National Aeronautics and
Space Administration

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December 27, 2023

Reply to Attn of: RE-23-201

New Mexico Environment Department
Attn: Ricardo Maestas, Acting Bureau Chief
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

Subject: Response to Approval with Modifications of the NASA WSTF 200 Area HWTL (SWMU 10) Investigation Report and Risk Assessment Report

NASA submitted the NASA WSTF 200 Area HWTL (SWMU 10) Investigation Report (IR) on December 14, 2017. NMED disapproved the Investigation Report on November 16, 2018 and directed NASA to address the 22 comments by July 31, 2019. NASA submitted the *Response to Disapproval of the NASA WSTF 200 Area HWTL (SWMU 10) Investigation Report* on July 30, 2019. On November 16, 2020, NMED disapproved the Investigation Report and directed NASA to address 16 comments by August 30, 2021. Due to COVID-related and new guidance delays, NASA submitted three requests for extension, with the final requesting additional time until February 28, 2022. NMED approved the extension on January 10, 2022. NASA submitted the *Response to Second Disapproval of NASA WSTF 200 Area HWTL (SWMU 10) Investigation Report and Risk Assessment Report* (RAR) on March 4, 2022. On November 1, 2023, NMED approved the IR and RAR with modifications and directed NASA to address 15 comments by December 31, 2023.

This submittal includes a printed response table addressing NMED's comments as Enclosure 1. Enclosure 2 includes printed replacement pages for the revised IR and RAR, and Enclosure 3 includes a CD-ROM with electronic copies of the response table, final IR and RAR, and redlined version of the IR and RAR.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions or comments concerning this submittal, please contact Antonette Doherty of my staff at 575–202-5406.

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For: Timothy J. Davis
Chief, Environmental Office

3 Enclosures

cc:
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Responses to NMED Comments for Approval with Modifications of the 200 Area HWTL (SWMU 10) IR

NMED Comment Number	NMED Comments	NASA Revisions/Responses/Discussion
1. Investigation Report: Section 3.2.1, Revised Site Conceptual Exposure Model, Page 7	**Permittee Statement:** "Based on results of the investigation and evaluation of risk and hazard the SCEM [Site Conceptual Exposure Model] is revised as shown on Figure 3.1 evaluating four potential exposure pathways: 1) incidental ingestion of soil; 2) dermal contact with soil; 3) ingestion of groundwater; and 4) inhalation of volatile contaminants (vapors)." **NMED Comment:** The figure link provided in the Permittee's statement directs the reader to Investigation Report Figure 3.1, SWMU 10 HWTLs [Hazardous Waste Transmission Lines] Sampling Locations and does not match the context of the information provided in the Permittee statement. Revise the statement to clarify that the SCEM is included as Figure 3.1 of the SWMU 10 Risk Assessment Report (RAR) and provide a replacement page.	NASA revised Section 3.2.1 to refer the reader to Figure 3.1 of the accompanying Risk Assessment Report (RAR). All replacement pages are provided in the response to Approval with Modifications.
2. Investigation Report: Section 4.5.8, Soil Vapor Sampling, Page 23	**Permittee Statement:** "Twelve temporary soil vapor implants were installed in the 200 Industrial Area as shown on Figure 3.1." **NMED Comment:** Figure 3.3, SWMU 10 HWTL Soil Vapor Sampling Locations, depicts the locations of the twelve temporary soil vapor implants. Revise the Permittee statement and figure page link for accuracy and provide a replacement page.	NASA revised Section 4.5.8 to refer the reader to Figure 3.3 showing the locations of the twelve soil vapor implants.
3. Investigation Report: Section 6.1.1.1, 1,1,2,-Trichloro-1,2,2-Trifluoroethane [Freon 113], Page 25	**Permittee Statement:** "Freon 113 was detected in four samples ranging from the minimum of l.9E-04 mg/kg [milligrams per kilogram] at 200-HWTL-05-5 to the maximum of 2.8E-03 mg/kg at 200-HWTL-04-3.5, with two detections in the 200 Industrial Area (Figure 6.4) and two detections in the 200 Area (Figure 6.5)." **NMED Comment:** The statement does not appear to be accurate. Table 6.1, Summary of Soil Sample Detection Frequencies, and the analytical data provided in the Microsoft Excel spreadsheet attached to the Report indicates that Freon 113 was detected in fifteen project soil samples. Revise the statement to accurately report the number of Freon 113 detections in soil samples at SWMU 10. Additionally, revise Figure 6.4, SWMU 10 HWTLs 200 Industrial Area VOC Detections, to include	NASA revised Section 6.1.1.1 to accurately reflect the fifteen total detections of Freon 113, and revised Figure 6.4 to add the detections of Freon 113 at locations 200-HWTL-11-2.5 and 200-HWTL-12-3.5.

NMED Comment Number	NMED Comments	NASA Revisions/Responses/Discussion
	detections for Freon 113 at sample locations 200-HWTL-11-2.5 and 200-HWTL-12-3.5. Provide a respective replacement page and figure.	
4. Investigation Report: Section 6.1.1.2, 2-Butanone, Page 25	**Permittee Statement:** "2-butanone was detected in one sample in the 200 Industrial Area (Figure 6.4). The single detected concentration was 2.50E-03 mg/kg at 200-HWTL-06 at 13 ft [feet] bgs [below ground surface]." **NMED Comment:** The statement does not appear to be accurate. Table 6.1, Figure 6.4, and analytical data provided in the Excel spreadsheet indicate that 2-butanone was detected in four project soil samples. Revise the Permittee statement for accuracy and provide a replacement page.	NASA revised Section 6.1.1.2 to accurately reflect the four locations where 2-butanone was detected, as well as the range of detections.
5. Investigation Report: Section 6.1.1.7, Cyclohexane, Page 25	**Permittee Statement:** "Cyclohexane was detected in four samples in all three areas of the HWTL. The minimum detected concentration of 6.6E-04 mg/kg at 200-HWTL-21 at 2.5 ft bgs, and the maximum concentration of 3.1E-03 mg/kg was at 200-HWTL-01.2 at 2.5 ft bgs." **NMED Comment:** Table 6.1 and the analytical data Excel spreadsheet indicate that cyclohexane was detected in twenty-one project soil samples. Revise the Permittee statement to accurately report the number of cyclohexane detections in project soil samples. Additionally, ensure that Figures 6.4, 6.5, and 6.6 accurately report all cyclohexane detections. Provide a respective revised replacement page and figures, as necessary.	NASA revised Section 6.1.1.7 to accurately reflect the 21 locations where cyclohexane was detected, as well as the range of detections. NASA also revised Figure 6.4 for accuracy and confirmed Figures 6.5 and 6.6 accurately reflect cyclohexane detections.
6. Investigation Report: Section 6.1.1.8, Tetrachloroethene [PCE], Page 26	**Permittee Statement:** "Tetrachloroethene was detected in two samples in the 200 Industrial Area (Figure 6.4). The minimum concentration of 8.00E-04 mg/kg was detected in location 200-HWTL-04.1 at 3.5 ft bgs. The maximum concentration of 3.80E-03 mg/kg was detected in 200-HWTL-04 at a depth of 3.5 ft bgs." **NMED Comment:** Figure 6.4 and the analytical data Excel spreadsheet indicate that PCE was detected in four project soil samples at the 200 Industrial Area. Revise the Permittee statement and Table 6.1 to accurately report the number of PCE detections in project soil samples and provide a revised replacement page and table, as necessary.	NASA revised Section 6.1.1.8 and Table 6.1 to accurately report the four detections of tetrachloroethene and confirmed the maximum and minimum detected concentrations and locations. Figure 6.4 was reviewed and accurately shows these detections.

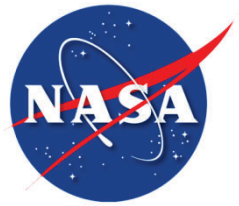
NMED Comment Number	NMED Comments	NASA Revisions/Responses/Discussion
7. Investigation Report: Section 6.1.1.10, Trichloroethene [TCE], Page 26	**Permittee Statement:** "Trichloroethene was detected in two samples in the 200 Industrial Area (Figure 6.4). The minimum concentration of 3.50E-04 mg/kg was detected in soil boring 200-HWTL-04.1 at 3.5 ft bgs. The maximum concentration of 8.20E-03 mg/kg was detected in 200-HWTL-04 at a depth of 3.5 ft bgs." **NMED Comment:** Figure 6.4, Table 6.1, and the analytical data Excel spreadsheet indicate that TCE was detected in four project soil samples. Revise the statement for accuracy and provide a revised replacement page.	NASA revised Section 6.1.1.10 to accurately report the four detections of trichloroethene and confirmed the maximum and minimum detected concentrations and locations.
8. Investigation Report: Section 6.1.2, SVOCs, Page 27	**Permittee Statement:** "Total PAH [polynuclear aromatic hydrocarbons] concentrations in samples from the 200 Area combined with the 600 Area (borings 200-HWTL-05 through 600-HWTL-10) are generally less than 0.01mg/ kg at all locations, with only sample 600- HWTL-01 (1-2 ft bHWTLs [below hazardous waste transmission lines]) having a detection greater than 0.10 mg/kg." **NMED Comment:** The Permittee statement is not accurate, Table 6.3, Semi-volatile Organic Compound Detection Summary, lists more than one sample as having Total PAH concentrations greater 0.01mg/kg. Review respective data included in the Report, revise the statement for accuracy, and provide a respective replacement page.	NASA revised Section 6.1.2 to accurately report locations with total PAH concentrations greater than 0.01 mg/kg and locations with total PAH concentrations greater than 0.10 mg/kg.
9. Investigation Report: Section 6.1.3.2.5, Sodium, Page 35	**Permittee Statement:** "Sodium was detected in was detected in in [sic] all 96 samples at all 48 soil borings (Figure 6.16 through Figure 6.18). The minimum detected concentration was 4.9E+0l mg/ kg at 200-HWTL-05 at a depth of 0-0.5 ft bHWTLs. The maximum detected sodium concentration was 4.10E+02 mg/kg at 200-HWTL-1.2 at a depth of 1-2 ft bHWTLs." **NMED Comment:** The minimum sodium concentration reported on Table 6.1 is 3.60E+0l mg/kg as reported on Table 6.1 and the analytical data Excel spreadsheet. Revise the Permittee statement for accuracy and provide a revised replacement page.	NASA revised Section 6.1.3.2.5 to accurately report the location exhibiting the minimum sodium concentration of 3.6E+01 mg/kg in the sample from 600-HWTL-07 at a depth of 0-0.5 ft bHWTLs.

NMED Comment Number	NMED Comments	NASA Revisions/Responses/Discussion
10. Investigation Report: Table 6.3, Semi-volatile Organic Compound Detection Summary Part I. Polynuclear Aromatic Hydrocarbons (PAH), Pages 100 and 101	**NMED Comment:** The location of the naphthalene concentration reported as 600-HWTL-06-015 on Table 6.3 is not accurate. The actual naphthalene detection was reported at 200-HWTL-06-015. Revise Table 6.3 for accuracy and provide a replacement table.	NASA revised Table 6.3 to accurately reflect actual naphthalene detections. No PAH constituents were detected at location 600-HWTL-06 at 15 ft bgs, and the total PAH concentration at location 200-HWTL-06 at 15 ft bgs accurately reports total detected PAH concentration of 1.17E-02 mg/kg, equal to the naphthalene concentration of 2.1E-03 mg/kg plus the phenanthrene concentration of 9.6E-03 mg/kg.
11. Investigation Report: Table 6.4, Metals Detection Summary, Page 105	**NMED Comment:** The following Table 6.4 issues must be addressed: a. Table header information indicates that the reported concentrations are at depths below ground surface; however, sample depths on the table appear to be reported as below the HWTL. Revise table header information to indicate that sample depths reported on the table are at depths below the HWTL or revise the table to report all sample depths as below ground surface and provide a revised replacement table. b. The reported maximum concentration for magnesium (4.3E+03 mg/ kg) reported on the table is not accurate. Data reported in the chemical analytical data Excel spreadsheet indicates that the maximum concentration for magnesium is 4.3E+04 mg/kg. Revise the table for accuracy and provide a revised replacement table.	a. NASA revised Table 6.4 header information to indicate that sample depths reported on the table are at depths below the HWTL. However, two of the locations (200-HWTL-07-015 and 200-HWTL-08-013) indicate the depth below ground surface. These two locations now include a footnote stating the depth of these two samples is in feet below ground surface, not feet below the HWTL. b. NASA also revised Table 6.4 to accurately reflect the maximum detected magnesium concentration as 4.3E+04 mg/kg at location 200-HWTL-10-000.
12. Risk Assessment Report: Section 6.1.2, Residential Non-cancer Risk Screening, Page 10	**Permittee Statement:** "Table 6.3 [Soil Residential Scenario- Non-cancer-Maximum Concentrations] presents the results of the non-cancer risk screening based on maximum COPC [Contaminant of Potential Concern] concentrations. Risk screening indicated the total combined residential non-cancer HI [Hazard Index] for SWMU 10 was 4.05E+00, which exceeds the target HI of l."	NASA revised the Risk Assessment Report Section 6.1.2 to accurately state the total combined residential non-cancer HI for SWMU 10 was 4.56E+00 and the HI was determined based on maximum concentrations.

NMED Comment Number	NMED Comments	NASA Revisions/Responses/Discussion
	NMED Comment: Table 6.3 data reports a total combined residential non-cancer HI 4.56E+00 for SWMU 10. Revise the Permittee statement for accuracy and provided a revised replacement page.	
13. Risk Assessment Report: Section 6.8, Cumulative Risk and Hazard, Page 10	**Permittee Statement:** "However, to see if that hazard could be lowered with continued screening, EPC [exposure point concentration] (UCL [upper confidence level] 95) concentrations were calculated for soil vapor concentrations (Appendix B), since the final soil HI was already using EPC (UCL95) concentrations. Although the cumulative soil vapor HI was reduced from 6.58E-01 (maximum) to 5.63E-01 (UCL95), the cumulative HQ [hazard quotient] for both soils and soil vapor was only reduced by 0.1 to 1.22, which still exceeds the NMED target (1)." **NMED Comment:** Table 6.4, Soil Residential Scenario-Non-cancer-UCL95, reports a cumulative soil HI 1.13 that would result in a total (soil and soil vapor) residential non-cancer HI of 1.69, not the HI 1.22 that was reported on Table 6.18. However, considering the uncertainty discussion provided in RAR Section 7.2, Residential Non-cancer HI Exceedance, revise the statement to clarify how the soil cumulative HI 6.58E-01 for residential non-cancer that was reported on Table 6.18 was calculated, provide the respective rationale for the calculation, and provide a revised replacement page.	NASA evaluated all risk calculations to confirm the residential non-cancer HI for soils, based on UCL95 concentrations, is 1.13 instead of 0.658. The error reported in Table 6.18, residential non-cancer, has been corrected to accurately reflect the soil HI of 1.13, the soil vapor HI of 0.563, and the cumulative HI of 1.69. NASA also revised Sections 6.8 and 7.2 of the Risk Assessment Report to provide the correct residential non-cancer HI of 1.13 for soils, based on UCL95 concentrations.
14. Risk Assessment Report: Section 7.3.2, Soil-to-groundwater Exceedances, Page 18	**Permittee Statement:** "Exceedances were identified at locations 200-HWTL-01.4; 200-HWTL-2, 200-HWTL-2.1; 200-HWTL-3; 200-HWTL-21; 200-HWTL-22; and 600-HWTL-06." **NMED Comment:** Revise the statement to indicate that soil-to-groundwater exceedances were identified at 200-HWTL-2.2 and 200-HWTL-3.1 rather than 200-HWTL-2.1 and 200-HWTL-3 for accuracy and to match information provided on Figure 6.1, SWMU 10 HWTLs Soil-to-Groundwater Scenario SL-SSL Exceedances and provide a replacement page.	NASA revised Section 7.3.2 to accurately list the seven locations where hydrazine concentrations exceeded the SL-SSL.

NMED Comment Number	NMED Comments	NASA Revisions/Responses/Discussion
15. Risk Assessment Report: Section 8.2, Recommendations, Page 22	**Permittee Statement:** "Based on the results of this risk assessment and evidentiary information detailed herein, no further actions are warranted in connection with soils at the former HWTLs location." **NMED Comment:** As deemed necessary by NMED, the discovery of emerging contaminants of concern in association with WSTF SWMUs may require the need for additional investigation and risk assessment if site history, available information, or data indicate that contaminants beyond those investigated under a prior scope of work are believed to have been released to the environment at a site. This comment is provided as an additional note and no revisions to the Report are required in response.	NASA understands that the discovery of emerging contaminants of concern in association with WSTF SWMUs may require the need for additional investigation and risk assessment if site history, available information, or data indicate that contaminants beyond those investigated under a prior scope of work are believed to have been released to the environment at a site. The report has not been revised.
16. N/A		NASA revised Permit, Groundwater Monitoring Plan, and Risk Assessment Guidance references to reflect current documents throughout the reports.

National Aeronautics and Space Administration



200 Area Hazardous Waste Transmission Lines (SWMU 10)

Investigation Report

December 2017

Revised July 2019

Revised March 2022

Revised December 2023

NM8800019434
NASA Johnson Space Center White Sands Test Facility

200 Area Hazardous Waste Transmission Lines (SWMU 10)

Investigation Report

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I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

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Executive Summary

The National Aeronautics and Space Administration (NASA) is required by the New Mexico Environment Department (NMED)-issued Hazardous Waste Permit (Permit; NMED, 2023) to provide Investigation Reports (IRs) from completed investigations performed at solid waste management units (SWMUs) and Areas of Concern at the Johnson Space Center White Sands Test Facility (WSTF). These investigations determine the nature, extent, and potential migration pathways of contaminant releases. This IR addresses NASA's applicable regulatory requirements, describes the investigation activities, summarizes investigation results, provides an interpretation of the results, and presents conclusions and recommendations for the 200 Area Hazardous Waste Transmission Lines (HWTLs) identified in the Permit as SWMU 10.

Investigation activities were conducted at SWMU 10 in May through August 2016 in accordance with the *200 Area Hazardous Waste Transmission Lines (SWMU 10) Investigation Work Plan* [IWP] (NASA, 2015b), which was approved with modifications by NMED on January 8, 2016 (NMED, 2016). Any deviations from the work plan are documented in this report. Sampling at a total of 48 sites was completed along the length of the HWTLs (SWMU 10) as follows:

- 44 shallow hand augered borings were completed 0 to 0.5 feet (ft) and 1 to 2 ft below the piping (minimum 1 ft to maximum 6 ft below ground surface [bgs]) along the length of the HWTLs.
- 4 shallow borings were augered at the known locations of spills or leaks associated with SWMU 10 and sampled from 13 to 17 ft bgs.

As part of the investigation activities, the HWTLs were excavated and removed. The stainless-steel portions of the HWTLs were managed and disposed of as scrap metal for recycling. The polyvinyl chloride (PVC) portions were managed as hazardous debris under 40 CFR 268.2(h), treated under the Alternative Treatment Standards for Hazardous Debris in accordance with 40 CFR 268.45, and disposed as a solid waste at a Subtitle D facility using a One-Time Notification (NASA, 2016).

A total of 1,176 chemical samples with individual sample numbers from 96 sampling locations and 48 soil borings were collected from SWMU 10 (724 investigation soil samples, 69 duplicate soil samples, 346 equipment rinsate blanks, 25 trip blanks, and 12 matrix spikes). Soil samples were analyzed by National Environmental Laboratory Accreditation Program-accredited laboratories for contaminants of potential concern (COPCs) that included volatile organic compounds (VOC), semi-volatile organic compounds (SVOC), metals, dioxins/furans, hydrazines, bromacil, N-nitrosodimethylamine (NDMA), cyanide, perchlorate, nitrate/nitrite, and chloride. As required in the IWP approval with modifications, pH results were also included as part of laboratory analyses.

Due to improper soil sample collection for the VOC fraction of each sample, results of the 2016 soil VOC analyses were determined to be invalid and required replacement and removal from the investigation dataset. Resampling of each location for soil VOCs was completed during July and August 2021. NASA also elected to collect soil vapor samples from soils potentially impacted by the former HWTLs. Twelve soil vapor samples were collected during September 2021 from sample locations adjacent to occupied buildings in the 200 Area. Samples were analyzed by National Environmental Laboratory Accreditation Program-accredited laboratories for VOCs.

As part of the performance acceptance criteria of the data quality objectives, validated soil chemical analytical data were reviewed for use in determining cancer risk and non-cancer hazard to receptor populations in accordance with risk assessment procedures included in the NMED's March 2017 and the

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then current November 2021 Risk Assessment Guidance for Site Investigations and Remediation (RA Guidance; NMED, 2017a, 2021) and Attachment 15 and Section 3.5 of the Permit (NMED, 2009; 2023). The complete risk assessment is provided in the accompanying Risk Assessment Report. Concentrations of detected constituents were evaluated to determine which COPCs carried forward through the risk screening process. Detected inorganic constituents in soil samples were compared with established WSTF background data to eliminate those constituents that are representative of background conditions at the HWTLs. The Site Conceptual Exposure Model was revised based on investigation results, and risk and hazard presented by identified concentrations of COPCs were evaluated for all identified receptor populations via each complete exposure pathway.

The entire WSTF facility prohibits residential use, but NASA evaluated risk and hazard to residential receptors for the soil and soil vapor exposure pathways in anticipation of a proposed closure without controls. Risk to industrial worker receptors was only evaluated for the vapor intrusion pathway, as industrial workers are not exposed to soils greater than one foot below ground where the former HWTLs were buried. Risk to construction worker receptors were evaluated for the soil pathway as they may be exposed to soils affected by the HWTLs. Potential impacts to groundwater from COPCs in HWTLs soils were evaluated. Ecological risk and hazard were evaluated for the deer mouse, horned lark, and plant species in accordance with the RA Guidance, based on the total area of SWMU 10 of approximately 1.7 acres.

Neither the residential nor the construction worker exposure scenario resulted in individual or cumulative carcinogenic risks greater than the target carcinogenic risk of 1E-05. Individual COPC hazard indices (HIs) and the cumulative hazard quotient (HQ) for construction workers were also less than the target hazard of 1. However, the cumulative residential HQ of 1.13 exceeded the target, with significant contributions from identified concentrations of monomethylhydrazine (MMH) and thallium. The contribution to total HQ from MMH results from a single detection that represents 1% of the total samples.

Individual COPCs that exceeded NMED soil leachate-soil screening levels (SL-SSLs) using maximum concentrations and using UCL95 concentrations were disulfoton (1 of 96 samples), hydrazine (7 of 96 samples), and MMH (1 of 96 samples). An evaluation of the locations of constituents with concentrations above SL-SSLs does not indicate a clear pattern in the distribution of the exceedances at SWMU 10, or indications of a widespread source of contamination.

Results of soil vapor samples were evaluated using a tiered approach where detected VOC concentrations were first evaluated against the generic NMED vapor intrusion screening levels, then evaluated against the site-specific WSTF Risk-Based Concentrations (RBCs; NASA, 2020a). NMED target risk (1E-05) and target hazard (1) were not exceeded for residential and industrial worker receptors.

Results of ecological risk screening at SWMU 10 indicated that the only exceedance of NMED targets was the cumulative HQ for plant receptors (1.08), but individual COPC HIs did not exceed targets. Ecological receptors potentially exposed to soils affected by the HWTLs are rare to non-existent based on the site inspection. Fauna within the site is transient and habitat within this area is inadequate to support wildlife populations for extended periods of time. Due to the limited nature of the area affected by historical HWTLs operation, and the lack of abundant habitat for ecological receptors surrounding the site, NASA believes the overall impact to these receptor populations is minimal and warrants no further evaluation.

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After completing risk and hazard for soils and soil vapor, NASA evaluated the cumulative risk presented by all exposure pathways to all identified receptors. The cumulative toxicity hazard (HQ) to residential receptors from soil and soil vapor (1.2) exceeded the target hazard of 1, but individually, the soil HQ of 6.58E-01 and the soil vapor HQ of 5.63E-01 do not exceed target hazard. Based on the conservative nature of risk methods detailed in the RA Guidance and NASA's selection of conservative assumptions supporting risk assessment, the targeted nature of investigation soil sampling, and results of soil vapor intrusion evaluation in this investigation and in the 200/600 Vapor Intrusion Assessment Report, NASA believes that the resultant cumulative HQ does not represent prediction of expected health risks but rather an upper bound above which such risks are extremely unlikely. In addition, with discontinuous, low concentration contamination potentially impacting groundwater; thick, unsorted alluvium with clay lenses to slow vadose zone contamination; deep groundwater; on-going groundwater monitoring and remediation, and built-in conservative assumptions (like no adsorption in the vadose zone) NASA concludes that the potential impact to human health and the environment is acceptable. Based on the results of this investigation, NASA concludes that no further actions are warranted in connection with soils or soil vapor at the former HWTLs location.

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List of Acronyms

AIWP	Abbreviated Investigation Work Plan
bgs	Below ground surface
bHWTLs	Below the Hazardous Waste Transmission Lines
BTV	Background Threshold Value
CAP	Corrective Action Plan
CFR	Code of Federal Regulations
CME	Central Mine Equipment
COPC	Contaminants of Potential Concern
CSSL	Construction Worker Soil Screening Level
DAF	Dilution Attenuation Factor
DOT	Department of Transportation
EPA	Environmental Protection Agency
EPC	Exposure Point Concentration
ESL	Ecological Screening Levels
ETU	Evaporation Treatment Unit
Freon 113	1,1,2-Trichloro-1,2,2-trifluoroethane
ft	Foot or feet
GPS	Global Positioning System
HI	Hazard Index
HIS	Historical Information Summary
HQ	Hazard quotient
HSA	Hollow Stem Auger
HWDL	Hazardous Waste Drain Line
HWMU	Hazardous Waste Management Unit
HWTLs	Hazardous Waste Transmission Lines
IDW	Investigation-Derived Waste
in.	Inch(es)
IR	Investigation Report
IWP	Investigation Work Plan
MEK	Methyl Ethyl Ketone (2-Butanone)
mi	Mile(s)
MMH	Monomethylhydrazine
MPITS	Mid-plume Interception Treatment System
NASA	National Aeronautics and Space Administration
ND	Not Detected
NDMA	N-nitrosodimethylamine
NMED	New Mexico Environment Department
OSHA	Occupational Safety and Health Administration
PAH	Polynuclear Aromatic Hydrocarbons
PeCDF	Pentachlorodibenzofuran
PPE	Personal Protective Equipment
PUF	Plant uptake factor
PVC	Polyvinyl chloride
QA	Quality Assurance
QA/QC	Quality Assurance/Quality Control
RA Guidance	NMED Risk Assessment Guidance for Site Investigations and Remediation
RAR	Risk Assessment Report
RBC	Risk-based Concentrations

RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RSL	Residential Screening Level
RSSL	Residential Soil Screening Level
SCEM	Site Conceptual Exposure Model
SHP	Safety and Health Plan
SLERA	Screening Level Ecological Risk Assessment
SLHI	Screening level hazard index
SLHQ	Screening level hazard quotient
SL-SSL	Soil leachate soil screening level
SSL	Soil Screening Level
SVOA	Semi-volatile Organic Analytes
SVOC	Semi-Volatile Organic Compounds
SWMU	Solid Waste Management Unit
TCDD	2,3,7,8-Tetrachlorodibenzo-p-dioxin
TCE	Trichloroethene
TCLP	Total Toxicity Characteristic Leaching Procedure
TEF	Toxicity Equivalency Factor
TEQ	Toxicity equivalent
UCL95	95% Upper Confidence Level
UST	Underground Storage Tank
VIAR	Vapor Intrusion Assessment Report
VISL	Vapor Intrusion Screening Level
VOA	Volatile Organic Analytes
VOC	Volatile Organic Compounds
WSTF	White Sands Test Facility

1.0 Introduction

The National Aeronautics and Space Administration (NASA) Johnson Space Center (JSC) White Sands Test Facility (WSTF; Environmental Protection Agency [EPA] Identification Number NM8800019434) has supported testing of space flight equipment and hazardous materials since 1964. The facility contains five closed hazardous waste management units (HWMUs) that are under post-closure care and 37 solid waste management units (SWMUs) requiring corrective action within the WSTF 100, 200, 300, 400, and 600 Areas. SWMU investigation requirements are specified in the 2009 NASA WSTF Hazardous Waste Permit (Permit) issued by the New Mexico Environment Department (NMED; NMED, 2009) and the 2023 RCRA Permit (NMED, 2023). Specific regulatory requirements are discussed in Section 1.1.

The investigation described in this report was conducted at SWMU 10, the historical 200 Area Hazardous Waste Transmission Lines (HWTLs) during May through August 2016, in accordance with the NMED-approved *200 Area Hazardous Waste Transmission Lines (SWMU 10) Investigation Work Plan* (NASA, 2015b). This report summarizes the field investigation and laboratory testing activities, presents the analytical results of the soil sampling activity, and provides interpretation of results and recommendations based on the results.

1.1 Regulatory Requirements

The Permit (NMED, 2023) requires that NASA investigate and address historical releases of hazardous waste and hazardous constituents that may have occurred at sites throughout WSTF as part of the Resource Conservation and Recovery Act (RCRA) corrective action process (CAP). The CAP consists of investigation, characterization, and, if necessary, cleanup. The principal components of the CAP are:

- RCRA Facility Assessment.
- RCRA Facility Investigation (RFI).
- Interim Corrective Measures (if necessary).
- Corrective Measures Study (if necessary).
- Corrective Measures Implementation (if necessary).

NASA is currently implementing interim corrective measures to address groundwater contamination and is conducting RFIs for specific HWMUs, SWMUs, and any other areas of concern or areas of interest at WSTF.

An investigation work plan (IWP) was prepared for SWMU 10 in accordance with the 2009 and 2023 Permit Sections VII.H and 6.2, respectively (NMED, 2009; 2023) and was submitted to NMED on June 29, 2015 (NASA, 2015b). NMED approved the IWP with modifications on January 8, 2016 (NMED, 2016).

1.2 WSTF Location and Description

WSTF is located in Doña Ana County, 18 mi (miles) northeast of Las Cruces, New Mexico and 65 mi north of El Paso, Texas (Figure 1.1). The site was constructed in a remote location adjacent to the San Andres Mountains. The land occupied by WSTF is owned by the Department of the Army and is used by NASA under a land use agreement with the Army (Department of Defense, 1976). Access to the site is provided via a paved road (NASA Road) that intersects U.S. Highway 70, 1 mi west of Organ, New Mexico.

1.3 SWMU 10 Location and Description

SWMU 10 is located within the WSTF 200 and 600 Areas in Section 35, Township 20 South, Range 3 East and Section 2, Township 21 South, Range 3 East (Figure 1.2). Access to SWMU 10 is provided via Apollo Boulevard. A description of SWMU 10 was provided in the Historical Information Summary (HIS) and the IWP (NASA, 2015b). This section presents a summary from those reports. Refer to the HIS/IWP for more details.

The 200 Area HWTLs (SWMU 10) comprise a network of mostly 3-inch (in.) stainless-steel and polyvinyl chloride (PVC) underground pipelines installed at depths of 1 foot (ft) up to approximately 6 ft below ground surface (bgs), in one location between the 200 and 600 Area Sewage Lagoons. The HWTLs were designed to gravity drain hazardous waste discharged from the 200 Area Laboratory Complex to the 600 Area HWMU Impoundments. The stainless-steel portions of SWMU 10 ran on the southeast and northwest sides of the 200 Area buildings, eventually joining at a point southwest of the complex. Beyond this juncture, a single PVC line extended more than 2,500 ft southwest to the 600 Area HWMU impoundments. Figure 1.2 shows the spatial extent of SWMU 10.

1.4 Site Usage and Status

The HWTLs are currently not used at WSTF and were abandoned in place prior to this investigation. The piping was removed as part of this investigation. Refer to Section 2.1 for HWTLs historical usage and Sections 3.3.1 and 3.3.5 for piping removal. SWMU 10 is currently under investigation with the status listed as "requiring corrective action" in Permit Attachment 22 (NMED, 2009) and Permit Attachment 4 Table 4-1 (NASA, 2023).

1.5 Purpose and Method of Investigation

The purpose of this investigation was to determine the nature and extent of potential contamination in the vadose zone at SWMU 10 and establish if further action is necessary. The method used to make this determination was to (1) locate (by potholing) and verify the exact location of the HWTLs, (2) identify soil sampling locations along the extent of the HWTLs, (3) excavate trenches to expose the HWTLs, (4) collect soil samples from identified locations and depths beneath the HWTLs, (5) analyze the collected soil samples, and (6) compare detected constituent concentrations with cleanup levels and perform human and ecological health risk and hazard screenings. During the investigation, NASA complied with applicable internal site procedures regarding health and safety, investigation activities, soil sampling, data management and quality control as well as external federal (40 Code of Federal Regulations [CFR], RCRA, and Occupational Safety and health Administration [OSHA]) and New Mexico State Regulations. Soil samples were shipped to the contracted analytical laboratories and reports were delivered to NASA. Analytical results from soil samples were assessed using NMED soil screening levels (SSLs; NMED, 2021), where available, and EPA regional screening levels (RSLs; EPA, 2017) to determine if further actions are required.

1.6 Type of Results

The types of results presented in this report include the following:

- General soil descriptions for hand augered soil borings and lithologic logs for the four deeper hollow stem auger (HSA)-drilled borings, soil types/conditions, soil sampling locations, and the relative sample depth.
- Soil and soil vapor analytical data summaries and contract laboratory analytical data reports for all soil samples collected.

- Quality assurance (QA) reports
- Human and ecological health risk and hazard screening summaries.

2.0 Background

Figure 2.1 shows SWMU 10 and current and former structures and features in the vicinity. Extensive background information on SWMU 10 was presented in detail in both the HIS and the IWP (NASA, 2015b). Refer to those documents for more detail. The following sections provide a brief review of the waste management history, results from past investigations conducted in and around SWMU 10, and the nature of contamination known to exist in the area.

2.1 SWMU 10 Waste Disposal History

Beginning in 1964, the HWTLs drained 200 Area aqueous hazardous wastes into two underground storage tanks (USTs). In 1966, a third UST was installed, requiring modifications to the HWTLs. Beginning in 1968, wastes from the USTs were transported by truck to the 600 Area HWMU Impoundments as needed.

In preparation to close the 200 Area USTs in April 1986, the HWTLs were modified within the 200 Area and a PVC extension was constructed for direct discharge into the 600 Area HWMU impoundments as an interim waste management solution until the 200 Area Evaporation Treatment Unit (ETU) could be constructed. The PVC extension was installed in the same trench as the overflow pipeline from the 200 Area Sewage Lagoons to the 600 Area Sewage Overflow Lagoons (Figure 2.1).

In June 1986, the EPA issued a Notice of Noncompliance stating that NASA had lost interim operating status for the 600 Area HWMU impoundments. All waste discharges to the impoundments ceased immediately to comply with the notice. Aqueous hazardous wastes continued to be discharged through the HWTLs and into a portable tank truck located adjacent to the 600 Area impoundments. From the portable tank truck, wastes were shipped off site for disposal at an EPA-permitted incineration facility.

On July 30, 1986, a leak occurred at the stainless-steel/PVC connection joint in the 200 Area, and NASA ceased using the PVC portion of the HWTLs. The PVC lines were triple rinsed and abandoned in place. NASA continued using the stainless-steel HWTLs in the 200 Area to discharge wastes into a series of mobile tanks located adjacent to the South Highbay and coincident with the juncture of the stainless-steel/PVC piping. Aqueous hazardous laboratory wastes continued being shipped off site for disposal at a permitted facility. Several leaks from the mobile tanks occurred, and affected soil was removed concurrent with leak discoveries and shipped off site for proper disposal.

In 1988, NASA completed the construction of the ETU. Some of the HWTLs were reconfigured, and others were replaced with polypropylene drainpipe. The polypropylene lines were referred to as the hazardous waste drain line (HWDL) and connected the 200 and 800 Areas to the ETU. HWTLs piping that were not used as part of the new HWDL system were triple rinsed and abandoned in place. The HWDL was removed and disposed of as part of the ETU closure process. The ETU received clean closure approval from NMED September 5, 2014 (NMED, 2014).

2.2 Previous Investigations

Many investigations have been conducted previously in the vicinity of SWMU 10 during the period 1986 to 2015 involving geophysical surveying and chemical analysis of soil, soil vapor, and groundwater. These investigations are summarized in the IWP (NASA, 2015b) and the 200 Area Phase II Investigation Report (NASA, 2015c), but a brief summary is provided here.

In 1986, a seismic reflection survey, a shallow soil vapor investigation, and a shallow boring investigation were conducted to target known HWMUs and SWMUs within the 200 Area. A phase II soil investigation was conducted in 1994-1995 as part of the RFI process (NASA, 1996). Soil borings were installed, and soil samples were collected at known HWMU and SWMU locations within the 200 Area. Four soil vapor wells (200-SG-1 through 200-SG-4) were installed in 1997.

Groundwater in the 200 Area was also investigated with the installation of seven groundwater monitoring wells between 1988 and 1997 (200-B-240, 200-D-109, 200-D-240, 200-F, 200-G, 200-H, and 200-I). Combination soil vapor groundwater wells 100-HG-139 and 200-JG-110 were installed in 2011 between the 200 and 600 Areas.

From 2012 to 2015, an additional two-phase investigation was completed in the 200 Area. A geophysical study and additional shallow soil vapor surveys for volatile organic compounds (VOCs) were completed as Phase I. In Phase II, 18 soil borings were completed in areas of interest in the 200 Area (NASA, 2015c). Soil borings were installed at the SWMUs, with four borings adjacent to soil borings installed in 1996. Multiport soil vapor monitoring wells were installed in 15 of the 18 borings and multiport soil vapor and groundwater monitoring wells were installed in two soil borings at the two HWMUs (NASA, 2015c).

During 2009 and 2010, an investigation into vadose zone soils and soil vapor beneath and surrounding the 600 Area HWMU Impoundments closure cap was completed, and results reported in the 600 Area Closure Investigation Report (NASA, 2010). This investigation provided chemical characterization of vadose zone soil samples collected from 10 soil borings, and of soil vapor samples collected from multiport soil vapor monitoring wells. The Contaminants of Potential Concern (COPCs) for this investigation included VOCs, NDMA, DMN, bromacil, semi-volatile organic compounds (SVOCs), total metals, perchlorate, nitrate/nitrite, and hexavalent chromium. Results of this investigation led NASA to conclude that the soils beneath the 600 closure are not a potential source of groundwater and soil vapor contamination, but that the groundwater contamination originating from the test areas sources are major contributor to groundwater and soil vapor contamination.

As part of the WSTF sewer lines upgrades, there were two locations in the 200 Area and the 600 Area that required removal of portions of the HWTL for installation of new underground sewer lines. Soil samples were collected and analyzed for select VOCs, metals, and hydrazines (NASA, 2012d, 2013a). Results of soil sample analyses indicate there were no exceedances of NMED residential SSLs.

The potential for soil vapor intrusion into occupied building at the 200 Area and 600 Area was completed during 2017 and 2018 as detailed in the 200 Area and 600 Area Vapor Intrusion Assessment Report (VIAR; NASA, 2020b). The buildings that are nearest the potential sources of contaminants in soil vapor at both areas were selected, and these were Building 200 (nearest the former Clean Room tank HWMU) and Building 637 (nearest the closed 600 Area HWMU). This investigation was completed by collection of soil vapor samples from existing soil vapor wells and air samples from the two buildings. Soil vapor and air samples were analyzed for 13 VOCs that were known to be managed in the former 200 Area underground storage tanks. Specific COPCs include TCE, PCE, Freon 11, Freon 113, 2-butanone (methyl ethyl ketone), 1,1,1-trichloroethane, chloroform, benzene, ethylbenzene, toluene, xylenes, acetone, and 2-propanol (isopropyl alcohol). The investigation identified contaminated groundwater beneath these two areas as the source of elevated COPC concentrations in soil vapor. Results of indoor air sample analyses for VOCs did not identify any VOC at concentrations exceeding NMED Vapor Intrusion Screening Levels (VISLs) for industrial workers at these buildings and no unacceptable hazard to workers was identified.

A soil investigation was completed at the former 200 Area Evaporation Treatment Unit (ETU) in support of closure efforts (NASA, 2013b). Collected soil samples were analyzed for VOC, SVOC, hydrazines, metals, mercury, and cyanide. Results of this investigations supported the conclusion that site COPCs were not identified at concentrations exceeding NMED screening levels and do not present unacceptable risk to potential receptors.

2.3 Nature and Extent of Contamination

Contamination identified during previous investigations conducted in the 200 Area and in the vicinity of SWMU 10 indicated groundwater has been affected by historical 200 Area activities. The primary COPC in groundwater in the vicinity of SWMU 10 is trichloroethene (TCE). Shallow soil vapor surveys for VOCs also identified TCE as the primary COPC. During the ETU closure investigation, 29 soil borings to 2 ft bgs were completed, 10 along the HWDL in the 800 Area and 19 along the HWDL in the 200 Area. Most of the HWDL was above ground but located coincident with the HWTLs. The only NMED SSL exceedance was for arsenic, which was within WSTF background levels.

All known and documented spills from the HWTLs were limited to the area where the stainless-steel piping connected to the PVC piping, coincident with where the mobile stainless-steel tanks were located (adjacent to the South Highbay). Spill cleanup involved the removal of the affected soil and shipment off site for disposal concurrent with each spill discovery. Soil samples collected during an abbreviated investigation conducted in 2012 at two locations along the HWTLs at a depth of 6 in. below the HWTLs (bHWTLs) did not detect VOCs, SVOCs, metals or hydrazines above residential SSLs.

An important observation resulting from evaluation of the investigations listed in Section 2.2 at both the 200 Area and 600 Area is that vadose zone soils do not appear to be the source of groundwater contamination or of soil vapor contamination. Historical 200 Area activities appear to be major contributors to groundwater contamination, and the groundwater appears to be the source of elevated COPC concentrations in soil vapor samples. Results of both the 600 Area Closure Investigation Report (NASA, 2010) and the 200 Area and 600 Area VIAR (NASA, 2020) indicated elevated constituent concentrations in soil vapor originate from groundwater as evidenced by vertical profiles of soil vapor sample results that increase in concentration with increasing depth, with the highest soil vapor concentrations identified in the lowest soil vapor sampling ports in existing wells.

2.4 Contaminants of Potential Concern

Table 2.1 lists the Preliminary COPCs presented in the IWP. The list of COPCs can be organized into the following categories: VOCs, SVOCs, metals, dioxins/furans, hydrazines, nitrosamines, bromacil, cyanide, chloride, perchlorate, and nitrate/nitrite. Soil samples were also analyzed for pH.

3.0 Scope of Activities

The following activities were performed during the investigation:

- Procured drilling and analytical laboratory services.
- Conducted pre-fieldwork project overview and safety meetings.
- Confirmed, where there was uncertainty, the location of certain portions of the HWTLs then selected soil sampling locations in those areas.
- Field verified sampling locations to confirm accessibility and obtained site clearance to excavate (dig permit).
- Surveyed sampling locations using the Global Positioning System (GPS) with decimeter accuracy.

- Documented field activities daily in logbooks and recorded pertinent field data on required forms.
- Conducted and recorded daily tailgate safety and health briefings at the investigation site.
- Excavated the HWTLs.
- Removed the HWTLs and disposed of the piping in accordance with all applicable regulations.
- Collected investigation samples, including resampling of soils for VOCs and sampling selected soil borings for soil vapor VOCs.
- Collected field quality control samples (equipment rinsates, duplicates, matrix spikes).
- Shipped investigation samples to the contracted analytical laboratories.
- Managed investigation-derived waste (IDW) in accordance with the IDW Management Plan (Appendix A of the IWP; NASA, 2012a).
- Backfilled borings following completed sample collection as part of backfilling the pipe excavations.
- Contracted laboratories analyzed the investigation samples.
- Received and processed contracted laboratory analytical data using the established WSTF data management system.
- Assessed analytical data and performed health and ecological risk and hazard assessments to determine the nature and extent of contamination at SWMU 10 and establish if continued assessment or corrective action may be necessary.
- Developed an investigation report.

3.1 Data Quality Objectives

The investigation methodology was developed based on *Guidance on Systematic Planning Using the Data Quality Objectives [DQO] Process* (EPA, 2006) and the Corrective Action Site Investigations requirements of the Permits (NMED, 2009; Section VII.H; 2023; Section 6.2). The data acquisition plan (i.e., sampling design) is based on the DQO process. The DQOs consist of the problem statement, information inputs, the spatial extent of the investigation, and the performance or acceptance criteria (the decision rule).

3.1.1 Problem and Objectives

The problem statement was to determine if residual contamination of the soil beneath SWMU 10 is present and determine if additional assessment or corrective action is required. The objective was to collect the required investigation samples and evaluate analytical results of detected constituents to determine which COPCs carried forward through the risk screening process. WSTF inorganics background threshold value (BTV) concentrations and populations were compared to SWMU 10 soil maximum concentrations and populations. Then, concentrations of identified COPCs were compared with the current NMED SSLs, and for soil vapor, NMED vapor intrusion screening levels (VISLs) and NMED-approved WSTF risk-based concentrations (RBCs; NASA, 2020a; NMED, 2020) per the then current NMED *Risk Assessment Guidance for Site Investigations and Remediation* (RA Guidance; NMED, 2021).

3.1.2 Information Inputs

Primary inputs to the decision were the analytical data generated from SWMU 10 investigation samples and the health risk results. Potential COPCs were identified based on the history of SWMU 10 (Table 2.1). The analytical methods used to quantify the presence of COPCs were selected in accordance with EPA SW-846 (EPA, 2017).

3.1.3 Spatial Extent of Investigation

The spatial extent of the investigation was limited to the upper portion of the vadose zone beneath the entire length of SWMU 10 (Figure 3.1). The extent of SWMU 10 was determined by historical research and confirmed by field surveys. The vertical boundary of the study was limited to 2 ft bHWTLs (or a maximum of 6 ft bgs) for shallow borings along most of the length of the HWTLs and 17 ft bgs for the HSA-drilled borings adjacent to the area of known spills. For reference to sample depths below ground surface, refer to Table 3.1).

3.1.4 Decision Statement and Alternative Actions

The primary decision is whether additional assessment or corrective actions are warranted at SWMU 10 due to the presence of a residual contamination source(s). In accordance with the then current NMED RA Guidance (NMED, 2021), the Permit (NMED, 2023), and the IWP (NASA, 2015b), validated analytical results from soil samples collected during the investigation were evaluated to determine which COPCs carried forward through the risk and hazard assessment process by a comparison of constituent concentrations with established WSTF background concentrations as approved by the NMED (NMED, 2015). Concentrations of COPCs were then compared to NMED SSLs. Where no NMED SSL existed, an EPA RSL was sought. Where multiple contaminants were detected, the cumulative risk and hazard effects of those contaminants were determined as described in the then current RA Guidance (NMED, 2021).

COPC concentrations greater than NMED SSLs, or cumulative health risk or hazard effects greater than 1.0 for noncarcinogenic constituents and 1E-05 for carcinogenic effects may require NASA to conduct additional investigation or move to a corrective action. Soil concentrations below residential SSLs or cumulative health risk and hazard criteria allow NASA to request a “corrective action complete” status determination and recommend no further investigative or corrective action at SWMU 10.

3.2 Site Conceptual Exposure Model

3.2.1 Revised Site Conceptual Exposure Model

The preliminary site conceptual exposure model (SCEM) presented in the IWP (NASA, 2015b) identified construction workers excavating the HWTLs as the only WSTF receptor population that can potentially be exposed to contaminated soil. Based on results of the investigation and evaluation of risk and hazard, the SCEM is revised as shown on Figure 3.1 of the accompanying Risk Assessment Report (RAR) evaluating four potential exposure pathways: 1) incidental ingestion of soil; 2) dermal contact with soil; 3) ingestion of groundwater; and 4) inhalation of volatile contaminants (vapors). Complete exposure pathways and receptors that were evaluated include: 1) ingestion; 2) dermal, construction worker and burrowing ecological receptors; and 3) inhalation, industrial worker.

The SWMU 10 IWP also identified the possible migration to groundwater pathway for any previously unidentified historical contamination from potential HWTLs leaks or residual soil contamination remaining after historical cleanup. The groundwater underlying much of WSTF is known to be contaminated and its future use and potential risk to receptors are part of ongoing site-wide evaluation and corrective actions. However, to determine if soil underlying SWMU 10 could potentially be a source for groundwater contamination, an initial screening evaluating the migration to groundwater pathway was conducted using NMED soil-to-groundwater soil leachate soil screening levels (SL-SSLs) protective of groundwater with a Dilution Attenuation Factor (DAF) of 20. A default DAF of 20 was chosen by NMED as protective of groundwater in New Mexico per the then current RA Guidance (NMED, 2021). Section 7.0 provides additional details of the risk screening process.

There are no residential receptors at WSTF, and it is unlikely that any residential receptors will be present in the future. The WSTF site is located on government-owned land as part of the White Sands Missile Range. Land usage is restricted to authorized industrial and construction worker usage only, and there are no future residential land-use plans at or near the investigation site. However, in anticipation of a proposed closure without controls, residential exposure was also evaluated in the health and ecological risk and hazard screening process using residential SSLs. Details are provided in Section 7.0.

SWMU 10 is not accessible by WSTF industrial workers, since it is stated in the then current NMED RA Guidance that industrial workers are exposed to soils from ground surface to 1 ft bgs (NMED, 2021) and the HWTLs were buried at a minimum depth of 1 ft bgs to a maximum depth of 6 ft bgs (Table 3.1). Therefore, no complete industrial exposure pathway exists for SWMU 10 at WSTF. However, buildings at the 200 Area are proximal to the former HWTLs and may be affected by organic vapors. The industrial worker inhalation pathway is potentially complete for SWMU 10 at WSTF and was evaluated.

3.2.2 Fate and Transport

Based on lithologic logs from adjacent groundwater wells, the subsurface below SWMU 10 in the 200 Area is comprised of 17 ft (in 200-F and 200-LV-150) to 145 ft (in 200-B-240) of alluvial deposits overlying fractured Permian Hueco limestone bedrock. The limestone is brownish gray, indurated to weathered, microcrystalline with fossil-bearing zones or with silty laminated horizons, and contains calcite-filled fractures.

Between the 200 and 600 Areas, the subsurface below SWMU 10 comprises alluvium deposits overlying a bedrock pediment slope. The alluvium is classified as the piedmont slope facies of the Camp Rice Formation, which forms part of the Quaternary Santa Fe Group. The alluvium consists of intercalated fan, interfan valley, and erosion surface veneer deposits derived from the San Andres Mountains to the east of WSTF. The heterogeneous alluvial soil lithologies in the vadose zone have shallow but laterally extensive caliche horizons, porosities between 25 and 42% (NASA, 2015c), and consist primarily of tan to brown unconsolidated to moderately cemented, poorly sorted, pebble to boulder conglomerates with interbedded lenticular silty clays, sandy gravels, and sandy silts.

In the 600 Area, alluvial thickness varies from 117 ft (in groundwater monitoring well 100-HG-139) to 146 ft (in well 600-G-138; Figure 1.2). Bedrock lithology changes in this area from Permian limestone to Tertiary volcanics. The change is attributed to the northwest-striking Hardscrabble Hill Fault, a Late Tertiary, normal fault related to basin and range activity. Andesite bedrock (observed in wells 600-SG-9 and 600-G-138) is described as gray to reddish brown with a weathered surface, microporphyritic with phenocrysts of plagioclase, dense, with minimal fracturing. A capping horizon of volcanic ash (present in well 100-HG-139) is described as gray to green, aphanitic, with abundant alteration to clay.

Groundwater resides in the fractured bedrock under the SWMU 10 HWTLs, although a localized perched groundwater zone on top of andesite bedrock is present in well 600-G-138 adjacent to the 600 Area HWMU. The transport of potential contamination from SWMU 10 is by infiltration of precipitation moving through the vadose zone and possibly reaching the groundwater.

3.3 Investigation Activities

The DQOs and planned activities identified in the SWMU 10 IWP were followed as closely as possible. Deviations are identified in Section 4.5 of this report. The following sections summarize the pre-investigation activities conducted in 2012 and 2015 and the field investigation activities conducted during May through August 2016 and July through August 2021.

3.3.1 Pre-Investigation HWTLs and Soil Removal

During construction at WSTF of the sanitary sewer connections to the City of Las Cruces in January 2012, it was anticipated that the sewer lines would intersect with the PVC SWMU 10 HWTLs both in the 200 Area and the 600 Area. NASA submitted an abbreviated investigation work plan (AIWP) for the removal of the intersecting HWTLs sections and adjacent soil on March 14, 2012 (NASA, 2012a). NMED approved the AIWP on April 24, 2012 (NMED, 2012a). Fieldwork was conducted between May 23 and June 7, 2012.

Potholing and trenching were conducted to attempt to definitively locate the HWTLs. In the 600 Area, the HWTLs were not located initially. It was determined that a portion of the HWTLs had been removed in 1990 to allow for installation of the second 600 Area wastewater lagoon. Therefore, NASA anticipated installing the 600 Area sanitary sewer lines without intersecting the HWTLs.

In the 200 Area, the HWTLs were located, and 125 ft of PVC HWTLs were cut and removed. The remaining HWTLs were capped. The removed HWTLs sections were triple rinsed and disposed of as solid waste per the NMED-approved AIWP (NASA, 2012d). Approximately 15 ft^3 of soil 6 to 8 in. bHWTLs were excavated and containerized in a bulk container at the work site and initially managed under the "Contained-In Policy," with the potential to contain listed hazardous wastes (40 CFR §261.31) due to the nature of the wastes transmitted through the HWTLs. Representative soil samples were collected from the bulk container and analyzed for VOCs, SVOCs, total Toxicity Characteristic Leaching Procedure (TCLP) metals, and hydrazines. Results were evaluated for toxicity and 40 CFR §268 Subpart D Treatment Standards for containing listed wastes. No toxic substances or listed wastes were detected in the soil, and a "No Longer Contained-In" determination was submitted to NMED on July 31, 2012 (NASA, 2012c). NMED approved the "No Longer Contained-In" determination on August 10, 2012 (NMED, 2012b). The soil was then returned to the location it was removed from to use as backfill. Rinsate generated was discharged to the 200 Area ETU. The abbreviated investigation report was submitted to NMED on October 5, 2012 (NASA, 2012d) and approved on January 16, 2013 (NMED, 2013a).

On March 12, 2013, NASA submitted an addendum to the abbreviated investigation report (NASA, 2013a). NASA reported that on December 4, 2012, construction crews intersected a portion of the PVC HWTLs in the 600 Area between the HWMU and the 600 Area sewage overflow lagoons while constructing the Las Cruces sanitary sewer connections. Approximately 12 linear ft of HWTLs were removed and 8 cubic yards of soil were excavated from beneath the HWTLs. Composite soil samples were obtained and analyzed. Results indicated that there were no concentrations of contaminants in the soil above Treatment Standards (40 CFR §268.48) or NMED residential soil screening levels (RSSLs). The soil was then used to backfill the sewer line. The removed HWTLs section was triple-rinsed and disposed of as solid waste. The rinsate was discharged to the 200 Area ETU (NASA, 2013a). NMED approved the abbreviated report addendum on March 20, 2013 (NMED, 2013b).

On May 8, 2014, exposed sections of the HWTLs located in Gardner Spring Arroyo were removed from the arroyo due to wash outs. The PVC piping was managed and disposed of in accordance with the SWMU 10 AIWP.

3.3.2 Background Information Research

In 2015, historical usage and waste management for SWMU 10 were reviewed as part of the HIS (NASA, 2015b). HIS research included extensive review of:

- NASA Environmental Records – correspondence, RCRA Permit Applications, RFI and Corrective Measures Study, closure records, spill reports, SWMU operating records, laboratory reports, memoranda, discrepancy reports, test preparation sheets, etc.
- NASA Drafting Records.
- NASA Photograph Archives.
- Interviews with current and former long-term WSTF personnel.

The HIS provides results of the background information research (NASA, 2015b).

3.3.3 Implemented Health and Safety Measures

Field activities were conducted in accordance with requirements of OSHA Standards for Hazardous Waste Operations and Emergency Response (29 CFR §1910.120[a]-[o], 2013), the WSTF environmental contractor's Safety and Health Plan (SHP), a site-specific SHP addendum for WSTF environmental restoration activities, and site-specific Job Hazard Analyses to address potential hazards foreseeable for the project. The augmented SHP addressed safety and health issues pertaining to work activities, including known and reasonably anticipated hazards associated with project scope of work as well as contingencies for unexpected conditions. Requirements of the SHP applied to prime and sub-tier contractors as well as personnel requesting access to controlled areas of the investigation site.

A Traffic Management Plan was prepared and implemented for field activities completed within the 200 Industrial Area. Parking areas and roadways were closed, and the local workforce traffic was diverted to other locations during active fieldwork. Crosswalks and steel-plated driveways were installed and clearly flagged to maximize safety for pedestrians and vehicle traffic during non-fieldwork times. A light-emitting diode sign located on Apollo Boulevard at the entrance to the WSTF industrial area contained information regarding the ongoing fieldwork for the local workforce and messages were placed in site information bulletins.

Personal dust mitigation safety measures implemented included personal protective equipment (PPE), (wearing half face mask respirators with VOC cartridges or dust masks), ensuring personnel were upwind of the active trenching or dirt work, and resting or completing alternate tasks when winds were strong enough to blow dust.

3.3.4 Field Data Collection

Contractor environmental personnel including geologists, compliance personnel, and sampling technicians recorded day-to-day accounts of field activities in field logbooks and any investigation data collected were recorded either in logbooks or on project-required forms. The documentation includes, but is not limited to:

- Geologist field logbook.
- Sampling technician field logbook.
- Daily safety tailgate meeting forms.
- Investigation site visitor log.
- Internal and external sample chain-of-custody forms.
- Sample shipment forms.
- GPS data for soil boring locations.
- Photographs.

3.3.5 Excavation and Removal

Since the SWMU 10 HWTLs were pipelines installed underground, the HWTLs had to be excavated to perform the SWMU 10 investigation. Excavation began at SWMU 10 on May 9, 2016 in the 200 Area, northwest of the building complex parallel to Apollo Boulevard. Appendix A contains photographs of the investigation. In the 200 Area, the HWTLs were 3-in. diameter stainless-steel buried between 1 and 3.5 ft bgs (Table 3.1). Southeast of the 200 Area building complex, the HWTLs consisted of both 3-in. and 4-in. diameter stainless-steel piping.

The industrialized 200 Area hosts a complex network of existing underground utility lines, paved parking lots, roadways, and existing structures located proximally to the HWTLs, which complicated excavation and removal of the stainless-steel HWTLs (Figure 2.1). Previous investigation soil boring SH-200-B1 was located adjacent to the HWTLs so the lines were excavated around the boring (Appendix A). Potholing was also completed prior to trenching in the 200 Area to ensure that no utilities or existing structures were damaged. The final stainless-steel HWTLs piping (the acid drain line) was removed east of Building 203 on August 2, 2016. Approximately 1,368 ft of stainless-steel HWTLs were removed.

South of the South Highbay, near the 200 Area burn pit (SWMU 9), the piping used for the HWTLs transitioned from stainless-steel to 4-in. PVC (Figure 2.1). The PVC HWTLs were buried from 1 ft and up to 4 ft bgs (Table 3.1) through hilly topography between the 200 and 600 Area Sewage Lagoons. At all sampling locations, the HWTLs were no deeper than 4 ft bgs. Potholing was completed as needed to locate all portions remaining of the PVC HWTLs.

Significant portions of the PVC HWTLs that extend from the 200 Area wastewater lagoon southwest to the 600 Area wastewater lagoon shared a common trench with a 4-in. diameter sewer line. The two lines were juxtaposed within the trench, with the sewer line located directly bHWTLs (Appendix A). NASA removed both the HWTLs and sewer line where the two shared a common trench. The PVC portion of the SWMU 10 HWTLs was removed beginning May 17, 2016. Approximately 3,837 ft of PVC HWTLs were removed.

However, not all portions of the PVC HWTLs were removed in the 600 Area during the SWMU 10 investigation. Approximately 50 ft to the northeast of the 600 Area Sewage Overflow Lagoons, the HWTLs and the sewer lines pass through a valve box. Because the 600 Area Sewage Overflow Lagoons still contained fluids at the time the SWMU 10 investigation fieldwork was being conducted, not all of the HWTLs could be removed at that time to ensure no sewage would spill or leak from the drying lagoons. The valves for the sewage piping were closed, and both the HWTLs and the sewage lines were left in place temporarily until removal of the 600 Area Sewage Overflow Lagoons. The remaining HWTLs piping was sounded greater than 25 ft (the length of the sounding tool). The HWTLs remaining will be removed and disposed in accordance with the SWMU 10 IWP (NASA, 2015b), along with the remaining sewage lines (in accordance with the Wastewater Lagoon Areas Closure IWP; NASA, 2012e). The final portion of the PVC HWTLs removed during the SWMU 10 investigation was located adjacent to the 600 Area HWMU (to the southeast of the 600 Area Sewage Overflow Lagoons) and was removed on July 6, 2016.

The last remaining HWTL piping, the acid drain line, was located directly adjacent to the northeast of Building 203 (Figure 3.2). Due to the high concentration of underground utilities, the high worker traffic use, and the need for safety so close to active buildings, this line was not fully excavated. Potholing was completed to excavate only portions of the line. Then the line was pulled out using a backhoe and cut into 10 ft sections. Sampling was completed at the pothole locations (Figure 3.2). The last section of the acid drain line was pulled out on August 2, 2016. Within the corridor between buildings 200 and 203, the acid drain line was located within a PVC sleeve. All of the stainless-steel drainline was removed (cut and

pulled using a backhoe). However, a 10 ft portion of the PVC sleeve was left underground in the building's corridor when the stainless-steel line pulled out of the sleeve, and field personnel were unable to remove the sleeve.

3.3.6 Pipe Condition

As required by the SWMU 10 IWP, the condition of the piping was observed and notated in the field logbooks. Appendix A contains photographs of SWMU 10 investigation fieldwork, including the HWTLs pipe condition. There were several places along the HWTLs where piping was broken or damaged, as discussed in Section 3.3.6.3.

3.3.6.1 Stainless-Steel Pipe Condition

The stainless-steel HWTLs piping was generally in good condition. There were several superficial rust-colored spots on the outside of the piping in front of the 200 Area building complex adjacent to Apollo Boulevard (Appendix A). However, the piping was intact, with no integrity issues from the rust. When the stainless-steel piping was cut and removed at the furthest northeast area, the inside of the line was reported to be "clean and dry."

3.3.6.2 PVC Pipe Condition

The PVC piping of SWMU 10 was also generally in good condition. Refer to Appendix A for photographs of piping condition.

3.3.6.3 Damaged or Cut Piping

While excavating and removing the SWMU 10 HWTLs, NASA encountered several locations where the piping had been cut, broken, or damaged. Piping cuts and removals were documented for the HWTLs in 2012 with the new sewer line construction project and SWMU 10 AIWP (NASA, 2012a). However, several other locations were discovered during the investigation where it was not documented in WSTF records or when HWTLs piping had been cut after rinsing and abandonment in 1986.Where piping had been cut in the past, the ends were mostly capped. Previously cut and capped or taped ends to the HWTLs were at sampling locations 200-HWTL-1.5, 200-HWTL-13, 200-HWTL-14, and 600-HWTL-06.

Near the South Highbay to the south, the stainless-steel piping was cut, and the end was found open and crushed (Appendix A). This location was added as sampling location 200-HWTL-3.1 (Figure 3.2). Other damaged piping was located south of the South Highbay, below buried electrical lines. It was determined that the HWTLs may have been damaged when an electrical line was installed after use of the HWTLs ended. No soil moisture or discoloration was present.

The HWTLs were also damaged ("bent and cut" as reported in the field logbook) approximately 6 ft north of a concrete valve box to the southeast of the 200 Area building complex. This break in the HWTLs corresponded to a breathing air line on the utility map (Appendix A). The installation of the breathing air line at some point following HWTLs abandonment likely caused the damage to the HWTLs. No soil discoloration or dampness was present at the piping break.

The abandoned HWTLs were also apparently used as a conduit for a smaller pipeline after HWTLs abandonment. A 1-in. diameter PVC line was discovered within the PVC HWTLs near the location of the former ETUs (Appendix A). This line was identified as a nitrogen line used to operate valves for the ETU and was removed along with the HWTLs. Since the ETUs were constructed in 1988, it is likely the

HWTLs were cut, and the nitrogen line was installed at that time. The exit of the 1-in. nitrogen line was designated as 200-HWTL-10 sampling location (Figure 3.2).

The end of the acid drain line PVC sleeve located to the east of Building 203 was discolored yellow, suggesting the line and sleeve had been exposed to sunlight for an extended time in the past. This area was sampled as 200-HWTL-1.3 (Figure 3.2).

Near the 600 Area Sewage Overflow Lagoons, the PVC HWTLs had been cut in the past (where the new sewer line was installed) and the ends sealed with tape. A photograph of the taped line is provided in Appendix A. Broken PVC piping was also encountered in the 600 Area. There was no evidence of pipe leakage (no moist or discolored soil or odors; Appendix A).

3.3.7 Drilling Activities Soil

Drilling activities at SWMU 10 were conducted as the pipeline was removed during May through August 2016. Hand augering was completed in the upper vadose zone directly below to 2 ft bHWTLs (a minimum depth of 1-ft to a maximum depth of 6 ft bgs) using a 2-in. diameter stainless-steel hand auger. Soil sample depths in ft bgs are provided in Table 3.1 that includes a key to correlating depth bgs and depth below the former HWTLs.

Four deeper borings were drilled using a HSA drilling rig to 17 ft bgs at the location of the former interim waste mobile storage tanks and coincident with the only documented HWTLs leak. Contractor environmental sampling technicians performed the hand augering and Terracon Consultants Inc. (Terracon), located in El Paso, TX were contracted to perform the HSA drilling operations. Terracon utilized a Central Mine Equipment (CME)-75 HSA drilling rig equipped with 5-ft auger flights and a 36-in. long by 3-in. diameter stainless-steel split-spoon sampler with auto-hammer to collect soil samples at specified intervals. Photos of drilling activities are provided in Appendix A, and soil boring locations are presented in Figure 3.1.

3.3.7.1 Equipment Decontamination

The CME-75 HSA drilling rig, auger flights, and associated sampling tools were decontaminated upon arrival at WSTF using pressurized heated water at >180 ºF. During investigation activities, the sampling tools were decontaminated after each sample was collected and between borings using an Alconox®[1] solution and purified water rinse. The hand auger was also steam cleaned prior to entering the investigation area, then field decontaminated after each sample collected and in between borings using an Alconox solution and purified water rinse. Wherever possible, soil was removed from equipment and managed as IDW in accordance with the NMED-approved IWP (NMED, 2015a). The CME-75 and associated equipment were decontaminated at the end of investigation work using pressurized heated water.

3.3.7.2 Soil Sample Collection and Analysis

Soil samples were collected by contractor environmental sampling technicians using a 2-in. stainless-steel hand auger (for borings up to 2 ft bHWTLs or up to 6 ft bgs; Table 3.1) and by using a 3-ft by 3-in. diameter stainless-steel split-spoon sampler (for HSA-drilled borings up to 17 ft bgs). During the initial phase of the investigation conducted in 2016, soil was removed from the hand auger head or split-spoon sampler and placed in a stainless-steel bowl, then extracted in order of volatility and in quantities required to fill the lab-provided sampling containers. The order of sample collection was as follows: VOCs (using

[1] Alconox is a registered trademark of Alconox, Inc.

Terra Core®[2] Sampling Kit containing preservative); SVOCs; inorganics (total metals, nitrate/nitrite, chloride, and essential nutrients); dioxins/furans, cyanide, perchlorate, hexavalent chromium, pH, n-nitrosodimethylamine (NDMA), and hydrazines.

Transfer of soil from the collection tool (hand auger or split-spoon) into a stainless-steel bowl potentially releases volatile constituents and can introduce a low bias in VOC analytical results. Based on input received from NMED (2020, Comment 3), the 2016 soil VOC results were invalidated due to the potential low bias introduced by this soil transfer. The HWTL soils were re-sampled in 2021 using the same collection tools (hand auger and split-spoon), and VOC samples were immediately collected directly from the collection tool using the Terra Core kits. Refer to Section 4.5.6 for a more detailed description of sampling procedures and a discussion of usability of the data collected.

All samples were placed on ice following containerization and labeling. All sampling equipment was decontaminated as described in Section 3.3.9. All samples were collected and managed per standard WSTF soil collection and sampling protocols. Photos of sampling activities are provided in Appendix A. Sampling field notes are provided in Appendix B.

SWMU 10 soil and soil vapor samples were analyzed for SWMU 10 COPCs at off-site subcontracted National Environmental Laboratory Accreditation Program laboratories. Table 3.2 provides the analytical methods used for soil and soil vapor sample analyses.

A photoionization detector (PID) was also used in the field to determine if VOCs may be present in the soil samples. Following soil sample collection, remaining soil from hand augering or drilling was placed in a plastic bag, shaken, and allowed to rest for 10 minutes. The headspace was then measured using the PID. PID results and soil sample locations where VOCs were detected by the PID are provided in Figure 3.2.

3.3.7.3 Soil Boring Site Abandonment and Survey

The 44 hand augered borings installed during 2016 were backfilled with the soil that had been removed from above the HWTLs. In the 200 Area where the HWTLs were beneath asphalt, after the trenches were infilled with original soil, base coarse was applied with water and the area compacted, then asphalt reapplied. The four HSA-drilled soil borings to 17 ft bgs were filled with cement (containing 5% bentonite by weight) from the total depth (17 ft bgs) to the ground surface and staked with a brass cap. All soil boring locations were surveyed using in-house Trimble®[3] laser transit and data collector GPS surveying equipment. Brass caps were stamped with the boring number and coordinates. The coordinates and ground surface elevation of all soil boring locations were recorded in the applicable project documentation.

Soil cuttings from the 44 hand auger borings installed during the 2021 VOC re-sampling event were segregated as appropriate by depth. Soil cuttings at depths below the former HWTLs depth were containerized, labelled, and characterized for proper disposal. Soil cuttings from depths above the former HWTLs were segregated for use as backfill material. After sampling, these 44 borings were backfilled from the bottom up to the depth of the former HWTLs using a cement/bentonite slurry, then backfilled to the surface using the segregated backfill material. The four HSA-drilled locations were abandoned as described for the 2016 HSA borings above.

[2] Terra Core is a registered trademark of En Novative Technologies, Inc.
[3] Trimble is a registered trademark of Trimble, Inc. Corporation.

3.3.8 Soil Vapor Sampling

In accordance with the NMED RAGS, a soil vapor evaluation (and therefore a soil vapor sampling event) for a COPC is required when the following conditions for that COPC are met:

Chemicals that should be considered for the vapor intrusion pathway include:

1. Those with a Henry's law constant of approximately 1E-05 atm-m^3/mole or greater,
2. A molecular weight of approximately 200 g/mole or less and
3. Known to pose a potential cancer risk or noncancer hazard through the inhalation pathway.

If all three of these criteria are met, the constituent is considered volatile and toxic. Table A-4 contains the VISLs for chemicals which met these three criteria. However, this list in Table A-4 is not comprehensive and any additional compounds meeting the above three criteria not listed in Table A-4 and present in site media will require additional analyses following the methods contained herein.

Results of soil sample analyses for VOC content identified the presence of several constituents that meet the above criteria. NASA performed soil vapor sampling at locations near occupied structures that could potentially impact workers in these structures. Note that this sampling constitutes a deviation from the approved IWP, as described in Section 4.5.8.

The multiport soil vapor wells already present in the vicinity of the 200 Industrial Area collect soil vapor from depths much greater than the former HWTLs and are not likely to characterize impact from releases originating from the former HWTLs. Therefore, NASA collected soil vapor samples at 12 SWMU 10 soil sample locations near occupied buildings at the 200 Area, to more accurately assess site risk and hazard. Soil vapor samples were collected from 12 temporary soil vapor implants installed at locations 200-HWTL-01.2, -01.3, -01.4, -01.5, -01.6, -01.7, -01.8, -01.9, -04, -04.1, -04.2, and -05 (Figure 3.3). Soil vapor implant construction and sampling activities are detailed in Section 4.5.8.

3.3.9 Investigation Derived Waste Management

IDW was initially characterized as hazardous waste with EPA waste codes F001 and F002 in accordance with the SWMU 10 IDW Management Plan (NASA, 2015). Due to the timing of receipt of investigation sample results, additional characterization using the investigation results was not possible. The initial waste characterization described in the SWMU 10 IDW Management Plan, field observations, and information from the SWMU 10 Historical Information Summary (NASA, 2015) were used to characterize environmental media, hazardous debris, and decontamination water before these waste streams were shipped offsite as hazardous waste. Residual water removed from the HWTL, decontamination water from stainless-steel piping decontamination, and water from treatment of PVC debris in accordance with 40 CFR §268.45 was managed as hazardous waste and disposed of at the WSTF Mid-plume Interception and Treatment System (MPITS).

Specific IDW waste streams were managed as follows:

- Used PPE, plastic sheeting, and other debris were containerized in Department of Transportation-(DOT) compliant drums and managed as hazardous waste.
- Soil generated during drilling and sampling was containerized in DOT-compliant drums. Due to the limited amount of waste generated and timing of receipt of analytical results, it was decided not to submit a "No Longer Contained-In" Determination to NMED. The waste was shipped off site to a RCRA permit Treatment, Storage, and Disposal facility for disposal as hazardous waste.

- Damp soils from HWTLs fluid spills during removal were excavated and containerized in DOT-compliant drums and shipped off site with the soil cuttings as hazardous waste.
- Residual fluid within the HWTLs piping and decontamination fluids, were managed in DOT-compliant drums and treated in the MPITS.
- Removed PVC piping was cut into manageable lengths (~10-ft) and managed in enclosed roll-off containers initially as hazardous waste. The PVC piping was then treated in accordance with 40 CFR §268.45 Treatment Standards for Hazardous Debris (high pressure steam and hot water 160-180 °F sprayed), then disposed of as solid waste.
- Removed stainless-steel piping was placed on plastic sheeting, treated (steam cleaned), then placed in a staging area pending recycling.
- The treatment liquid from steam cleaning the PVC and stainless-steel piping was containerized as a newly generated waste with EPA waste codes F001 and F002 and disposed of at the MPITS.
- No petroleum wastes associated with equipment maintenance (e.g., grease, contaminated rags, etc.) were generated.

4.0 Field Investigation Results

This section provides a summary of the completed drilling and soil sampling program and presents the surface and subsurface soil conditions observed during field operations.

4.1 Soil Borings and Sampling Summary

A total of 44 hand augered soil borings were drilled along the length of the SWMU 10 HWTLs from directly below to 2 ft below the pipeline. Even though the depth bgs of the HWTLs reached approximately 6 ft, the piping was no greater than 4 ft bgs at all sampling locations. This resulted in sampling depths that were a minimum of 1 ft to a maximum of 6 ft bgs (Table 3.1). Two sampling sets (one set at 0 to 0.5 ft and one set at 1 to 2 ft bHWTLs) were collected at each hand augered soil boring. Sampling locations were placed at line welds or couplings, bends, or cut or damaged casing whenever possible.

Four additional soil borings (HWTL-06 through HWTL-09) were completed to 17 ft bgs where mobile tankers historically collected the waste. This location was also coincident with the only documented HWTLs piping leak. Figure 4.1 shows interval depths for the excavated pit based on a front elevation profile drawing of the HWTL tankers. From this figure, it was determined that the base of the original pit was located approximately 13 ft bgs. When use of the tankers was discontinued, the pit was filled with clean fill. The clean fill was not native to SWMU 10 and would not be representative of contamination from the SWMU. Therefore, NASA did not sample within this non-representative fill from 0 to 13 ft bgs. Two sampling sets (one set at 13 to 15 ft bgs and one set at 15 to 17 ft bgs) were collected within the native soil from SWMU 10 for each soil boring to investigate potential contamination from SWMU 10 and account for subsurface soil disturbance. A total of 1,176 samples with individual sample numbers were collected for 96 sampling sets within the 48 soil borings (724 soil samples, 69 duplicates, 346 equipment blanks, 25 trip blanks, and 12 matrix spike samples).

4.2 Surface Conditions

SWMU 10 is located within soils of the Nickel-Tencee Association (USDA, 1976). The Nickel series includes deep, well drained soils associated with old, coalescent alluvial fans derived from the adjacent San Andres Mountains (SAM) to the east. The soils are formed in gravelly, medium textured alluvial sediments. The upper 5 ft are characterized by light brown to pink gravelly to fine sandy loam. Gravel content is approximately 50%.

The Nickel-Tencee unit is approximately 60% Nickel Gravelly Fine Sandy Loam and 25% Tencee Very Gravelly Loam. The soils are gently to steeply sloping and are in similar positions on alluvial fans. Tencee soils dominate the older, more stable areas where the source of alluvial material was limestone bedrock.

4.3 Subsurface Conditions

The subsurface below SWMU 10, in and between the 200 and 600 Areas, is comprised of alluvium deposits overlying a bedrock pediment slope. The alluvium is classified as the piedmont slope facies of the Camp Rice Formation, which forms part of the Quaternary Santa Fe Group. The alluvium consists of intercalated fan, interfan valley, and erosion surface veneer deposits derived from the SAM between Bear Canyon, located to the northeast, and Loman Canyon, located to the southeast of the WSTF industrial areas. The heterogeneous alluvial soil lithologies in the vadose zone have shallow but laterally extensive caliche horizons, porosities between 25 to 42% (NASA, 2015c), and consist primarily of tan to brown unconsolidated to moderately cemented, poorly sorted, pebble to boulder conglomerates with interbedded lenticular silty clays, sandy gravels, and sandy silts. The alluvium thickens moving from the SAM front westward, towards the southern Jornada del Muerto Basin.

4.3.1 Shallow Vadose Zone

The following SWMU 10 shallow vadose zone conditions were described from information observed during drilling boreholes 200-HWTL-06, 200-HWTL-07, 200-HWTL-08, and 200-HWTL-09 to a depth of 17 ft bgs, and from 44 hand-augered borings installed to depths of up to 6 ft bgs (Table 3.1). Descriptions of soil sample characteristics and classification according to United Soil Classification System were recorded on lithologic logs (Appendix B).

The observed shallow vadose zone in the HWTLs trench surrounding the 200 Area (and to the east of Apollo Boulevard) was infilled with sand, or under pavement/asphalt areas, crusher fine gravel with diameter < $^{3}/_{16}$-in. Above the sand or crusher fine material, the trench was backfilled with sifted native fill (mostly sand) with cobbles < 1.5-in diameter. The trench-fill was installed from ground surface to a maximum of approximately 1 ft bHWTLs. Native alluvium below the trench fill consisted of poorly sorted, dry, light brown silty, sandy, gravel with clasts up to 40%, angular to subrounded, predominantly dark gray limestone with some volcanic clasts.

In borings west of Apollo Boulevard and within the 600 Area, the HWTLs trench was infilled with sand. Above the sand, the trench was backfilled with sifted native fill – non-plastic, dry to slightly moist, moderately to well sorted fine to medium-grained, medium brown sand with 10% gravel up to ¼-in diameter and 5% clay. The trench-fill was installed from ground surface to a maximum of approximately 1 ft bHWTLs.

Native alluvium below the trench fill consisted of poorly sorted, dry to slightly moist, light to medium brown silty, sandy, gravel with 10% clay and clasts up to 10%, up to ¾-in. diameter, angular to subrounded, and predominantly limestone clasts coated with caliche with some volcanic clasts.

The four 17 ft boreholes installed east of Apollo Boulevard and south of the 200 Area buildings encountered native soils beneath the pavement/fill materials consisting of silty sand with cobbles/gravels and silty sandy gravels to depths of 17 ft bgs. These soils are medium tan- and red-brown, moderately to poorly graded, with predominately fossiliferous and micritic limestone clasts and up to 10% volcanic clasts. The matrix material consists of dry non-plastic clays and silts.

Soils from depths of 13 to 17 ft bgs were similar in composition, color, grading, and moisture content to the native surface soils surrounding the former HWTLs. Soils to depths of 17 ft bgs along the HWTL originate from alluvial deposition of SAM source rocks including limestone and volcanics and are comprised of the same materials with only minor compositional changes.

4.3.2 Deeper Subsurface

Lithologic logs from groundwater wells located most proximal to the 200 Area have recorded alluvium thicknesses of 145 ft (at 200-B-240, west of Apollo Boulevard), decreasing to 130 ft (a 200-I, adjacent to the 200 Area Sewage Lagoons), and 17 to 18 ft (at 200-F and 200-LV-150, adjacent to the 200 Area buildings). Limestone bedrock pediment below the alluvium comprises fractured Permian Hueco limestone. The limestone is gray to brownish gray, indurated to weathered, microcrystalline with fossil-bearing zones or with silty laminated horizons, and indications of calcite-filled fractures.

In the 600 Area, alluvium thickness is 117 ft (at groundwater well 100-HG-139) and 146 ft (at well 600-G-138). Bedrock lithology changes in this area from Permian limestone to Tertiary volcanics. The change is attributed to the northwest-striking Hardscrabble Hill Fault, a Late Tertiary, normal fault related to basin and range activity. The andesite bedrock is gray to reddish brown with a weathered surface, microporphyritic with phenocrysts of plagioclase, dense, with minimal fracturing. A capping horizon of volcanic ash (at 100-HG-139) is gray to green, aphanitic, with abundant alteration to clay. Groundwater is within fractured bedrock approximately 150 to 180 ft bgs, although a localized occurrence of perched groundwater on top of andesite bedrock is present in well 600-G-138 at 143 ft bgs (Figure 1.2).

4.4 Fluid Releases from HWTLs

As identified in the HIS (NASA, 2015b), the PVC piping had been triple-rinsed and then abandoned in place in 1986. Since the piping was gravity driven from the 200 Area to the 600 Area, any low spots in the piping contained residual fluid. This fluid was contained in drums and managed as hazardous waste. During the piping excavation and removal process, small spills occurred to soil from residual fluid in the piping several times. All affected soil was removed, containerized, and managed as hazardous waste.

4.5 Investigation Deviations

During the SWMU 10 investigation unforeseen circumstances arose, and it was in the judgement of qualified and experienced field personnel to determine the best response while attempting to meet investigation DQOs. Deviations from the IWP were required and are described below.

4.5.1 Resampling

Several SWMU 10 locations required resampling during the investigation. Locations for resampling are shown on Figure 3.2, and details are provided below.

4.5.1.1 200-HWTL-04 through 4.2

Sampling was originally completed at 200-HWTL-04, -4.1, and -4.2 on May 11, 12, and 16, respectively. However, the laboratory reported that the VOC samples did not contain enough space in the Terra Cores for proper analysis. Therefore, VOC resampling was completed for 200-HWTL-04, -4.1, and -4.2 on May 26, 2016.

Each lot of Terra Cores comprised pre-weighed, pre-preserved 40 mL vials verified by the laboratory for methanol volume and purity. The Terra Core sample plungers were required to deliver approximately 5

grams of soil sample into the vials. Because the original sample plungers utilized were not configured correctly (the power stop handle was not adjusted for 5 grams), approximately 10 grams of soil was inadvertently extruded into the pre-preserved vials. This reduced the required headspace for analysis. VOC resampling was completed for the 200-HWTL-04, -4.1, and -4.2 locations on May 26, 2016. When resampling for VOCs at 200-HWTL-04, the original sample location was covered by a steel plate required for vehicular traffic crossing the HWTL trench and was not accessible. VOC resampling at 200-HWTL-04 was completed approximately 8 ft to the southwest of the original location (Appendix B, Notebook HWTL-1, Page 35).

4.5.1.2 200-HWTL-21 through 22

Sampling was originally completed for 200-HWTL-21 and -22 on June 2, 2016. However, the NDMA samples were lost during shipping to the laboratory. As a result, resampling for NDMA was completed on June 8, 2016 for both locations.

4.5.2 Alternate Sampling Locations

4.5.2.1 200-HWTL-3.1

The HWTL pipe run between sample locations 200-HWTL-03 and 200-HWTL-08 was identified in the IWP (NASA, 2015b; Figure 4.1) as "assumed abandoned." During field investigation activities, no significant section of pipe was identified in the ground between 200-HWTL-03 and 200-HWTL-08. Because HWTL soil samples were collected throughout the investigation in the subsurface with specific reference to the position of the pipe in the ground, no sample was collected for the original proposed location (200-HWTL-06). In lieu of not collecting the soil sample at the midpoint between 200-HWTL-03 and HWTL-08, soil sample location (200-HWTL-3.1) was identified at the terminus of the HWTL pipe located approximately 40 ft northwest of the 200-HWTL-03 location.

When a terminus of the HWTLs stainless-steel piping was discovered open and crushed, soil sample point 200-HWTL-3.1 was planned for that location. However, when fluid spilled from the line, the soil was removed for cleaning, and a stock tank was placed at the end of the line to contain additional fluids within the HWTLs. Therefore, sampling location 200-HWTL-3.1 had to be moved (approximately 3.5 ft to the southeast) to avoid the disturbed soil and the stock tank (Figure 3.2).

4.5.2.2 200-HWTL-04

On May 26, 2016 when resampling for VOCs at 200-HWTL-04, it was discovered that the original location for 200-HWTL-04 was under the steel plate installed over the HWTLs trench for WSTF personnel to safely cross, and not accessible. Therefore, VOC resampling at 200-HWTL-04 was completed approximately 8 ft to the southwest of the original location (Figure 3.2).

On May 18, 2016, the HWTLs were excavated to this point, with sampling at 200-HWTL-13 planned for the next day. Rainstorms overnight resulted in rainwater collecting in the trench. Since the HWTLs were gravity drained, the deeper part of the trench was located to the southern end of the line, and the original sampling location was unreachable. The 200-HWTL-13 sampling point was relocated approximately 60 ft upgradient (to the northeast) at a point that was not impacted by rainwater (Figure 3.2). A photograph of the flooded trench is provided in Appendix A.

4.5.2.3 200-HWTL-05

Sampling location 200-HWTL-05 was moved approximately 15 ft southwest from the planned location to match the actual end flange of the stainless-steel HWTLs. Figure 3.2 shows the planned and actual locations.

4.5.2.4 200-HWTL-06 through 09

The locations of three of the four HSA-drilled borings had to be relocated due to adjacent utilities. 200-HWTL-06 was relocated approximately 5 ft east to avoid a buried nitrogen line. 200-HWTL-07 and 200-HWTL-09 were relocated approximately 6 ft east and 15 ft north, respectively, to avoid overhead electrical power lines (Figure 3.2).

4.5.2.5 200-HWTL-13

Sampling location 200-HWTL-13 was relocated from the intended sampling point at the southern end of the HWTLs at the point the lines bent northwest towards the 200 Area Sewage Lagoons (Figure 3.2). At this location, the soil beneath the HWTLs was previously sampled and the HWTLs were cut and taped closed during the WSTF sewer line installation in 2012. No constituents were detected above regulatory criteria (NASA, 2012c, 2012d).

4.5.3 Sampling Depths (IWP Section 4.2)

NASA anticipated soil hand auger depths to be 3 to 3.5 ft and 4 to 5 ft bgs (assuming HWTLs were installed at 3 ft bgs). However, the HWTLs were observed during the investigation to be installed from 1 to 6 ft bgs, with a maximum depth of 4 ft bgs at sampling locations. Therefore, the depths of samples collected bgs varied with HWTLs depth (Table 3.1). Sample depths in relation to the base of the HWTLs remained the same (0 to 0.5 ft and 1 to 2 ft bHWTLs), as stated in the IWP.

As indicated in Section 4.2 of the IWP (NASA, 2015b), the vertical extent of the investigation is required to be extended to 10 ft below the bottom of the HWTLs if evidence of leakage is discovered during the field investigation. Evidence of minor leakage from the HWTL was observed at location 200-HWTL-03.1. The remaining locations indicated on Figure 3.2 appeared to be caused by excavation and removal activities. Impacted soils were identified as indicated by visual, olfactory observations and measurement of organic vapors using the PID. Then the impacted soils were removed and properly disposed. Soil samples for 200-HWTL-03.1 contained maximum concentrations for only two constituents, arsenic and vanadium, both COPCs determined to be representative of WSTF background (Section 7.3).

NASA made several attempts at reaching target depths for soil sampling (Table 3.1) at locations 200-HWTL-18 through -22, with each attempt encountering refusal on rock. The field crew collected soil samples at these locations from depths above the former HWTLs. These samples were submitted for analyses, and soil VOC analytical results indicate these five samples exhibit similar physical and chemical characteristics as samples from adjacent locations. These results were included in the data evaluated for site risk and hazard due to these similarities.

4.5.4 Analytical Methods (IWP Table 4.1)

In the SWMU 10 IWP, Table 4.1 lists the analytical methods requested by NMED for the SWMU 10 investigation. Anticipated analytical methods were:

- VOCs using SW-846 Method 8260C.

- SVOCs using SW-846 Method 8270C.
- Perchlorate using SW-846 Method 6850.
- Total metals using the most appropriate methods.
- Dioxins/furans using SW-846 Methods 8280/8290.
- Cyanide using SW-846 Methods 9012/9013.
- Nitrate/nitrite/chloride using SW-846 Method 300.
- Hexavalent chromium using SW-846 Method 7199.
- NDMA using EPA Method 607M.
- Hydrazines using SW-846 Method 8315.
- Bromacil by SW-846 Method 8321B.
- pH using SW-846 Method 9045D.

Analytical methods for soil actually used by the laboratories were:

- VOCs using SW-846 Method 8260C.
- SVOCs using SW-846 Method 8270D.
- Perchlorate using SW-846 Method 6850.
- Metals using SW-846 Methods 6010B/6010C/6020A/7471A/7471B.
- Dioxins/furans using SW-846 Methods 8290/8290A.
- Cyanide using SW-846 Methods 9012B/9014.
- Nitrate/nitrite as nitrogen using EPA Methods 353.2/353.2M.
- Hexavalent chromium using SW-846 Methods 7196A/7199.
- Chloride using EPA Method 300.0 and SW-846 Method 9056A.
- NDMA using EPA Method 607M.
- Hydrazines using SW-846 Method 8315M.
- Bromacil by SW-846 Method 8321.
- pH using SW-846 Method 9045D.

Also, the order sampling was anticipated from Table 4.1 of the IWP was VOCs, hydrazines, NDMA, SVOCs, bromacil, dioxins/furans, metals, nitrate/nitrite/chloride, cyanide, perchlorate, soil pH, and then hexavalent chromium. The order that investigation samples were collected for SWMU 10 was VOC, SVOCs, perchlorate, metals, dioxins/furans, nitrate/nitrite, chloride, cyanide, soil pH, hexavalent chromium, NDMA, hydrazines, and then bromacil.

4.5.5 Soil sampling procedures (IWP Section 5.1)

4.5.5.1 Clean Backfill

It was stated in the IWP (NASA, 2012a), “Clean backfill soil removed from above the excavated HWTLs trenches will be stockpiled at the surface adjacent to the trench and returned to the trench following soil sampling and the receipt of analytical results.” Because of the anticipated timeframe for receipt of all laboratory analytical results (more than a month), clean backfill material was returned to the trenches to ensure area worker safety. However, if additional investigation is required, NASA will re-excavate the SWMU 10 trench(es) as needed.

4.5.5.2 Waste Management

“All soil cuttings generated during the drilling and sampling process from below the location of the HWTLs will be containerized and managed in a less than 90-day accumulation area pending analyses in accordance with the 200 Area HWTLs IDW Management Plan…” NASA did not submit a no-longer-

contained-in determination as planned. Because of the minimal quantity of IDW soil volumes, soil generated from beneath the HWTLs was managed as a hazardous waste and subsequently shipped off site and disposed of as hazardous waste.

4.5.6 Sampling Procedures (Collection, Management, Shipment) and Requirements (IWP Section 5.3)

In the SWMU 10 IWP, it was stated that soil would be transferred from the sampler or tool and placed directly into clean sample containers provided by the laboratory. During investigation activities conducted in 2016, soil samples were transferred from the sampling tool first into a stainless-steel bowl, then extracted in aliquots and placed into the laboratory provided containers. For each VOC sample, the laboratory provided a Terra Core Sampling Kit consisting of a specialized disposable sampler designed to extract a 5-gram aliquot of soil, 40-ml VOC vials with preservative, and a 60-gram sample jar for percent moisture analysis or screening. A stainless-steel hand auger was the predominant sampling device used during the investigation. The 2016 soil samples were collected by placing the soil from the auger head into a stainless-steel bowl, from which individual sample containers were quickly filled. This sample collection process was carried forward to soil VOC samples collected from split-spoons recovered from soil borings, maintaining a consistent sampling approach throughout the project.

Once the VOC samples were collected, the remaining samples were also collected from the bowl in descending order of volatility. However, in Table 4.1 of the IWP, the preferred order listed for sample collection was VOCs, then hydrazines and NDMA prior to SVOCs, then bromacil, dioxins/furans, metals, nitrate/nitrite, chloride, cyanide, perchlorate, and hexavalent chromium. In the SWMU 10 investigation, the order of sample collection was VOCs, SVOCs, perchlorate, metals, dioxins/furans, cyanide, nitrate/nitrite, hexavalent chromium, chloride, NDMA, hydrazines, and bromacil.

Based on input received from NMED (2018, Comment 9 and 2020, Comment 3), resampling for VOC analyses was performed for all soil samples previously collected for hand auger sampling intervals along the HWTL, and for each of the split-spoon sample intervals at the 200-HWTL-06, 200-HWTL-07, 200-HWTL-08, and 200-HWTL-09 soil boring locations.

Transfer of soil from the collection device to a stainless-steel bowl was not done during the 2021 resampling event. The 2021 soil chemical VOC samples were collected directly from the sampling device (hand auger or split-spoon) immediately following retrieval using the laboratory-provided Terra Core kits, and were immediately transferred directly to the primary sampling container during the sample collection process.

4.5.7 Field Quality Control Samples (IWP Section 5.3.2)

4.5.7.1 Rinsates and Field Blanks

It was stated in the IWP that if field rinsates (equipment) blanks did not satisfy the field blank requirement, that NASA would collect one field blank per day per sampling medium. NASA intended to use field equipment rinsates as field blanks during the SWMU 10 investigation, which would satisfy the requirement. However, in a subsequent Disapproval for a separate investigation report, NMED stated the definition of a field blank was, “a container of reagent water or a solid blank material, which is opened in the field for a predefined period” (NMED, 2017b). NMED required NASA to collect field blanks for all future investigations and to address the absence of field blanks and the potential quality assurance/quality control (QA/QC) implications in the deviations section of the revised report.

Since the SWMU 10 investigation was conducted prior to this direction by NMED, NASA did not collect field blanks per the definition provided by NMED. As previously planned for the SWMU 10 investigation, equipment rinsate blanks were collected following decontamination activities in the field. The results of equipment blank samples were also utilized as field blank samples to account for field conditions. The implications to QA/QC for the SWMU 10 investigation are minimal. Errors introduced by replacing field blank sample results with rinsate blank results would combine the effect of improper decontamination and ambient field conditions, and result in more conservative values being used to validate investigation sample results.

4.5.7.2 Matrix Spikes

NASA stated that 5% matrix spike samples would be collected. In Table 4.1 of the SWMU 10 IWP, five matrix spike sample sets were planned, at 200-HWTL-03, 200-HWTL-09, 200-HWTL-20, one from the 200 Area southeast of Building 203, and 600-HWTL-08. However, only three matrix spike samples were collected during the field investigation, 200-HWTL-03, 200-HWTL-20, and 600-HWTL-08. Due to an error on the external chain-of-custody form, the sample for 200-HWTL-20 was not identified as a matrix spike to the laboratory. The sample was analyzed as a duplicate.

4.5.8 Soil Vapor Sampling

Twelve temporary soil vapor implants were installed in the 200 Industrial Area as shown on Figure 3.3. These implants were installed on September 21, 2021 in preparation of soil vapor sample collection on September 23. NASA used an electric hand-held rotary hammer drill (properly decontaminated) to a depth of 1 ft bgs, using a 1-in. diameter drill bit. Temporary soil vapor implants were installed in the completed soil borings to the bottom of the boring. The implants were assembled prior to installation and were constructed using a 1 in. long stainless-steel filter (screen) connected to 1/8-in. diameter Teflon®[4] tubing with Swagelok®[5] fittings. These pre-assembled implants were placed in the boreholes to the bottom of the borehole.

Clean silica filter sand was placed around the stainless soil vapor screen from the bottom of the borehole (or top of slough) up to a depth of approximately 2 in. bgs. Each implant was sealed from the surface using a minimum of 2 in. of granular bentonite placed on top of the silica sand and hydrated after emplacement. Construction details are provided on Figure 4.1.

Twelve soil vapor samples were collected on September 23, 2021 and submitted for VOC analyses by Method TO-15. NASA has developed comprehensive internal procedures for soil vapor sample collection and management. These procedures provide specific information on sample management and related documentation, including instructions for sample custody (CoCs internal to NASA and external during shipment), storage, packaging, shipment, delivery tracking, and related recordkeeping. These procedures were followed during this assessment to ensure appropriate sample management. Sampling procedures and the equipment used follows generally accepted EPA guidance (EPA, 2015) and WSTF standard procedures. Sample collection techniques conformed to the specifications for the appropriate EPA sample collection method and the WSTF procedure. The following generalized procedures were followed:

- Sampling start times and the initial vacuum gauge readings were recorded in the field sampling logbook and on the internal CoC form.
- The soil vapor implant was purged using a gas analyzer by allowing the pump to purge the soil vapor well tubing for a minimum of five minutes to evacuate at least three volumes of the 1/8-in.

[4] Teflon is a registered trademark of The Chemours Company FC, LLC.
[5] Swagelok is a registered trademark of Swagelok Company.

tubing and implant, and until measured parameters of methane, carbon dioxide, and oxygen have stabilized. The gas analyzer was disconnected, and the laboratory-prepared 1-liter SUMMA canister was connected to the implant tubing.
- Sample valves on each canister were opened to perform sample collection.
- Upon the completion of soil vapor sampling, the valve on the passivated stainless-steel canister was closed and the time and ending vacuum pressure recorded in the field sampling logbook and on the internal CoC form.
- Canisters were shipped back as a single shipment to the analytical laboratory.

Disposable gloves were worn to collect soil vapor samples. Gloves and other disposable materials contacting the samples were collected and managed as described in Section 3.3.9.

5.0 Regulatory Criteria

The regulatory criteria used for this investigation is from NMED's then current RA Guidance Volume I for human health (NMED, 2021) and Volume II for ecological receptors (NMED, 2017). Volume I contains the NMED soil SSLs for residential and construction worker soil exposures, soil leachate-SSLs (SL-SSLs) for a DAF of 20 that are protective of groundwater, and Vapor Intrusion Screening Levels (VISLs) for residential and industrial worker exposure to soil vapor. Detected constituents with no NMED SSL or VISL values were compared to the then current EPA RSLs (EPA, 2021), with a correction factor for carcinogens of 10 times the RSL to comply with the NASA WSTF Permit and NMED's criteria of 1E-05 risk level target. Ecological screening levels include Tier I Ecological Screening Levels (ESLs) and Tier II Threshold Reference Values (TRVs) as contained in Volume II of the RA Guidance (NMED, 2017).

6.0 Site Contamination

Site contamination was determined from the soil chemical analytical data reported for SWMU 10. The analytical methods used to quantify the presence of COPCs were selected in accordance with EPA SW-846 (EPA, 2017). To produce data of known and sufficient quality, field and laboratory quality control samples (field rinsate [equipment] blanks, field duplicate samples, and matrix spike samples) were collected. Chemical analytical data were received from the laboratories and reviewed, verified, and validated, and assessed as usable to meet the project DQOs established in Section 4.1 of the approved IWP and 3.1 of this Investigation Report (IR). A summary of the soil chemical analytical results (detects only), all soil chemical analytical results (not detected [ND], tentatively identified compounds, detects, and QA data), and full laboratory analytical reports are provided as Enclosure 3. Evaluation of detected concentrations of COPCs is provided in the accompanying Risk Assessment Report (RAR).

6.1 Soil Chemical Analytical Results

A brief description of detected constituents in soil samples are provided in this section. Table 6.1 provides SWMU 10 HWTLs detected constituents with maximum detections, minimum detections, and detection frequency. Detected constituents that were identified as COPCs for the SWMU 10 HWTL investigation (listed in Table 2.1) are identified in Table 6.1 shaded in gray. A total of 19 of the 64 COPCs listed in Table 2.1 were not detected in the SWMU 10 investigation data and are therefore not listed in Table 6.1. Figure 3.1 shows an overview of the HWTL and sample locations. To show sufficient analytical detection details on the figures, the HWTL has been split into three separate areas. The 200 Industrial Area Location encompasses the 200 Industrial Area adjacent to the buildings, with sample locations 200-HWTL-01 through 200-HWTL-13 (Figure 6.1). The 200 Area Location encompasses the sample locations to the west of Apollo Boulevard with 200 Area designations: 200-HWTL-14 through 200-HWTL-26 (Figure 6.2). The 600 Area Location encompasses all the sampling locations with 600 Area

designations: 600-HWTL-01 through 600-HWTL-10 (Figure 6.3). Detected constituents are presented in Figure 6.4 through Figure 6.30.

6.1.1 VOCs

The following 10 VOCs were detected above method detection limits in SWMU 10 soil borings: Freon 113 (1,1,2-trichloro-1,2,2,-trifluoroethane), 2-butanone, acetone, benzene, bromoform, carbon disulfide, cyclohexane, tetrachloroethene, toluene, and trichloroethene. Table 6.2 shows minimum and maximum detected concentrations of VOCs and the sampling locations and depths bgs of these detections. Figure 6.4, Figure 6.5, and Figure 6.6 show VOC detections for each HWTL sampling location. The accompanying RAR provides the health risk, hazard, and soil-to-groundwater screening for VOCs.

6.1.1.1 1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)

Freon 113 was detected in fifteen samples ranging from the minimum of 1.9E-04 mg/kg at 200-HWTL-05-5 to the maximum of 2.8E-03 mg/kg at 200-HWTL-04-3.5, with all fifteen detections in the 200 Industrial Area (Figure 6.4 and Figure 6.5).

6.1.1.2 2-Butanone (MEK)

2-butanone was detected in four samples in the 200 Industrial Area (Figure 6.4). The detected concentrations range from a minimum of 2.50E-03 mg/kg at 200-HWTL-06 at 13 ft bgs to a maximum of 8.0E-03 mg/kg at 200-HWTL-01.2 at 2.5 ft bgs.

6.1.1.3 Acetone

Acetone was detected in one sample in the 200 Industrial Area (Figure 6.4). The single detected concentration of 3.2E-02 mg/kg was at location 200-HWTL-04.2 at 4.5 ft bgs.

6.1.1.4 Benzene

Benzene was detected in two samples in the 200 Industrial Area (Figure 6.4). The minimum detected concentration of 2.80E-04 mg/kg was located at 200-HWTL-1.2 at 2.5 ft bgs. The maximum detected concentration of 3.70E-04 mg/kg was at 200-HWTL-03 at 2.5 ft bgs.

6.1.1.5 Bromoform

Bromoform was detected in two samples in the 200 Area (Figure 6.5). The minimum detected concentration of 1.20E-03 mg/kg was located at 200-HWTL-16 at 3 ft bgs. The maximum detected concentration of 2.10E-03 mg/kg was at 200-HWTL-26 at 5.5 ft bgs.

6.1.1.6 Carbon Disulfide

Carbon disulfide was detected in one sample in the 200 Industrial Area (Figure 6.4). The single detected concentration of 7.10E-04 mg/kg was at location 200-HWTL-08 at 13 ft bgs.

6.1.1.7 Cyclohexane

Cyclohexane was detected in 21 samples in all three areas of the HWTL. The minimum detected concentration of 2.8E-04 mg/kg at 600-HWTL-08 at 2.5 ft bgs, and the maximum concentration of 3.1E-03 mg/kg was at 200-HWTL-01.2 at 2.5 ft bgs.

6.1.1.8 Tetrachloroethene (PCE)

Tetrachloroethene was detected in four samples in the 200 Industrial Area (Figure 6.4). The minimum concentration of 8.00E-04 mg/kg was detected in location 200-HWTL-04.1 at 3.5 ft bgs. The maximum concentration of 3.80E-03 mg/kg was detected in 200-HWTL-04 at a depth of 3.5 ft bgs.

6.1.1.9 Toluene

Toluene was detected in one sample in the 200 Industrial Area (Figure 6.4). The single detected concentration of 3.50E-03 mg/kg was at location 200-HWTL-04 at 4.5 ft bgs.

6.1.1.10 Trichloroethene (TCE)

Trichloroethene was detected in four samples in the 200 Industrial Area (Figure 6.4). The minimum concentration of 3.50E-04 mg/kg was detected in soil boring 200-HWTL-04.1 at 3.5 ft bgs. The maximum concentration of 8.20E-03 mg/kg was detected in 200-HWTL-04 at a depth of 3.5 ft bgs.

6.1.2 SVOCs

SVOCs detected in SWMU 10 samples were: acenaphthylene, anthracene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, benzyl alcohol, bis(2-ethylhexyl)phthalate, butyl benzyl phthalate, chrysene, dibenz(a,h)anthracene, diethyl phthalate, di-n-butyl phthalate, di-n-octyl phthalate, diphenylamine, disulfoton, fluoranthene, fluorine, ideno(1,2,3-cd)pyrene, isophorone, naphthalene, phenanthrene, phenol, and pyrene. Table 6.1 shows minimum and maximum detected concentrations and the sampling locations and depths bHWTLs for the maximum detected SVOC concentrations. Figure 6.7 shows SVOC detections in the 200 Industrial Area. SVOC detections in the 200 Area are shown in Figure 6.8, and Figure 6.9 contains SVOC detections in the 600 Area locations.

SVOCs were grouped into sub-categories (Polynuclear Aromatic Hydrocarbons [PAHs] and phthalates) to describe the nature and extent of SVOC occurrence. These categories are shown on Table 6.3.

The PAHs detected in one or more samples along the HWTLs cumulatively included Napthalene, Acenaphthylene, Anthracene, Benz(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, Chrysene, Fluoranthene, Fluorene, Phenanthrene, Indeno(1,2,3-cd)pyrene, and Pyrene.

Table 6.3 breaks down the occurrence of PAHs by the three HWTL areas, summing the number of PAH compounds detected per sample, and the corresponding combined concentration of PAH per sample.

In the 200 Industrial Area, the greatest number of PAH compounds detected per sample, and the greatest combined concentration of total PAH per sample, was at boring location 200-HWTL-01.9. This isolated high occurrence and concentration's location does not to correlate with concentrations in nearby borings (Figure 6.7). A second area with multiple PAHs at higher concentrations is at location boring 200-HWTL-02. At both of these locations, there is a decrease in total PAH concentration and the number of PAH compounds detected from the 0-0.5 ft to the 1-2 ft bHWTLs sample. This could be due to lack of mobility, but in other borings in the 200 Area having lower total PAH concentrations, the pattern does not hold. In general. total PAHs are in the single digits to under 100 mg/kg.

Total PAH concentrations in samples from the 200 Area combined with the 600 Area (borings 200-HWTL-05 through 600-HWTL-10) detected total PAH concentrations in 17 of 59 samples greater than

0.01 mg/kg, with three samples, 200-HWTL-01.9 (0-1 ft bHWTLs), 200-HWTL-02 (0-1 ft bHWTLs), and 600-HWTL-01 (1-2 ft bHWTLs) having a detection greater than 0.10 mg/kg.

Bis(2-ethylhexyl) Phthalate and Diethyl Phthalate were the dominant phthalates, co-detected in all soil samples for the overall HWTLs; neither was ever detected as a stand-alone contaminant. For ease of review, the combined concentration of the phthalates in each sample, where detected, are presented in Table 6.3. As shown in the table, in only a few samples was another phthalate (Di-n-octlyl, di-n butyl, or Butyl Benzyl) detected with them.

Phtalates were detected frequently at all areas, and at most locations along the HWTLs (Table 6.3). Not indicated by the table is that they were also detected at multiple depths. Typical total phthalate concentration for the HWTLs range approximately from 0.20-0.80 mg/kg.

Other SVOCs detected in the HWTL project in rank order of detections from high to low included (Table 6.1) Benzyl alcohol, Diphenylamine, Phenol, Isophorone, and Disulfoton. These were sporadic and at low concentration.

6.1.2.1 Acenaphthylene

Acenaphthylene was detected in one sample, at 600-HWTL-01 (Figure 6.9) at a depth of 1-2 ft bHWTLs.

6.1.2.2 Anthracene

Anthracene was detected in four samples, two located in the 200 Industrial Area (200-HWTL-01 and 200-HWTL-02; Figure 6.7), and one in the 200 Area (200-HWTL-20, Figure 6.8) and one in the 600 Area (600-HWTL-01; Figure 6.9). The minimum concentration of 2.40E-03 mg/kg was detected at 200-HWTL-20 at a depth of 1-2 ft bHWTLs. The maximum concentration (8.50E-03 mg/kg) was located at 600-HWTL-01 at a depth of 1-2 ft bHWTLs.

6.1.2.3 Benz(a)anthracene

Benz(a)anthracene was detected in 36 samples in all three HWTL areas (Figure 6.7 through Figure 6.9). The minimum concentration was 1.70E-03 mg/kg within five soil borings: 200-HWTL-03 (1-2 ft bHWTLs), 200-HWTL-15 (1-2 ft bHWTLs), 200-HWTL-19 (0-0.5 ft bHWTLs), 200-HWTL-22 (0-0.5 ft bHWTLs), and 600-HWTL-09 (0-0.5 ft bHWTLs). The maximum concentration was 6.70E-02 mg/kg at 200-HWTL-1.9 at a depth of 0-0.5 ft.

6.1.2.4 Benzo(a)pyrene

Benzo(a)pyrene was detected in 12 samples, all but two (200-HWTL-20 [Figure 6.8] and 600-HWTL-01 [Figure 6.9]) were located in the 200 Industrial Area (Figure 6.7). The minimum concentration (1.70E-03 mg/kg) was detected at soil boring 200-HWTL-06 at 13-15 ft bgs depth, and the maximum concentration (6.60E-02 mg/kg) was detected at soil boring 200-HWTL-1.9 at 0-0.5 ft bHWTLs.

6.1.2.5 Benzo(b)fluoranthene

Benzo(b)fluoranthene was detected in 15 samples, all but two (200-HWTL-20 [Figure 6.8] and 600-HWTL-01 [Figure 6.9]) were located in the 200 Industrial Area (Figure 6.7). The minimum concentration was 1.70E-03 mg/kg at 200-HWTL-1.6 at a depth of 1-2 ft bHWTLs. The maximum concentration (8.30E-02 mg/kg) was at soil boring 200-HWTL-1.9 at a depth of 0-0.5 ft bHWTLs.

6.1.2.6 Benzo(g,h,i)perylene

Benzo(g,h,i)perylene was detected in nine samples, all but three samples in two soil borings (200-HWTL-20 [Figure 6.8] and 600-HWTL-01 [Figure 6.9]) in the 200 Industrial Area (Figure 6.7). The minimum and maximum detected concentrations were located at soil boring 600-HWTL-01. The minimum (2.00E-03 mg/kg) was at 0-0.5 ft bHWTLs, and the maximum (5.30E-02 mg/kg) was at 1-2 ft bHWTLs.

6.1.2.7 Benzo(k)fluoranthene

Benzo(k)fluoranthene was detected in six samples, all but two (200-HWTL-20 [Figure 6.8] and 600-HWTL-01 [Figure 6.9]) in the 200 Industrial Area (Figure 6.7). The minimum concentration was 1.70E-03 mg/kg located at 200-HWTL-20 at a depth of 1-2 ft bHWTLs. The maximum concentration detected was 3.30E-02 mg/kg located at 200-HWTL-1.9 at a depth of 0-0.5 ft bHWTLs.

6.1.2.8 Benzyl Alcohol

Benzyl alcohol was detected in three samples in two soil borings (200-HWTL-04 and 200-HWTL-4.1; Figure 6.7) in the 200 Industrial Area. Both the minimum and maximum detections were in soil boring 200-HWTL-04. The minimum was 9.60E-02 mg/kg at 0-0.5 ft bHWTLs, and the maximum was 1.60E-01 mg/kg at 1-2 ft bHWTLs.

6.1.2.9 Bis(2-ethylhexyl)phthalate

Bis(2-ethylhexyl)phthalate was detected in 90 samples (Figure 6.7; Figure 6.8; Figure 6.9) in all but three soil borings (200-HWTL-04, 200-HWTL-4.1, and 200-HWTL-4.2 [Figure 6.7]). The minimum detected concentration was 1.10E-01 mg/kg at a depth of 1-2 ft bHWTLs in soil boring 200-HWTL-10, and the maximum detected concentration was 6.90E-01 mg/kg at depths of 0-0.5 ft and 1-2 ft bHWTLs in soil boring 200-HWTL-2.1.

6.1.2.10 Butyl Benzyl Phthalate

Butyl benzyl phthalate was detected in one sample in the 200 Industrial Area at 200-HWTL-1.3 (Figure 6.7) at a depth of 0-0.5 ft bHWTLs at a concentration of 8.40E-03 mg/kg.

6.1.2.11 Chrysene

Chrysene was detected in 12 samples, all but two (200-HWTL-20 [Figure 6.8] and 600-HWTL-01 [Figure 6.9]) located in the 200 Industrial Area (Figure 6.7). The minimum concentration of 1.70E-03 mg/kg was detected in soil boring 200-HWTL-09 at a depth of 13-15 ft bgs. The maximum concentration of 7.70E-02 mg/kg was detected in soil boring 200-HWTL-1.9 at a depth of 0-0.5 ft bHWTLs.

6.1.2.12 Dibenz(a,h)anthracene

Dibenz(a,h)anthracene was detected in three samples, two in the 200 Industrial Area (200-HWTL-1.9, 200-HWTL-02 [Figure 6.7]) and one in the 600 Area (600-HWTL-01 [Figure 6.9]). The minimum concentration was 3.80E-03 mg/kg in boring 200-HWTL-02 at 0-0.5 ft bHWTLs, and the maximum concentration was 7.80E-03 mg/kg in boring 600-HWTL-01 at 1-2 ft bHWTLs.

6.1.2.13 Diethyl Phthalate

Diethyl phthalate was detected in 90 samples in all three areas of the HWTL, in all but three soil borings (200-HWTL-04, 200-HWTL-4.1, and 200-HWTL-4.2 [Figure 6.7]). The minimum detected concentration was 2.50E-02 mg/kg at a depth of 1-2 ft bHWTLs in soil boring 600-HWTL-05, and the maximum detected concentration was 7.90E-02 mg/kg at a depth of 0-0.5 ft bHWTLs in soil boring 200-HWTL-1.7.

6.1.2.14 Di-n-butyl Phthalate

Di-n-butyl phthalate was detected in nine samples, four in the 200 Industrial Area (Figure 6.7) and five in the 600 Area (Figure 6.9). The minimum detection was 3.40E-01 mg/kg at soil borings 200-HWTL-06 at 13-15 ft bgs depth and 600-HWTL-05 at 1-2 ft bHWTLs. The maximum detection was 4.60E-01 mg/kg at soil borings 200-HWTL-1.2 at 1-2 ft bHWTLs and at 600-HWTL-06 at 0-0.5 ft bHWTLs (Figure 3.1).

6.1.2.15 Di-n-octyl Phthalate

Di-n-octyl phthalate was detected in three samples within two soil borings (200-HWTL-1.8 and 200-HWTL-13 [Figure 6.7]). The minimum detected concentration was 4.20E-02 mg/kg in 200-HWTL-13 at 0-0.5 ft bHWTLs. The maximum (1.80E-01 mg/kg) was detected in 200-HWTL-1.8 at 0-0.5 ft bHWTLs.

6.1.2.16 Diphenylamine

Diphenylamine was detected in two samples within one boring at 200-HWTL-1.7 (Figure 6.7). The minimum detected concentration was 1.50E-02 mg/kg at 0-0.5 ft bHWTLs, and the maximum detected concentration was 3.80E-02 mg/kg at 1-2 ft bHWTLs.

6.1.2.17 Disulfoton

Disulfoton was detected in one sample at 200-HWTL-1.8 (Figure 6.7) at a depth of 0-0.5 ft bHWTLs at a concentration of 1.40E-02 mg/kg.

6.1.2.18 Fluoranthene

Fluoranthene was detected in 23 samples in the HWTL, 16 samples in 10 borings in the 200 Industrial Area (Figure 6.7), five samples in three soil borings in the 200 Area (Figure 6.8), and four samples in three soil borings in the 600 Area (Figure 6.9). The minimum detection was 1.70E-03 mg/kg at soil borings 200-HWTL-17 at 1-2 ft bHWTLs, 200-HWTL-20 at 0-0.5 ft bHWTLs, and 600-HWTL-01 at 0-0.5 ft bHWTLs. The maximum detection was 7.60E-02 mg/kg at soil boring 200-HWTL-1.9 at 0-0.5 ft bHWTLs (Figure 3.1).

6.1.2.19 Fluorene

Fluorene was detected in one sample, at 200-HWTL-20 (Figure 6.8) at a depth of 1-2 ft bHWTLs and at a concentration of 1.70E-03 mg/kg.

6.1.2.20 Ideno(1,2,3-cd)pyrene

Ideno(1,2,3-cd)pyrene was detected in nine samples in the HWTL, seven samples in four borings in the 200 Industrial Area (Figure 6.7), one sample in the 200 Area (200-HWTL-20; Figure 6.8), and one sample in the 600 Area (600-HWTL-01; Figure 6.9). The minimum detection was 1.70E-03 mg/kg at soil

boring 200-HWTL-02 at 1-2 ft bHWTLs. The maximum detection was 4.60E-02 mg/kg at soil boring 600-HWTL-01 at 1-2 ft bHWTLs (Figure 3.1).

6.1.2.21 Isophorone

Isophorone was detected in seven samples in four soil borings in the HWTL, six samples in three borings in the 200 Industrial Area (Figure 6.7) and one sample in the 600 Area (600-HWTL-10; Figure 6.9). The minimum detection was 1.20E-02 mg/kg at soil boring 600-HWTL-10 at 0-0.5 ft bHWTLs. The maximum detection was 2.20E-02 mg/kg at soil boring 200-HWTL-2.1 at 0-0.5 ft bHWTLs (Figure 6.7).

6.1.2.22 Naphthalene

Naphthalene was detected in one sample, at 200-HWTL-06 (Figure 6.7) at a depth of 15-17 ft bgs and a concentration of 2.10E-03 mg/kg.

6.1.2.23 Phenanthrene

Phenanthrene was detected in 45 samples within 26 soil borings at the HWTL, 32 samples in 18 soil borings in the 200 Industrial Area (Figure 6.7), seven samples in five borings in the 200 Area (Figure 6.8), and six samples in three borings in the 600 Area (Figure 6.9). The minimum detection was 1.70E-03 mg/kg at soil boring 200-HWTL-18 at 0-0.5 ft bHWTLs. The maximum detection was 1.20E-02 mg/kg at soil borings 200-HWTL-1.9 and 200-HWTL-02 at a depth of 0-0.5 ft bHWTLs.

6.1.2.24 Phenol

Phenol was detected in 13 samples in nine soil borings at the HWTL, all but one (200-HWTL-17; Figure 6.8) located in the 200 Industrial Area (Figure 6.7). The minimum detection was 1.50E-02 mg/kg at boring 200-HWTL-2.1 at a depth of 0-0.5 ft bHWTLs. The maximum detection was 2.60E-02 mg/kg at boring 200-HWTL-1.7 at a depth of 1-2 ft bHWTLs.

6.1.2.25 Pyrene

Pyrene was detected in 17 samples within 12 soil borings at the HWTL, 13 samples in nine soil borings in the 200 Industrial Area (Figure 6.7), three samples in two soil borings in the 200 Area, and one sample (600-HWTL-01; Figure 6.9) in the 600 Area. The minimum detected concentration was 1.80E-03 mg/kg at soil boring 200-HWTL-05 at a depth of 1-2 ft bHWTLs, and the maximum concentration was 8.40E-02 mg/kg at boring 200-HWTL-1.9 at a depth of 0-0.5 ft bHWTLs.

6.1.3 Inorganics

Inorganic constituents sampled for included metals, essential nutrients, and nitrate/nitrite. Table 6.1 shows minimum and maximum detected inorganic concentrations and the sampling locations and depths bHWTLs or bgs. Figure 6.10 through Figure 6.12 show RCRA metal detections in the 200 Industrial Area, the 200 Area, and the 600 Area. Figure 6.13 through Figure 6.18 show total metal detections in the 200 Industrial Area, the 200 Area, and the 600 Area. Figure 6.19 through Figure 6.21 shows RCRA metal detections in the 200 Industrial Area, the 200 Area, and the 600 Area. Other inorganic compound detections are shown in Figure 6.19 through Figure 6.21. A summary of inorganic constituents detected is provided below.

6.1.3.1 Metals

The laboratory analyzed for the following metals: aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, hexavalent chromium, total chromium, cobalt, copper, iron, lead, manganese, mercury, molybdenum, nickel, selenium, silver, strontium, thallium, tin, vanadium, and zinc. Hexavalent chromium was analyzed by EPA Method 7199 as required by NMED. All metals were detected in SWMU 10 samples. Refer to Section 7.3 for a discussion of HWTLs results compared to WSTF background metals concentrations. Table 6.1 shows minimum and maximum detected concentrations and the sampling locations and depths below HWTLs or bgs for the maximum detected concentrations. Figure 6.10 through Figure 6.18 show metals detections for each HWTL sampling location. For all metals detected, Table 6.4 shows the minimum and maximum detected concentration and their corresponding sample numbers.

Most metals in HWTLs samples were detected at 100%. Only metals above WSTF background concentrations per Section 7.3 were investigated for the nature and extent of occurrence. These are boron, cadmium, mercury, selenium, and tin. With the exception of cadmium, these metals were also among the ones where sample detections were less than 100%.

Intermediate concentrations of Boron (between the lowest and highest detected concentration; Table 6.4) increased in a gradual manner among the 31 total detections (Table 6.1). There were no abnormal concentrations within that range. Selenium followed a similar gradation in concentration from low to high, with no abnormal concentrations within its range of 42 detected concentrations (Table 6.1).

Intermediate concentrations of Cadmium between the lowest and highest detection (Table 6.1 and Table 6.4) increased in a gradual manner from the low up to 0.46 mg/kg, whereupon the four greatest concentrations (200-HWTL-02.1-000 [0.7 mg/kg], 200-HWTL-05-000 [3.2 mg/kg], 200-HWTL-06-013 [1.43 mg/kg], and 200-HWTL-11-000 [4.8 mg/kg]) among the 96 total detections diverged markedly.

Intermediate concentrations of Mercury between the lowest and highest detection were also gradual up to a break point. The four greatest concentrations (200-HWTL-03-001 [0.149 mg/kg], 200-HWTL-02-000 [0.157 mg/kg], 200-HWTL-02.1-001 [1.55 mg/kg], and 200-HWTL-02.1-000 [59.3 mg/kg]) among the 48 total detections (Table 6.1 and Table 6.4) diverged markedly). Note that location 200-HWTL-02.1 was also anomalous for cadmium. Finally, the two greatest concentrations of tin that were abnormal within its range of concentration were also located at 200-HWTL-02.1, both depths (1-2 ft bHWTLs [36 mg/kg] and 0-0.5 ft bHWTLs [91 mg/kg]).

6.1.3.1.1 Aluminum

Aluminum was detected in all 96 samples and all 48 soil borings in each of the three HWTL areas (Figure 6.13 through Figure 6.15). The minimum detected aluminum concentration was 1.72E+03 mg/kg in 600-HWTL-06 at a depth of 0-0.5 ft bHWTLs, and the maximum detected concentration was 1.11E+04 mg/kg in 200-HWTL-2.1 at a depth of 0-0.5 ft bHWTLs.

6.1.3.1.2 Antimony

Antimony was detected in seven samples within six soil borings, all within the 200 Industrial Area (Figure 6.13). The minimum detection was 1.30E-01 mg/kg at 200-HWTL-04 at a depth of 1-2 ft bHWTLs. The maximum detection was 1.30E+00 mg/kg at boring 200-HWTL-2.1 at a depth of 0-0.5 ft bHWTLs.

6.1.3.1.3 Arsenic

Arsenic was detected in all 96 samples in all 48 soil borings at the HWTL (Figure 6.10 through Figure 6.12). The minimum detected concentration was 9.50E-01 mg/kg at soil boring 200-HWTL-04 at a depth of 0-0.5 ft bHWTLs, and the maximum detected concentration was 3.00E+01 mg/kg at soil boring 200-HWTL-4.2 at a depth of 1-2 ft bHWTLs.

6.1.3.1.4 Barium

Barium was detected in all 96 samples within all 48 soil borings at the HWTL (Figure 6.10 through Figure 6.12). The minimum detected concentration was 2.65E+01 mg/kg at boring 200-HWTL-07 at a depth of 15-17 ft bgs. The maximum barium concentration was 2.19E+02 mg/kg at soil boring 600-HWTL-07 at a depth of 1-2 ft bHWTLs.

6.1.3.1.5 Beryllium

Beryllium was detected in all 96 samples in all 48 soil borings at the HWTL (Figure 6.13 through Figure 6.15). The minimum detected concentration was 1.50E-01 mg/kg at soil borings 200-HWTL-20 and 600-HWTL-06 at a depth of 0-0.5 ft bHWTLs, and the maximum concentration was 5.90E-01 mg/kg at soil boring 200-HWTL-22 at a depth of 1-2 ft bHWTLs.

6.1.3.1.6 Boron

Boron was detected in 31 samples at 20 soil borings, 24 samples in 15 borings in the 200 Industrial Area (Figure 6.13), two samples in one boring in the 200 Area (200-HWTL-26; Figure 6.14), and 5 samples in 4 borings in the 600 Area (Figure 6.15). The minimum boron detection was 1.60E+00 mg/kg at boring 200-HWTL-4.2 at a depth of 0-0.5 ft bHWTLs, and the maximum was 8.00E+00 mg/kg at soil borings 200-HWTL-1.2 (at 1-2 ft bHWTLs), 200-HWTL-2.1 (at 0-0.5 ft and 1-2 ft bHWTLs), and 200-HWTL-2.2 (at 1-2 ft bHWTLs).

6.1.3.1.7 Cadmium

Cadmium was detected in all 96 samples and all 48 soil borings (Figure 6.10 through Figure 6.12). The minimum concentration was 4.00E-02 mg/kg detected in soil boring 200-HWTL-03 at a depth of 1-2 ft bHWTLs. The maximum concentration was 4.80E+00 mg/kg detected in boring 200-HWTL-11 at a depth of 0-0.5 ft bHWTLs.

6.1.3.1.8 Hexavalent Chromium

Hexavalent chromium was detected in six samples within five soil borings at the HWTL, five within the 200 Industrial Area (Figure 6.13), and one (200-HWTL-21; Figure 6.14) within the 200 Area. The minimum detection was 2.80E-01 mg/kg at soil boring 200-HWTL-1.8 at a depth of 0-0.5 ft bHWTLs, and the maximum was 5.66E+00 mg/kg at 200-HWTL-2.1 at a depth of 0-0.5 ft bHWTLs.

6.1.3.1.9 Total Chromium

Total chromium was detected in all 96 samples and the 48 soil borings (Figure 6.10 through Figure 6.12). The minimum detection was 2.14E+00 at 600-HWTL-02 at a depth of 0-0.5 ft bHWTLs. The maximum detected concentration was 1.25E+02 at 200-HWTL-1.8 at a depth of 0-0.5 ft bHWTLs.

6.1.3.1.10 Cobalt

Cobalt was detected in all 96 samples in all 48 soil borings (Figure 6.13 through Figure 6.15). The minimum detected concentration was 1.80E+00 mg/kg at soil boring 200-HWTL-21 at a depth of 0-0.5 mg/kg. The maximum detected concentration was 7.40E+00 mg/kg at boring 200-HWTL-2.2 at a depth of 1-2 ft bHWTLs.

6.1.3.1.11 Copper

Copper was detected in all 96 samples and 48 soil borings (Figure 6.13 through Figure 6.15). The minimum detected concentration was 2.20E+00 mg/kg at 200-HWTL-20 and 600-HWTL-02 at a depth of 0-0.5 ft bHWTLs, and the maximum concentration was 8.41E+01 mg/kg at boring 200-HWTL-2.1 at a depth 0-0.5 ft bHWTLs.

6.1.3.1.12 Iron

Iron was detected in all 96 samples and 48 soil borings (Figure 6.13 through Figure 6.15). The minimum concentration was 3.90E+03 mg/kg at soil boring 600-HWTL-02 at a depth of 0-0.5 ft bHWTLs, and the maximum concentration was 1.86E+04 mg/kg at boring 200-HWTL-2.2 at a depth of 1-2 ft bHWTLs.

6.1.3.1.13 Lead

Lead was detected in all samples in all 48 soil borings (Figure 6.10 through Figure 6.12). The minimum detection was 2.40E+00 mg/kg at boring 200-HWTL-04 at a depth of 0-0.5 ft bHWTLs. The maximum detected concentration was 2.56E+01 mg/kg at 200-HWTL-2.1 at a depth of 0-0.5 ft bHWTLs.

6.1.3.1.14 Manganese

Manganese was detected in all 96 samples in all 48 soil borings (Figure 6.16 through Figure 6.18). The minimum detected concentration was 6.80E+01 mg/kg at boring 200-HWTL-04 at a depth of 0-0.5 ft bHWTLs. The maximum concentration was 3.48E+02 mg/kg at soil boring 200-HWTL-23 at a depth of 0-0.5 ft bHWTLs.

6.1.3.1.15 Mercury

Mercury was detected in 48 samples in 30 soil borings, 30 samples in 18 borings in the 200 Industrial Area, 10 samples in seven borings in the 200 Area, and eight samples in five borings in the 600 Area (Figure 6.10 through Figure 6.12). The minimum detected mercury concentration was 3.00E-03 mg/kg at borings 200-HWTL-08 at a depth of 13-15 ft bgs and 200-HWTL-14 at a depth of 0-0.5 ft bHWTLs. The maximum 5.93E+01 mg/kg at soil boring 200-HWTL-2.1 at a depth 0-0.5 ft bHWTLs.

6.1.3.1.16 Molybdenum

Molybdenum was detected in 52 samples within 32 soil borings at the HWTLs, 24 samples in 15 borings in the 200 Industrial Area, 13 samples in eight borings in the 200 Area, and 15 samples in 9 soil borings in the 600 Area (Figure 6.16 through Figure 6.18). The minimum molybdenum concentration was 8.00E-02 mg/kg at boring 600-HWTL-10 at a depth of 1-2 ft bHWTLs, and the maximum concentration was 2.70E+00 at 200-HWTL-4.2 at a depth of 1-2 ft bHWTLs.

6.1.3.1.17 Nickel

Nickel was detected in all 96 samples in the 48 soil borings at the HWTL (Figure 6.16 through Figure 6.18). The minimum concentration was 2.80E+00 mg/kg detected at 200-HWTL-15 at a depth of 0-0.5 ft bHWTLs. The maximum nickel concentration was 7.49E+01 mg/kg detected at 200-HWTL-1.8 at a depth of 0-0.5 ft bHWTLs.

6.1.3.1.18 Selenium

Selenium was detected in 42 samples in 30 soil borings, 33 samples in 21 borings in the 200 Industrial Area, four samples in four borings in the 200 Area, and 5 samples in 5 borings in the 600 Area (Figure 6.16 through Figure 6.18). The minimum selenium concentration was 1.50E-01 mg/kg in soil boring 200-HWTL-04 at a depth of 1-2 ft bHWTLs. The maximum concentration was 3.00E+00 mg/kg at soil boring 200-HWTL-1.6 at a depth of 1-2 ft bHWTLs.

6.1.3.1.19 Silver

Silver was detected in three samples within two soil borings, all within the 200 Industrial Area (200-HWTL-1.5 and 200-HWTL-2.1; Figure 6.10). Both the maximum and minimum concentrations were detected in the same boring (200-HWTL-2.1). The minimum concentration was 5.00E-01 mg/kg and detected at a depth of 1-2 ft bHWTLs, and the maximum concentration was 1.00E+00 mg/kg detected at a depth of 0-0.5 ft bHWTLs.

6.1.3.1.20 Strontium

Strontium was detected in all 96 samples in the 48 soil borings at the HWTLs (Figure 6.16 through Figure 6.18). The minimum detected concentration was 1.63E+01 mg/kg at boring 600-HWTL-07 at a depth of 0-0.5 ft bHWTLs. The maximum detected concentration was 6.10E+02 mg/kg at boring 200-HWTL-4.1 at a depth of 1-2 ft bHWTLs.

6.1.3.1.21 Thallium

Thallium was detected in 19 samples in 14 soil borings, 16 samples in 11 borings in the 200 Industrial Area (Figure 6.16), one sample in one boring in the 200 Area (200-HWTL-24; Figure 6.17), and two samples in two borings in the 600 Area (600-HWTL-07 and 600-HWTL-08; Figure 6.18). The minimum detection was 6.00E-02 mg/kg at 200-HWTL-4.1 at a depth of 1-2 ft bHWTLs, and the maximum detection was 2.50E+00 mg/kg at 200-HWTL-10 at a depth of 0-0.5 ft bHWTLs.

6.1.3.1.22 Tin

Tin was detected in eight samples in four soil borings, all within the 200 Industrial Area (Figure 6.16). The minimum detected concentration was 2.40E+00 mg/kg at soil boring 200-HWTL-04 at a depth of 0-0.5 ft bHWTLs. The maximum concentration was 9.10E+01 mg/kg at 200-HWTL-2.1 at a depth of 0-0.5 ft bHWTLs.

6.1.3.1.23 Vanadium

Vanadium was detected in all 96 samples in the 48 soil borings (Figure 6.16 through Figure 6.18). The minimum detected vanadium concentration was 7.50E+00 mg/kg at soil boring 600-HWTL-02 at a depth of 0-0.5 ft bHWTLs. The maximum concentration was 4.96E+01 mg/kg at 200-HWTL-3.1 at a depth of 1-2 ft bHWTLs.

6.1.3.1.24 Zinc

Zinc was detected in all 96 samples in all 48 soil borings at the HWTLs (Figure 6.16 through Figure 6.18). The minimum concentration was 9.60E+00 mg/k at boring 200-HWTL-20 at a depth of 0-0.5 ft bHWTLs, and the maximum detected concentration was 1.24E+02 mg/kg at 200-HWTL-2.1 at a depth of 0-0.5 ft bHWTLs.

6.1.3.2 Essential Nutrients

Essential nutrients calcium, chloride, magnesium, potassium, and sodium were detected in SWMU 10 samples. A discussion of background concentrations compared to HWTLs concentrations for essential nutrients are discussed in Section 7.3. Table 6.1 shows minimum and maximum detected concentrations and the sampling locations and depths bHWTLs for the maximum detected essential nutrient concentrations. Table 6.4 shows the minimum and maximum detected concentration and their corresponding sample numbers.

6.1.3.2.1 Calcium

Calcium was detected in all 96 samples at all 48 soil borings (Figure 6.13 through Figure 6.15). The minimum detection was 2.50E+03 mg/kg at 200-HWTL-04 at a depth of 0-0.5 ft bHWTLs, and the maximum detection was 1.74E+05 mg/kg at 200-HWTL.1.5 at a depth of 1-2 ft bHWTLs.

6.1.3.2.2 Chloride

Chloride was detected in 70 samples within 39 soil borings, 39 samples in 21 soil borings in the 200 Industrial Area (Figure 6.19), 18 samples in 11 borings in the 200 Area (Figure 6.20), and 13 samples in seven borings in the 600 Area (Figure 6.21). The minimum detected concentration was 1.20E+00 mg/kg at 200-HWTL-4.2 at a depth of 0-0.5 ft bHWTLs. The maximum detected chloride concentration was 2.19E+02 mg/kg at 200-HWTL-1.2 at a depth of 1-2 ft bHWTLs.

6.1.3.2.3 Magnesium

Magnesium was detected in all 96 samples at all 48 soil borings (Figure 6.13 through Figure 6.15). The minimum detection was 1.04E+03 mg/kg at 600-HWTL-06 at a depth of 0-0.5 ft bHWTLs, and the maximum detection was 4.30E+04 mg/kg at 200-HWTL-10 at a depth of 0-0.5 ft bHWTLs.

6.1.3.2.4 Potassium

Potassium was detected in in all 96 samples at all 48 soil borings (Figure 6.16 through Figure 6.18). The minimum detected concentration was 3.60E+02 mg/kg at 600-HWTL-06 at a depth of 0-0.5 ft bHWTLs. The maximum detected potassium concentration was 2.46E+03 mg/kg at 600-HWTL-01 at a depth of 1-2 ft bHWTLs.

6.1.3.2.5 Sodium

Sodium was detected in all 96 samples at all 48 soil borings (Figure 6.16 through Figure 6.18). The minimum detected concentration was 3.6E+01 mg/kg at 600-HWTL-07 at a depth of 0-0.5 ft bHWTLs. The maximum detected sodium concentration was 4.10E+02 mg/kg at 200-HWTL-1.2 at a depth of 1-2 ft bHWTLs.

6.1.3.3 Nitrate/Nitrite

Nitrate/nitrite was analyzed by EPA Method 300.0 detected in 90 out of 96 samples and in all HWTLs soil borings except 200-HWTL-20 (47 out of 48 borings; Figure 6.19 through Figure 6.21). Detected concentrations range from 0.14 to 67 mg/kg.

6.1.4 pH

As required by NMED in the SWMU 10 IWP approval with modifications (NMED, 2016), NASA collected samples for testing of pH by Method 9045D. For SWMU 10 investigation samples, pH ranged from 7.65 to 9.92 pH units.

6.1.5 Perchlorate

Perchlorate was analyzed both in the semi-volatile organic compounds (SVOCs) and separately in perchlorate analyses by Method 6850 from SW-846. Perchlorate was detected in 31 SWMU 10 investigation samples in 19 soil borings (Figure 6.19 through Figure 6.21). The minimum perchlorate detection was 3.90E-04 mg/kg at boring 600-HWTL-02 at a depth of 1-2 ft bHWTLs, and the maximum detection was 3.60E-03 mg/kg at soil boring 600-HWTL-03 at a depth of 0-0.5 ft bHWTLs.

The pattern of perchlorate occurrence is different than for most other compounds and compound classes. Table 6.5 shows relatively few detections of perchlorate in the Industrial area, with near-surface detections beginning in the 200 Area along the HWTLs at location 200-HWTL-17, and mostly continuing through the 600 Area to the end of the HWTLs, sample location 600-HWTL-10.

6.1.6 Cyanide

Samples for cyanide were collected for the SWMU 10 investigation and analyzed by SW-846 Method 9012B. Cyanide was detected in 59 samples within 37 soil borings, 23 samples in 15 borings within the 200 Industrial Area, 22 samples in 13 borings in the 200 Area, and 14 samples in nine borings in the 600 Area. The minimum concentration was 1.50E-02 mg/kg at 600-HWTL-07 at a depth of 0-0.5 ft bHWTLs. The maximum cyanide detection was 1.40E-01 mg/kg at soil boring 200-HWTL-3.1 at a depth of 0-0.5 ft bHWTLs. Table 6.6 indicates the detections of cyanide for the HWTLs. The detections appear at a uniformly low concentration across the HWTLs (Figure 6.19 through Figure 6.21). Unlike other compounds or classes of compounds, there were frequent locations where cyanide was not detected. The table shows basic statistics for the detected cyanide presence for the HWTLs. The statistics illustrate that (1) the average cyanide concentration is nearly the same at the 0-0.5 ft and 1-2 ft bHWTLs two depths, (2) concentrations form a narrow range with an order of magnitude 10^{-2} mg/kg, and (3) amongst areas of the HWTLs, average concentrations are the same level and in the same narrow range.

6.1.7 Dioxins/Furans

Dioxins/furans were analyzed by SW-846 EPA Method 8280/8290 and were detected in all 96 samples in all 48 soil borings at SWMU 10. Individual dioxins and furan congeners and totals detected at the HWTLs with minimum and maximum detections are provided in Table 6.1. Dioxins and furans detected in soil borings are also shown in Figure 6.22 through Figure 6.27.

Dioxin/Furans commonly refer to a family of chemicals that share chemical structures and characteristics. These compounds include polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzo furans (PCDFs) which are unwanted by-products of industrial and natural processes. There are 75 PCDD

congeners, differing in the number and location of chlorine atoms. There are 135 isomers of PCDFs. The most toxic of the chlorinated dioxin and furan molecules is 2,3,7,8-tetachlorodibenzo-p-dioxin (TCDD).

For purposes describing the nature and extent of dioxin/furan occurrence, dioxins and furans were grouped into a sub-category of the specific congeners searched and analyzed in dioxin/furan analysis by EPA method 8290 or 8290A. Generally, these are in the method because they are among the most toxic.

Section 2.1 of the then current NMED RA Guidance (NMED, 2021) requires evaluation of seven chlorinated dibenzo-p-dioxin congeners and 10 chlorinated dibenzofuran congeners. The seven dioxins include:

- TCDD
- 1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)
- 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)
- 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)
- 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)
- 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)
- octachlorodibenzo-p-dioxin [OCDD])

The 10 furans include:

- 2,3,7,8-Tetrachlorodibenzofuran (TCDF)
- 1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)
- 2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)
- 1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)
- 1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)
- 1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)
- 2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)
- 1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)
- 1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)
- octachlorodibenzofuran [OCDF]

Specific dioxins/furans detected in one or more samples along the HWTLs cumulatively include each of these congeners.

The EPA Method 8290 or 8290A also reports total dioxins (e.g., TCDD, Total; Pentachlorodibenzo-p-dioxin [PeCDD], Total; and Heptachlorodibenzo-p-dioxins [HpCDD], Total), and total furans (e.g., Tetrachlorodibenzofurans [TCDF], Total; Pentachlorodibenzofurans [PeCDF], Total; Hexachlorodibenzofurans [HxCDF], and Total; and Heptachlorodibenzofurans [HpCDF], Total).

Table 6.7 breaks down the occurrence of the 17 dioxin/furan congeners listed in Section 2.1 of the then current RA Guidance (NMED, 2021) by the three HWTL areas, summing the total number of congeners detected per sample, and listing the corresponding Toxicity Equivalent (TEQ) for each sample. Section 2.1 of the then current NMED RA Guidance (NMED, 2021) requires evaluation of seven chlorinated dibenzo-p-dioxin congeners and ten chlorinated dibenzofuran congeners as detailed in Section 6.1.7. Detected concentrations of these dioxin/furan congeners at each sample, and the TEQ for each sample are listed in Table 6.7. The TEQ values were determined in accordance with the then current RA Guidance Section 2.1 Human Health Basis, by applying the congener-specific Toxicity Equivalency Factor (TEF) to the concentration, then summing the congener-specific equivalent concentrations to generate the TEQ for that sample (NMED, 2021). The RA Guidance, Table 2-1 Dioxin and Furan Toxicity Equivalency

Factors, lists the TEF for each congener, and the formula to calculate the TEQ is Equation 1 Calculation of Toxicity equivalents for dioxin and furan congeners.

In the Industrial Area, the greatest combined concentration of total congeners per location at either depth detected, in order, were at boring locations 200-HWTL-01.9 (1-2 ft bHWTLs depth), 200-HWTL-01.6 (1-2 ft bHWTLs depth), 200-HWTL-02.1 (0-0.5 ft bHWTLs depth), 200-HWTL-01.5 (0-0.5 ft bHWTLs depth), and 200-HWTL-01.3 (1-2 ft bHWTLs depth.) These also had the five greatest number of congener compounds detected per location. The detections range from the 1.00E-05 to 2.00E-04 mg/kg.

The three locations with highest dioxin/furan concentrations nearest each other are at locations 200-HWTL-01.6, 200-HWTL-01.5, and 200-HWTL-01.3. The other two locations are isolated as shown on Figure 6.22 and Figure 6.25. Location 200-HWTL-01.9 is noted as having a high detection of total PAHs, but otherwise there is little correlation between dioxins and PAHs except that both classes of compounds are present in most of the 200 Industrial Area.

Similar to PAHs, borings in the 200 Industrial Area outside of the three areas listed above have lower total dioxin concentrations, in the single 1.00E-06 to 1.00E-05 of mg/kg range. The pattern of detection is much the same as for the PAHs samples from the 200 Area, and then in the 600 Area (borings 200-HWTL-04 through 600-HWTL-10) to the end of the HWTLs. By “the same,” it is meant that concentrations of dioxins are similar along the HWTLs, and at a lesser concentration than in the 200 Industrial Area. Total dioxin concentrations are generally in the 1.00E-06mg/kg range, with only three locations near the end of the HWTLs, 600-HWTL-01, 600-HWTL-08, and 600-HWTL-09, having a detection greater than 1.00E-05 mg/kg (Figure 6.24 and Figure 6.27). It is noted that location 600-HWTL-01 also contained a higher detected concentration for PAH.

6.1.8 Hydrazines, NDMA, and Bromacil

NDMA and bromacil were analyzed by Method 607M. Hydrazines were analyzed by Method 8315M. Bromacil and NDMA were not detected in any soil samples for the SWMU 10 investigation.

6.1.8.1 Hydrazine

Hydrazine was detected in seven samples, within seven soil borings, four in the 200 Industrial Area (Figure 6.28), two northeast of where the HWTLs crossed Gardner Spring Arroyo in the 200 Area (Figure 6.29), and one southwest of the Gardner Spring Arroyo crossing in the 600 Area (Figure 6.30). Hydrazine detections in the 200 Area were at 1 to 2 ft bHWTLs depth and not detected directly below the line (0 to 0.5 ft). Near Gardner spring Arroyo, hydrazine was detected at 0 to 0.5 ft bHWTLs and not detected in the 1 to 2 ft depth range. The minimum detection was 2.40E-01 mg/kg at 200-HWTL-3.1 at a depth of 1-2 ft bHWTLs. The maximum detection was 3.00E-01 mg/kg at soil boring 200-HWTL-22 at 0-0.5 ft bHWTLs.

6.1.8.2 Monomethylhydrazine

Monomethylhydrazine (MMH) was detected in one sample (200-HWTL-1.5) behind the 200 Area building complex at a depth of 0 to 0.5 ft bHWTLs (Figure 6.28).

6.2 Soil QA/QC Chemical Analytical Results

NASA stated that 10% field duplicate samples would be collected. In Table 4.1 of the SWMU 10 IWP, nine duplicate sample sets were planned. Nine duplicate samples were collected along the length of HWTL and analyzed for the same parameters as the primary samples. A tenth sample was collected at

200-HWTL-03 as a matrix spike; however, due to an error on the external chain-of-custody form it received a partial parameter set as a duplicate for Methods 607M and 8315M. Duplicate samples were collected at 200-HWTL-01.9, 200-HWTL-06, 200-HWTL-11, 200-HWTL-16, 200-HWTL-20, 200-HWTL-21, 200-HWTL-26, 600-HWTL-02, and 600-HWTL-07. For these locations, the results of the primary and duplicate sample analyses were compared, and the maximum result was selected to ensure conservative screening approach. Enclosure 4 provides a QA/QC workbook of the analytical parameters sampled for the QA/QC samples as well as the analytical results pertaining to those parameter sets.

6.3 Quality Control Qualifiers

Individual analytical results requiring additional explanation are flagged with qualifiers. The flags are explained in Table 6.8 of this report.

6.4 Soil Vapor Analytical Results

NASA collected 12 samples of soil vapor at the locations shown on Figure 3.1 on September 25, 2021. Collected soil vapor samples were analyzed by method TO-15 for 68 VOC constituents. Table 6.9 provides VOC constituent detections for soil vapor implant samples, and Figure 6.30 shows COPC concentrations for each soil vapor implant.

There are 24 VOC constituents detected in the 12 samples. The detected constituents identified as HWTL COPCs include 2-butanone, 2-propanol, acetone, benzene, chloroform, chloromethane, Freon 11, m,p-xylene, tetrachloroethene, toluene, and trichloroethene (Figure 6.31).

7.0 Summary of Risk and Hazard

NASA completed risk assessment activities in accordance with procedures detailed in the then current NMED's RA Guidance Volume I for human health and groundwater (NMED, 2021) and Volume II for ecological (NMED, 2017a). The complete description of risk assessment methods is provided in the accompanying RAR submitted with this IR. Risk and hazard presented by identified COPC concentrations in soil and soil vapor samples were evaluated for all receptors identified in the revised SCEM shown on Figure 3.1. Volume I of the then current RA Guidance (NMED, 2021) provides a tiered approach to determining risk for all human receptors and to groundwater that includes determination of the final COPCs for SWMU 10, evaluation of risk and hazard to all receptors using COPC maximum and refined exposure point concentrations (EPCs) for both soil and soil vapor, discussion of uncertainties, and lines of evidence to support the risk assessment conclusions. Volume II of the RA Guidance (NMED, 2017a) provides a tiered approach to determining hazard to ecological receptors presented by identified concentrations of COPCs.

Investigative analytical data were used to evaluate cancer risk and non-cancer hazard to human and ecological receptors and to groundwater. Soils analytical data were evaluated to determine risk and hazard to residential, construction worker, and ecological receptors and to screen for potential impacts to groundwater beneath the former HWTLs. Soil vapor data were evaluated to determine risk and hazard to residential and industrial worker receptors. The following sections summarize final risk and hazard to all receptor populations.

7.1 Constituents of Potential Concern

Section 4.0 of the accompanying RAR provided a complete description of the methods used to determine the final COPCs for soils at the HWTLs (SWMU 10). The COPCs for the HWTLs include all constituents detected in soil and soil vapor samples except for detected inorganic constituents that were determined to

be representative of background conditions at SWMU 10. NASA has established background concentrations of inorganic constituents in the *NASA WSTF Soil Background Study Investigation Report* (NASA, 2015a) that were approved by NMED (NMED, 2015). Note that soil vapor samples were not analyzed for inorganic constituents, so all detected constituents in soil vapor samples were evaluated in the risk assessment.

As part of the DQOs for this investigation, quality control samples were collected that include duplicate sample results. The initial step of any risk assessment is to develop an investigative dataset that includes one analytical result for each sampling location. For each sample with a duplicate result, the most conservative result, the result exhibiting a higher constituent concentration, was selected to populate the investigative dataset as detailed in the RAR Sections 4.1 and 4.2.

Determination of inorganics that are representative of background conditions is completed by comparing investigative data maximum concentrations with established background threshold values (BTVs) as detailed in Section 4.6.1 of the RAR, then by a statistical population-to-population comparison using investigative and background datasets detailed in Section 4.6.2 of the RAR.

Once the comparisons of investigative data and background data is complete, the constituents determined to be representative of background conditions were eliminated from further risk assessment activities. Inorganic constituents eliminated as final COPCs include aluminum, antimony, arsenic, barium, beryllium, chromium, hexavalent chromium, cobalt, copper, iron, lead, manganese, mercury, molybdenum, nickel, perchlorate, silver, strontium, vanadium, and zinc, and the essential nutrients calcium, chloride, magnesium, potassium, and sodium. Table 4.4 of the RAR provides the list of final COPCs for soils at the HWTLs.

7.2 Human Health Risk and Hazard

Details of the evaluation of risk and hazard to residential receptors is provided in the RAR Section 6.1, and to construction workers in the RAR Section 6.2. Neither the residential exposure scenario nor the construction worker scenario resulted in individual or cumulative carcinogenic risks greater than the target carcinogenic risk of 1E-05. Individual COPC hazard indices (HIs) and the cumulative hazard quotient (HQ) for construction workers were also less than the target hazard of 1. However, the cumulative residential HQ of 1.13 exceeded the target as described in Section 6.2.2 of the RAR, with significant contributions from identified concentrations of monomethylhydrazine (MMH) and thallium. As described in Section 7.2 of the RAR, the contribution to total HQ from MMH results from a single detection that represents 1% of the total samples.

7.3 Protection of Groundwater

Details of the soil-to-groundwater receptor scenario evaluation are provided in the RAR Section 6.3. For the soil-to-groundwater exposure scenario, individual COPC concentrations exceeded soil leachate-soil screening levels (SL-SSLs) for maximum and calculated UCL95 concentrations. Individual COPCs that exceeded SL-SSLs using maximum concentrations and using UCL95 concentrations were disulfoton, hydrazine, and MMH (Figure 7.1).

The distribution of the observed constituent concentrations exceeding SL-SSLs at SWMU 10 appear to be concentrated around the rear (southeast side) of the 200 Area building complex (6 of 9 detections). In addition, three hydrazine detections occur in the straight line of the HWTLs between the industrial 200 Area and the 600 Area Closure HWMU impoundments. These detections only potentially affect the soil-to-groundwater scenario, since both residential and construction worker risk and hazards were not exceeded. The uncertainties section of the RAR (Section 7.0) provides lines of evidence regarding vadose

zone soils and groundwater conditions at the site including; discontinuous, low concentration contamination for only one potential receptor (groundwater); thick, unsorted alluvium with clay lenses to slow constituent transport downward through the vadose zone; deep groundwater; on-going groundwater monitoring and remediation, and built-in conservative assumptions (like no adsorption in the vadose zone).

7.4 Soil Vapor Risk and Hazard

Details of evaluation of risk and hazard to residential and industrial workers from COPC concentrations identified in soil vapor samples are provided in the RAR Section 6.7. No individual or summed risk or hazard exceed NMED soil vapor targets.

7.5 Ecological Risk

Evaluation of risk and hazard to ecological receptors are detailed in the RAR Section 6.5. Identified receptor populations include the deer mouse, horned lark, and plants, based on the total area occupied by SWMU 10. Results of the ecological risk screening indicate ecological receptors that may potentially be exposed to soils affected by the former operation of the HWTLs are rare to non-existent. Due to the depth of burial, only burrowing animals and deep-rooted plants can potentially be exposed to affected soils. Fauna within the site is transient and habitat within this area is inadequate to support wildlife populations for extended periods of time (photographs Appendix D). Results of the Tier II screening-level ecological risk assessment (SLERA) did not identify unacceptable risk to ecological receptors.

7.6 Cumulative Risk and Hazard

Table 7.1 summarizes the final carcinogenic risk and toxicity hazard to identified receptor populations that may come in contact with SWMU 10 soils. In the tiered risk and hazard approach, when risk is below targets, the screening process ends at that step. However, the then current RA Guidance Section 1.3 (NMED, 2021) states that risks and hazards across all appropriate pathways, including soil vapor, must be included and summed with the soils risk and hazard. This all-pathways sum must then be compared to the targets for risk (1E-05) and hazard (1; NMED, 2021). The cumulative cancer risk for residential and construction worker receptors were below NMED targets, as were the cumulative hazard to industrial/commercial and construction worker receptors. Unacceptable risk was not identified for these receptor populations.

The cumulative HQ to residential receptors from soil and soil vapor (1.2) exceeded the target hazard of 1. Individually, the soil HQ of 6.58E-01 and the soil vapor HQ of 5.63E-01 do not exceed target hazard. Based on the conservative nature of risk methods detailed in the RA Guidance and NASA's conservative choice to input a PUF of 1 for COPCs unlikely to uptake in plants, the targeted nature of investigation soil sampling, and results of soil vapor intrusion evaluation in this investigation and in the 200/600 VIAR, NASA believes that the resultant cumulative HQ does not represent prediction of expected health risks but rather an upper bound above which such risks are extremely unlikely.

The exceedances of NMED SL-SSLs are detailed in Section 7.2.2 of the RAR and were observed in 9 of the 48 sampled locations. NASA believes that due to the subsurface lithologies and groundwater conditions described in Section 7.2.1 of the RAR, and the ongoing monitoring and remediation of groundwater at WSTF, the potential for these exceedances to adversely affect groundwater users at WSTF is unlikely.

8.0 Conclusions and Recommendations

8.1 Conclusions

Results of the investigative data evaluation for risk and hazard to all receptors and for the protection of groundwater as detailed in the RAR support the conclusions provided in this section. NASA compared the concentrations of VOCs, SVOCs, metals, perchlorate, cyanide, dioxins/furans, hydrazines, NDMA, bromacil, nitrite/nitrate, and essential nutrients in soil samples collected at SWMU 10 to NMED SSLs and conducted human and ecological risk, hazard, and soil-to-groundwater screenings of the constituents detected. NASA collected soil vapor samples from the HWTLs locations surrounding the 200 Industrial Area occupied buildings. Soil vapor samples were analyzed for VOCs, and the analytical results support characterization of risk and hazard to residential and industrial/commercial worker receptors from potential vapor intrusion.

The RAR Section 7.0 provides additional lines of evidence supporting the conclusions of this investigation. The evidence includes discussion of the following information:

- The methods of determining risk and hazard as detailed in the then current RA Guidance (NMED, 2017a, 2021) are conservative and do not account for site characteristics that mitigate risk and hazards to receptors.
- Groundwater occurrence and the subsurface lithologic characteristics of at the site that will mitigate vertical contaminant transport, and the lack of widespread, persistent soil contamination that indicates the source of potential groundwater contamination is minimal.
- Investigation sampling that focuses on the potentially impacted soils and do not provide an overall chemical characterization of the former HWTLs (SWMU 10).
- A summary of the previous vapor intrusion investigation demonstrating there is not unacceptable risk and hazard presented by vapor intrusion to building occupants. This investigation is the *NMED Disapproval Response for 200 Area and 600 Area Vapor Intrusion Assessment Report* (NASA, 2020b).

8.1.1 Human Health Risk and Hazard

Neither the residential exposure scenario nor the construction worker scenario resulted in individual or cumulative carcinogenic risks greater than the target carcinogenic risk of 1.0E-05. Individual and total cumulative HIs were also less than the target hazard of 1.0. As stated in the then current NMED RA guidance, since both risk and hazard for the residential and construction worker scenarios did not exceed targets, the risks/hazards were acceptable for these scenarios and are not likely to result in adverse human health impacts (NMED, 2017a, 2021). Therefore, additional investigation or remedial action based on risk/hazard screening for residential and construction worker exposure scenarios are not required.

8.1.2 Protection of Groundwater

However, for the soil-to-groundwater exposure scenario, several individual COPC concentrations exceeded SL-SSLs for maximum and calculated UCL95 concentrations. Individual COPCs that exceeded SL-SSLs using maximum concentrations were disulfoton, hydrazine, MMH, and nitrate/nitrite. Using refined exposure concentrations (UCL95 concentrations calculated using ProUCL software or median concentrations), hydrazine, and MMH exceeded SL-SSLs (Figure 7.1).

The distribution of the observed constituent concentrations exceeding SL-SSLs at SWMU 10 appear to be concentrated around the rear (northeast side) of the 200 Area building complex (6 of 9 detections) and with three hydrazine detections in the straight line of the HWTLs between the industrial 200 Area and the

600 Area Closure HWMU impoundments (Figure 7.1). These detections only potentially affect the soil-to-groundwater scenario, since both residential and construction worker risk and hazards were not exceeded. With discontinuous, low concentration contamination for only one potential receptor (groundwater); thick, unsorted alluvium with clay lenses to slow vadose zone contamination; deep groundwater; on-going groundwater monitoring and remediation, and built-in conservative assumptions (like no adsorption in the vadose zone) NASA concludes that the potential impact to groundwater beneath the former HWTLs is acceptable.

8.1.3 Soil Vapor Risk and Hazard

No individual or summed risk or hazard exceed NMED soil vapor targets. In addition, with thick building slabs, strong heating, ventilation, and air conditioning systems, and concordance of evidence for lack of vapor intrusion (coupling results of this risk and hazard evaluation with the results of the 200/600 Areas VIAR (NASA, 2020b), NASA has not identified unacceptable risk or hazard to Building 200 occupants that warrants further actions.

8.1.4 Ecological Risk and Hazard

Results of the ecological risk screening indicate ecological receptors that may potentially be exposed to soils affected by the former operation of the HWTLs are rare to non-existent. Due to the depth of burial, only burrowing animals and deep-rooted plants can potentially be exposed to affected soils. Fauna within the site is transient and habitat within this area is inadequate to support wildlife populations for extended periods of time. Results of the Tier II SLERA did not identify unacceptable risk to ecological receptors.

8.1.5 Cumulative Risk and Hazard

Results of the human health and groundwater protective risk assessment are summarized in Table 7.1. The cumulative cancer risk for residential and construction worker receptors were below NMED targets, as were the cumulative hazard to industrial/commercial and construction worker receptors. Unacceptable risk was not identified for these receptor populations.

The cumulative toxicity hazard (HQ) to residential receptors from soil and soil vapor (1.2) exceeded the target hazard of 1. Individually, the soil HQ of 6.58E-01 and the soil vapor HI of 5.63E-01 do not exceed target hazard. Based on the conservative nature of risk methods detailed in the RA Guidance and NASA's conservative choice to input a plant uptake factor (PUF) of 1 for COPCs unlikely to uptake in plants, the targeted nature of investigation soil sampling, and results of soil vapor intrusion evaluation in this investigation and in the 200/600 Areas VIAR, NASA believes that the resultant cumulative HQ does not represent prediction of expected health risks but rather an upper bound above which such risks are extremely unlikely.

The exceedances of NMED SL-SSLs were observed in 9 of the 48 sampled locations. NASA believes that due to the limited nature of these SL-SSL exceedances, subsurface lithologies and groundwater conditions, and the ongoing monitoring and remediation of groundwater at WSTF, the potential for these exceedances to adversely affect groundwater users at WSTF is unlikely.

8.2 Recommendations

Based on the results of soil and soil vapor investigation activities, results of this risk assessment, and evidentiary information detailed herein, no further actions are warranted in connection with soils at the former HWTLs location.

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Figures

Figure 1.1 WSTF Location Map

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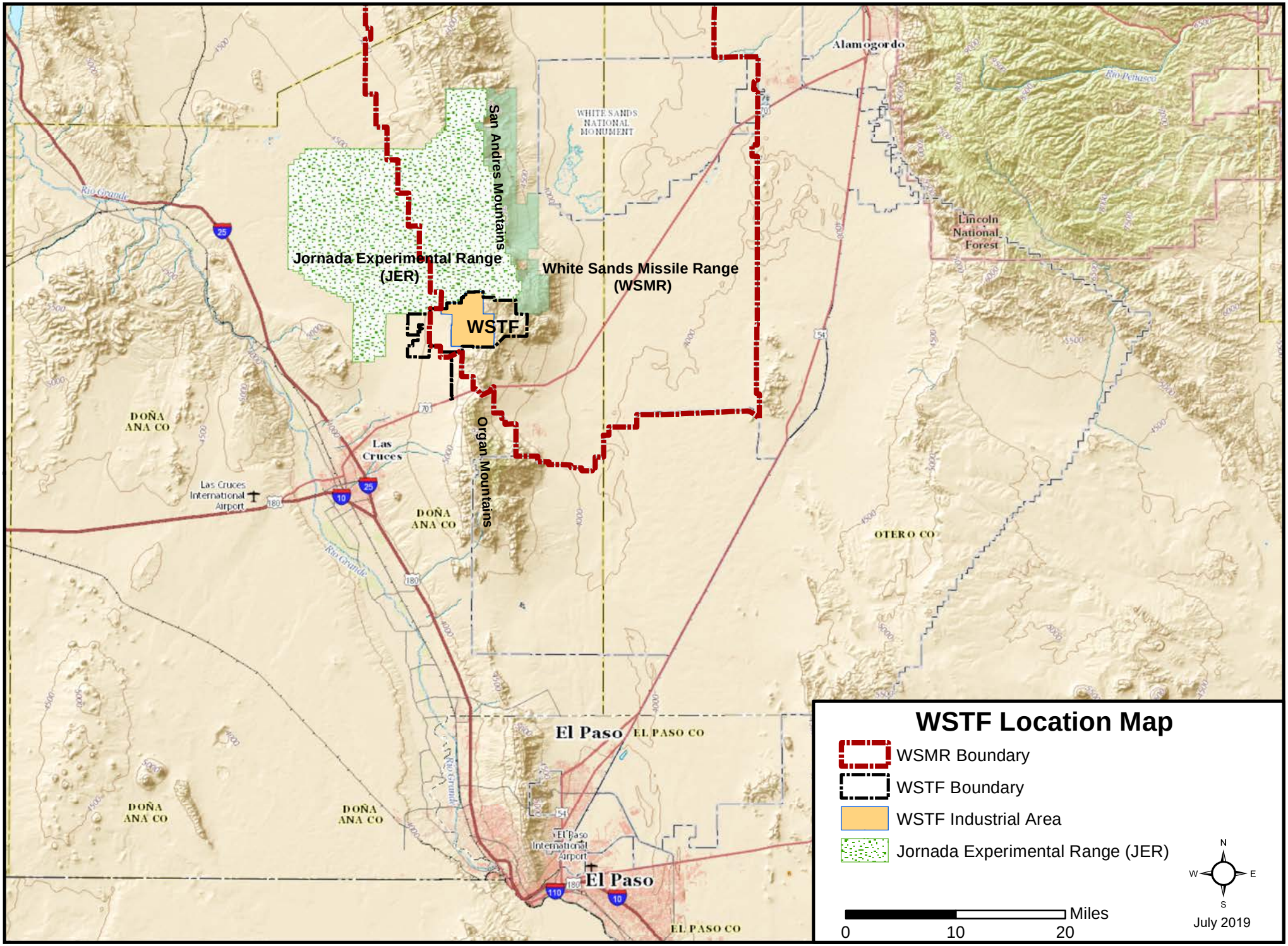
Alamogordo
WHITE SANDS NATIONAL MONUMENT
San Andres Mountains
Jornada Experimental Range (JER)
White Sands Missile Range (WSMR)
WSTF
Lincoln National Forest
Rio Grande
DOÑA ANA CO
Las Cruces
Las Cruces International Airport
Organ Mountains
OTERO CO
El Paso
EL PASO CO
El Paso International Airport
WSTF Location Map
WSMR Boundary
WSTF Boundary
WSTF Industrial Area
Jornada Experimental Range (JER)
Miles
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10
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Figure 1.2 200-600 Area Hazardous Waste Transmission Lines SWMU 10 Location

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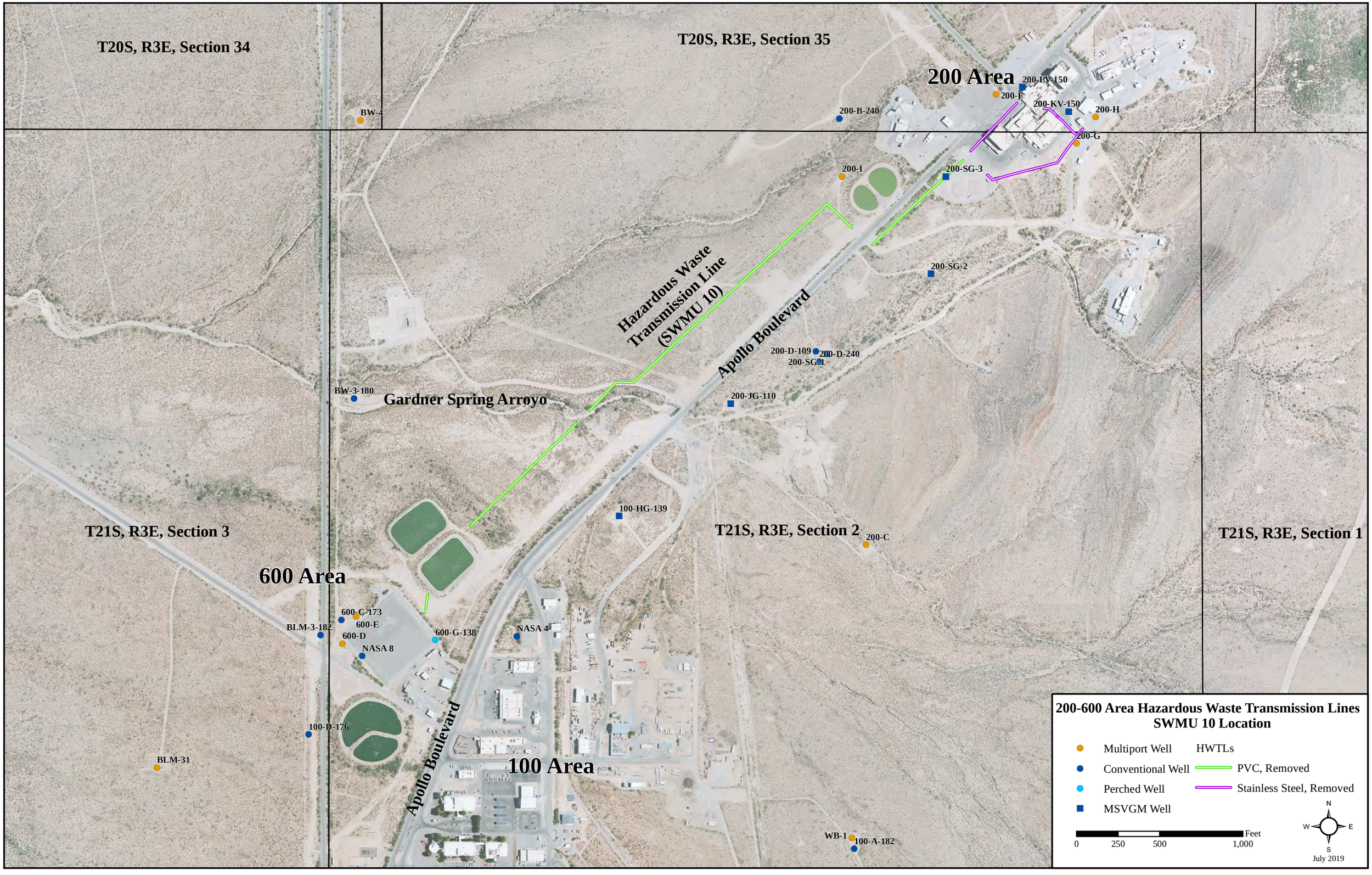

T20S, R3E, Section 34
T20S, R3E, Section 35
200 Area
200-LV-150
200-F
200-KV-150
200-H
200-G
BW-4
200-B-240
200-I
200-SG-3
200-SG-2
Hazardous Waste
Transmission Line
(SWMU 10)
Apollo Boulevard
200-D-109
200-D-240
200-SG-1
BW-3-180
Gardner Spring Arroyo
200-JG-110
100-HG-139
T21S, R3E, Section 3
T21S, R3E, Section 2
T21S, R3E, Section 1
200-C
600 Area
600-C-173
600-E
BLM-3-182
600-D
NASA 8
600-G-138
NASA 4
100-D-176
BLM-31
100 Area
Apollo Boulevard
WB-1
100-A-182
200-600 Area Hazardous Waste Transmission Lines
SWMU 10 Location
Multiport Well
Conventional Well
Perched Well
MSVGM Well
HWTLs
PVC, Removed
Stainless Steel, Removed
0
250
500
1,000
Feet
N
W
E
S
July 2019

Figure 2.1 200-600 Area Hazardous Waste Transmission Lines SWMU 10 Utilities Map

(SEE NEXT PAGE)

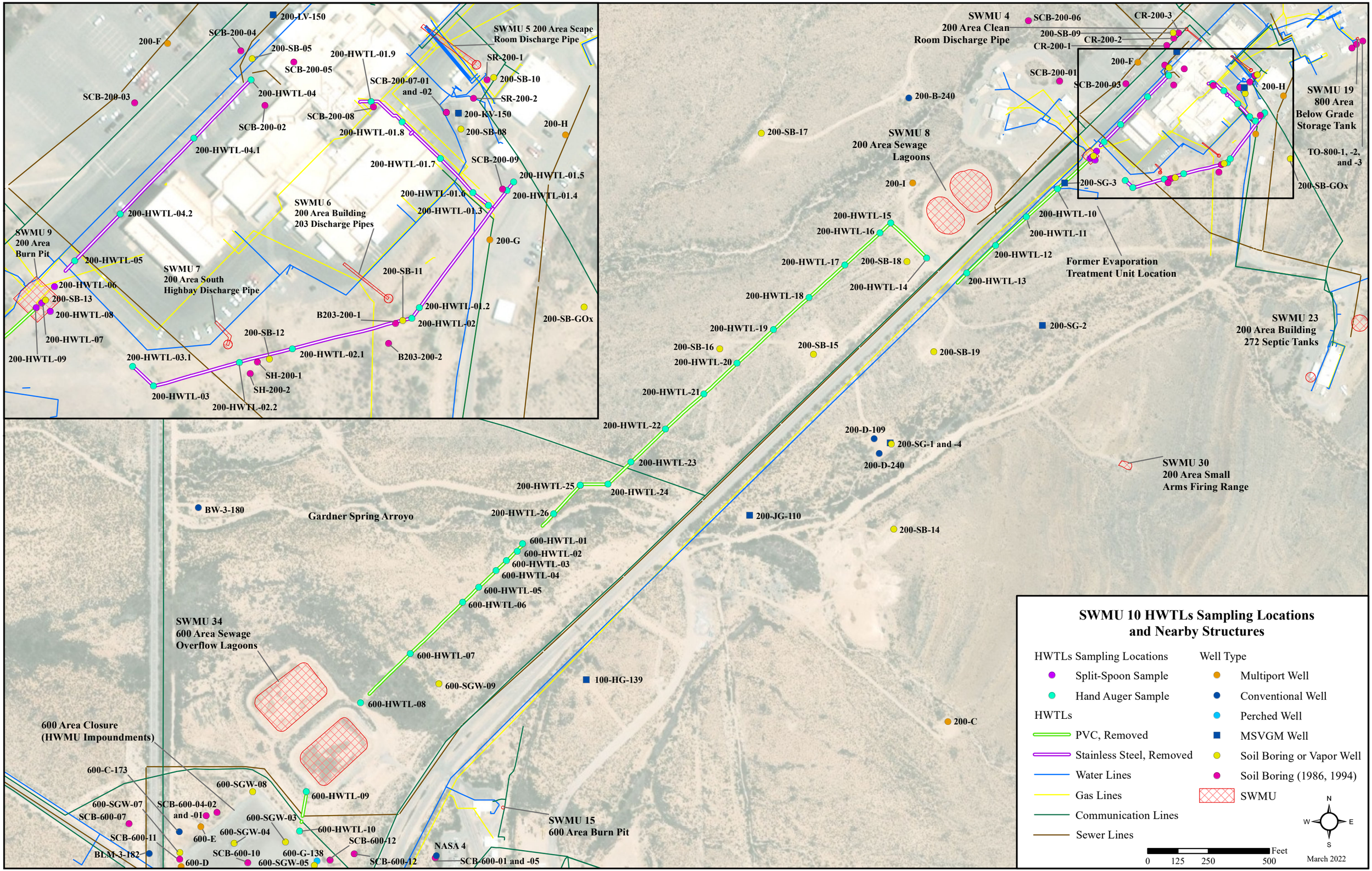

200-LV-150
200-F
SCB-200-04
200-SB-05
SCB-200-05
SCB-200-03
200-HWTL-04
SCB-200-02
200-HWTL-04.1
200-HWTL-04.2
SWMU 9
200 Area
Burn Pit
200-HWTL-05
200-HWTL-06
200-SB-13
200-HWTL-08
200-HWTL-07
200-HWTL-09
SWMU 7
200 Area South
Highbay Discharge Pipe
200-HWTL-03.1
200-HWTL-03
200-SB-12
SH-200-1
SH-200-2
200-HWTL-02.2
200-HWTL-02.1
B203-200-1
B203-200-2
200-HWTL-02
200-HWTL-01.2
200-SB-11
SWMU 6
200 Area Building
203 Discharge Pipes
200-HWTL-01.3
200-HWTL-01.4
200-HWTL-01.5
200-HWTL-01.6
200-HWTL-01.7
SCB-200-09
200-HWTL-01.8
SCB-200-08
SCB-200-07-01
and -02
200-HWTL-01.9
SR-200-1
200-SB-10
SR-200-2
200-LV-150
200-SB-08
200-H
200-G
200-SB-GOx
SWMU 5 200 Area Scape
Room Discharge Pipe
SWMU 4
200 Area Clean
Room Discharge Pipe
SCB-200-06
200-SB-09
CR-200-1
CR-200-3
CR-200-2
200-F
SCB-200-01
SCB-200-03
200-H
200-B-240
SWMU 19
800 Area
Below Grade
Storage Tank
TO-800-1, -2,
and -3
200-SB-GOx
200-SB-17
SWMU 8
200 Area Sewage
Lagoons
200-I
200-SG-3
200-HWTL-10
200-HWTL-11
200-HWTL-15
200-HWTL-16
200-HWTL-12
200-HWTL-17
200-SB-18
200-HWTL-14
200-HWTL-13
200-HWTL-18
Former Evaporation
Treatment Unit Location
200-HWTL-19
200-SG-2
SWMU 23
200 Area Building
272 Septic Tanks
200-SB-16
200-SB-15
200-SB-19
200-HWTL-20
200-HWTL-21
200-HWTL-22
200-D-109
200-SG-1 and -4
200-HWTL-23
200-D-240
SWMU 30
200 Area Small
Arms Firing Range
200-HWTL-25
200-HWTL-24
200-HWTL-26
BW-3-180
Gardner Spring Arroyo
200-JG-110
200-SB-14
600-HWTL-01
600-HWTL-02
600-HWTL-03
600-HWTL-04
600-HWTL-05
600-HWTL-06
SWMU 34
600 Area Sewage
Overflow Lagoons
600-HWTL-07
600-SGW-09
100-HG-139
600-HWTL-08
200-C
600 Area Closure
(HWMU Impoundments)
600-C-173
600-SGW-08
600-HWTL-09
600-SGW-07
SCB-600-04-02
and -01
SCB-600-07
600-SGW-03
600-HWTL-10
600-SGW-04
600-E
SCB-600-11
SCB-600-12
SCB-600-10
600-G-138
BLM-3-182
600-D
600-SGW-05
SCB-600-12
NASA 4
SCB-600-01 and -05
SWMU 15
600 Area Burn Pit
SWMU 10 HWTLs Sampling Locations
and Nearby Structures
HWTLs Sampling Locations
Split-Spoon Sample
Hand Auger Sample
HWTLs
PVC, Removed
Stainless Steel, Removed
Water Lines
Gas Lines
Communication Lines
Sewer Lines
Well Type
Multiport Well
Conventional Well
Perched Well
MSVGM Well
Soil Boring or Vapor Well
Soil Boring (1986, 1994)
SWMU
N
W
E
S
0
125
250
500
Feet
March 2022

Figure 3.1 SWMU 10 HWTLs Sampling Locations

(SEE NEXT PAGE)

200-HWTL-04
200-HWTL-04.1
200-HWTL-04.2
200-HWTL-05
200-HWTL-06
200-HWTL-07
200-HWTL-08
200-HWTL-09
200-HWTL-01.9
200-HWTL-01.8
200-HWTL-01.7
200-HWTL-01.6
200-HWTL-01.5
200-HWTL-01.4
200-HWTL-01.3
200-HWTL-01.2
200-HWTL-02
200-HWTL-02.1
200-HWTL-02.2
200-HWTL-03.1
200-HWTL-03
200 Area Sewage Lagoons
200-HWTL-10
200-HWTL-11
200-HWTL-12
200-HWTL-13
200-HWTL-14
200-HWTL-15
200-HWTL-16
200-HWTL-17
200-HWTL-18
200-HWTL-19
200-HWTL-20
200-HWTL-21
200-HWTL-22
200-HWTL-23
200-HWTL-24
200-HWTL-25
200-HWTL-26
Gardner Spring Arroyo
600-HWTL-01
600-HWTL-02
600-HWTL-03
600-HWTL-04
600-HWTL-05
600-HWTL-06
600-HWTL-07
600-HWTL-08
600 Area Sewage Overflow Lagoons
600-HWTL-09
600-HWTL-10
600 Area Closure (HWMU Impoundments)

SWMU 10 HWTLs Sampling Locations

HWTLs Sampling Locations

- Split-Spoon Sample
- Hand Auger Sample

HWTLs

- PVC, Removed
- Stainless Steel, Removed

N
W E
S

0 125 250 500 Feet

July 2019

Figure 3.2 SWMU 10 HWTLs Sampling Locations and Investigation Details

(SEE NEXT PAGE)

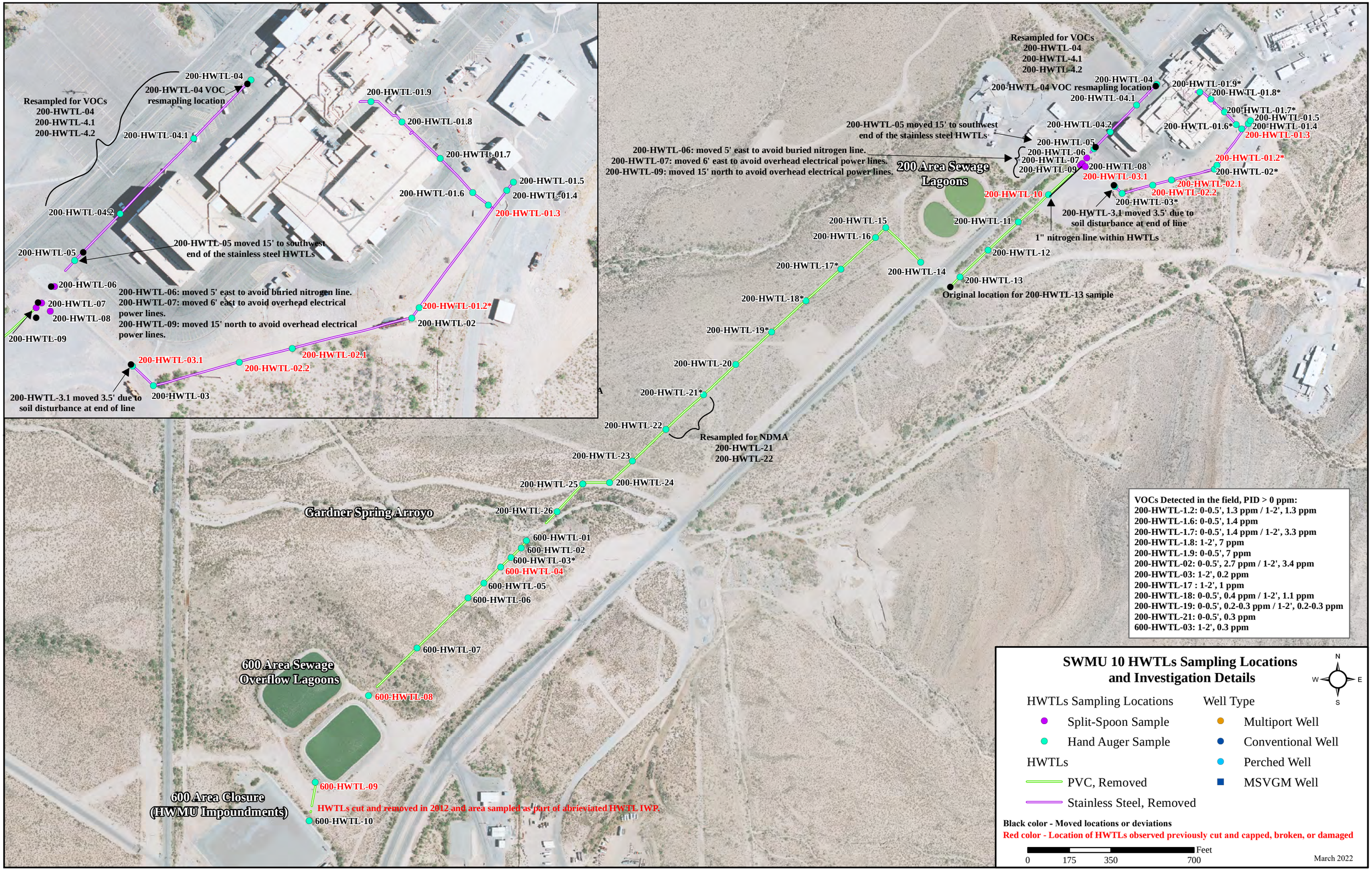

Resampled for VOCs
200-HWTL-04
200-HWTL-4.1
200-HWTL-4.2
200-HWTL-04
200-HWTL-04 VOC resmapling location
200-HWTL-04.1
200-HWTL-04.2
200-HWTL-05
200-HWTL-05 moved 15' to southwest end of the stainless steel HWTLs
200-HWTL-06
200-HWTL-07
200-HWTL-08
200-HWTL-09
200-HWTL-06: moved 5' east to avoid buried nitrogen line.
200-HWTL-07: moved 6' east to avoid overhead electrical power lines.
200-HWTL-09: moved 15' north to avoid overhead electrical power lines.
200-HWTL-01.9
200-HWTL-01.8
200-HWTL-01.7
200-HWTL-01.6
200-HWTL-01.5
200-HWTL-01.4
200-HWTL-01.3
200-HWTL-01.2*
200-HWTL-02
200-HWTL-03.1
200-HWTL-02.2
200-HWTL-02.1
200-HWTL-03
200-HWTL-3.1 moved 3.5' due to soil disturbance at end of line
Resampled for VOCs
200-HWTL-04
200-HWTL-4.1
200-HWTL-4.2
200-HWTL-04
200-HWTL-04 VOC resmapling location
200-HWTL-04.1
200-HWTL-04.2
200-HWTL-05 moved 15' to southwest end of the stainless steel HWTLs
200-HWTL-06: moved 5' east to avoid buried nitrogen line.
200-HWTL-07: moved 6' east to avoid overhead electrical power lines.
200-HWTL-09: moved 15' north to avoid overhead electrical power lines.
200 Area Sewage Lagoons
200-HWTL-05
200-HWTL-06
200-HWTL-07
200-HWTL-09
200-HWTL-08
200-HWTL-03.1
200-HWTL-10
200-HWTL-01.9*
200-HWTL-01.8*
200-HWTL-01.7*
200-HWTL-01.6*
200-HWTL-01.5
200-HWTL-01.4
200-HWTL-01.3
200-HWTL-01.2*
200-HWTL-02*
200-HWTL-02.1
200-HWTL-02.2
200-HWTL-03*
200-HWTL-3.1 moved 3.5' due to soil disturbance at end of line
1" nitrogen line within HWTLs
200-HWTL-11
200-HWTL-12
200-HWTL-13
Original location for 200-HWTL-13 sample
200-HWTL-14
200-HWTL-15
200-HWTL-16
200-HWTL-17*
200-HWTL-18*
200-HWTL-19*
200-HWTL-20
200-HWTL-21*
200-HWTL-22
Resampled for NDMA
200-HWTL-21
200-HWTL-22
200-HWTL-23
200-HWTL-24
200-HWTL-25
200-HWTL-26
Gardner Spring Arroyo
600-HWTL-01
600-HWTL-02
600-HWTL-03*
600-HWTL-04
600-HWTL-05
600-HWTL-06
600-HWTL-07
600-HWTL-08
600 Area Sewage Overflow Lagoons
600-HWTL-09
HWTLs cut and removed in 2012 and area sampled as part of abrieviated HWTL IWP.
600-HWTL-10
600 Area Closure (HWMU Impoundments)
VOCs Detected in the field, PID > 0 ppm:
200-HWTL-1.2: 0-0.5', 1.3 ppm / 1-2', 1.3 ppm
200-HWTL-1.6: 0-0.5', 1.4 ppm
200-HWTL-1.7: 0-0.5', 1.4 ppm / 1-2', 3.3 ppm
200-HWTL-1.8: 1-2', 7 ppm
200-HWTL-1.9: 0-0.5', 7 ppm
200-HWTL-02: 0-0.5', 2.7 ppm / 1-2', 3.4 ppm
200-HWTL-03: 1-2', 0.2 ppm
200-HWTL-17 : 1-2', 1 ppm
200-HWTL-18: 0-0.5', 0.4 ppm / 1-2', 1.1 ppm
200-HWTL-19: 0-0.5', 0.2-0.3 ppm / 1-2', 0.2-0.3 ppm
200-HWTL-21: 0-0.5', 0.3 ppm
600-HWTL-03: 1-2', 0.3 ppm
SWMU 10 HWTLs Sampling Locations and Investigation Details
N
W
E
S
HWTLs Sampling Locations
Split-Spoon Sample
Hand Auger Sample
HWTLs
PVC, Removed
Stainless Steel, Removed
Well Type
Multiport Well
Conventional Well
Perched Well
MSVGM Well
Black color - Moved locations or deviations
Red color - Location of HWTLs observed previously cut and capped, broken, or damaged
Feet
0
175
350
700
March 2022

Figure 3.3 SWMU 10 HWTLs Soil Vapor Sampling Locations

(SEE NEXT PAGE)

200-HWTL-04
200-HWTL-04.1
200-HWTL-04.2
200-HWTL-05
200-HWTL-06
200-HWTL-07
200-HWTL-08
200-HWTL-09
200-HWTL-03.1
200-HWTL-03
200-HWTL-02.2
200-HWTL-02.1
200-HWTL-02
200-HWTL-01.2
200-HWTL-01.3
200-HWTL-01.4
200-HWTL-01.5
200-HWTL-01.6
200-HWTL-01.7
200-HWTL-01.8
200-HWTL-01.9
SWMU 10 HWTLs Soil Vapor Sampling Locations
HWTLs
Material, Current Status
PVC, Removed
Stainless Steel, Removed
Split-Spoon Soil Sample
Hand Auger Soil Sample
N
W
E
S
200-HWTL-01.2 Soil Vapor Sampling Location (within hand auger soil sample boring)
0
25
50
100
Feet
HWTLs = Hazardous Waste Transmission Lines
March 2022

Figure 4.1 SWMU 10 Front Elevation Drawing of HWTL Tankers and Pit

(SEE NEXT PAGE)

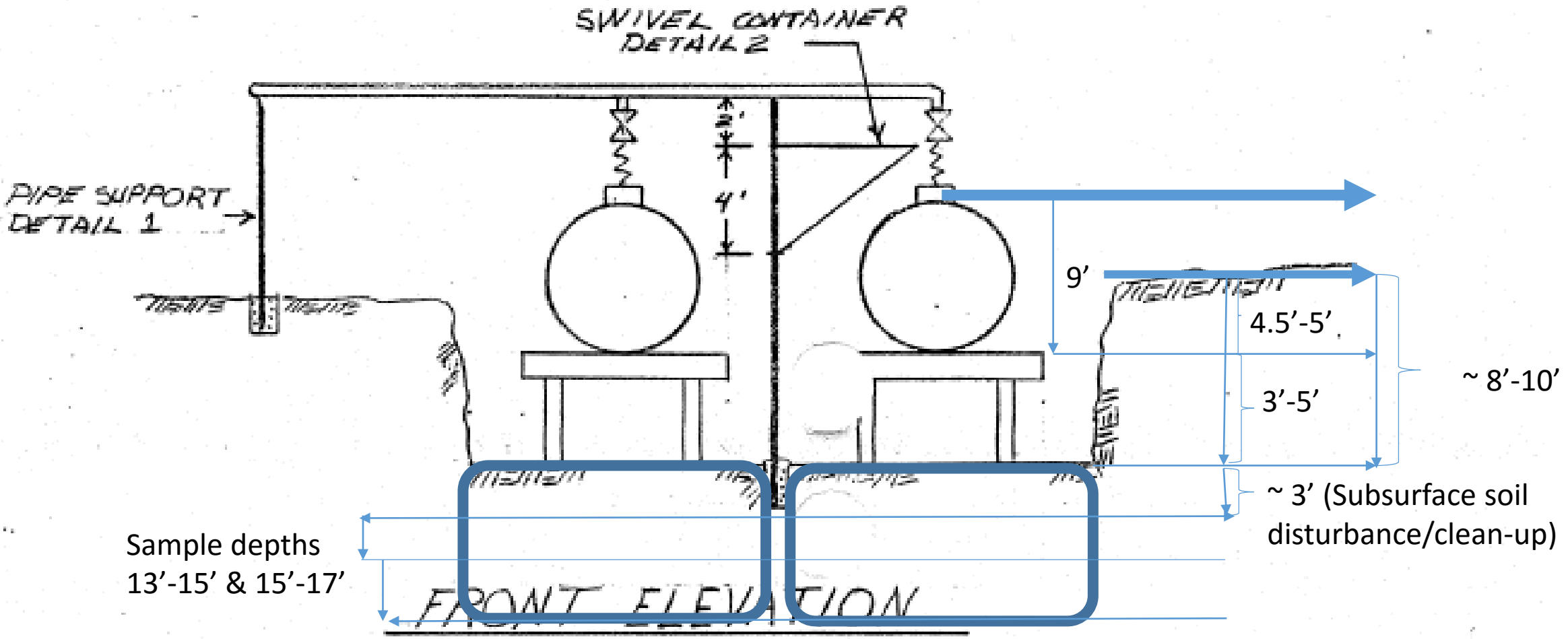

SWIVEL CONTAINER DETAIL 2
PIPE SUPPORT DETAIL 1
4'
9'
4.5'-5'
3'-5'
~ 8'-10'
~ 3' (Subsurface soil disturbance/clean-up)
Sample depths
13'-15' & 15'-17'
FRONT ELEVATION

Figure 6.1 SWMU 10 HWTLs 200 Industrial Area Location

(SEE NEXT PAGE)

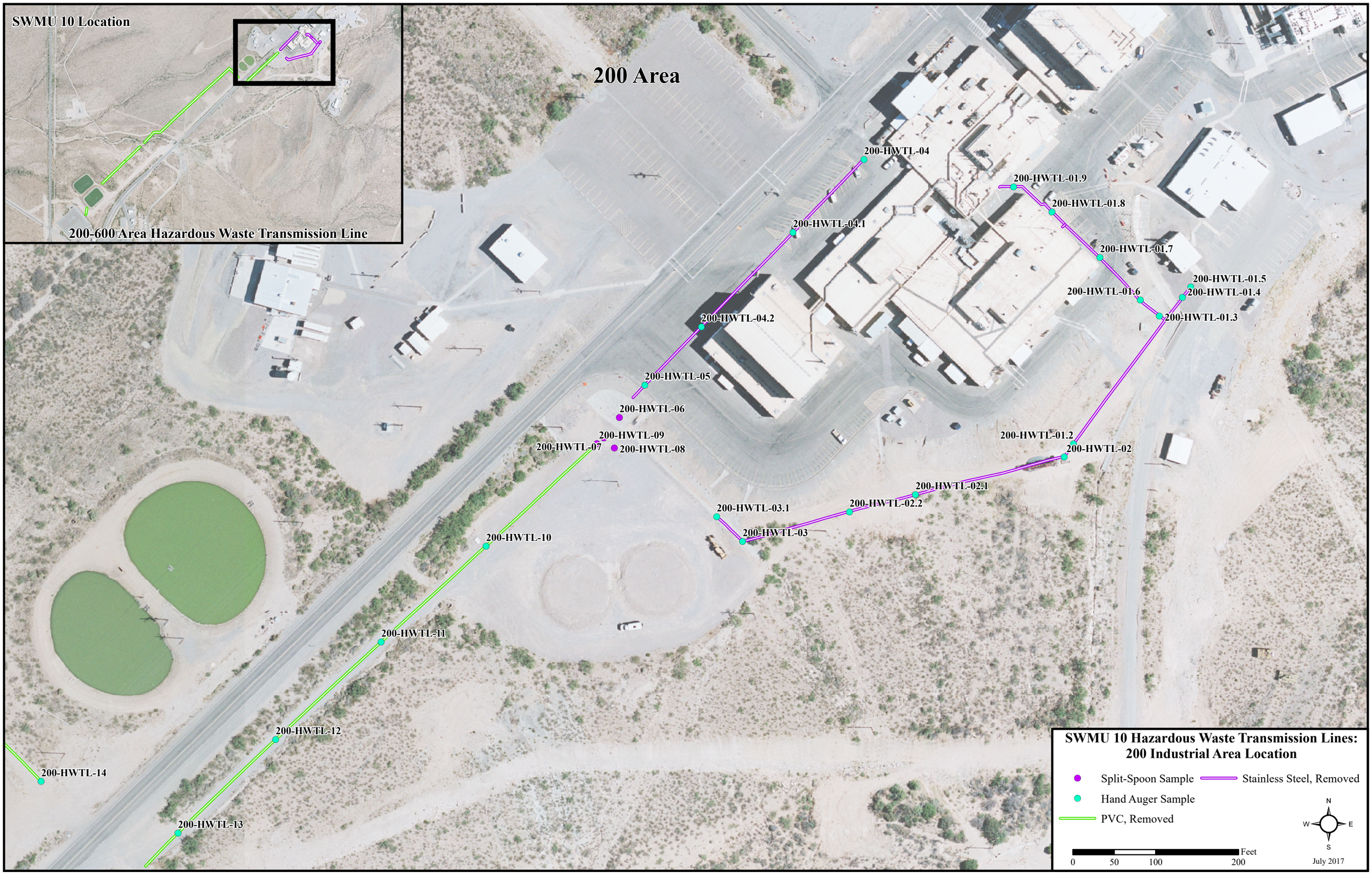
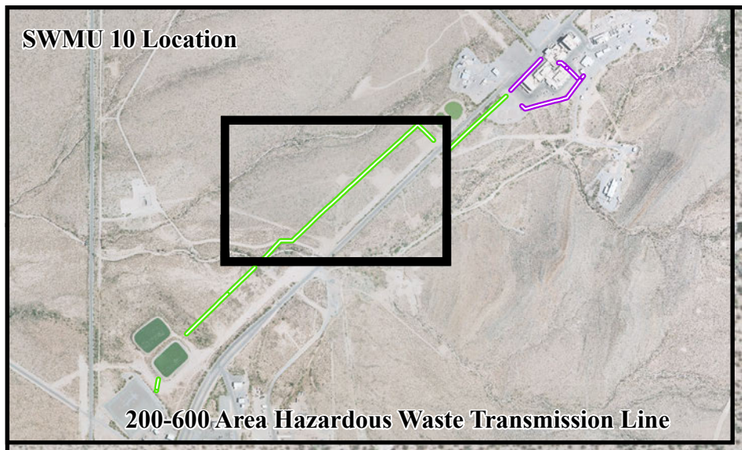

SWMU 10 Location
200-600 Area Hazardous Waste Transmission Line
200 Area
200-HWTL-04
200-HWTL-04.1
200-HWTL-04.2
200-HWTL-05
200-HWTL-06
200-HWTL-09
200-HWTL-07
200-HWTL-08
200-HWTL-10
200-HWTL-11
200-HWTL-12
200-HWTL-13
200-HWTL-14
200-HWTL-01.9
200-HWTL-01.8
200-HWTL-01.7
200-HWTL-01.6
200-HWTL-01.5
200-HWTL-01.4
200-HWTL-01.3
200-HWTL-01.2
200-HWTL-02
200-HWTL-02.1
200-HWTL-02.2
200-HWTL-03.1
200-HWTL-03
SWMU 10 Hazardous Waste Transmission Lines:
200 Industrial Area Location
Split-Spoon Sample
Hand Auger Sample
PVC, Removed
Stainless Steel, Removed
N
W
E
S
Feet
0
50
100
200
July 2017

Figure 6.2 SWMU 10 HWTLs 200 Area Location

(SEE NEXT PAGE)



200-HWTL-15
200-HWTL-16
200-HWTL-14
200-HWTL-17
200-HWTL-18
200-HWTL-19
200-HWTL-20
200-HWTL-21
200-HWTL-22
200-HWTL-23
200-HWTL-24
200-HWTL-25
200-HWTL-26
Apollo Boulevard

SWMU 10 Hazardous Waste Transmission Lines: 200 Area Location

Split-Spoon Sample
Hand Auger Sample
PVC, Removed
Stainless Steel, Removed

N
W
E
S

Feet
0 75 150 300

July 2019

Figure 6.3 SWMU 10 HWTLs 600 Area Location

(SEE NEXT PAGE)

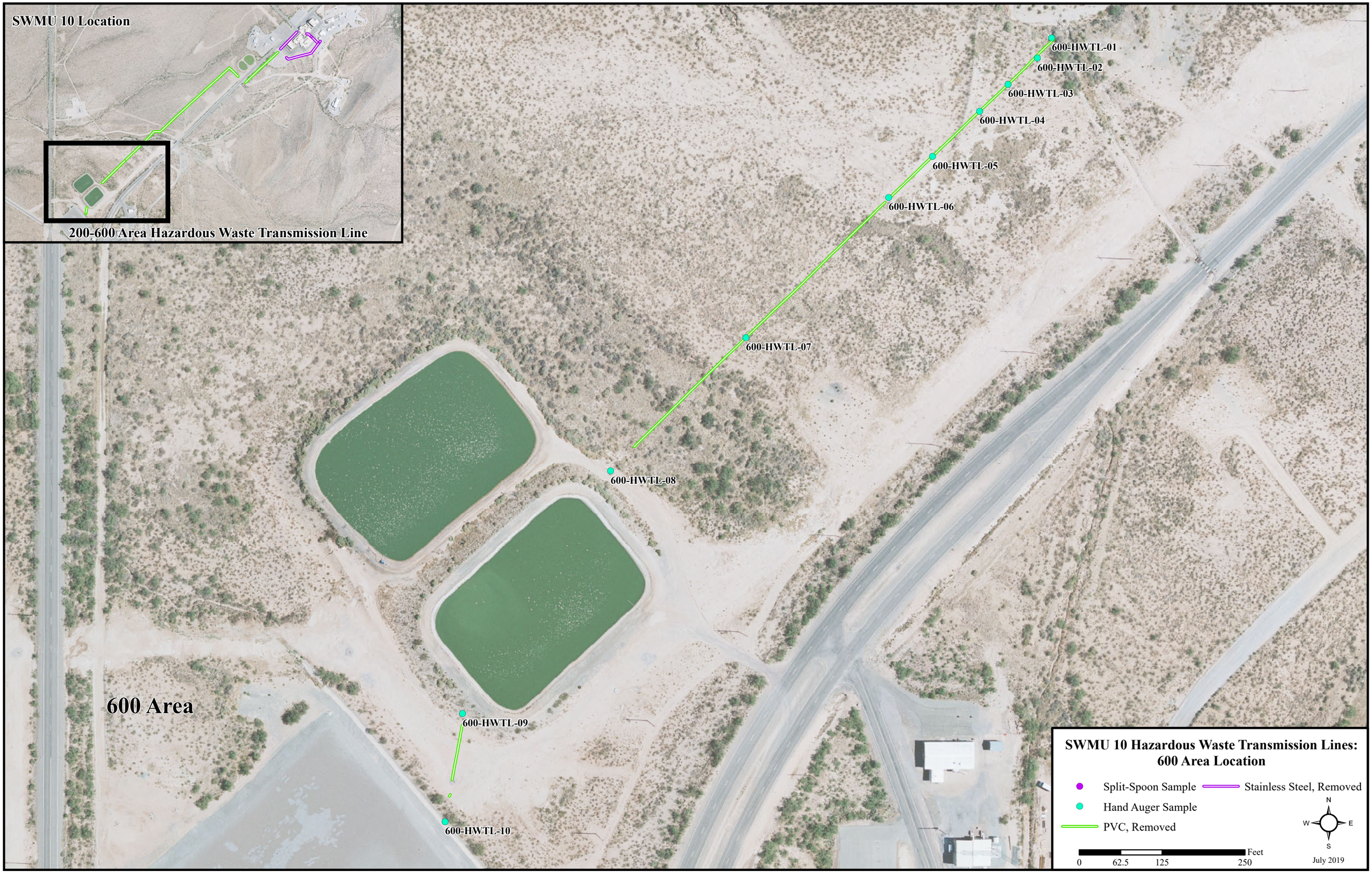

SWMU 10 Location
200-600 Area Hazardous Waste Transmission Line
600-HWTL-01
600-HWTL-02
600-HWTL-03
600-HWTL-04
600-HWTL-05
600-HWTL-06
600-HWTL-07
600-HWTL-08
600-HWTL-09
600-HWTL-10
600 Area
SWMU 10 Hazardous Waste Transmission Lines:
600 Area Location
Split-Spoon Sample
Hand Auger Sample
PVC, Removed
Stainless Steel, Removed
N
W
E
S
0
62.5
125
250
Feet
July 2019

Figure 6.4 SWMU 10 HWTLs 200 Industrial Area VOC Detections

(SEE NEXT PAGE)

200 Area

200-HWTL-04			
Depth	Analyte	Result	Flag
3.5	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0028	J
3.5	Tetrachloroethene (PCE)	0.0038	J
3.5	Trichloroethene (TCE)	0.0082	
4.5	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0023	J
4.5	Tetrachloroethene (PCE)	0.0036	J
4.5	Toluene	0.0035	J
4.5	Trichloroethene (TCE)	0.0055	J

200-HWTL-04.1			
Depth	Analyte	Result	Flag
3.5	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.00098	J
3.5	Cyclohexane	0.0024	J
3.5	Tetrachloroethene (PCE)	0.0008	J
3.5	Trichloroethene (TCE)	0.00035	J
4.5	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0014	J
4.5	Tetrachloroethene (PCE)	0.0013	J
4.5	Trichloroethene (TCE)	0.00053	J

200-HWTL-04.2			
Depth	Analyte	Result	Flag
4.5	2-Butanone (MEK)	0.0065	J
4.5	Acetone	0.032	J
4.5	Cyclohexane	0.0021	J

200-HWTL-05			
Depth	Analyte	Result	Flag
5	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0002	J
4	Cyclohexane	0.0016	J

200-HWTL-06			
Depth	Analyte	Result	Flag
13	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0006	J
13	2-Butanone (MEK)	0.0025	J
15	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0004	J

200-HWTL-07			
Depth	Analyte	Result	Flag
No Detections			

200-HWTL-08			
Depth	Analyte	Result	Flag
13	Carbon Disulfide	0.0007	J
13	Cyclohexane	0.0013	J

200-HWTL-09			
Depth	Analyte	Result	Flag
13	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0002	J
15	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0002	J

200-HWTL-10			
Depth	Analyte	Result	Flag
No Detections			

200-HWTL-11			
Depth	Analyte	Result	Flag
2.5	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.00059	J
2.5	Cyclohexane	0.00097	J

200-HWTL-12			
Depth	Analyte	Result	Flag
3.5	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0006	J
3.5	Cyclohexane	0.00077	J

200-HWTL-13			
Depth	Analyte	Result	Flag
No Detections			

200-HWTL-03			
Depth	Analyte	Result	Flag
2.5	Benzene	0.00037	J

200-HWTL-03.1			
Depth	Analyte	Result	Flag
2	Cyclohexane	0.0018	J

200-HWTL-02.2			
Depth	Analyte	Result	Flag
No Detections			

200-HWTL-02.1			
Depth	Analyte	Result	Flag
No Detections			

200-HWTL-02			
Depth	Analyte	Result	Flag
No Detections			

200-HWTL-01.2			
Depth	Analyte	Result	Flag
2.5	2-Butanone (MEK)	0.0038	J
2.5	Benzene	0.00028	J
2.5	Cyclohexane	0.0031	J

200-HWTL-01.3			
Depth	Analyte	Result	Flag
3.5	Cyclohexane	0.00056	J

200-HWTL-01.4			
Depth	Analyte	Result	Flag
No Detections			

200-HWTL-01.5			
Depth	Analyte	Result	Flag
No Detections			

200-HWTL-01.6			
Depth	Analyte	Result	Flag
No Detections			

200-HWTL-01.7			
Depth	Analyte	Result	Flag
2.5	Cyclohexane	0.00076	J

200-HWTL-01.8			
Depth	Analyte	Result	Flag
1.5	2-Butanone (MEK)	0.0037	J

200-HWTL-01.9			
Depth	Analyte	Result	Flag
No Detections			

200-HWTL-04
200-HWTL-04.1
200-HWTL-04.2
200-HWTL-05
200-HWTL-06
200-HWTL-07
200-HWTL-09
200-HWTL-08
200-HWTL-10
200-HWTL-11
200-HWTL-12
200-HWTL-13
200-HWTL-03.1
200-HWTL-03
200-HWTL-02.2
200-HWTL-02.1
200-HWTL-02
200-HWTL-01.2
200-HWTL-03
200-HWTL-01.3
200-HWTL-01.6
200-HWTL-01.4
200-HWTL-01.5
200-HWTL-01.7
200-HWTL-01.8
200-HWTL-01.9

Hazardous Waste Transmission Line
VOC Detections - 200 Industrial Area Location
2021 Resample

Split-Spoon Sample — PVC, Removed

Hand Auger Sample — Stainless Steel, Removed

Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft bgs
2. Results are in mg/kg.
3. See Table 6.8 for qualifer flag definitions.

0 50 100 200 Feet

N W E S

December 2023

Figure 6.5 SWMU 10 HWTLs 200 Area VOC Detections

(SEE NEXT PAGE)

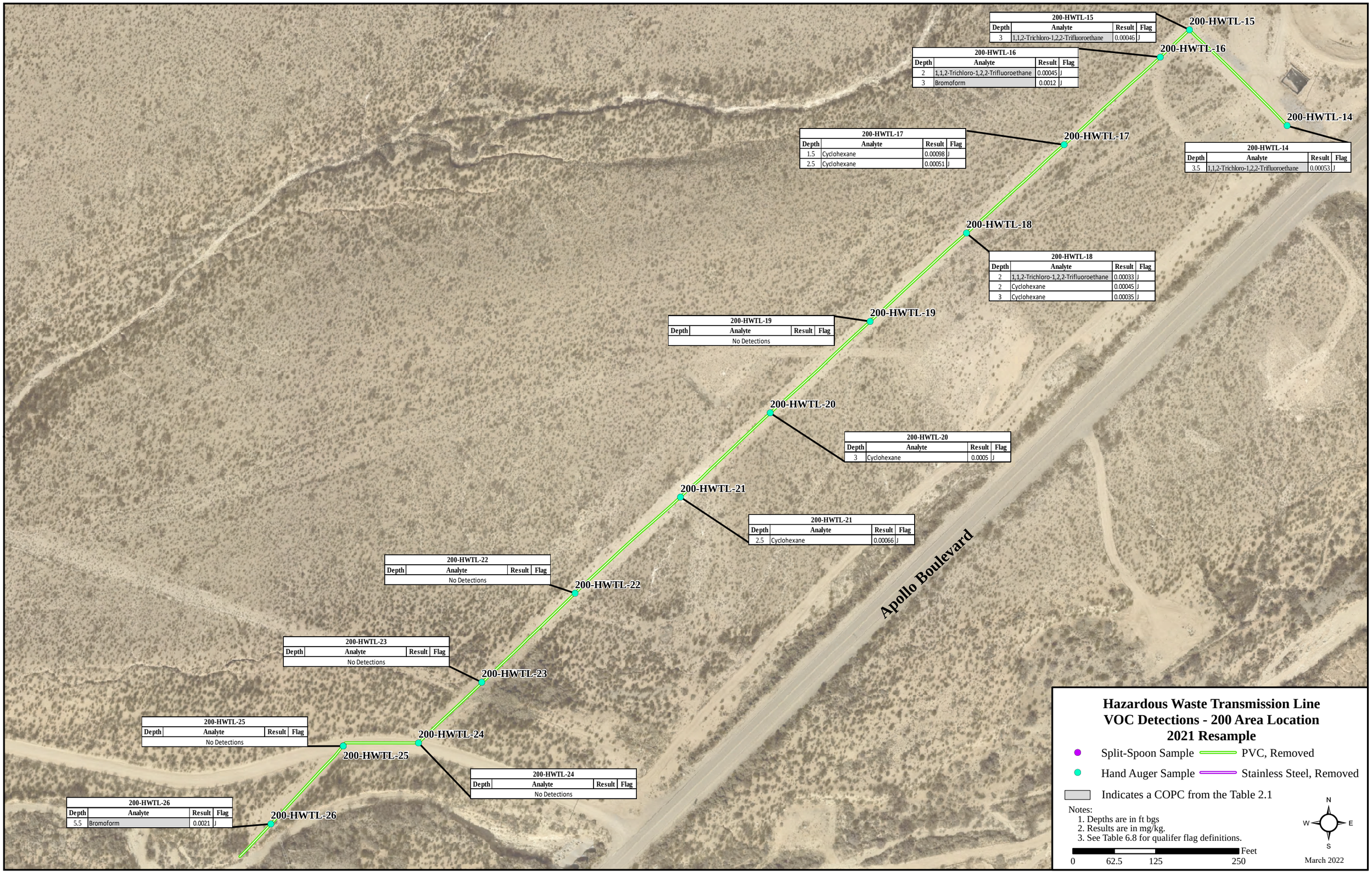

200-HWTL-15
Depth | Analyte | Result | Flag
3 | 1,1,2-Trichloro-1,2,2-Trifluoroethane | 0.00046 | J
200-HWTL-15
200-HWTL-16
Depth | Analyte | Result | Flag
2 | 1,1,2-Trichloro-1,2,2-Trifluoroethane | 0.00045 | J
3 | Bromoform | 0.0012 | J
200-HWTL-16
200-HWTL-14
200-HWTL-14
Depth | Analyte | Result | Flag
3.5 | 1,1,2-Trichloro-1,2,2-Trifluoroethane | 0.00053 | J
200-HWTL-17
Depth | Analyte | Result | Flag
1.5 | Cyclohexane | 0.00098 | J
2.5 | Cyclohexane | 0.00051 | J
200-HWTL-17
200-HWTL-18
200-HWTL-18
Depth | Analyte | Result | Flag
2 | 1,1,2-Trichloro-1,2,2-Trifluoroethane | 0.00033 | J
2 | Cyclohexane | 0.00045 | J
3 | Cyclohexane | 0.00035 | J
200-HWTL-19
Depth | Analyte | Result | Flag
No Detections
200-HWTL-19
200-HWTL-20
200-HWTL-20
Depth | Analyte | Result | Flag
3 | Cyclohexane | 0.0005 | J
200-HWTL-21
200-HWTL-21
Depth | Analyte | Result | Flag
2.5 | Cyclohexane | 0.00066 | J
200-HWTL-22
Depth | Analyte | Result | Flag
No Detections
200-HWTL-22
Apollo Boulevard
200-HWTL-23
Depth | Analyte | Result | Flag
No Detections
200-HWTL-23
200-HWTL-25
Depth | Analyte | Result | Flag
No Detections
200-HWTL-24
200-HWTL-25
200-HWTL-24
Depth | Analyte | Result | Flag
No Detections
200-HWTL-26
Depth | Analyte | Result | Flag
5.5 | Bromoform | 0.0021 | J
200-HWTL-26
Hazardous Waste Transmission Line
VOC Detections - 200 Area Location
2021 Resample
Split-Spoon Sample
PVC, Removed
Hand Auger Sample
Stainless Steel, Removed
Indicates a COPC from the Table 2.1
Notes:
1. Depths are in ft bgs
2. Results are in mg/kg.
3. See Table 6.8 for qualifer flag definitions.
N
W
E
S
Feet
0
62.5
125
250
March 2022

Figure 6.6 SWMU 10 HWTLs 600 Area VOC Detections

(SEE NEXT PAGE)

600-HWTL-02			
Depth	Analyte	Result	Flag
No Detections			

600-HWTL-01			
Depth	Analyte	Result	Flag
No Detections			

600-HWTL-03			
Depth	Analyte	Result	Flag
1.5	Cyclohexane	0.00068	J

600-HWTL-05			
Depth	Analyte	Result	Flag
No Detections			

600-HWTL-04			
Depth	Analyte	Result	Flag
No Detections			

600-HWTL-06			
Depth	Analyte	Result	Flag
No Detections			

600-HWTL-07			
Depth	Analyte	Result	Flag
2	Cyclohexane	0.00066	J
3	Cyclohexane	0.00052	J

600-HWTL-08			
Depth	Analyte	Result	Flag
2.5	Cyclohexane	0.00028	J

600-HWTL-09			
Depth	Analyte	Result	Flag
2.5	Cyclohexane	0.0014	J

600-HWTL-10			
Depth	Analyte	Result	Flag
No Detections			

600-HWTL-01
600-HWTL-02
600-HWTL-03
600-HWTL-04
600-HWTL-05
600-HWTL-06
600-HWTL-07
600-HWTL-08
600-HWTL-09
600-HWTL-10

Apollo Boulevard

Hazardous Waste Transmission Line VOC Detections - 600 Area Location 2021 Resample

Split-Spoon Sample
Hand Auger Sample
PVC, Removed
Stainless Steel, Removed
Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft bgs.
2. Results are in mg/kg.
3. See Table 6.8 for qualifer flag definitions.

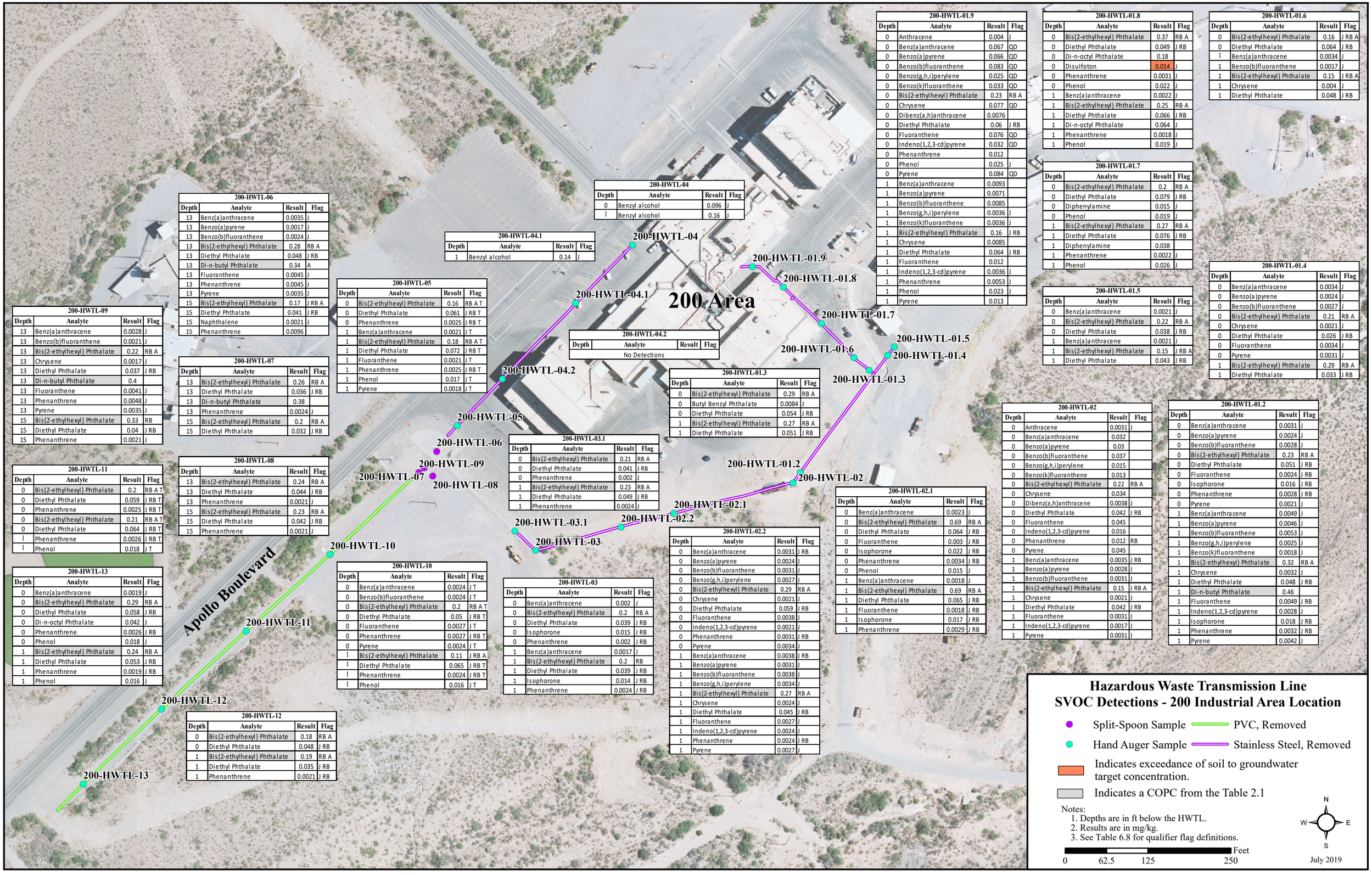
N
W E
S

0 62.5 125 250 Feet

March 2022

Figure 6.7 SWMU 10 HWTLs 200 Industrial Area SVOC Detections

(SEE NEXT PAGE)



200-HWTL-09

Depth	Analyte	Result	Flag
13	Benz(a)anthracene	0.0028	J
13	Benzo(b)fluoranthene	0.0021	J
13	Bis(2-ethylhexyl) Phthalate	0.22	RB A
13	Chrysene	0.0017	J
13	Diethyl Phthalate	0.037	J RB
13	Di-n-butyl Phthalate	0.4	
13	Fluoranthene	0.0041	J
13	Phenanthrene	0.0048	J
13	Pyrene	0.0035	J
15	Bis(2-ethylhexyl) Phthalate	0.33	RB
15	Diethyl Phthalate	0.04	J RB
15	Phenanthrene	0.0021	J

200-HWTL-06

Depth	Analyte	Result	Flag
13	Benz(a)anthracene	0.0035	J
13	Benzo(a)pyrene	0.0017	J
13	Benzo(b)fluoranthene	0.0024	J
13	Bis(2-ethylhexyl) Phthalate	0.28	RB A
13	Diethyl Phthalate	0.048	J RB
13	Di-n-butyl Phthalate	0.34	A
13	Fluoranthene	0.0045	J
13	Phenanthrene	0.0045	J
13	Pyrene	0.0035	J
15	Bis(2-ethylhexyl) Phthalate	0.17	J RB A
15	Diethyl Phthalate	0.041	J RB
15	Naphthalene	0.0021	J
15	Phenanthrene	0.0096	

200-HWTL-07

Depth	Analyte	Result	Flag
13	Bis(2-ethylhexyl) Phthalate	0.26	RB A
13	Diethyl Phthalate	0.036	J RB
13	Di-n-butyl Phthalate	0.38	
13	Phenanthrene	0.0024	J
15	Bis(2-ethylhexyl) Phthalate	0.2	RB A
15	Diethyl Phthalate	0.032	J RB

200-HWTL-08

Depth	Analyte	Result	Flag
13	Bis(2-ethylhexyl) Phthalate	0.24	RB A
13	Diethyl Phthalate	0.044	J RB
13	Phenanthrene	0.0021	J
15	Bis(2-ethylhexyl) Phthalate	0.23	RB A
15	Diethyl Phthalate	0.042	J RB
15	Phenanthrene	0.0021	J

200-HWTL-11

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.2	RB A T
0	Diethyl Phthalate	0.059	J RB T
0	Phenanthrene	0.0025	J RB T
0	Bis(2-ethylhexyl) Phthalate	0.21	RB A T
0	Diethyl Phthalate	0.064	J RB T
l	Phenanthrene	0.0026	J RB T
l	Phenol	0.018	J T

200-HWTL-13

Depth	Analyte	Result	Flag
0	Benz(a)anthracene	0.0019	J
0	Bis(2-ethylhexyl) Phthalate	0.29	RB A
0	Diethyl Phthalate	0.058	J RB
0	Di-n-octyl Phthalate	0.042	J
0	Phenanthrene	0.0026	J RB
0	Phenol	0.018	J
1	Bis(2-ethylhexyl) Phthalate	0.24	RB A
1	Diethyl Phthalate	0.053	J RB
1	Phenanthrene	0.0019	J RB
1	Phenol	0.016	J

200-HWTL-12

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.18	RB A
0	Diethyl Phthalate	0.048	J RB
1	Bis(2-ethylhexyl) Phthalate	0.19	RB A
1	Diethyl Phthalate	0.035	J RB
1	Phenanthrene	0.0021	J RB

200-HWTL-10

Depth	Analyte	Result	Flag
0	Benz(a)anthracene	0.0024	J T
0	Benzo(b)fluoranthene	0.0024	J T
0	Bis(2-ethylhexyl) Phthalate	0.2	RB A T
0	Diethyl Phthalate	0.05	J RB T
0	Fluoranthene	0.0027	J T
0	Phenanthrene	0.0027	J RB T
0	Pyrene	0.0024	J T
l	Bis(2-ethylhexyl) Phthalate	0.11	J RB A
l	Diethyl Phthalate	0.065	J RB T
l	Phenanthrene	0.0024	J RB T
l	Phenol	0.016	J T

200-HWTL-05

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.16	RB A T
0	Diethyl Phthalate	0.061	J RB T
0	Phenanthrene	0.0025	J RB T
1	Benz(a)anthracene	0.0021	J T
1	Bis(2-ethylhexyl) Phthalate	0.18	RB A T
1	Diethyl Phthalate	0.072	J RB T
1	Fluoranthene	0.0021	J T
1	Phenanthrene	0.0025	J RB T
1	Phenol	0.017	J T
1	Pyrene	0.0018	J T

200-HWTL-04.1

Depth	Analyte	Result	Flag
1	Benzyl alcohol	0.14	J

200-HWTL-04

Depth	Analyte	Result	Flag
0	Benzyl alcohol	0.096	J
l	Benzyl alcohol	0.16	J

200-HWTL-04.2

Depth	Analyte	Result	Flag
No Detections			

200-HWTL-03.1

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.21	RB A
0	Diethyl Phthalate	0.041	J RB
0	Phenanthrene	0.002	J
1	Bis(2-ethylhexyl) Phthalate	0.23	RB A
1	Diethyl Phthalate	0.049	J RB
1	Phenanthrene	0.0024	J

200-HWTL-03

Depth	Analyte	Result	Flag
0	Benz(a)anthracene	0.002	J
0	Bis(2-ethylhexyl) Phthalate	0.2	RB A
0	Diethyl Phthalate	0.039	J RB
0	Isophorone	0.015	J RB
0	Phenanthrene	0.002	J RB
1	Benz(a)anthracene	0.0017	J
1	Bis(2-ethylhexyl) Phthalate	0.2	RB
1	Diethyl Phthalate	0.039	J RB
1	Isophorone	0.014	J RB
1	Phenanthrene	0.0024	J RB

200-HWTL-01.3

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.29	RB A
0	Butyl Benzyl Phthalate	0.0084	J
0	Diethyl Phthalate	0.054	J RB
1	Bis(2-ethylhexyl) Phthalate	0.27	RB A
1	Diethyl Phthalate	0.051	J RB

200-HWTL-02.2

Depth	Analyte	Result	Flag
0	Benz(a)anthracene	0.0031	J RB
0	Benzo(a)pyrene	0.0024	J
0	Benzo(b)fluoranthene	0.0031	J
0	Benzo(g,h,i)perylene	0.0027	J
0	Bis(2-ethylhexyl) Phthalate	0.29	RB A
0	Chrysene	0.0021	J
0	Diethyl Phthalate	0.059	J RB
0	Fluoranthene	0.0038	J
0	Indeno(1,2,3-cd)pyrene	0.0021	J
0	Phenanthrene	0.0031	J RB
0	Pyrene	0.0034	J
1	Benz(a)anthracene	0.0038	J RB
1	Benzo(a)pyrene	0.0031	J
1	Benzo(b)fluoranthene	0.0038	J
1	Benzo(g,h,i)perylene	0.0034	J
1	Bis(2-ethylhexyl) Phthalate	0.27	RB A
1	Chrysene	0.0024	J
1	Diethyl Phthalate	0.045	J RB
1	Fluoranthene	0.0027	J
1	Indeno(1,2,3-cd)pyrene	0.0024	J
1	Phenanthrene	0.0024	J RB
1	Pyrene	0.0027	J

200-HWTL-02.1

Depth	Analyte	Result	Flag
0	Benz(a)anthracene	0.0023	J
0	Bis(2-ethylhexyl) Phthalate	0.69	RB A
0	Diethyl Phthalate	0.064	J RB
0	Fluoranthene	0.003	J RB
0	Isophorone	0.022	J RB
0	Phenanthrene	0.0034	J RB
0	Phenol	0.015	J
1	Benz(a)anthracene	0.0018	J
1	Bis(2-ethylhexyl) Phthalate	0.69	RB A
1	Diethyl Phthalate	0.065	J RB
1	Fluoranthene	0.0018	J RB
1	Isophorone	0.017	J RB
1	Phenanthrene	0.0029	J RB

200-HWTL-02

Depth	Analyte	Result	Flag
0	Anthracene	0.0031	J
0	Benz(a)anthracene	0.032	
0	Benzo(a)pyrene	0.03	
0	Benzo(b)fluoranthene	0.037	
0	Benzo(g,h,i)perylene	0.015	
0	Benzo(k)fluoranthene	0.013	
0	Bis(2-ethylhexyl) Phthalate	0.22	RB A
0	Chrysene	0.034	
0	Dibenz(a,h)anthracene	0.0038	J
0	Diethyl Phthalate	0.042	J RB
0	Fluoranthene	0.045	
0	Indeno(1,2,3-cd)pyrene	0.016	
0	Phenanthrene	0.012	RB
0	Pyrene	0.045	
1	Benz(a)anthracene	0.0035	J RB
1	Benzo(a)pyrene	0.0028	J
1	Benzo(b)fluoranthene	0.0031	J
1	Bis(2-ethylhexyl) Phthalate	0.15	J RB A
1	Chrysene	0.0021	J
1	Diethyl Phthalate	0.042	J RB
1	Fluoranthene	0.0031	J
1	Indeno(1,2,3-cd)pyrene	0.0017	J
1	Pyrene	0.0031	J

200-HWTL-01.9

Depth	Analyte	Result	Flag
0	Anthracene	0.004	J
0	Benz(a)anthracene	0.067	QD
0	Benzo(a)pyrene	0.066	QD
0	Benzo(b)fluoranthene	0.083	QD
0	Benzo(g,h,i)perylene	0.025	QD
0	Benzo(k)fluoranthene	0.033	QD
0	Bis(2-ethylhexyl) Phthalate	0.23	RB A
0	Chrysene	0.077	QD
0	Dibenz(a,h)anthracene	0.0076	
0	Diethyl Phthalate	0.06	J RB
0	Fluoranthene	0.076	QD
0	Indeno(1,2,3-cd)pyrene	0.032	QD
0	Phenanthrene	0.012	
0	Phenol	0.025	J
0	Pyrene	0.084	QD
1	Benz(a)anthracene	0.0093	
1	Benzo(a)pyrene	0.0071	
1	Benzo(b)fluoranthene	0.0085	
1	Benzo(g,h,i)perylene	0.0036	J
1	Benzo(k)fluoranthene	0.0036	J
1	Bis(2-ethylhexyl) Phthalate	0.16	J RB
1	Chrysene	0.0085	
1	Diethyl Phthalate	0.064	J RB
1	Fluoranthene	0.012	
1	Indeno(1,2,3-cd)pyrene	0.0036	J
1	Phenanthrene	0.0053	J
1	Phenol	0.023	J
1	Pyrene	0.013	

200-HWTL-01.8

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.37	RB A
0	Diethyl Phthalate	0.049	J RB
0	Di-n-octyl Phthalate	0.18	
0	Disulfoton	0.014	J
0	Phenanthrene	0.0031	J
0	Phenol	0.022	J
1	Benz(a)anthracene	0.0022	J
1	Bis(2-ethylhexyl) Phthalate	0.25	RB A
1	Diethyl Phthalate	0.066	J RB
1	Di-n-octyl Phthalate	0.064	J
1	Phenanthrene	0.0018	J
1	Phenol	0.019	J

200-HWTL-01.7

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.2	RB A
0	Diethyl Phthalate	0.079	J RB
0	Diphenylamine	0.015	J
0	Phenol	0.019	J
1	Bis(2-ethylhexyl) Phthalate	0.27	RB A
1	Diethyl Phthalate	0.076	J RB
1	Diphenylamine	0.038	
1	Phenanthrene	0.0022	J
1	Phenol	0.026	J

200-HWTL-01.5

Depth	Analyte	Result	Flag
0	Benz(a)anthracene	0.0021	J
0	Bis(2-ethylhexyl) Phthalate	0.22	RB A
0	Diethyl Phthalate	0.038	J RB
1	Benz(a)anthracene	0.0021	J
1	Bis(2-ethylhexyl) Phthalate	0.15	J RB A
1	Diethyl Phthalate	0.043	J RB

200-HWTL-01.6

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.16	J RB A
0	Diethyl Phthalate	0.064	J RB
l	Benz(a)anthracene	0.0034	J
1	Benzo(b)fluoranthene	0.0017	J
1	Bis(2-ethylhexyl) Phthalate	0.15	J RB A
1	Chrysene	0.004	J
1	Diethyl Phthalate	0.048	J RB

200-HWTL-01.4

Depth	Analyte	Result	Flag
0	Benz(a)anthracene	0.0034	J
0	Benzo(a)pyrene	0.0024	J
0	Benzo(b)fluoranthene	0.0027	J
0	Bis(2-ethylhexyl) Phthalate	0.21	RB A
0	Chrysene	0.0021	J
0	Diethyl Phthalate	0.026	J RB
0	Fluoranthene	0.0034	J
0	Pyrene	0.0031	J
1	Bis(2-ethylhexyl) Phthalate	0.29	RB A
1	Diethyl Phthalate	0.033	J RB

200-HWTL-01.2

Depth	Analyte	Result	Flag
0	Benz(a)anthracene	0.0031	J
0	Benzo(a)pyrene	0.0024	J
0	Benzo(b)fluoranthene	0.0028	J
0	Bis(2-ethylhexyl) Phthalate	0.23	RB A
0	Diethyl Phthalate	0.051	J RB
0	Fluoranthene	0.0024	J RB
0	Isophorone	0.016	J RB
0	Phenanthrene	0.0028	J RB
0	Pyrene	0.0021	J
1	Benz(a)anthracene	0.0049	J
1	Benzo(a)pyrene	0.0046	J
1	Benzo(b)fluoranthene	0.0053	J
1	Benzo(g,h,i)perylene	0.0025	J
1	Benzo(k)fluoranthene	0.0018	J
1	Bis(2-ethylhexyl) Phthalate	0.32	RB A
1	Chrysene	0.0032	J
1	Diethyl Phthalate	0.048	J RB
1	Di-n-butyl Phthalate	0.46	
1	Fluoranthene	0.0049	J RB
1	Indeno(1,2,3-cd)pyrene	0.0028	J
1	Isophorone	0.018	J RB
1	Phenanthrene	0.0032	J RB
1	Pyrene	0.0042	J

Hazardous Waste Transmission Line
SVOC Detections - 200 Industrial Area Location

Split-Spoon Sample — PVC, Removed

Hand Auger Sample — Stainless Steel, Removed

Indicates exceedance of soil to groundwater target concentration.

Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifier flag definitions.

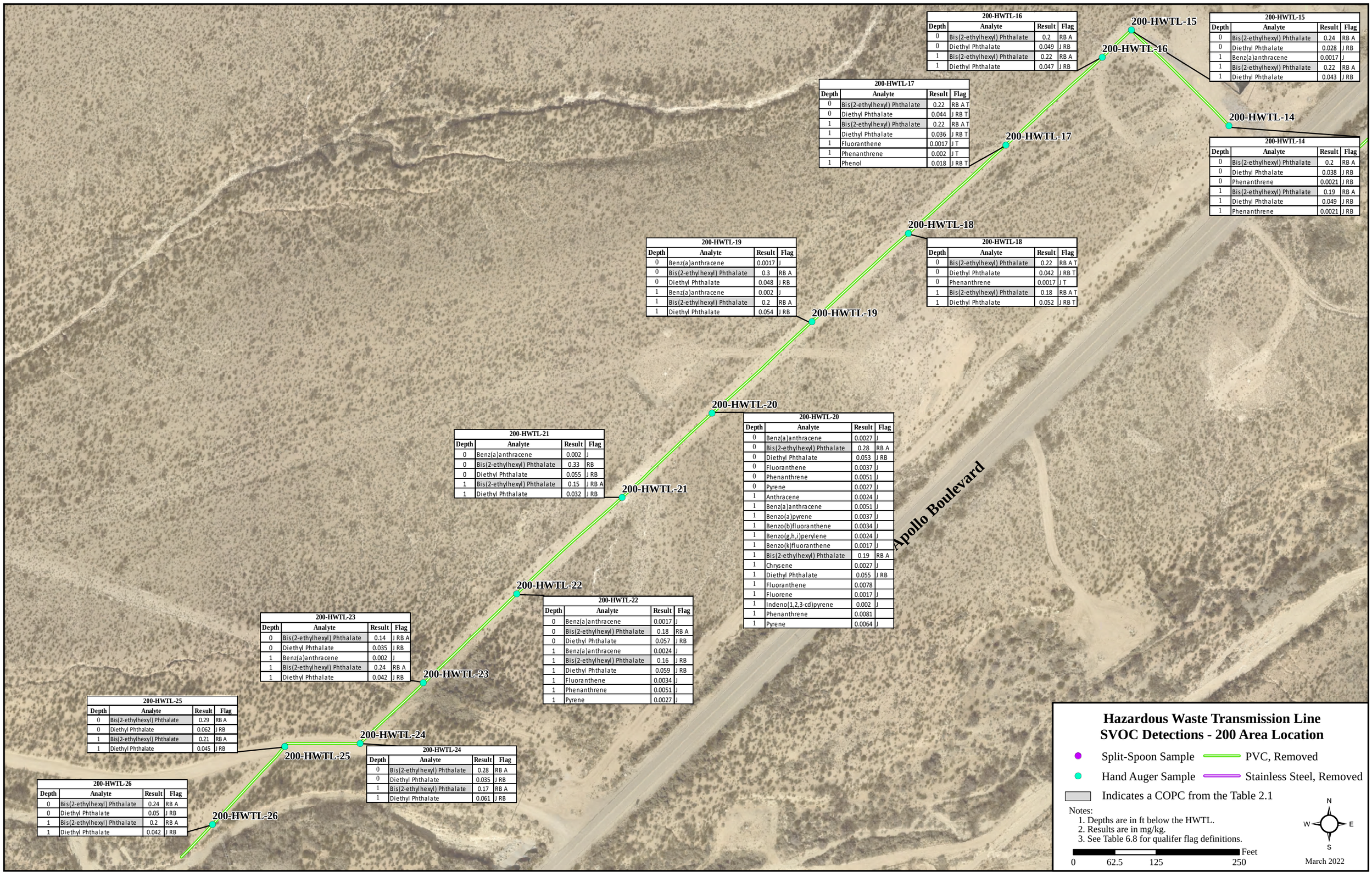
0 62.5 125 250 Feet

N W E S

July 2019

Figure 6.8 SWMU 10 HWTLs 200 Area SVOC Detections

(SEE NEXT PAGE)



200-HWTL-16

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.2	RB A
0	Diethyl Phthalate	0.049	J RB
1	Bis(2-ethylhexyl) Phthalate	0.22	RB A
1	Diethyl Phthalate	0.047	J RB

200-HWTL-15

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.24	RB A
0	Diethyl Phthalate	0.028	J RB
1	Benz(a)anthracene	0.0017	J
1	Bis(2-ethylhexyl) Phthalate	0.22	RB A
1	Diethyl Phthalate	0.043	J RB

200-HWTL-17

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.22	RB A T
0	Diethyl Phthalate	0.044	J RB T
1	Bis(2-ethylhexyl) Phthalate	0.22	RB A T
1	Diethyl Phthalate	0.036	J RB T
1	Fluoranthene	0.0017	J T
1	Phenanthrene	0.002	J T
1	Phenol	0.018	J RB T

200-HWTL-14

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.2	RB A
0	Diethyl Phthalate	0.038	J RB
0	Phenanthrene	0.0021	J RB
1	Bis(2-ethylhexyl) Phthalate	0.19	RB A
1	Diethyl Phthalate	0.049	J RB
1	Phenanthrene	0.0021	J RB

200-HWTL-19

Depth	Analyte	Result	Flag
0	Benz(a)anthracene	0.0017	J
0	Bis(2-ethylhexyl) Phthalate	0.3	RB A
0	Diethyl Phthalate	0.048	J RB
1	Benz(a)anthracene	0.002	J
1	Bis(2-ethylhexyl) Phthalate	0.2	RB A
1	Diethyl Phthalate	0.054	J RB

200-HWTL-18

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.22	RB A T
0	Diethyl Phthalate	0.042	J RB T
0	Phenanthrene	0.0017	J T
1	Bis(2-ethylhexyl) Phthalate	0.18	RB A T
1	Diethyl Phthalate	0.052	J RB T

200-HWTL-20

Depth	Analyte	Result	Flag
0	Benz(a)anthracene	0.0027	J
0	Bis(2-ethylhexyl) Phthalate	0.28	RB A
0	Diethyl Phthalate	0.053	J RB
0	Fluoranthene	0.0037	J
0	Phenanthrene	0.0051	J
0	Pyrene	0.0027	J
1	Anthracene	0.0024	J
1	Benz(a)anthracene	0.0051	J
1	Benzo(a)pyrene	0.0037	J
1	Benzo(b)fluoranthene	0.0034	J
1	Benzo(g,h,i)perylene	0.0024	J
1	Benzo(k)fluoranthene	0.0017	J
1	Bis(2-ethylhexyl) Phthalate	0.19	RB A
1	Chrysene	0.0027	J
1	Diethyl Phthalate	0.055	J RB
1	Fluoranthene	0.0078	
1	Fluorene	0.0017	J
1	Indeno(1,2,3-cd)pyrene	0.002	J
1	Phenanthrene	0.0081	
1	Pyrene	0.0064	J

200-HWTL-21

Depth	Analyte	Result	Flag
0	Benz(a)anthracene	0.002	J
0	Bis(2-ethylhexyl) Phthalate	0.33	RB
0	Diethyl Phthalate	0.055	J RB
1	Bis(2-ethylhexyl) Phthalate	0.15	J RB A
1	Diethyl Phthalate	0.032	J RB

200-HWTL-22

Depth	Analyte	Result	Flag
0	Benz(a)anthracene	0.0017	J
0	Bis(2-ethylhexyl) Phthalate	0.18	RB A
0	Diethyl Phthalate	0.057	J RB
1	Benz(a)anthracene	0.0024	J
1	Bis(2-ethylhexyl) Phthalate	0.16	J RB
1	Diethyl Phthalate	0.059	J RB
1	Fluoranthene	0.0034	J
1	Phenanthrene	0.0051	J
1	Pyrene	0.0027	J

200-HWTL-23

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.14	J RB A
0	Diethyl Phthalate	0.035	J RB
1	Benz(a)anthracene	0.002	J
1	Bis(2-ethylhexyl) Phthalate	0.24	RB A
1	Diethyl Phthalate	0.042	J RB

200-HWTL-24

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.28	RB A
0	Diethyl Phthalate	0.035	J RB
1	Bis(2-ethylhexyl) Phthalate	0.17	RB A
1	Diethyl Phthalate	0.061	J RB

200-HWTL-25

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.29	RB A
0	Diethyl Phthalate	0.062	J RB
1	Bis(2-ethylhexyl) Phthalate	0.21	RB A
1	Diethyl Phthalate	0.045	J RB

200-HWTL-26

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.24	RB A
0	Diethyl Phthalate	0.05	J RB
1	Bis(2-ethylhexyl) Phthalate	0.2	RB A
1	Diethyl Phthalate	0.042	J RB

Hazardous Waste Transmission Line
SVOC Detections - 200 Area Location

Split-Spoon Sample — PVC, Removed

Hand Auger Sample — Stainless Steel, Removed

Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifer flag definitions.

0 62.5 125 250 Feet

N W E S

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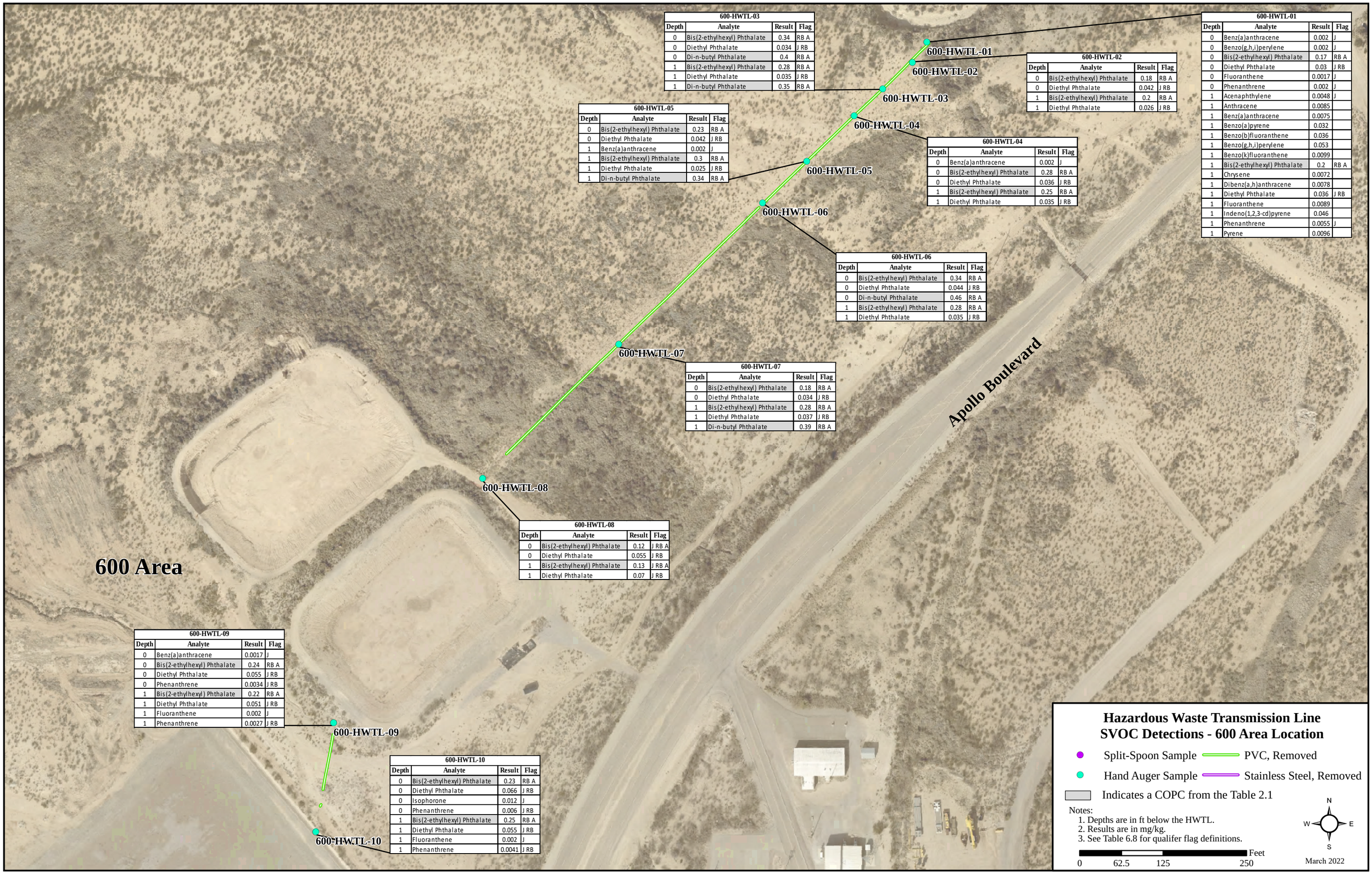
Figure 6.9 SWMU 10 HWTLs 600 Area SVOC Detections

(SEE NEXT PAGE)



600-HWTL-03

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.34	RB A
0	Diethyl Phthalate	0.034	J RB
0	Di-n-butyl Phthalate	0.4	RB A
1	Bis(2-ethylhexyl) Phthalate	0.28	RB A
1	Diethyl Phthalate	0.035	J RB
1	Di-n-butyl Phthalate	0.35	RB A

600-HWTL-01

Depth	Analyte	Result	Flag
0	Benz(a)anthracene	0.002	J
0	Benzo(g,h,i)perylene	0.002	J
0	Bis(2-ethylhexyl) Phthalate	0.17	RB A
0	Diethyl Phthalate	0.03	J RB
0	Fluoranthene	0.0017	J
0	Phenanthrene	0.002	J
1	Acenaphthylene	0.0048	J
1	Anthracene	0.0085	
1	Benz(a)anthracene	0.0075	
1	Benzo(a)pyrene	0.032	
1	Benzo(b)fluoranthene	0.036	
1	Benzo(g,h,i)perylene	0.053	
1	Benzo(k)fluoranthene	0.0099	
1	Bis(2-ethylhexyl) Phthalate	0.2	RB A
1	Chrysene	0.0072	
1	Dibenz(a,h)anthracene	0.0078	
1	Diethyl Phthalate	0.036	J RB
1	Fluoranthene	0.0089	
1	Indeno(1,2,3-cd)pyrene	0.046	
1	Phenanthrene	0.0055	J
1	Pyrene	0.0096	

600-HWTL-02

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.18	RB A
0	Diethyl Phthalate	0.042	J RB
1	Bis(2-ethylhexyl) Phthalate	0.2	RB A
1	Diethyl Phthalate	0.026	J RB

600-HWTL-05

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.23	RB A
0	Diethyl Phthalate	0.042	J RB
1	Benz(a)anthracene	0.002	J
1	Bis(2-ethylhexyl) Phthalate	0.3	RB A
1	Diethyl Phthalate	0.025	J RB
1	Di-n-butyl Phthalate	0.34	RB A

600-HWTL-04

Depth	Analyte	Result	Flag
0	Benz(a)anthracene	0.002	J
0	Bis(2-ethylhexyl) Phthalate	0.28	RB A
0	Diethyl Phthalate	0.036	J RB
1	Bis(2-ethylhexyl) Phthalate	0.25	RB A
1	Diethyl Phthalate	0.035	J RB

600-HWTL-06

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.34	RB A
0	Diethyl Phthalate	0.044	J RB
0	Di-n-butyl Phthalate	0.46	RB A
1	Bis(2-ethylhexyl) Phthalate	0.28	RB A
1	Diethyl Phthalate	0.035	J RB

600-HWTL-07

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.18	RB A
0	Diethyl Phthalate	0.034	J RB
1	Bis(2-ethylhexyl) Phthalate	0.28	RB A
1	Diethyl Phthalate	0.037	J RB
1	Di-n-butyl Phthalate	0.39	RB A

600-HWTL-08

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.12	J RB A
0	Diethyl Phthalate	0.055	J RB
1	Bis(2-ethylhexyl) Phthalate	0.13	J RB A
1	Diethyl Phthalate	0.07	J RB

600-HWTL-09

Depth	Analyte	Result	Flag
0	Benz(a)anthracene	0.0017	J
0	Bis(2-ethylhexyl) Phthalate	0.24	RB A
0	Diethyl Phthalate	0.055	J RB
0	Phenanthrene	0.0034	J RB
1	Bis(2-ethylhexyl) Phthalate	0.22	RB A
1	Diethyl Phthalate	0.051	J RB
1	Fluoranthene	0.002	J
1	Phenanthrene	0.0027	J RB

600-HWTL-10

Depth	Analyte	Result	Flag
0	Bis(2-ethylhexyl) Phthalate	0.23	RB A
0	Diethyl Phthalate	0.066	J RB
0	Isophorone	0.012	J
0	Phenanthrene	0.006	J RB
1	Bis(2-ethylhexyl) Phthalate	0.25	RB A
1	Diethyl Phthalate	0.055	J RB
1	Fluoranthene	0.002	J
1	Phenanthrene	0.0041	J RB

Hazardous Waste Transmission Line
SVOC Detections - 600 Area Location

Split-Spoon Sample — PVC, Removed

Hand Auger Sample — Stainless Steel, Removed

Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifer flag definitions.

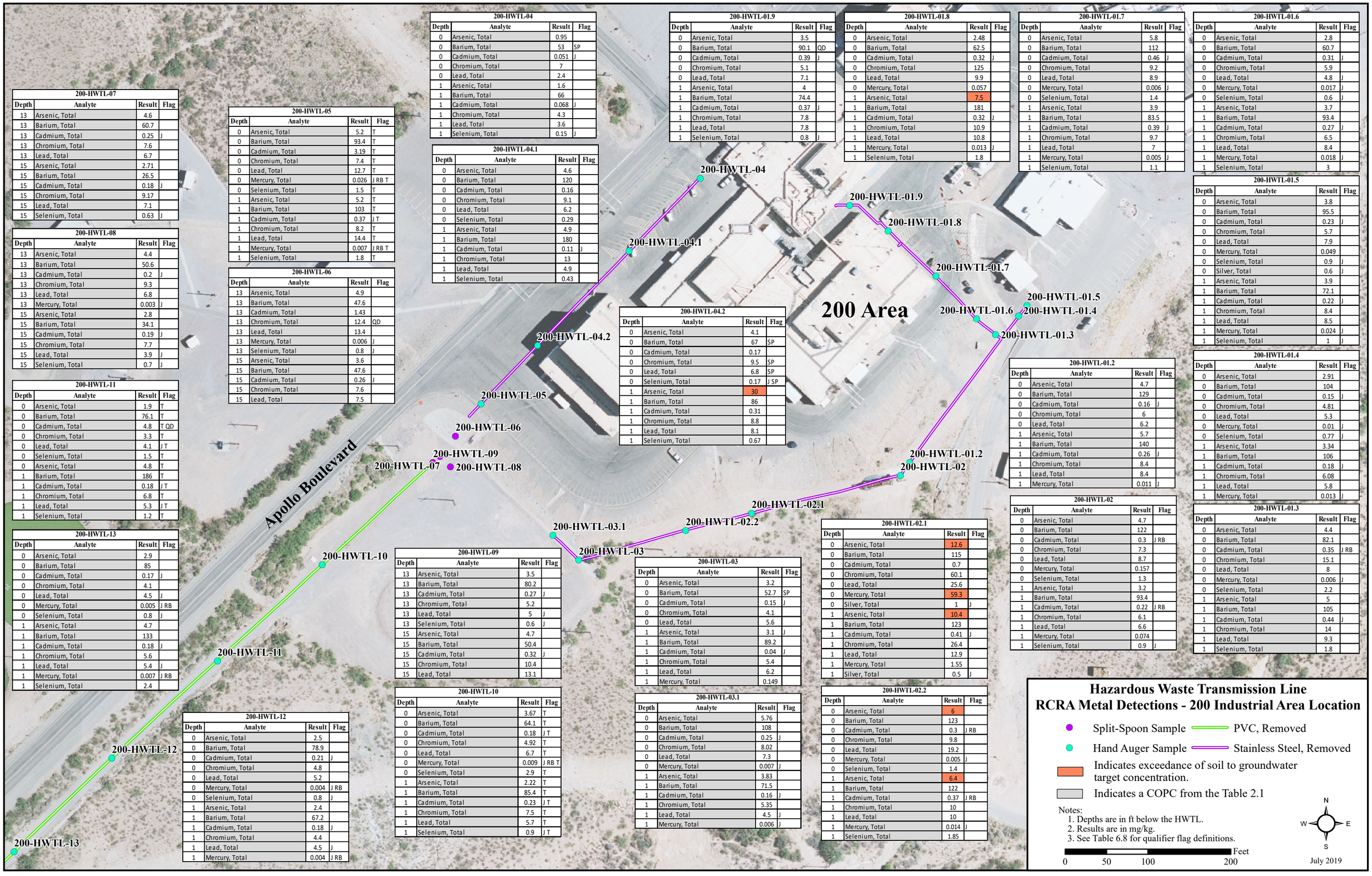
N W E S

0 62.5 125 250 Feet

March 2022

Figure 6.10 SWMU 10 HWTLs 200 Industrial Area RCRA Detections

(SEE NEXT PAGE)



200-HWTL-07

Depth	Analyte	Result	Flag
13	Arsenic, Total	4.6	
13	Barium, Total	60.7	
13	Cadmium, Total	0.25	J
13	Chromium, Total	7.6	
13	Lead, Total	6.7	
15	Arsenic, Total	2.71	
15	Barium, Total	26.5	
15	Cadmium, Total	0.18	J
15	Chromium, Total	9.17	
15	Lead, Total	7.1	
15	Selenium, Total	0.63	J

200-HWTL-08

Depth	Analyte	Result	Flag
13	Arsenic, Total	4.4	
13	Barium, Total	50.6	
13	Cadmium, Total	0.2	J
13	Chromium, Total	9.3	
13	Lead, Total	6.8	
13	Mercury, Total	0.003	J
15	Arsenic, Total	2.8	
15	Barium, Total	34.1	
15	Cadmium, Total	0.19	J
15	Chromium, Total	7.7	
15	Lead, Total	3.9	J
15	Selenium, Total	0.7	J

200-HWTL-11

Depth	Analyte	Result	Flag
0	Arsenic, Total	1.9	T
0	Barium, Total	76.1	T
0	Cadmium, Total	4.8	T QD
0	Chromium, Total	3.3	T
0	Lead, Total	4.1	J T
0	Selenium, Total	1.5	T
0	Arsenic, Total	4.8	T
1	Barium, Total	186	T
1	Cadmium, Total	0.18	J T
1	Chromium, Total	6.8	T
1	Lead, Total	5.3	J T
1	Selenium, Total	1.2	T

200-HWTL-13

Depth	Analyte	Result	Flag
0	Arsenic, Total	2.9	
0	Barium, Total	85	
0	Cadmium, Total	0.17	J
0	Chromium, Total	4.1	
0	Lead, Total	4.5	J
0	Mercury, Total	0.005	J RB
0	Selenium, Total	0.8	J
1	Arsenic, Total	4.7	
1	Barium, Total	133	
1	Cadmium, Total	0.18	J
1	Chromium, Total	5.6	
1	Lead, Total	5.4	J
1	Mercury, Total	0.007	J RB
1	Selenium, Total	2.4	

200-HWTL-05

Depth	Analyte	Result	Flag
0	Arsenic, Total	5.2	T
0	Barium, Total	93.4	T
0	Cadmium, Total	3.19	T
0	Chromium, Total	7.4	T
0	Lead, Total	12.7	T
0	Mercury, Total	0.026	J RB T
0	Selenium, Total	1.5	T
1	Arsenic, Total	5.2	T
1	Barium, Total	103	T
1	Cadmium, Total	0.37	J T
1	Chromium, Total	8.2	T
1	Lead, Total	14.4	T
1	Mercury, Total	0.007	J RB T
1	Selenium, Total	1.8	T

200-HWTL-06

Depth	Analyte	Result	Flag
13	Arsenic, Total	4.9	
13	Barium, Total	47.6	
13	Cadmium, Total	1.43	
13	Chromium, Total	12.4	QD
13	Lead, Total	13.4	
13	Mercury, Total	0.006	J
13	Selenium, Total	0.8	J
15	Arsenic, Total	3.6	
15	Barium, Total	47.6	
15	Cadmium, Total	0.26	J
15	Chromium, Total	7.6	
15	Lead, Total	7.5	

200-HWTL-12

Depth	Analyte	Result	Flag
0	Arsenic, Total	2.5	
0	Barium, Total	78.9	
0	Cadmium, Total	0.21	J
0	Chromium, Total	4.8	
0	Lead, Total	5.2	
0	Mercury, Total	0.004	J RB
0	Selenium, Total	0.8	J
1	Arsenic, Total	2.4	
1	Barium, Total	67.2	
1	Cadmium, Total	0.18	J
1	Chromium, Total	4.4	
1	Lead, Total	4.5	J
1	Mercury, Total	0.004	J RB

200-HWTL-04

Depth	Analyte	Result	Flag
0	Arsenic, Total	0.95	
0	Barium, Total	53	SP
0	Cadmium, Total	0.051	J
0	Chromium, Total	7	
0	Lead, Total	2.4	
1	Arsenic, Total	1.6	
1	Barium, Total	66	
1	Cadmium, Total	0.068	J
1	Chromium, Total	4.3	
1	Lead, Total	3.6	
1	Selenium, Total	0.15	J

200-HWTL-04.1

Depth	Analyte	Result	Flag
0	Arsenic, Total	4.6	
0	Barium, Total	120	
0	Cadmium, Total	0.16	
0	Chromium, Total	9.1	
0	Lead, Total	6.2	
0	Selenium, Total	0.29	
1	Arsenic, Total	4.9	
1	Barium, Total	180	
1	Cadmium, Total	0.11	J
1	Chromium, Total	13	
1	Lead, Total	4.9	
1	Selenium, Total	0.43	

200-HWTL-04.2

Depth	Analyte	Result	Flag
0	Arsenic, Total	4.1	
0	Barium, Total	67	SP
0	Cadmium, Total	0.17	
0	Chromium, Total	9.5	SP
0	Lead, Total	6.8	SP
0	Selenium, Total	0.17	J SP
1	Arsenic, Total	30	
1	Barium, Total	86	
1	Cadmium, Total	0.31	
1	Chromium, Total	8.8	
1	Lead, Total	8.1	
1	Selenium, Total	0.67	

200-HWTL-09

Depth	Analyte	Result	Flag
13	Arsenic, Total	3.5	
13	Barium, Total	80.2	
13	Cadmium, Total	0.27	J
13	Chromium, Total	5.2	
13	Lead, Total	5	J
13	Selenium, Total	0.6	J
15	Arsenic, Total	4.7	
15	Barium, Total	50.4	
15	Cadmium, Total	0.32	J
15	Chromium, Total	10.4	
15	Lead, Total	13.1	

200-HWTL-10

Depth	Analyte	Result	Flag
0	Arsenic, Total	3.67	T
0	Barium, Total	64.1	T
0	Cadmium, Total	0.18	J T
0	Chromium, Total	4.92	T
0	Lead, Total	6.7	T
0	Mercury, Total	0.009	J RB T
0	Selenium, Total	2.9	T
1	Arsenic, Total	2.22	T
1	Barium, Total	85.4	T
1	Cadmium, Total	0.23	J T
1	Chromium, Total	7.5	T
1	Lead, Total	5.7	T
1	Selenium, Total	0.9	J T

200-HWTL-03

Depth	Analyte	Result	Flag
0	Arsenic, Total	3.2	
0	Barium, Total	52.7	SP
0	Cadmium, Total	0.15	J
0	Chromium, Total	4.1	
0	Lead, Total	5.6	
1	Arsenic, Total	3.1	J
1	Barium, Total	89.2	
1	Cadmium, Total	0.04	J
1	Chromium, Total	5.4	
1	Lead, Total	6.2	
1	Mercury, Total	0.149	

200-HWTL-03.1

Depth	Analyte	Result	Flag
0	Arsenic, Total	5.76	
0	Barium, Total	108	
0	Cadmium, Total	0.25	J
0	Chromium, Total	8.02	
0	Lead, Total	7.3	
0	Mercury, Total	0.007	J
1	Arsenic, Total	3.83	
1	Barium, Total	71.5	
1	Cadmium, Total	0.16	J
1	Chromium, Total	5.35	
1	Lead, Total	4.5	J
1	Mercury, Total	0.006	J

200-HWTL-02.1

Depth	Analyte	Result	Flag
0	Arsenic, Total	12.6	
0	Barium, Total	115	
0	Cadmium, Total	0.7	
0	Chromium, Total	60.1	
0	Lead, Total	25.6	
0	Mercury, Total	59.3	
0	Silver, Total	1	J
1	Arsenic, Total	10.4	
1	Barium, Total	123	
1	Cadmium, Total	0.41	J
1	Chromium, Total	26.4	
1	Lead, Total	12.9	
1	Mercury, Total	1.55	
1	Silver, Total	0.5	J

200-HWTL-02.2

Depth	Analyte	Result	Flag
0	Arsenic, Total	6	
0	Barium, Total	123	
0	Cadmium, Total	0.3	J RB
0	Chromium, Total	9.8	
0	Lead, Total	19.2	
0	Mercury, Total	0.005	J
0	Selenium, Total	1.4	
1	Arsenic, Total	6.4	
1	Barium, Total	122	
1	Cadmium, Total	0.37	J RB
1	Chromium, Total	10	
1	Lead, Total	10	
1	Mercury, Total	0.014	J
1	Selenium, Total	1.85	

200-HWTL-01.9

Depth	Analyte	Result	Flag
0	Arsenic, Total	3.5	
0	Barium, Total	90.1	QD
0	Cadmium, Total	0.39	J
0	Chromium, Total	5.1	
0	Lead, Total	7.1	
1	Arsenic, Total	4	
1	Barium, Total	74.4	
1	Cadmium, Total	0.37	J
1	Chromium, Total	7.8	
1	Lead, Total	7.8	
1	Selenium, Total	0.8	J

200-HWTL-01.8

Depth	Analyte	Result	Flag
0	Arsenic, Total	2.48	
0	Barium, Total	62.5	
0	Cadmium, Total	0.32	J
0	Chromium, Total	125	
0	Lead, Total	9.9	
0	Mercury, Total	0.057	
1	Arsenic, Total	7.5	
1	Barium, Total	181	
1	Cadmium, Total	0.32	J
1	Chromium, Total	10.9	
1	Lead, Total	10.8	
1	Mercury, Total	0.013	J
1	Selenium, Total	1.8	

200-HWTL-01.7

Depth	Analyte	Result	Flag
0	Arsenic, Total	5.8	
0	Barium, Total	112	
0	Cadmium, Total	0.46	J
0	Chromium, Total	9.2	
0	Lead, Total	8.9	
0	Mercury, Total	0.006	J
0	Selenium, Total	1.4	
1	Arsenic, Total	3.9	
1	Barium, Total	83.5	
1	Cadmium, Total	0.39	J
1	Chromium, Total	9.7	
1	Lead, Total	7	
1	Mercury, Total	0.005	J
1	Selenium, Total	1.1	

200-HWTL-01.2

Depth	Analyte	Result	Flag
0	Arsenic, Total	4.7	
0	Barium, Total	129	
0	Cadmium, Total	0.16	J
0	Chromium, Total	6	
0	Lead, Total	6.2	
1	Arsenic, Total	5.7	
1	Barium, Total	140	
1	Cadmium, Total	0.26	J
1	Chromium, Total	8.4	
1	Lead, Total	8.4	
1	Mercury, Total	0.011	J

200-HWTL-02

Depth	Analyte	Result	Flag
0	Arsenic, Total	4.7	
0	Barium, Total	122	
0	Cadmium, Total	0.3	J RB
0	Chromium, Total	7.3	
0	Lead, Total	8.7	
0	Mercury, Total	0.157	
0	Selenium, Total	1.3	
1	Arsenic, Total	3.2	
1	Barium, Total	93.4	
1	Cadmium, Total	0.22	J RB
1	Chromium, Total	6.1	
1	Lead, Total	6.6	
1	Mercury, Total	0.074	
1	Selenium, Total	0.9	J

200-HWTL-01.6

Depth	Analyte	Result	Flag
0	Arsenic, Total	2.8	
0	Barium, Total	60.7	
0	Cadmium, Total	0.31	J
0	Chromium, Total	5.9	
0	Lead, Total	4.8	J
0	Mercury, Total	0.017	J
0	Selenium, Total	0.6	J
1	Arsenic, Total	3.7	
1	Barium, Total	93.4	
1	Cadmium, Total	0.27	J
1	Chromium, Total	6.5	
1	Lead, Total	8.4	
1	Mercury, Total	0.018	J
1	Selenium, Total	3	

200-HWTL-01.5

Depth	Analyte	Result	Flag
0	Arsenic, Total	3.8	
0	Barium, Total	95.5	
0	Cadmium, Total	0.23	J
0	Chromium, Total	5.7	
0	Lead, Total	7.9	
0	Mercury, Total	0.049	
0	Selenium, Total	0.9	J
0	Silver, Total	0.6	J
1	Arsenic, Total	3.9	
1	Barium, Total	72.1	
1	Cadmium, Total	0.22	J
1	Chromium, Total	8.4	
1	Lead, Total	8.5	
1	Mercury, Total	0.024	J
1	Selenium, Total	1	J

200-HWTL-01.4

Depth	Analyte	Result	Flag
0	Arsenic, Total	2.91	
0	Barium, Total	104	
0	Cadmium, Total	0.15	J
0	Chromium, Total	4.81	
0	Lead, Total	5.3	
0	Mercury, Total	0.01	J
0	Selenium, Total	0.77	J
1	Arsenic, Total	3.34	
1	Barium, Total	106	
1	Cadmium, Total	0.18	J
1	Chromium, Total	6.08	
1	Lead, Total	5.8	
1	Mercury, Total	0.013	J

200-HWTL-01.3

Depth	Analyte	Result	Flag
0	Arsenic, Total	4.4	
0	Barium, Total	82.1	
0	Cadmium, Total	0.35	J RB
0	Chromium, Total	15.1	
0	Lead, Total	8	
0	Mercury, Total	0.006	J
0	Selenium, Total	2.2	
1	Arsenic, Total	5	
1	Barium, Total	105	
1	Cadmium, Total	0.44	J
1	Chromium, Total	14	
1	Lead, Total	9.3	
1	Selenium, Total	1.8	

Hazardous Waste Transmission Line
RCRA Metal Detections - 200 Industrial Area Location

Split-Spoon Sample — PVC, Removed

Hand Auger Sample — Stainless Steel, Removed

Indicates exceedance of soil to groundwater target concentration.

Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifier flag definitions.

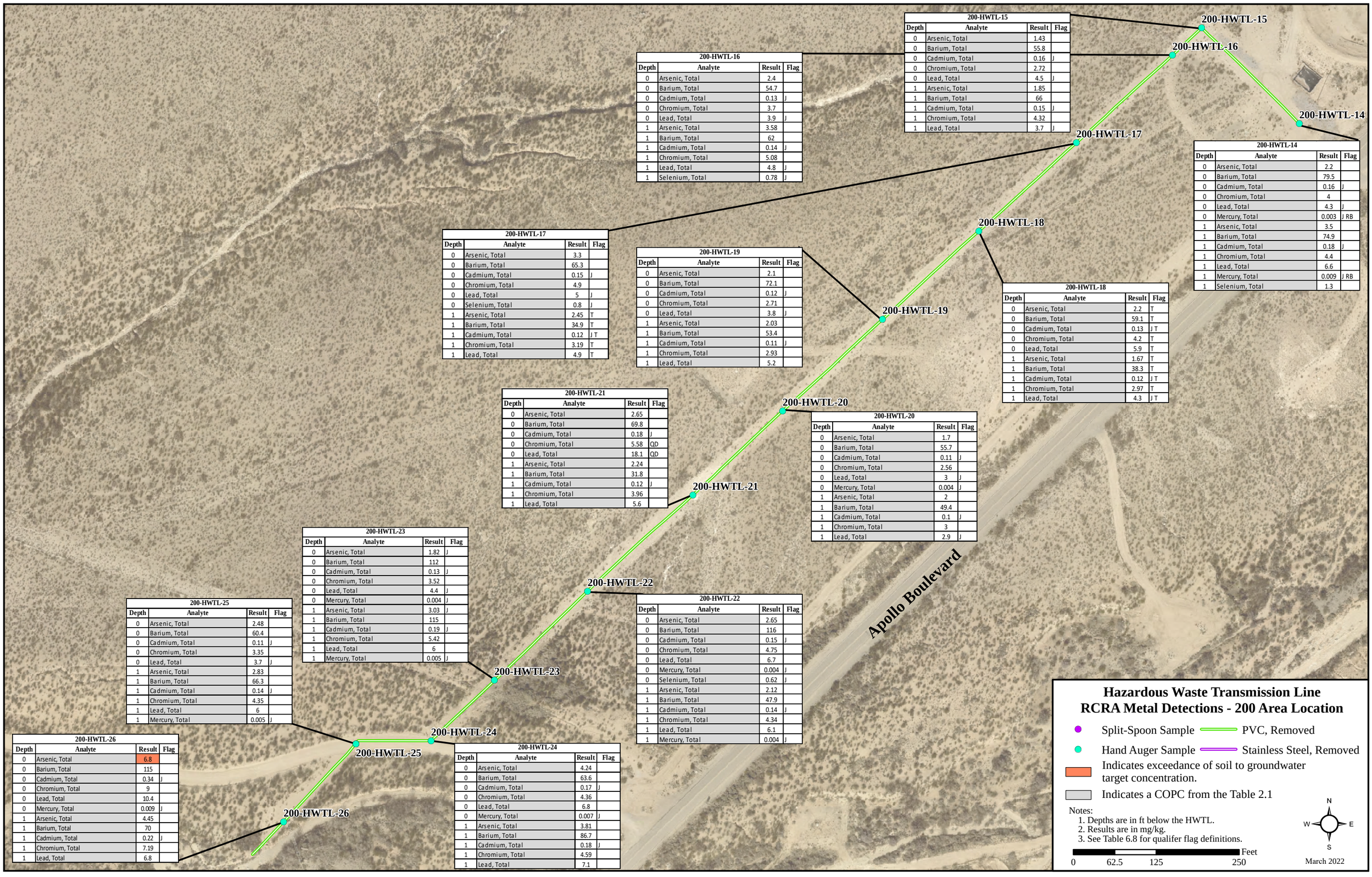
0 50 100 200 Feet

N W E S

July 2019

Figure 6.11 SWMU 10 HWTLs 200 Area RCRA Detections

(SEE NEXT PAGE)



200-HWTL-15

Depth	Analyte	Result	Flag
0	Arsenic, Total	1.43	
0	Barium, Total	55.8	
0	Cadmium, Total	0.16	J
0	Chromium, Total	2.72	
0	Lead, Total	4.5	J
1	Arsenic, Total	1.85	
1	Barium, Total	66	
1	Cadmium, Total	0.15	J
1	Chromium, Total	4.32	
1	Lead, Total	3.7	J

200-HWTL-16

Depth	Analyte	Result	Flag
0	Arsenic, Total	2.4	
0	Barium, Total	54.7	
0	Cadmium, Total	0.13	J
0	Chromium, Total	3.7	
0	Lead, Total	3.9	J
1	Arsenic, Total	3.58	
1	Barium, Total	62	
1	Cadmium, Total	0.14	J
1	Chromium, Total	5.08	
1	Lead, Total	4.8	J
1	Selenium, Total	0.78	J

200-HWTL-14

Depth	Analyte	Result	Flag
0	Arsenic, Total	2.2	
0	Barium, Total	79.5	
0	Cadmium, Total	0.16	J
0	Chromium, Total	4	
0	Lead, Total	4.3	J
0	Mercury, Total	0.003	J RB
1	Arsenic, Total	3.5	
1	Barium, Total	74.9	
1	Cadmium, Total	0.18	J
1	Chromium, Total	4.4	
1	Lead, Total	6.6	
1	Mercury, Total	0.009	J RB
1	Selenium, Total	1.3	

200-HWTL-17

Depth	Analyte	Result	Flag
0	Arsenic, Total	3.3	
0	Barium, Total	65.3	
0	Cadmium, Total	0.15	J
0	Chromium, Total	4.9	
0	Lead, Total	5	J
0	Selenium, Total	0.8	J
1	Arsenic, Total	2.45	T
1	Barium, Total	34.9	T
1	Cadmium, Total	0.12	J T
1	Chromium, Total	3.19	T
1	Lead, Total	4.9	T

200-HWTL-19

Depth	Analyte	Result	Flag
0	Arsenic, Total	2.1	
0	Barium, Total	72.1	
0	Cadmium, Total	0.12	J
0	Chromium, Total	2.71	
0	Lead, Total	3.8	J
1	Arsenic, Total	2.03	
1	Barium, Total	53.4	
1	Cadmium, Total	0.11	J
1	Chromium, Total	2.93	
1	Lead, Total	5.2	

200-HWTL-18

Depth	Analyte	Result	Flag
0	Arsenic, Total	2.2	T
0	Barium, Total	59.1	T
0	Cadmium, Total	0.13	J T
0	Chromium, Total	4.2	T
0	Lead, Total	5.9	T
1	Arsenic, Total	1.67	T
1	Barium, Total	38.3	T
1	Cadmium, Total	0.12	J T
1	Chromium, Total	2.97	T
1	Lead, Total	4.3	J T

200-HWTL-21

Depth	Analyte	Result	Flag
0	Arsenic, Total	2.65	
0	Barium, Total	69.8	
0	Cadmium, Total	0.18	J
0	Chromium, Total	5.58	QD
0	Lead, Total	18.1	QD
1	Arsenic, Total	2.24	
1	Barium, Total	31.8	
1	Cadmium, Total	0.12	J
1	Chromium, Total	3.96	
1	Lead, Total	5.6	

200-HWTL-20

Depth	Analyte	Result	Flag
0	Arsenic, Total	1.7	
0	Barium, Total	55.7	
0	Cadmium, Total	0.11	J
0	Chromium, Total	2.56	
0	Lead, Total	3	J
0	Mercury, Total	0.004	J
1	Arsenic, Total	2	
1	Barium, Total	49.4	
1	Cadmium, Total	0.1	J
1	Chromium, Total	3	
1	Lead, Total	2.9	J

200-HWTL-23

Depth	Analyte	Result	Flag
0	Arsenic, Total	1.82	J
0	Barium, Total	112	
0	Cadmium, Total	0.13	J
0	Chromium, Total	3.52	
0	Lead, Total	4.4	J
0	Mercury, Total	0.004	J
1	Arsenic, Total	3.03	J
1	Barium, Total	115	
1	Cadmium, Total	0.19	J
1	Chromium, Total	5.42	
1	Lead, Total	6	
1	Mercury, Total	0.005	J

200-HWTL-22

Depth	Analyte	Result	Flag
0	Arsenic, Total	2.65	
0	Barium, Total	116	
0	Cadmium, Total	0.15	J
0	Chromium, Total	4.75	
0	Lead, Total	6.7	
0	Mercury, Total	0.004	J
0	Selenium, Total	0.62	J
1	Arsenic, Total	2.12	
1	Barium, Total	47.9	
1	Cadmium, Total	0.14	J
1	Chromium, Total	4.34	
1	Lead, Total	6.1	
1	Mercury, Total	0.004	J

200-HWTL-25

Depth	Analyte	Result	Flag
0	Arsenic, Total	2.48	
0	Barium, Total	60.4	
0	Cadmium, Total	0.11	J
0	Chromium, Total	3.35	
0	Lead, Total	3.7	J
1	Arsenic, Total	2.83	
1	Barium, Total	66.3	
1	Cadmium, Total	0.14	J
1	Chromium, Total	4.35	
1	Lead, Total	6	
1	Mercury, Total	0.005	J

200-HWTL-24

Depth	Analyte	Result	Flag
0	Arsenic, Total	4.24	
0	Barium, Total	63.6	
0	Cadmium, Total	0.17	J
0	Chromium, Total	4.36	
0	Lead, Total	6.8	
0	Mercury, Total	0.007	J
1	Arsenic, Total	3.81	
1	Barium, Total	86.7	
1	Cadmium, Total	0.18	J
1	Chromium, Total	4.59	
1	Lead, Total	7.1	

200-HWTL-26

Depth	Analyte	Result	Flag
0	Arsenic, Total	6.8	
0	Barium, Total	115	
0	Cadmium, Total	0.34	J
0	Chromium, Total	9	
0	Lead, Total	10.4	
0	Mercury, Total	0.009	J
1	Arsenic, Total	4.45	
1	Barium, Total	70	
1	Cadmium, Total	0.22	J
1	Chromium, Total	7.19	
1	Lead, Total	6.8	

Hazardous Waste Transmission Line
RCRA Metal Detections - 200 Area Location

Split-Spoon Sample — PVC, Removed

Hand Auger Sample — Stainless Steel, Removed

Indicates exceedance of soil to groundwater target concentration.

Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifer flag definitions.

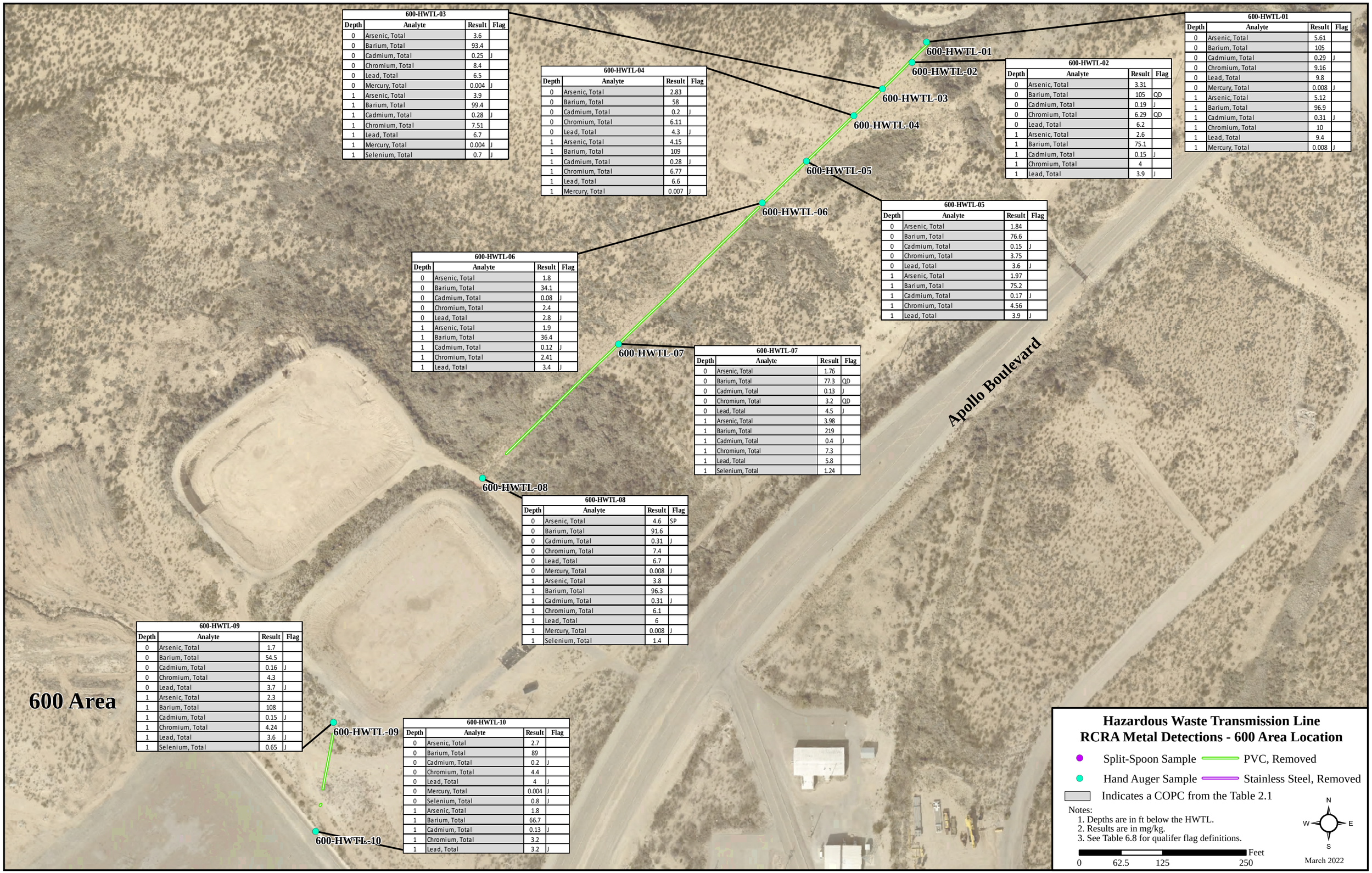
0 62.5 125 250 Feet

N W E S

March 2022

Figure 6.12 SWMU 10 HWTLs 600 Area RCRA Detections

(SEE NEXT PAGE)



600-HWTL-01

Depth	Analyte	Result	Flag
0	Arsenic, Total	5.61	
0	Barium, Total	105	
0	Cadmium, Total	0.29	J
0	Chromium, Total	9.16	
0	Lead, Total	9.8	
0	Mercury, Total	0.008	J
1	Arsenic, Total	5.12	
1	Barium, Total	96.9	
1	Cadmium, Total	0.31	J
1	Chromium, Total	10	
1	Lead, Total	9.4	
1	Mercury, Total	0.008	J

600-HWTL-02

Depth	Analyte	Result	Flag
0	Arsenic, Total	3.31	
0	Barium, Total	105	QD
0	Cadmium, Total	0.19	J
0	Chromium, Total	6.29	QD
0	Lead, Total	6.2	
1	Arsenic, Total	2.6	
1	Barium, Total	75.1	
1	Cadmium, Total	0.15	J
1	Chromium, Total	4	
1	Lead, Total	3.9	J

600-HWTL-03

Depth	Analyte	Result	Flag
0	Arsenic, Total	3.6	
0	Barium, Total	93.4	
0	Cadmium, Total	0.25	J
0	Chromium, Total	8.4	
0	Lead, Total	6.5	
0	Mercury, Total	0.004	J
1	Arsenic, Total	3.9	
1	Barium, Total	99.4	
1	Cadmium, Total	0.28	J
1	Chromium, Total	7.51	
1	Lead, Total	6.7	
1	Mercury, Total	0.004	J
1	Selenium, Total	0.7	J

600-HWTL-04

Depth	Analyte	Result	Flag
0	Arsenic, Total	2.83	
0	Barium, Total	58	
0	Cadmium, Total	0.2	J
0	Chromium, Total	6.11	
0	Lead, Total	4.3	J
1	Arsenic, Total	4.15	
1	Barium, Total	109	
1	Cadmium, Total	0.28	J
1	Chromium, Total	6.77	
1	Lead, Total	6.6	
1	Mercury, Total	0.007	J

600-HWTL-05

Depth	Analyte	Result	Flag
0	Arsenic, Total	1.84	
0	Barium, Total	76.6	
0	Cadmium, Total	0.15	J
0	Chromium, Total	3.75	
0	Lead, Total	3.6	J
1	Arsenic, Total	1.97	
1	Barium, Total	75.2	
1	Cadmium, Total	0.17	J
1	Chromium, Total	4.56	
1	Lead, Total	3.9	J

600-HWTL-06

Depth	Analyte	Result	Flag
0	Arsenic, Total	1.8	
0	Barium, Total	34.1	
0	Cadmium, Total	0.08	J
0	Chromium, Total	2.4	
0	Lead, Total	2.8	J
1	Arsenic, Total	1.9	
1	Barium, Total	36.4	
1	Cadmium, Total	0.12	J
1	Chromium, Total	2.41	
1	Lead, Total	3.4	J

600-HWTL-07

Depth	Analyte	Result	Flag
0	Arsenic, Total	1.76	
0	Barium, Total	77.3	QD
0	Cadmium, Total	0.13	J
0	Chromium, Total	3.2	QD
0	Lead, Total	4.5	J
1	Arsenic, Total	3.98	
1	Barium, Total	219	
1	Cadmium, Total	0.4	J
1	Chromium, Total	7.3	
1	Lead, Total	5.8	
1	Selenium, Total	1.24	

600-HWTL-08

Depth	Analyte	Result	Flag
0	Arsenic, Total	4.6	SP
0	Barium, Total	91.6	
0	Cadmium, Total	0.31	J
0	Chromium, Total	7.4	
0	Lead, Total	6.7	
0	Mercury, Total	0.008	J
1	Arsenic, Total	3.8	
1	Barium, Total	96.3	
1	Cadmium, Total	0.31	J
1	Chromium, Total	6.1	
1	Lead, Total	6	
1	Mercury, Total	0.008	J
1	Selenium, Total	1.4	

600-HWTL-09

Depth	Analyte	Result	Flag
0	Arsenic, Total	1.7	
0	Barium, Total	54.5	
0	Cadmium, Total	0.16	J
0	Chromium, Total	4.3	
0	Lead, Total	3.7	J
1	Arsenic, Total	2.3	
1	Barium, Total	108	
1	Cadmium, Total	0.15	J
1	Chromium, Total	4.24	
1	Lead, Total	3.6	J
1	Selenium, Total	0.65	J

600-HWTL-10

Depth	Analyte	Result	Flag
0	Arsenic, Total	2.7	
0	Barium, Total	89	
0	Cadmium, Total	0.2	J
0	Chromium, Total	4.4	
0	Lead, Total	4	J
0	Mercury, Total	0.004	J
0	Selenium, Total	0.8	J
1	Arsenic, Total	1.8	
1	Barium, Total	66.7	
1	Cadmium, Total	0.13	J
1	Chromium, Total	3.2	
1	Lead, Total	3.2	J

Hazardous Waste Transmission Line
RCRA Metal Detections - 600 Area Location

Split-Spoon Sample — PVC, Removed

Hand Auger Sample — Stainless Steel, Removed

Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifer flag definitions.

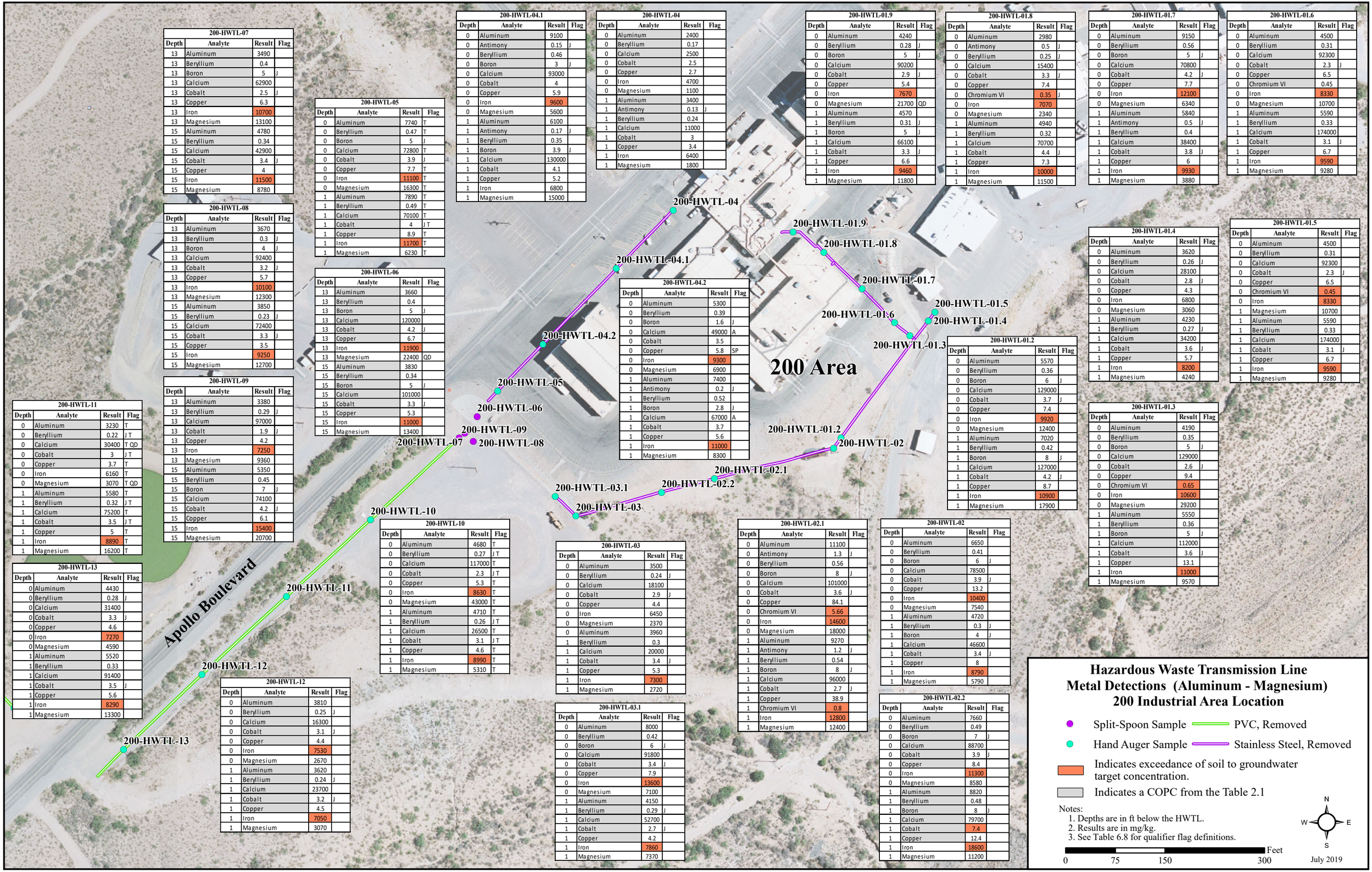
N W E S

0 62.5 125 250 Feet

March 2022

Figure 6.13 SWMU 10 HWTLs 200 Industrial Area Metal Detections (Aluminum to Magnesium)

(SEE NEXT PAGE)



200-HWTL-07

Depth	Analyte	Result	Flag
13	Aluminum	3490	
13	Beryllium	0.4	
13	Boron	5	J
13	Calcium	62900	
13	Cobalt	2.5	J
13	Copper	6.3	
13	Iron	10700	
13	Magnesium	13100	
15	Aluminum	4780	
15	Beryllium	0.34	
15	Calcium	42900	
15	Cobalt	3.4	J
15	Copper	4	
15	Iron	11500	
15	Magnesium	8780	

200-HWTL-08

Depth	Analyte	Result	Flag
13	Aluminum	3670	
13	Beryllium	0.3	J
13	Boron	4	J
13	Calcium	92400	
13	Cobalt	3.2	J
13	Copper	5.7	
13	Iron	10100	
13	Magnesium	12300	
15	Aluminum	3850	
15	Beryllium	0.23	J
15	Calcium	72400	
15	Cobalt	3.3	J
15	Copper	3.5	
15	Iron	9250	
15	Magnesium	12700	

200-HWTL-09

Depth	Analyte	Result	Flag
13	Aluminum	3380	
13	Beryllium	0.29	J
13	Calcium	97000	
13	Cobalt	1.9	J
13	Copper	4.2	
13	Iron	7250	
13	Magnesium	9360	
15	Aluminum	5350	
15	Beryllium	0.45	
15	Boron	7	J
15	Calcium	74100	
15	Cobalt	4.2	J
15	Copper	6.1	
15	Iron	15400	
15	Magnesium	20700	

200-HWTL-11

Depth	Analyte	Result	Flag
0	Aluminum	3230	T
0	Beryllium	0.22	J T
0	Calcium	30400	T QD
0	Cobalt	3	J T
0	Copper	3.7	T
0	Iron	6160	T
0	Magnesium	3070	T QD
1	Aluminum	5580	T
1	Beryllium	0.32	J T
1	Calcium	75200	T
1	Cobalt	3.5	J T
1	Copper	5	T
1	Iron	8890	T
1	Magnesium	16200	T

200-HWTL-13

Depth	Analyte	Result	Flag
0	Aluminum	4430	
0	Beryllium	0.28	J
0	Calcium	31400	
0	Cobalt	3.3	J
0	Copper	4.6	
0	Iron	7270	
0	Magnesium	4590	
1	Aluminum	5520	
1	Beryllium	0.33	
1	Calcium	91400	
1	Cobalt	3.5	J
1	Copper	5.6	
1	Iron	8290	
1	Magnesium	13300	

200-HWTL-05

Depth	Analyte	Result	Flag
0	Aluminum	7740	T
0	Beryllium	0.47	T
0	Boron	5	J
0	Calcium	72800	T
0	Cobalt	3.9	J
0	Copper	7.7	T
0	Iron	11100	T
0	Magnesium	16300	T
1	Aluminum	7890	T
1	Beryllium	0.49	T
1	Calcium	70100	T
1	Cobalt	4	J T
1	Copper	8.9	T
1	Iron	11700	T
1	Magnesium	6230	T

200-HWTL-06

Depth	Analyte	Result	Flag
13	Aluminum	3660	
13	Beryllium	0.4	
13	Boron	5	J
13	Calcium	120000	
13	Cobalt	4.2	J
13	Copper	6.7	
13	Iron	11900	
13	Magnesium	22400	QD
15	Aluminum	3830	
15	Beryllium	0.34	
15	Boron	5	J
15	Calcium	101000	
15	Cobalt	3.3	J
15	Copper	5.3	
15	Iron	11000	
15	Magnesium	13400	

200-HWTL-04.1

Depth	Analyte	Result	Flag
0	Aluminum	9100	
0	Antimony	0.15	J
0	Beryllium	0.46	
0	Boron	3	J
0	Calcium	93000	
0	Cobalt	4	
0	Copper	5.9	
0	Iron	9600	
0	Magnesium	5600	
1	Aluminum	6100	
1	Antimony	0.17	J
1	Beryllium	0.35	
1	Boron	3.9	J
1	Calcium	130000	
1	Cobalt	4.1	
1	Copper	5.2	
1	Iron	6800	
1	Magnesium	15000	

200-HWTL-04

Depth	Analyte	Result	Flag
0	Aluminum	2400	
0	Beryllium	0.17	
0	Calcium	2500	
0	Cobalt	2.5	
0	Copper	2.7	
0	Iron	4700	
0	Magnesium	1100	
1	Aluminum	3400	
1	Antimony	0.13	J
1	Beryllium	0.24	
1	Calcium	11000	
1	Cobalt	3	
1	Copper	3.4	
1	Iron	6400	
1	Magnesium	1800	

200-HWTL-04.2

Depth	Analyte	Result	Flag
0	Aluminum	5300	
0	Beryllium	0.39	
0	Boron	1.6	J
0	Calcium	49000	A
0	Cobalt	3.5	
0	Copper	5.8	SP
0	Iron	9300	
0	Magnesium	6900	
1	Aluminum	7400	
1	Antimony	0.2	J
1	Beryllium	0.52	
1	Boron	2.8	J
1	Calcium	67000	A
1	Cobalt	3.7	
1	Copper	5.6	
1	Iron	11000	
1	Magnesium	8300	

200-HWTL-10

Depth	Analyte	Result	Flag
0	Aluminum	4680	T
0	Beryllium	0.27	J T
0	Calcium	117000	T
0	Cobalt	2.3	J T
0	Copper	5.3	T
0	Iron	8630	T
0	Magnesium	43000	T
1	Aluminum	4710	T
1	Beryllium	0.26	J T
1	Calcium	26500	T
1	Cobalt	3.1	J T
1	Copper	4.6	T
1	Iron	8990	T
1	Magnesium	5310	T

200-HWTL-12

Depth	Analyte	Result	Flag
0	Aluminum	3810	
0	Beryllium	0.25	J
0	Calcium	16300	
0	Cobalt	3.1	J
0	Copper	4.4	
0	Iron	7530	
0	Magnesium	2670	
1	Aluminum	3620	
1	Beryllium	0.24	J
1	Calcium	23700	
1	Cobalt	3.2	J
1	Copper	4.5	
1	Iron	7050	
1	Magnesium	3070	

200-HWTL-03

Depth	Analyte	Result	Flag
0	Aluminum	3500	
0	Beryllium	0.24	J
0	Calcium	18100	
0	Cobalt	2.9	J
0	Copper	4.4	
0	Iron	6450	
0	Magnesium	2370	
0	Aluminum	3960	
1	Beryllium	0.3	
1	Calcium	20000	
1	Cobalt	3.4	J
1	Copper	5.3	
1	Iron	7300	
1	Magnesium	2720	

200-HWTL-03.1

Depth	Analyte	Result	Flag
0	Aluminum	8000	
0	Beryllium	0.42	
0	Boron	6	J
0	Calcium	91800	
0	Cobalt	3.4	J
0	Copper	7.9	
0	Iron	13600	
0	Magnesium	7100	
1	Aluminum	4150	
1	Beryllium	0.29	J
1	Calcium	52700	
1	Cobalt	2.7	J
1	Copper	4.2	
1	Iron	7860	
1	Magnesium	7370	

200-HWTL-01.9

Depth	Analyte	Result	Flag
0	Aluminum	4240	
0	Beryllium	0.28	J
0	Boron	5	J
0	Calcium	90200	
0	Cobalt	2.9	J
0	Copper	5.4	
0	Iron	7670	
0	Magnesium	21700	QD
1	Aluminum	4570	
1	Beryllium	0.31	J
1	Boron	5	J
1	Calcium	66100	
1	Cobalt	3.3	J
1	Copper	6.6	
1	Iron	9460	
1	Magnesium	11800	

200-HWTL-02.1

Depth	Analyte	Result	Flag
0	Aluminum	11100	
0	Antimony	1.3	J
0	Beryllium	0.56	
0	Boron	8	J
0	Calcium	101000	
0	Cobalt	3.6	J
0	Copper	84.1	
0	Chromium VI	5.66	
0	Iron	14600	
0	Magnesium	18000	
1	Aluminum	9270	
1	Antimony	1.2	J
1	Beryllium	0.54	
1	Boron	8	J
1	Calcium	96000	
1	Cobalt	2.7	J
1	Copper	38.9	
1	Chromium VI	0.8	
1	Iron	12800	
1	Magnesium	12400	

200-HWTL-01.8

Depth	Analyte	Result	Flag
0	Aluminum	2980	
0	Antimony	0.5	J
0	Beryllium	0.25	J
0	Calcium	15400	
0	Cobalt	3.3	J
0	Copper	7.4	
0	Chromium VI	0.35	J
0	Iron	7070	
0	Magnesium	2340	
1	Aluminum	4940	
1	Beryllium	0.32	
1	Calcium	70700	
1	Cobalt	4.4	J
1	Copper	7.3	
1	Iron	10000	
1	Magnesium	11500	

200-HWTL-01.2

Depth	Analyte	Result	Flag
0	Aluminum	5570	
0	Beryllium	0.36	
0	Boron	6	J
0	Calcium	129000	
0	Cobalt	3.7	J
0	Copper	7.4	
0	Iron	9920	
0	Magnesium	12400	
1	Aluminum	7020	
1	Beryllium	0.42	
1	Boron	8	J
1	Calcium	127000	
1	Cobalt	4.2	J
1	Copper	8.7	
1	Iron	10900	
1	Magnesium	17900	

200-HWTL-02

Depth	Analyte	Result	Flag
0	Aluminum	6650	
0	Beryllium	0.41	
0	Boron	6	J
0	Calcium	78500	
0	Cobalt	3.9	J
0	Copper	13.2	
0	Iron	10400	
0	Magnesium	7540	
1	Aluminum	4720	
1	Beryllium	0.3	J
1	Boron	4	J
1	Calcium	46600	
1	Cobalt	3.4	J
1	Copper	8	
1	Iron	8790	
1	Magnesium	5790	

200-HWTL-02.2

Depth	Analyte	Result	Flag
0	Aluminum	7660	
0	Beryllium	0.49	
0	Boron	7	J
0	Calcium	88700	
0	Cobalt	3.9	J
0	Copper	8.4	
0	Iron	11300	
0	Magnesium	8580	
1	Aluminum	8820	
1	Beryllium	0.48	
1	Boron	8	J
1	Calcium	79700	
1	Cobalt	7.4	
1	Copper	12.4	
1	Iron	18600	
1	Magnesium	11200	

200-HWTL-01.7

Depth	Analyte	Result	Flag
0	Aluminum	9150	
0	Beryllium	0.56	
0	Boron	5	J
0	Calcium	70800	
0	Cobalt	4.2	J
0	Copper	7.7	
0	Iron	12100	
0	Magnesium	6340	
1	Aluminum	5840	
1	Antimony	0.5	J
1	Beryllium	0.4	
1	Calcium	38400	
1	Cobalt	3.8	J
1	Copper	6	
1	Iron	9930	
1	Magnesium	3880	

200-HWTL-01.6

Depth	Analyte	Result	Flag
0	Aluminum	4500	
0	Beryllium	0.31	
0	Calcium	92300	
0	Cobalt	2.3	J
0	Copper	6.5	
0	Chromium VI	0.45	
0	Iron	8330	
0	Magnesium	10700	
1	Aluminum	5590	
1	Beryllium	0.33	
1	Calcium	174000	
1	Cobalt	3.1	J
1	Copper	6.7	
1	Iron	9590	
1	Magnesium	9280	

200-HWTL-01.4

Depth	Analyte	Result	Flag
0	Aluminum	3620	
0	Beryllium	0.26	J
0	Calcium	28100	
0	Cobalt	2.8	J
0	Copper	4.3	
0	Iron	6800	
0	Magnesium	3060	
1	Aluminum	4230	
1	Beryllium	0.27	J
1	Calcium	34200	
1	Cobalt	3.6	J
1	Copper	5.7	
1	Iron	8200	
1	Magnesium	4240	

200-HWTL-01.5

Depth	Analyte	Result	Flag
0	Aluminum	4500	
0	Beryllium	0.31	
0	Calcium	92300	
0	Cobalt	2.3	J
0	Copper	6.5	
0	Chromium VI	0.45	
0	Iron	8330	
1	Magnesium	10700	
1	Aluminum	5590	
1	Beryllium	0.33	
1	Calcium	174000	
1	Cobalt	3.1	J
1	Copper	6.7	
1	Iron	9590	
1	Magnesium	9280	

200-HWTL-01.3

Depth	Analyte	Result	Flag
0	Aluminum	4190	
0	Beryllium	0.35	
0	Boron	5	J
0	Calcium	129000	
0	Cobalt	2.6	J
0	Copper	9.4	
0	Chromium VI	0.65	
0	Iron	10600	
0	Magnesium	29200	
1	Aluminum	5550	
1	Beryllium	0.36	
1	Boron	5	J
1	Calcium	112000	
1	Cobalt	3.6	J
1	Copper	13.1	
1	Iron	11000	
1	Magnesium	9570	

Hazardous Waste Transmission Line
Metal Detections (Aluminum - Magnesium)
200 Industrial Area Location

Split-Spoon Sample — PVC, Removed

Hand Auger Sample — Stainless Steel, Removed

Indicates exceedance of soil to groundwater target concentration.

Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifier flag definitions.

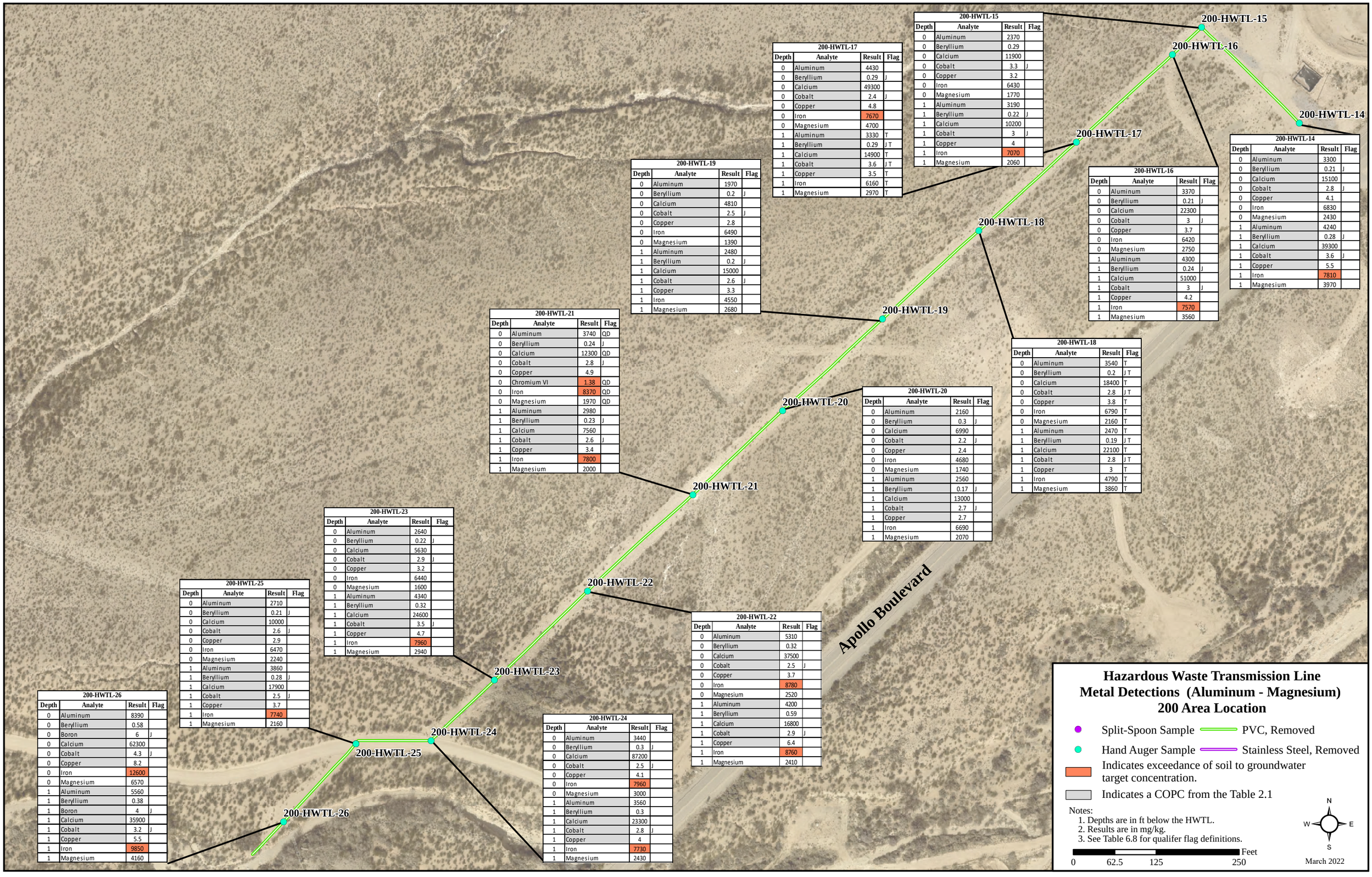
N W E S

0 75 150 300 Feet

July 2019

Figure 6.14 SWMU 10 HWTLs 200 Area Metal Detections (Aluminum to Magnesium)

(SEE NEXT PAGE)



200-HWTL-15

Depth	Analyte	Result	Flag
0	Aluminum	2370	
0	Beryllium	0.29	
0	Calcium	11900	
0	Cobalt	3.3	J
0	Copper	3.2	
0	Iron	6430	
0	Magnesium	1770	
1	Aluminum	3190	
1	Beryllium	0.22	J
1	Calcium	10200	
1	Cobalt	3	J
1	Copper	4	
1	Iron	7070	
1	Magnesium	2060	

200-HWTL-17

Depth	Analyte	Result	Flag
0	Aluminum	4430	
0	Beryllium	0.29	J
0	Calcium	49300	
0	Cobalt	2.4	J
0	Copper	4.8	
0	Iron	7670	
0	Magnesium	4700	
1	Aluminum	3330	T
1	Beryllium	0.29	J T
1	Calcium	14900	T
1	Cobalt	3.6	J T
1	Copper	3.5	T
1	Iron	6160	T
1	Magnesium	2970	T

200-HWTL-14

Depth	Analyte	Result	Flag
0	Aluminum	3300	
0	Beryllium	0.21	J
0	Calcium	15100	
0	Cobalt	2.8	J
0	Copper	4.1	
0	Iron	6830	
0	Magnesium	2430	
1	Aluminum	4240	
1	Beryllium	0.28	J
1	Calcium	39300	
1	Cobalt	3.6	J
1	Copper	5.5	
1	Iron	7810	
1	Magnesium	3970	

200-HWTL-16

Depth	Analyte	Result	Flag
0	Aluminum	3370	
0	Beryllium	0.21	J
0	Calcium	22300	
0	Cobalt	3	J
0	Copper	3.7	
0	Iron	6420	
0	Magnesium	2750	
1	Aluminum	4300	
1	Beryllium	0.24	J
1	Calcium	51000	
1	Cobalt	3	J
1	Copper	4.2	
1	Iron	7570	
1	Magnesium	3560	

200-HWTL-19

Depth	Analyte	Result	Flag
0	Aluminum	1970	
0	Beryllium	0.2	J
0	Calcium	4810	
0	Cobalt	2.5	J
0	Copper	2.8	
0	Iron	6490	
0	Magnesium	1390	
1	Aluminum	2480	
1	Beryllium	0.2	J
1	Calcium	15000	
1	Cobalt	2.6	J
1	Copper	3.3	
1	Iron	4550	
1	Magnesium	2680	

200-HWTL-18

Depth	Analyte	Result	Flag
0	Aluminum	3540	T
0	Beryllium	0.2	J T
0	Calcium	18400	T
0	Cobalt	2.8	J T
0	Copper	3.8	T
0	Iron	6790	T
0	Magnesium	2160	T
1	Aluminum	2470	T
1	Beryllium	0.19	J T
1	Calcium	22100	T
1	Cobalt	2.8	J T
1	Copper	3	T
1	Iron	4790	T
1	Magnesium	3860	T

200-HWTL-21

Depth	Analyte	Result	Flag
0	Aluminum	3740	QD
0	Beryllium	0.24	J
0	Calcium	12300	QD
0	Cobalt	2.8	J
0	Copper	4.9	
0	Chromium VI	1.38	QD
0	Iron	8370	QD
0	Magnesium	1970	QD
1	Aluminum	2980	
1	Beryllium	0.23	J
1	Calcium	7560	
1	Cobalt	2.6	J
1	Copper	3.4	
1	Iron	7800	
1	Magnesium	2000	

200-HWTL-20

Depth	Analyte	Result	Flag
0	Aluminum	2160	
0	Beryllium	0.3	J
0	Calcium	6990	
0	Cobalt	2.2	J
0	Copper	2.4	
0	Iron	4680	
0	Magnesium	1740	
1	Aluminum	2560	
1	Beryllium	0.17	J
1	Calcium	13000	
1	Cobalt	2.7	J
1	Copper	2.7	
1	Iron	6690	
1	Magnesium	2070	

200-HWTL-23

Depth	Analyte	Result	Flag
0	Aluminum	2640	
0	Beryllium	0.22	J
0	Calcium	5630	
0	Cobalt	2.9	J
0	Copper	3.2	
0	Iron	6440	
0	Magnesium	1600	
1	Aluminum	4340	
1	Beryllium	0.32	
1	Calcium	24600	
1	Cobalt	3.5	J
1	Copper	4.7	
1	Iron	7960	
1	Magnesium	2940	

200-HWTL-22

Depth	Analyte	Result	Flag
0	Aluminum	5310	
0	Beryllium	0.32	
0	Calcium	37500	
0	Cobalt	2.5	J
0	Copper	3.7	
0	Iron	8780	
0	Magnesium	2520	
1	Aluminum	4200	
1	Beryllium	0.59	
1	Calcium	16800	
1	Cobalt	2.9	J
1	Copper	6.4	
1	Iron	8760	
1	Magnesium	2410	

200-HWTL-25

Depth	Analyte	Result	Flag
0	Aluminum	2710	
0	Beryllium	0.21	J
0	Calcium	10000	
0	Cobalt	2.6	J
0	Copper	2.9	
0	Iron	6470	
0	Magnesium	2240	
1	Aluminum	3860	
1	Beryllium	0.28	J
1	Calcium	17900	
1	Cobalt	2.5	J
1	Copper	3.7	
1	Iron	7740	
1	Magnesium	2160	

200-HWTL-24

Depth	Analyte	Result	Flag
0	Aluminum	3440	
0	Beryllium	0.3	J
0	Calcium	87200	
0	Cobalt	2.5	J
0	Copper	4.1	
0	Iron	7960	
0	Magnesium	3000	
1	Aluminum	3560	
1	Beryllium	0.3	
1	Calcium	23300	
1	Cobalt	2.8	J
1	Copper	4	
1	Iron	7730	
1	Magnesium	2430	

200-HWTL-26

Depth	Analyte	Result	Flag
0	Aluminum	8390	
0	Beryllium	0.58	
0	Boron	6	J
0	Calcium	62300	
0	Cobalt	4.3	J
0	Copper	8.2	
0	Iron	12600	
0	Magnesium	6570	
1	Aluminum	5560	
1	Beryllium	0.38	
1	Boron	4	J
1	Calcium	35900	
1	Cobalt	3.2	J
1	Copper	5.5	
1	Iron	9850	
1	Magnesium	4160	

Hazardous Waste Transmission Line
Metal Detections (Aluminum - Magnesium)
200 Area Location

Split-Spoon Sample — PVC, Removed

Hand Auger Sample — Stainless Steel, Removed

Indicates exceedance of soil to groundwater target concentration.

Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifer flag definitions.

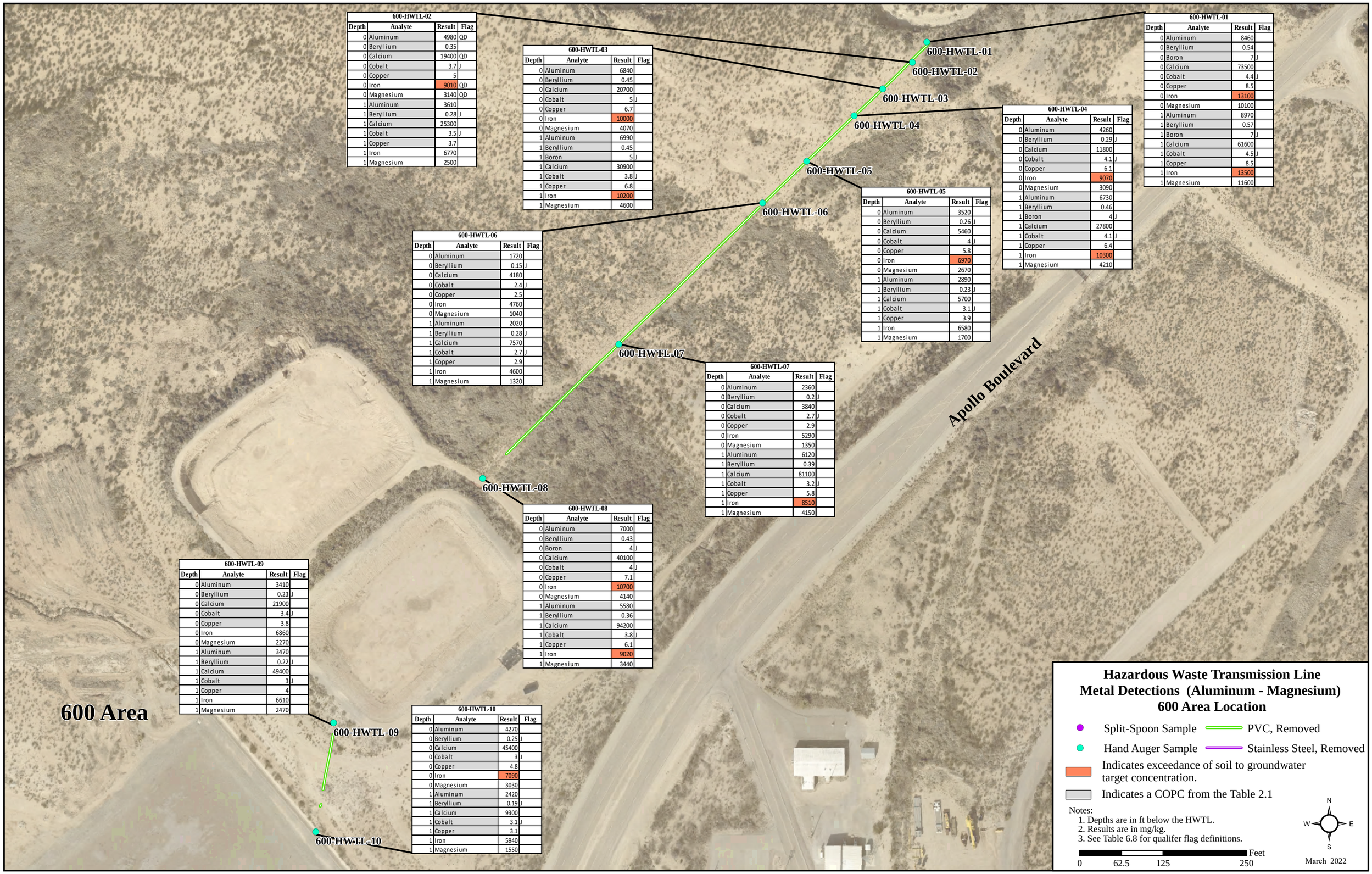
0 62.5 125 250 Feet

N W E S

March 2022

Figure 6.15 SWMU 10 HWTLs 600 Area Metal Detections (Aluminum to Magnesium)

(SEE NEXT PAGE)



600-HWTL-02

Depth	Analyte	Result	Flag
0	Aluminum	4980	QD
0	Beryllium	0.35	
0	Calcium	19400	QD
0	Cobalt	3.7	J
0	Copper	5	
0	Iron	9010	QD
0	Magnesium	3140	QD
1	Aluminum	3610	
1	Beryllium	0.28	J
1	Calcium	25300	
1	Cobalt	3.5	J
1	Copper	3.7	
1	Iron	6770	
1	Magnesium	2500	

600-HWTL-03

Depth	Analyte	Result	Flag
0	Aluminum	6840	
0	Beryllium	0.45	
0	Calcium	20700	
0	Cobalt	5	J
0	Copper	6.7	
0	Iron	10000	
0	Magnesium	4070	
1	Aluminum	6990	
1	Beryllium	0.45	
1	Boron	5	J
1	Calcium	30900	
1	Cobalt	3.8	J
1	Copper	6.8	
1	Iron	10200	
1	Magnesium	4600	

600-HWTL-01

Depth	Analyte	Result	Flag
0	Aluminum	8460	
0	Beryllium	0.54	
0	Boron	7	J
0	Calcium	73500	
0	Cobalt	4.4	J
0	Copper	8.5	
0	Iron	13100	
0	Magnesium	10100	
1	Aluminum	8970	
1	Beryllium	0.57	
1	Boron	7	J
1	Calcium	61600	
1	Cobalt	4.5	J
1	Copper	8.5	
1	Iron	13500	
1	Magnesium	11600	

600-HWTL-04

Depth	Analyte	Result	Flag
0	Aluminum	4260	
0	Beryllium	0.29	J
0	Calcium	11800	
0	Cobalt	4.1	J
0	Copper	6.1	
0	Iron	9070	
0	Magnesium	3090	
1	Aluminum	6730	
1	Beryllium	0.46	
1	Boron	4	J
1	Calcium	27800	
1	Cobalt	4.1	J
1	Copper	6.4	
1	Iron	10300	
1	Magnesium	4210	

600-HWTL-05

Depth	Analyte	Result	Flag
0	Aluminum	3520	
0	Beryllium	0.26	J
0	Calcium	5460	
0	Cobalt	4	J
0	Copper	5.8	
0	Iron	6970	
0	Magnesium	2670	
1	Aluminum	2890	
1	Beryllium	0.23	J
1	Calcium	5700	
1	Cobalt	3.1	J
1	Copper	3.9	
1	Iron	6580	
1	Magnesium	1700	

600-HWTL-06

Depth	Analyte	Result	Flag
0	Aluminum	1720	
0	Beryllium	0.15	J
0	Calcium	4180	
0	Cobalt	2.4	J
0	Copper	2.5	
0	Iron	4760	
0	Magnesium	1040	
1	Aluminum	2020	
1	Beryllium	0.28	J
1	Calcium	7570	
1	Cobalt	2.7	J
1	Copper	2.9	
1	Iron	4600	
1	Magnesium	1320	

600-HWTL-07

Depth	Analyte	Result	Flag
0	Aluminum	2360	
0	Beryllium	0.2	J
0	Calcium	3840	
0	Cobalt	2.7	J
0	Copper	2.9	
0	Iron	5290	
0	Magnesium	1350	
1	Aluminum	6120	
1	Beryllium	0.39	
1	Calcium	81100	
1	Cobalt	3.2	J
1	Copper	5.8	
1	Iron	8510	
1	Magnesium	4150	

600-HWTL-08

Depth	Analyte	Result	Flag
0	Aluminum	7000	
0	Beryllium	0.43	
0	Boron	4	J
0	Calcium	40100	
0	Cobalt	4	J
0	Copper	7.1	
0	Iron	10700	
0	Magnesium	4140	
1	Aluminum	5580	
1	Beryllium	0.36	
1	Calcium	94200	
1	Cobalt	3.8	J
1	Copper	6.1	
1	Iron	9020	
1	Magnesium	3440	

600-HWTL-09

Depth	Analyte	Result	Flag
0	Aluminum	3410	
0	Beryllium	0.23	J
0	Calcium	21900	
0	Cobalt	3.4	J
0	Copper	3.8	
0	Iron	6860	
0	Magnesium	2270	
1	Aluminum	3470	
1	Beryllium	0.22	J
1	Calcium	49400	
1	Cobalt	3	J
1	Copper	4	
1	Iron	6610	
1	Magnesium	2470	

600-HWTL-10

Depth	Analyte	Result	Flag
0	Aluminum	4270	
0	Beryllium	0.25	J
0	Calcium	45400	
0	Cobalt	3	J
0	Copper	4.8	
0	Iron	7090	
0	Magnesium	3030	
1	Aluminum	2420	
1	Beryllium	0.19	J
1	Calcium	9300	
1	Cobalt	3.1	J
1	Copper	3.1	
1	Iron	5940	
1	Magnesium	1550	

Hazardous Waste Transmission Line
Metal Detections (Aluminum - Magnesium)
600 Area Location

Split-Spoon Sample — PVC, Removed

Hand Auger Sample — Stainless Steel, Removed

Indicates exceedance of soil to groundwater target concentration.

Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifer flag definitions.

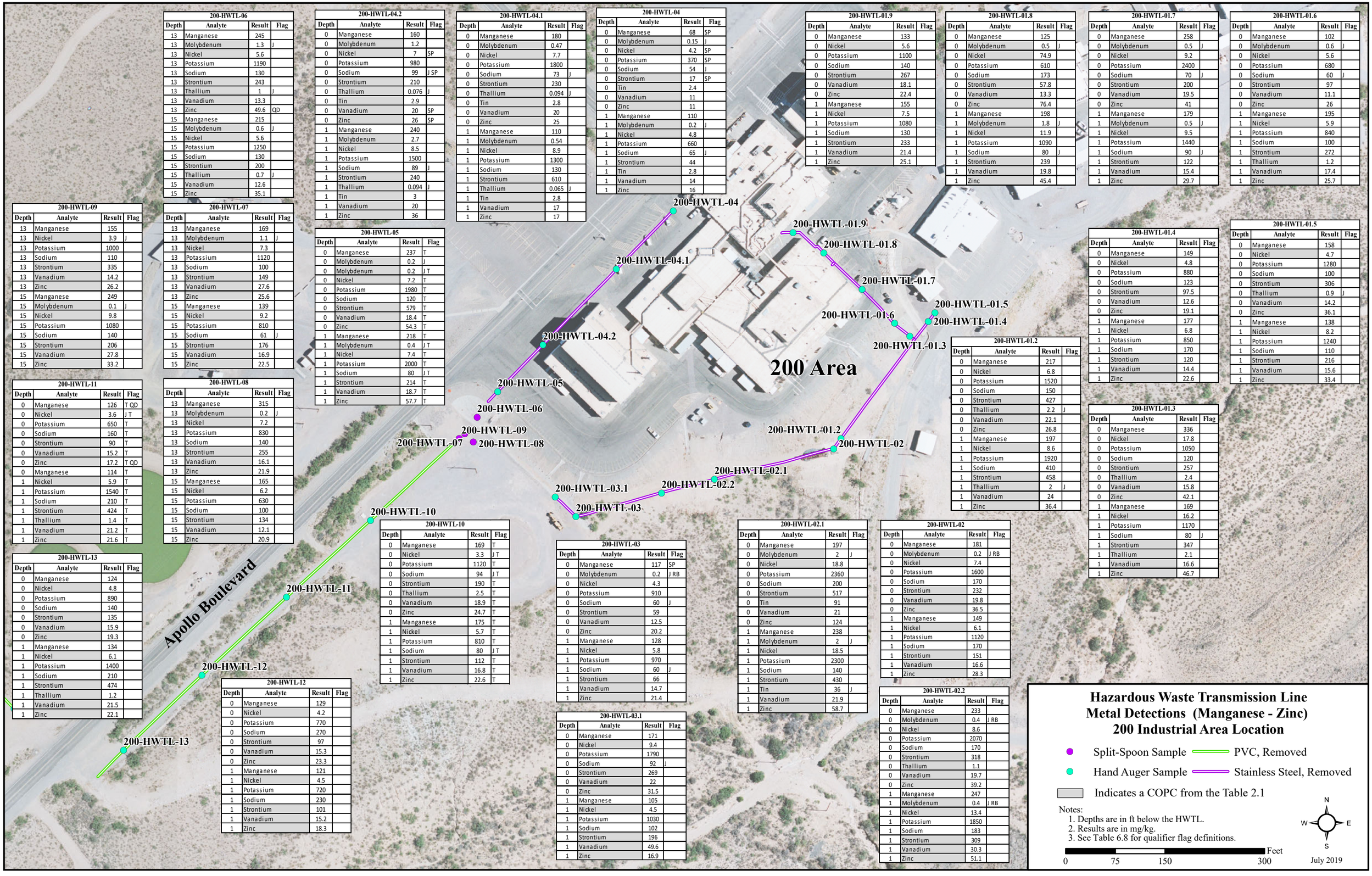
0 62.5 125 250 Feet

N W E S

March 2022

Figure 6.16 SWMU 10 HWTLs 200 Industrial Area Metal Detections (Manganese to Zinc)

(SEE NEXT PAGE)



200-HWTL-06

Depth	Analyte	Result	Flag
13	Manganese	245	
13	Molybdenum	1.3	J
13	Nickel	5.6	
13	Potassium	1190	
13	Sodium	130	
13	Strontium	243	
13	Thallium	1	J
13	Vanadium	13.3	
13	Zinc	49.6	QD
15	Manganese	215	
15	Molybdenum	0.6	J
15	Nickel	5.6	
15	Potassium	1250	
15	Sodium	130	
15	Strontium	200	
15	Thallium	0.7	J
15	Vanadium	12.6	
15	Zinc	35.1	

200-HWTL-04.2

Depth	Analyte	Result	Flag
0	Manganese	160	
0	Molybdenum	1.2	
0	Nickel	7	SP
0	Potassium	980	
0	Sodium	99	J SP
0	Strontium	210	
0	Thallium	0.076	J
0	Tin	2.9	
0	Vanadium	20	SP
0	Zinc	26	SP
1	Manganese	240	
1	Molybdenum	2.7	
1	Nickel	8.5	
1	Potassium	1500	
1	Sodium	89	J
1	Strontium	240	
1	Thallium	0.094	J
1	Tin	3	
1	Vanadium	20	
1	Zinc	36	

200-HWTL-04.1

Depth	Analyte	Result	Flag
0	Manganese	180	
0	Molybdenum	0.47	
0	Nickel	7.7	
0	Potassium	1800	
0	Sodium	73	J
0	Strontium	230	
0	Thallium	0.094	J
0	Tin	2.8	
0	Vanadium	20	
0	Zinc	25	
1	Manganese	110	
1	Molybdenum	0.54	
1	Nickel	8.9	
1	Potassium	1300	
1	Sodium	130	
1	Strontium	610	
1	Thallium	0.065	J
1	Tin	2.8	
1	Vanadium	17	
1	Zinc	17	

200-HWTL-04

Depth	Analyte	Result	Flag
0	Manganese	68	SP
0	Molybdenum	0.15	J
0	Nickel	4.2	SP
0	Potassium	370	SP
0	Sodium	54	J
0	Strontium	17	SP
0	Tin	2.4	
0	Vanadium	11	
0	Zinc	11	
1	Manganese	110	
1	Molybdenum	0.2	J
1	Nickel	4.8	
1	Potassium	660	
1	Sodium	65	J
1	Strontium	44	
1	Tin	2.8	
1	Vanadium	14	
1	Zinc	16	

200-HWTL-01.9

Depth	Analyte	Result	Flag
0	Manganese	133	
0	Nickel	5.6	
0	Potassium	1100	
0	Sodium	140	
0	Strontium	267	
0	Vanadium	18.1	
0	Zinc	22.4	
1	Manganese	155	
1	Nickel	7.5	
1	Potassium	1080	
1	Sodium	130	
1	Strontium	233	
1	Vanadium	21.4	
1	Zinc	25.1	

200-HWTL-01.8

Depth	Analyte	Result	Flag
0	Manganese	125	
0	Molybdenum	0.5	J
0	Nickel	74.9	
0	Potassium	610	
0	Sodium	173	
0	Strontium	57.8	
0	Vanadium	13.3	
0	Zinc	76.4	
1	Manganese	198	
1	Molybdenum	1.8	J
1	Nickel	11.9	
1	Potassium	1090	
1	Sodium	80	J
1	Strontium	239	
1	Vanadium	19.8	
1	Zinc	45.4	

200-HWTL-01.7

Depth	Analyte	Result	Flag
0	Manganese	258	
0	Molybdenum	0.5	J
0	Nickel	9.2	
0	Potassium	2400	
0	Sodium	70	J
0	Strontium	200	
0	Vanadium	19.5	
0	Zinc	41	
1	Manganese	179	
1	Molybdenum	0.5	J
1	Nickel	9.5	
1	Potassium	1440	
1	Sodium	90	J
1	Strontium	122	
1	Vanadium	15.4	
1	Zinc	29.7	

200-HWTL-01.6

Depth	Analyte	Result	Flag
0	Manganese	102	
0	Molybdenum	0.6	J
0	Nickel	5.6	
0	Potassium	680	
0	Sodium	60	J
0	Strontium	97	
0	Vanadium	11.1	
0	Zinc	26	
1	Manganese	195	
1	Nickel	5.9	
1	Potassium	840	
1	Sodium	100	
1	Strontium	272	
1	Thallium	1.2	
1	Vanadium	17.4	
1	Zinc	25.7	

200-HWTL-09

Depth	Analyte	Result	Flag
13	Manganese	155	
13	Nickel	3.9	J
13	Potassium	1000	
13	Sodium	110	
13	Strontium	335	
13	Vanadium	14.2	
13	Zinc	26.2	
15	Manganese	249	
15	Molybdenum	0.1	J
15	Nickel	9.8	
15	Potassium	1080	
15	Sodium	140	
15	Strontium	206	
15	Vanadium	27.8	
15	Zinc	33.2	

200-HWTL-07

Depth	Analyte	Result	Flag
13	Manganese	169	
13	Molybdenum	1.1	J
13	Nickel	7.3	
13	Potassium	1120	
13	Sodium	100	
13	Strontium	149	
13	Vanadium	27.6	
13	Zinc	25.6	
15	Manganese	139	
15	Nickel	9.2	
15	Potassium	810	
15	Sodium	61	J
15	Strontium	176	
15	Vanadium	16.9	
15	Zinc	22.5	

200-HWTL-05

Depth	Analyte	Result	Flag
0	Manganese	237	T
0	Molybdenum	0.2	J
0	Molybdenum	0.2	J T
0	Nickel	7.2	T
0	Potassium	1980	T
0	Sodium	120	T
0	Strontium	579	T
0	Vanadium	18.4	T
0	Zinc	54.3	T
1	Manganese	218	T
1	Molybdenum	0.4	J T
1	Nickel	7.4	T
1	Potassium	2000	T
1	Sodium	80	J T
1	Strontium	214	T
1	Vanadium	18.7	T
1	Zinc	57.7	T

200-HWTL-01.4

Depth	Analyte	Result	Flag
0	Manganese	149	
0	Nickel	4.8	
0	Potassium	880	
0	Sodium	123	
0	Strontium	97.5	
0	Vanadium	12.6	
0	Zinc	19.1	
1	Manganese	177	
1	Nickel	6.8	
1	Potassium	850	
1	Sodium	170	
1	Strontium	120	
1	Vanadium	14.4	
1	Zinc	22.6	

200-HWTL-01.5

Depth	Analyte	Result	Flag
0	Manganese	158	
0	Nickel	4.7	
0	Potassium	1280	
0	Sodium	100	
0	Strontium	306	
0	Thallium	0.9	J
0	Vanadium	14.2	
0	Zinc	36.1	
1	Manganese	138	
1	Nickel	8.2	
1	Potassium	1240	
1	Sodium	110	
1	Strontium	216	
1	Vanadium	15.6	
1	Zinc	33.4	

200-HWTL-11

Depth	Analyte	Result	Flag
0	Manganese	126	T QD
0	Nickel	3.6	J T
0	Potassium	650	T
0	Sodium	160	T
0	Strontium	90	T
0	Vanadium	15.2	T
0	Zinc	17.2	T QD
0	Manganese	114	T
1	Nickel	5.9	T
1	Potassium	1540	T
1	Sodium	210	T
1	Strontium	424	T
1	Thallium	1.4	T
1	Vanadium	21.2	T
1	Zinc	21.6	T

200-HWTL-08

Depth	Analyte	Result	Flag
13	Manganese	315	
13	Molybdenum	0.2	J
13	Nickel	7.2	
13	Potassium	830	
13	Sodium	140	
13	Strontium	255	
13	Vanadium	16.1	
13	Zinc	21.9	
15	Manganese	165	
15	Nickel	6.2	
15	Potassium	630	
15	Sodium	100	
15	Strontium	134	
15	Vanadium	12.1	
15	Zinc	20.9	

200-HWTL-01.2

Depth	Analyte	Result	Flag
0	Manganese	217	
0	Nickel	6.8	
0	Potassium	1520	
0	Sodium	150	
0	Strontium	427	
0	Thallium	2.2	J
0	Vanadium	22.1	
0	Zinc	26.8	
1	Manganese	197	
1	Nickel	8.6	
1	Potassium	1920	
1	Sodium	410	
1	Strontium	458	
1	Thallium	2	J
1	Vanadium	24	
1	Zinc	36.4	

200-HWTL-01.3

Depth	Analyte	Result	Flag
0	Manganese	336	
0	Nickel	17.8	
0	Potassium	1050	
0	Sodium	120	
0	Strontium	257	
0	Thallium	2.4	
0	Vanadium	15.8	
0	Zinc	42.1	
1	Manganese	169	
1	Nickel	16.2	
1	Potassium	1170	
1	Sodium	80	J
1	Strontium	347	
1	Thallium	2.1	
1	Vanadium	16.6	
1	Zinc	46.7	

200-HWTL-13

Depth	Analyte	Result	Flag
0	Manganese	124	
0	Nickel	4.8	
0	Potassium	890	
0	Sodium	140	
0	Strontium	135	
0	Vanadium	15.9	
0	Zinc	19.3	
1	Manganese	134	
1	Nickel	6.1	
1	Potassium	1400	
1	Sodium	210	
1	Strontium	474	
1	Thallium	1.2	
1	Vanadium	21.5	
1	Zinc	22.1	

200-HWTL-10

Depth	Analyte	Result	Flag
0	Manganese	169	T
0	Nickel	3.3	J T
0	Potassium	1120	T
0	Sodium	94	J T
0	Strontium	190	T
0	Thallium	2.5	T
0	Vanadium	18.9	T
0	Zinc	24.7	T
1	Manganese	175	T
1	Nickel	5.7	T
1	Potassium	810	T
1	Sodium	80	J T
1	Strontium	112	T
1	Vanadium	16.8	T
1	Zinc	22.6	T

200-HWTL-03

Depth	Analyte	Result	Flag
0	Manganese	117	SP
0	Molybdenum	0.2	J RB
0	Nickel	4.3	
0	Potassium	910	
0	Sodium	60	J
0	Strontium	59	
0	Vanadium	12.5	
0	Zinc	20.2	
1	Manganese	128	
1	Nickel	5.8	
1	Potassium	970	
1	Sodium	60	J
1	Strontium	66	
1	Vanadium	14.7	
1	Zinc	21.4	

200-HWTL-02.1

Depth	Analyte	Result	Flag
0	Manganese	197	
0	Molybdenum	2	J
0	Nickel	18.8	
0	Potassium	2360	
0	Sodium	200	
0	Strontium	517	
0	Tin	91	
0	Vanadium	21	
0	Zinc	124	
1	Manganese	238	
1	Molybdenum	2	J
1	Nickel	18.5	
1	Potassium	2300	
1	Sodium	140	
1	Strontium	430	
1	Tin	36	J
1	Vanadium	21.9	
1	Zinc	58.7	

200-HWTL-02

Depth	Analyte	Result	Flag
0	Manganese	181	
0	Molybdenum	0.2	J RB
0	Nickel	7.4	
0	Potassium	1600	
0	Sodium	170	
0	Strontium	232	
0	Vanadium	19.8	
0	Zinc	36.5	
1	Manganese	149	
1	Nickel	6.1	
1	Potassium	1120	
1	Sodium	170	
1	Strontium	151	
1	Vanadium	16.6	
1	Zinc	28.3	

200-HWTL-12

Depth	Analyte	Result	Flag
0	Manganese	129	
0	Nickel	4.2	
0	Potassium	770	
0	Sodium	270	
0	Strontium	97	
0	Vanadium	15.3	
0	Zinc	23.3	
1	Manganese	121	
1	Nickel	4.5	
1	Potassium	720	
1	Sodium	230	
1	Strontium	101	
1	Vanadium	15.2	
1	Zinc	18.3	

200-HWTL-03.1

Depth	Analyte	Result	Flag
0	Manganese	171	
0	Nickel	9.4	
0	Potassium	1790	
0	Sodium	92	J
0	Strontium	269	
0	Vanadium	22	
0	Zinc	31.5	
1	Manganese	105	
1	Nickel	4.5	
1	Potassium	1030	
1	Sodium	102	
1	Strontium	196	
1	Vanadium	49.6	
1	Zinc	16.9	

200-HWTL-02.2

Depth	Analyte	Result	Flag
0	Manganese	233	
0	Molybdenum	0.4	J RB
0	Nickel	8.6	
0	Potassium	2070	
0	Sodium	170	
0	Strontium	318	
0	Thallium	1.1	
0	Vanadium	19.7	
0	Zinc	39.2	
1	Manganese	247	
1	Molybdenum	0.4	J RB
1	Nickel	13.4	
1	Potassium	1850	
1	Sodium	183	
1	Strontium	309	
1	Vanadium	30.3	
1	Zinc	51.1	

Hazardous Waste Transmission Line
Metal Detections (Manganese - Zinc)
200 Industrial Area Location

Split-Spoon Sample — PVC, Removed

Hand Auger Sample — Stainless Steel, Removed

Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifier flag definitions.

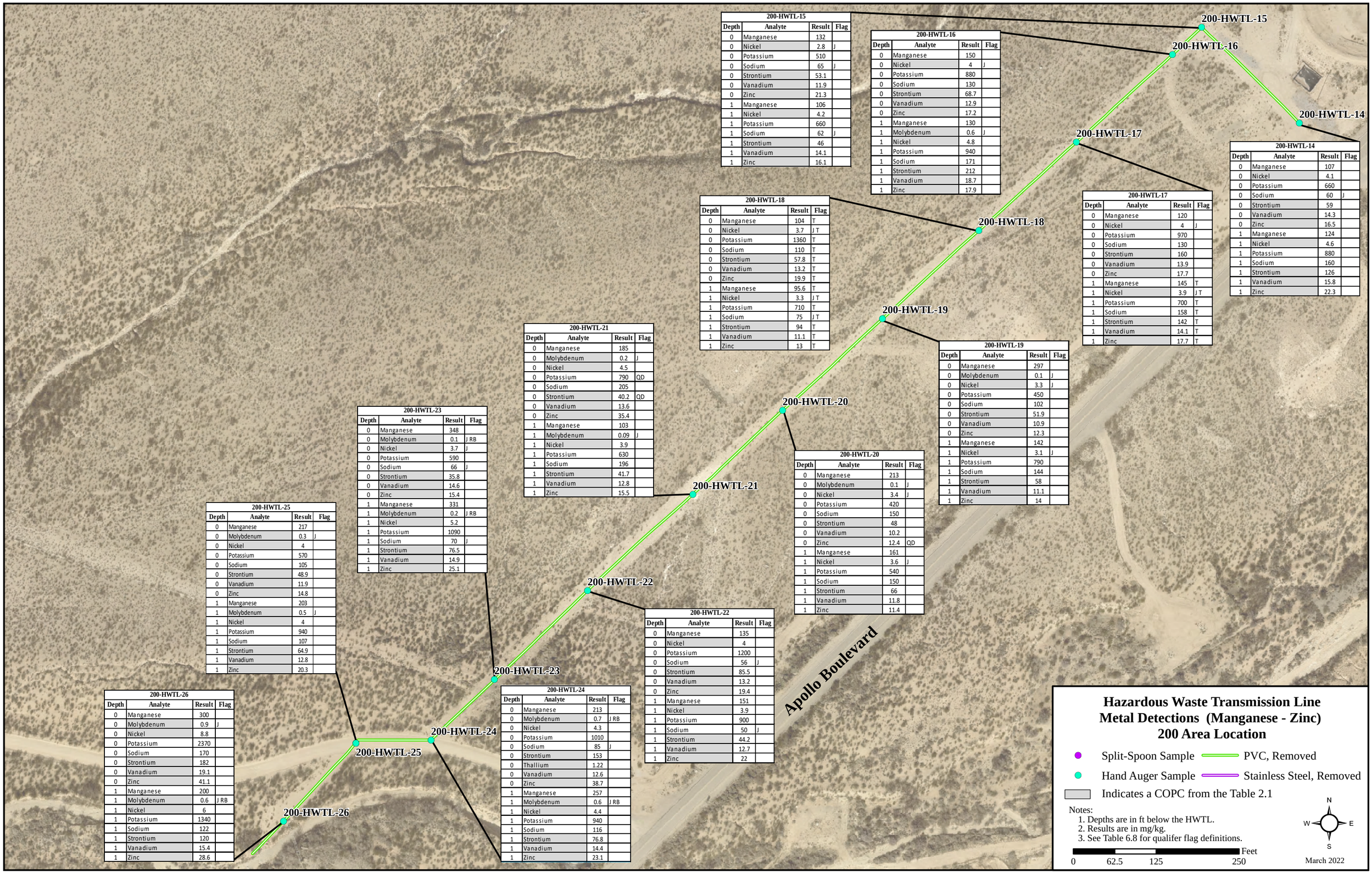
N W E S

0 75 150 300 Feet

July 2019

Figure 6.17 SWMU 10 HWTLs 200 Area Metal Detections (Manganese to Zinc)

(SEE NEXT PAGE)



200-HWTL-15

Depth	Analyte	Result	Flag
0	Manganese	132	
0	Nickel	2.8	J
0	Potassium	510	
0	Sodium	65	J
0	Strontium	53.1	
0	Vanadium	11.9	
0	Zinc	21.3	
1	Manganese	106	
1	Nickel	4.2	
1	Potassium	660	
1	Sodium	62	J
1	Strontium	46	
1	Vanadium	14.1	
1	Zinc	16.1	

200-HWTL-16

Depth	Analyte	Result	Flag
0	Manganese	150	
0	Nickel	4	J
0	Potassium	880	
0	Sodium	130	
0	Strontium	68.7	
0	Vanadium	12.9	
0	Zinc	17.2	
1	Manganese	130	
1	Molybdenum	0.6	J
1	Nickel	4.8	
1	Potassium	940	
1	Sodium	171	
1	Strontium	212	
1	Vanadium	18.7	
1	Zinc	17.9	

200-HWTL-14

Depth	Analyte	Result	Flag
0	Manganese	107	
0	Nickel	4.1	
0	Potassium	660	
0	Sodium	60	J
0	Strontium	59	
0	Vanadium	14.3	
0	Zinc	16.5	
1	Manganese	124	
1	Nickel	4.6	
1	Potassium	880	
1	Sodium	160	
1	Strontium	126	
1	Vanadium	15.8	
1	Zinc	22.3	

200-HWTL-17

Depth	Analyte	Result	Flag
0	Manganese	120	
0	Nickel	4	J
0	Potassium	970	
0	Sodium	130	
0	Strontium	160	
0	Vanadium	13.9	
0	Zinc	17.7	
1	Manganese	145	T
1	Nickel	3.9	J T
1	Potassium	700	T
1	Sodium	158	T
1	Strontium	142	T
1	Vanadium	14.1	T
1	Zinc	17.7	T

200-HWTL-18

Depth	Analyte	Result	Flag
0	Manganese	104	T
0	Nickel	3.7	J T
0	Potassium	1360	T
0	Sodium	110	T
0	Strontium	57.8	T
0	Vanadium	13.2	T
0	Zinc	19.9	T
1	Manganese	95.6	T
1	Nickel	3.3	J T
1	Potassium	710	T
1	Sodium	75	J T
1	Strontium	94	T
1	Vanadium	11.1	T
1	Zinc	13	T

200-HWTL-19

Depth	Analyte	Result	Flag
0	Manganese	297	
0	Molybdenum	0.1	J
0	Nickel	3.3	J
0	Potassium	450	
0	Sodium	102	
0	Strontium	51.9	
0	Vanadium	10.9	
0	Zinc	12.3	
1	Manganese	142	
1	Nickel	3.1	J
1	Potassium	790	
1	Sodium	144	
1	Strontium	58	
1	Vanadium	11.1	
1	Zinc	14	

200-HWTL-20

Depth	Analyte	Result	Flag
0	Manganese	213	
0	Molybdenum	0.1	J
0	Nickel	3.4	J
0	Potassium	420	
0	Sodium	150	
0	Strontium	48	
0	Vanadium	10.2	
0	Zinc	12.4	QD
1	Manganese	161	
1	Nickel	3.6	J
1	Potassium	540	
1	Sodium	150	
1	Strontium	66	
1	Vanadium	11.8	
1	Zinc	11.4	

200-HWTL-21

Depth	Analyte	Result	Flag
0	Manganese	185	
0	Molybdenum	0.2	J
0	Nickel	4.5	
0	Potassium	790	QD
0	Sodium	205	
0	Strontium	40.2	QD
0	Vanadium	13.6	
0	Zinc	35.4	
1	Manganese	103	
1	Molybdenum	0.09	J
1	Nickel	3.9	
1	Potassium	630	
1	Sodium	196	
1	Strontium	41.7	
1	Vanadium	12.8	
1	Zinc	15.5	

200-HWTL-22

Depth	Analyte	Result	Flag
0	Manganese	135	
0	Nickel	4	
0	Potassium	1200	
0	Sodium	56	J
0	Strontium	85.5	
0	Vanadium	13.2	
0	Zinc	19.4	
1	Manganese	151	
1	Nickel	3.9	
1	Potassium	900	
1	Sodium	50	J
1	Strontium	44.2	
1	Vanadium	12.7	
1	Zinc	22	

200-HWTL-23

Depth	Analyte	Result	Flag
0	Manganese	348	
0	Molybdenum	0.1	J RB
0	Nickel	3.7	J
0	Potassium	590	
0	Sodium	66	J
0	Strontium	35.8	
0	Vanadium	14.6	
0	Zinc	15.4	
1	Manganese	331	
1	Molybdenum	0.2	J RB
1	Nickel	5.2	
1	Potassium	1090	
1	Sodium	70	J
1	Strontium	76.5	
1	Vanadium	14.9	
1	Zinc	25.1	

200-HWTL-24

Depth	Analyte	Result	Flag
0	Manganese	213	
0	Molybdenum	0.7	J RB
0	Nickel	4.3	
0	Potassium	1010	
0	Sodium	85	J
0	Strontium	153	
0	Thallium	1.22	
0	Vanadium	12.6	
0	Zinc	38.7	
1	Manganese	257	
1	Molybdenum	0.6	J RB
1	Nickel	4.4	
1	Potassium	940	
1	Sodium	116	
1	Strontium	76.8	
1	Vanadium	14.4	
1	Zinc	23.1	

200-HWTL-25

Depth	Analyte	Result	Flag
0	Manganese	217	
0	Molybdenum	0.3	J
0	Nickel	4	
0	Potassium	570	
0	Sodium	105	
0	Strontium	48.9	
0	Vanadium	11.9	
0	Zinc	14.8	
1	Manganese	203	
1	Molybdenum	0.5	J
1	Nickel	4	
1	Potassium	940	
1	Sodium	107	
1	Strontium	64.9	
1	Vanadium	12.8	
1	Zinc	20.3	

200-HWTL-26

Depth	Analyte	Result	Flag
0	Manganese	300	
0	Molybdenum	0.9	J
0	Nickel	8.8	
0	Potassium	2370	
0	Sodium	170	
0	Strontium	182	
0	Vanadium	19.1	
0	Zinc	41.1	
1	Manganese	200	
1	Molybdenum	0.6	J RB
1	Nickel	6	
1	Potassium	1340	
1	Sodium	122	
1	Strontium	120	
1	Vanadium	15.4	
1	Zinc	28.6	

Hazardous Waste Transmission Line
Metal Detections (Manganese - Zinc)
200 Area Location

Split-Spoon Sample — PVC, Removed

Hand Auger Sample — Stainless Steel, Removed

Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifer flag definitions.

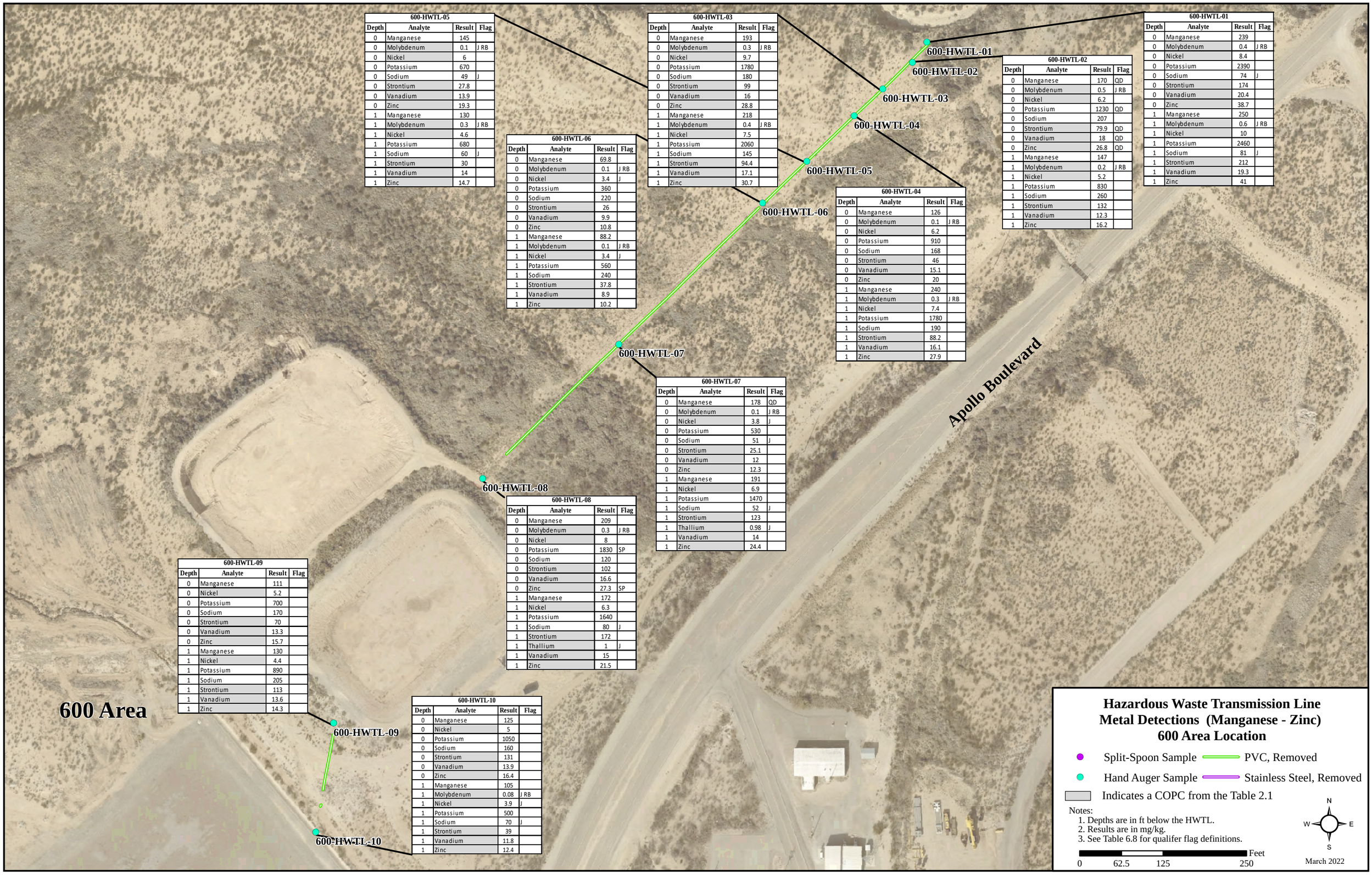
N W E S

0 62.5 125 250 Feet

March 2022

Figure 6.18 SWMU 10 HWTLs 600 Area Metal Detections (Manganese to Zinc)

(SEE NEXT PAGE)



600-HWTL-01

Depth	Analyte	Result	Flag
0	Manganese	239	
0	Molybdenum	0.4	J RB
0	Nickel	8.4	
0	Potassium	2390	
0	Sodium	74	J
0	Strontium	174	
0	Vanadium	20.4	
0	Zinc	38.7	
1	Manganese	250	
1	Molybdenum	0.6	J RB
1	Nickel	10	
1	Potassium	2460	
1	Sodium	81	J
1	Strontium	212	
1	Vanadium	19.3	
1	Zinc	41	

600-HWTL-02

Depth	Analyte	Result	Flag
0	Manganese	170	QD
0	Molybdenum	0.5	J RB
0	Nickel	6.2	
0	Potassium	1230	QD
0	Sodium	207	
0	Strontium	79.9	QD
0	Vanadium	18	QD
0	Zinc	26.8	QD
1	Manganese	147	
1	Molybdenum	0.2	J RB
1	Nickel	5.2	
1	Potassium	830	
1	Sodium	260	
1	Strontium	132	
1	Vanadium	12.3	
1	Zinc	16.2	

600-HWTL-03

Depth	Analyte	Result	Flag
0	Manganese	193	
0	Molybdenum	0.3	J RB
0	Nickel	9.7	
0	Potassium	1780	
0	Sodium	180	
0	Strontium	99	
0	Vanadium	16	
0	Zinc	28.8	
1	Manganese	218	
1	Molybdenum	0.4	J RB
1	Nickel	7.5	
1	Potassium	2060	
1	Sodium	145	
1	Strontium	94.4	
1	Vanadium	17.1	
1	Zinc	30.7	

600-HWTL-04

Depth	Analyte	Result	Flag
0	Manganese	126	
0	Molybdenum	0.1	J RB
0	Nickel	6.2	
0	Potassium	910	
0	Sodium	168	
0	Strontium	46	
0	Vanadium	15.1	
0	Zinc	20	
1	Manganese	240	
1	Molybdenum	0.3	J RB
1	Nickel	7.4	
1	Potassium	1780	
1	Sodium	190	
1	Strontium	88.2	
1	Vanadium	16.1	
1	Zinc	27.9	

600-HWTL-05

Depth	Analyte	Result	Flag
0	Manganese	145	
0	Molybdenum	0.1	J RB
0	Nickel	6	
0	Potassium	670	
0	Sodium	49	J
0	Strontium	27.8	
0	Vanadium	13.9	
0	Zinc	19.3	
1	Manganese	130	
1	Molybdenum	0.3	J RB
1	Nickel	4.6	
1	Potassium	680	
1	Sodium	60	J
1	Strontium	30	
1	Vanadium	14	
1	Zinc	14.7	

600-HWTL-06

Depth	Analyte	Result	Flag
0	Manganese	69.8	
0	Molybdenum	0.1	J RB
0	Nickel	3.4	J
0	Potassium	360	
0	Sodium	220	
0	Strontium	26	
0	Vanadium	9.9	
0	Zinc	10.8	
1	Manganese	88.2	
1	Molybdenum	0.1	J RB
1	Nickel	3.4	J
1	Potassium	560	
1	Sodium	240	
1	Strontium	37.8	
1	Vanadium	8.9	
1	Zinc	10.2	

600-HWTL-07

Depth	Analyte	Result	Flag
0	Manganese	178	QD
0	Molybdenum	0.1	J RB
0	Nickel	3.8	J
0	Potassium	530	
0	Sodium	51	J
0	Strontium	25.1	
0	Vanadium	12	
0	Zinc	12.3	
1	Manganese	191	
1	Nickel	6.9	
1	Potassium	1470	
1	Sodium	52	J
1	Strontium	123	
1	Thallium	0.98	J
1	Vanadium	14	
1	Zinc	24.4	

600-HWTL-08

Depth	Analyte	Result	Flag
0	Manganese	209	
0	Molybdenum	0.3	J RB
0	Nickel	8	
0	Potassium	1830	SP
0	Sodium	120	
0	Strontium	102	
0	Vanadium	16.6	
0	Zinc	27.3	SP
1	Manganese	172	
1	Nickel	6.3	
1	Potassium	1640	
1	Sodium	80	J
1	Strontium	172	
1	Thallium	1	J
1	Vanadium	15	
1	Zinc	21.5	

600-HWTL-09

Depth	Analyte	Result	Flag
0	Manganese	111	
0	Nickel	5.2	
0	Potassium	700	
0	Sodium	170	
0	Strontium	70	
0	Vanadium	13.3	
0	Zinc	15.7	
1	Manganese	130	
1	Nickel	4.4	
1	Potassium	890	
1	Sodium	205	
1	Strontium	113	
1	Vanadium	13.6	
1	Zinc	14.3	

600-HWTL-10

Depth	Analyte	Result	Flag
0	Manganese	125	
0	Nickel	5	
0	Potassium	1050	
0	Sodium	160	
0	Strontium	131	
0	Vanadium	13.9	
0	Zinc	16.4	
1	Manganese	105	
1	Molybdenum	0.08	J RB
1	Nickel	3.9	J
1	Potassium	500	
1	Sodium	70	J
1	Strontium	39	
1	Vanadium	11.8	
1	Zinc	12.4	

Hazardous Waste Transmission Line
Metal Detections (Manganese - Zinc)
600 Area Location

Split-Spoon Sample — PVC, Removed

Hand Auger Sample — Stainless Steel, Removed

Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifer flag definitions.

0 62.5 125 250 Feet

N W E S

March 2022

Figure 6.19 SWMU 10 HWTLs 200 Industrial Area Other Inorganic Compounds Detections

(SEE NEXT PAGE)

200 Area

200-HWTL-04			
Depth	Analyte	Result	Flag
0	Chloride	4.8	J RB
0	Nitrate Nitrite as N	0.14	J RB
1	Chloride	2.8	J RB
1	Nitrate Nitrite as N	0.18	J RB

200-HWTL-04.1			
Depth	Analyte	Result	Flag
0	Chloride	1.6	J RB
0	Nitrate Nitrite as N	0.49	J RB
1	Chloride	1.6	J RB
1	Nitrate Nitrite as N	0.4	RB

200-HWTL-05			
Depth	Analyte	Result	Flag
0	Chloride	7	J T
0	Cyanide, Total	0.025	J T
0	Nitrate+Nitrite as Nitrogen	12.8	T
1	Nitrate+Nitrite as Nitrogen	9.2	T

200-HWTL-07			
Depth	Analyte	Result	Flag
13	Chloride	31	
13	Nitrate+Nitrite as Nitrogen	14.3	
15	Chloride	32	
15	Nitrate+Nitrite as Nitrogen	13.4	

200-HWTL-09			
Depth	Analyte	Result	Flag
13	Chloride	31	J
13	Cyanide, Total	0.083	J
13	Nitrate+Nitrite as Nitrogen	13.3	
15	Chloride	31	J
15	Nitrate+Nitrite as Nitrogen	15.5	
15	Perchlorate	0.0004	J

200-HWTL-08			
Depth	Analyte	Result	Flag
13	Chloride	110	
13	Nitrate+Nitrite as Nitrogen	24.3	
13	Perchlorate	0.0008	J
15	Chloride	23	J
15	Nitrate+Nitrite as Nitrogen	8.7	

200-HWTL-06			
Depth	Analyte	Result	Flag
13	Chloride	20	J
13	Nitrate+Nitrite as Nitrogen	3.3	J
15	Chloride	19	J
15	Nitrate+Nitrite as Nitrogen	3	J

200-HWTL-10			
Depth	Analyte	Result	Flag
0	Chloride	15	J T
0	Nitrate+Nitrite as Nitrogen	2.3	J RB T
1	Chloride	9	J T
1	Nitrate+Nitrite as Nitrogen	3.7	J RB T

200-HWTL-11			
Depth	Analyte	Result	Flag
0	Chloride	13	J T
0	Nitrate+Nitrite as Nitrogen	1.3	J RB T
1	Chloride	17	J T
1	Nitrate+Nitrite as Nitrogen	1.1	J T

200-HWTL-12			
Depth	Analyte	Result	Flag
0	Chloride	118	
0	Cyanide, Total	0.017	J
0	Nitrate+Nitrite as Nitrogen	1.8	J RB
1	Chloride	105	
1	Cyanide, Total	0.031	J
1	Nitrate+Nitrite as Nitrogen	1.1	J RB

200-HWTL-13			
Depth	Analyte	Result	Flag
0	Chloride	9	J
0	Cyanide, Total	0.019	J
1	Chloride	84	
1	Nitrate+Nitrite as Nitrogen	2.7	J RB

200-HWTL-04.2			
Depth	Analyte	Result	Flag
0	Chloride	1.2	J
1	Chloride	1.4	J
1	Nitrate Nitrite as N	0.38	RB

200-HWTL-03			
Depth	Analyte	Result	Flag
0	Cyanide, Total	0.019	J
0	Nitrate+Nitrite as Nitrogen	15.1	
1	Cyanide, Total	0.047	J
1	Nitrate+Nitrite as Nitrogen	7.9	

200-HWTL-03.1			
Depth	Analyte	Result	Flag
0	Chloride	17	J
0	Cyanide, Total	0.14	J
0	Nitrate+Nitrite as Nitrogen	13.4	
1	Cyanide, Total	0.025	J
1	Nitrate+Nitrite as Nitrogen	5.1	J

200-HWTL-02.2			
Depth	Analyte	Result	Flag
0	Chloride	65	
0	Cyanide, Total	0.037	J
0	Nitrate+Nitrite as Nitrogen	13.2	
0	Perchlorate	0.0006	J
1	Chloride	66	
1	Cyanide, Total	0.117	
1	Nitrate+Nitrite as Nitrogen	11	
1	Perchlorate	0.0006	J

200-HWTL-02.1			
Depth	Analyte	Result	Flag
0	Chloride	40	
0	Nitrate+Nitrite as Nitrogen	2.3	J
1	Chloride	28	J
1	Cyanide, Total	0.029	J
1	Nitrate+Nitrite as Nitrogen	3.6	J

200-HWTL-02			
Depth	Analyte	Result	Flag
0	Chloride	38	
0	Cyanide, Total	0.017	J
0	Nitrate+Nitrite as Nitrogen	23.7	
0	Perchlorate	0.001	J
1	Chloride	33	
1	Cyanide, Total	0.05	J
1	Nitrate+Nitrite as Nitrogen	14.6	
1	Perchlorate	0.0008	J

200-HWTL-01.2			
Depth	Analyte	Result	Flag
0	Chloride	30	J
0	Cyanide, Total	0.026	J
0	Nitrate+Nitrite as Nitrogen	1.5	J
1	Chloride	219	
1	Nitrate+Nitrite as Nitrogen	6.3	
1	Perchlorate	0.0006	J

200-HWTL-01.3			
Depth	Analyte	Result	Flag
0	Cyanide, Total	0.093	J
0	Nitrate+Nitrite as Nitrogen	2.7	J
1	Cyanide, Total	0.05	J
1	Nitrate+Nitrite as Nitrogen	3.3	J

200-HWTL-01.4			
Depth	Analyte	Result	Flag
0	Cyanide, Total	0.06	J
0	Nitrate+Nitrite as Nitrogen	4.7	J
1	Nitrate+Nitrite as Nitrogen	3.9	J

200-HWTL-01.5			
Depth	Analyte	Result	Flag
0	Nitrate+Nitrite as Nitrogen	10.6	
1	Nitrate+Nitrite as Nitrogen	16	

200-HWTL-01.6			
Depth	Analyte	Result	Flag
0	Chloride	12	J
0	Cyanide, Total	0.024	J
0	Nitrate+Nitrite as Nitrogen	3.9	J
1	Chloride	11	J
1	Cyanide, Total	0.044	J
1	Nitrate+Nitrite as Nitrogen	3.7	J

200-HWTL-01.7			
Depth	Analyte	Result	Flag
0	Chloride	13	J
0	Cyanide, Total	0.05	J
0	Nitrate+Nitrite as Nitrogen	23.2	
1	Cyanide, Total	0.041	J
1	Nitrate+Nitrite as Nitrogen	13	

200-HWTL-01.8			
Depth	Analyte	Result	Flag
0	Chloride	14	J EB
0	Cyanide, Total	0.026	J
0	Nitrate+Nitrite as Nitrogen	3.4	J
1	Chloride	12	J
1	Nitrate+Nitrite as Nitrogen	5	J

200-HWTL-01.9			
Depth	Analyte	Result	Flag
0	Chloride	14	J
0	Nitrate+Nitrite as Nitrogen	11.4	
0	Perchlorate	0.0004	J
1	Chloride	16	J
1	Nitrate+Nitrite as Nitrogen	23.6	

200-HWTL-04
200-HWTL-04.1
200-HWTL-04.2
200-HWTL-05
200-HWTL-06
200-HWTL-07
200-HWTL-09
200-HWTL-08
200-HWTL-10
200-HWTL-11
200-HWTL-12
200-HWTL-13
200-HWTL-03.1
200-HWTL-03
200-HWTL-02.2
200-HWTL-02.1
200-HWTL-02
200-HWTL-01.2
200-HWTL-01.3
200-HWTL-01.4
200-HWTL-01.5
200-HWTL-01.6
200-HWTL-01.7
200-HWTL-01.8
200-HWTL-01.9

Apollo Boulevard

Hazardous Waste Transmission Line
Other Inorganic Compound Detections
200 Industrial Area Location

Split-Spoon Sample — PVC, Removed

Hand Auger Sample — Stainless Steel, Removed

Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifier flag definitions.

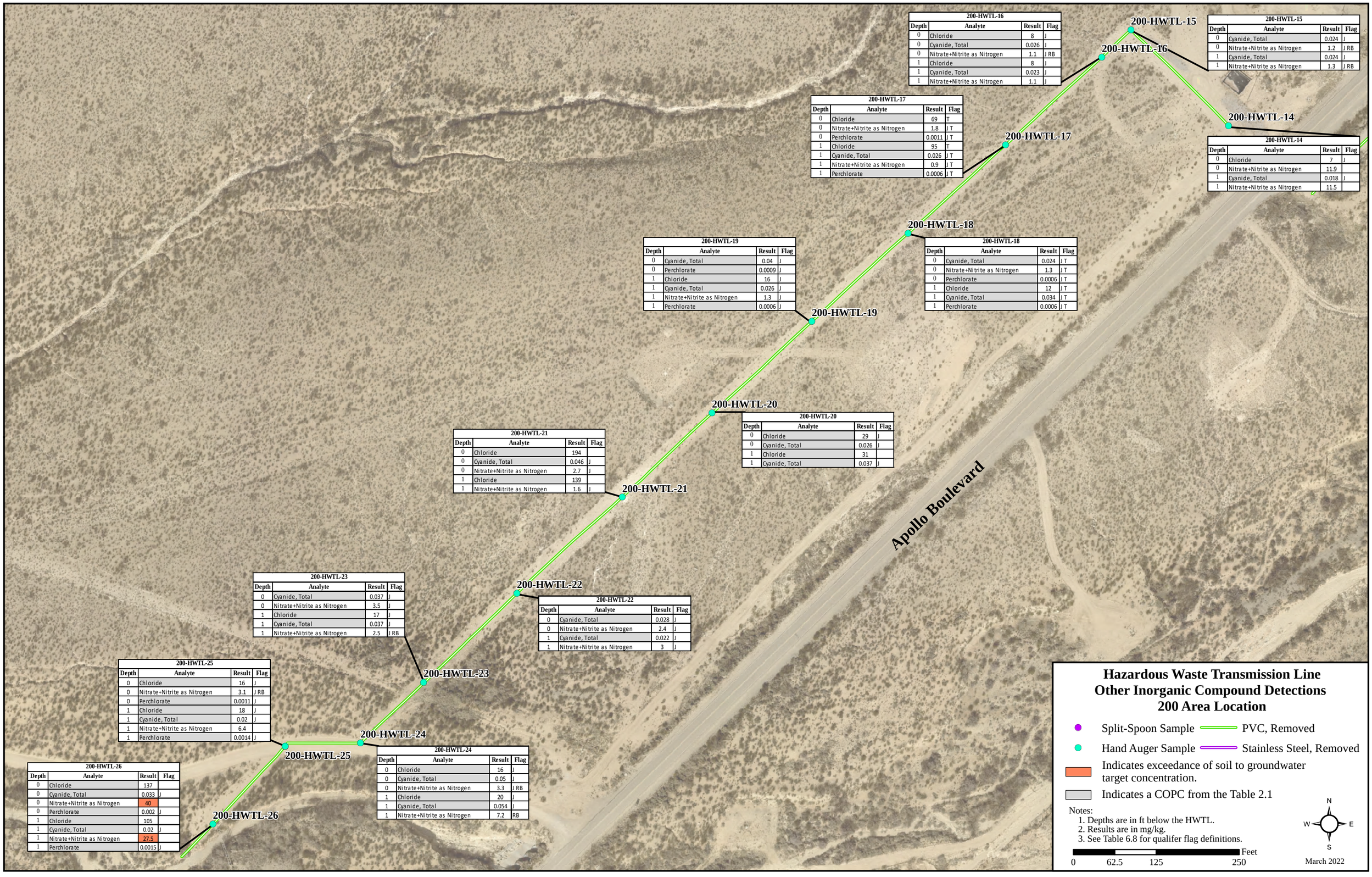
0 50 100 200 Feet

N W E S

July 2019

Figure 6.20 SWMU 10 HWTLs 200 Area Other Inorganic Compounds Detections

(SEE NEXT PAGE)



200-HWTL-16

Depth	Analyte	Result	Flag
0	Chloride	8	J
0	Cyanide, Total	0.026	J
0	Nitrate+Nitrite as Nitrogen	1.1	J RB
1	Chloride	8	J
1	Cyanide, Total	0.023	J
1	Nitrate+Nitrite as Nitrogen	1.1	J

200-HWTL-15

Depth	Analyte	Result	Flag
0	Cyanide, Total	0.024	J
0	Nitrate+Nitrite as Nitrogen	1.2	J RB
1	Cyanide, Total	0.024	J
1	Nitrate+Nitrite as Nitrogen	1.3	J RB

200-HWTL-17

Depth	Analyte	Result	Flag
0	Chloride	69	T
0	Nitrate+Nitrite as Nitrogen	1.8	J T
0	Perchlorate	0.0011	J T
1	Chloride	95	T
1	Cyanide, Total	0.026	J T
1	Nitrate+Nitrite as Nitrogen	0.9	J T
1	Perchlorate	0.0006	J T

200-HWTL-14

Depth	Analyte	Result	Flag
0	Chloride	7	J
0	Nitrate+Nitrite as Nitrogen	11.9	
1	Cyanide, Total	0.018	J
1	Nitrate+Nitrite as Nitrogen	11.5	

200-HWTL-19

Depth	Analyte	Result	Flag
0	Cyanide, Total	0.04	J
0	Perchlorate	0.0009	J
1	Chloride	16	J
1	Cyanide, Total	0.026	J
1	Nitrate+Nitrite as Nitrogen	1.3	J
1	Perchlorate	0.0006	J

200-HWTL-18

Depth	Analyte	Result	Flag
0	Cyanide, Total	0.024	J T
0	Nitrate+Nitrite as Nitrogen	1.3	J T
0	Perchlorate	0.0006	J T
1	Chloride	12	J T
1	Cyanide, Total	0.034	J T
1	Perchlorate	0.0006	J T

200-HWTL-20

Depth	Analyte	Result	Flag
0	Chloride	29	J
0	Cyanide, Total	0.026	J
1	Chloride	31	
1	Cyanide, Total	0.037	J

200-HWTL-21

Depth	Analyte	Result	Flag
0	Chloride	194	
0	Cyanide, Total	0.046	J
0	Nitrate+Nitrite as Nitrogen	2.7	J
1	Chloride	139	
1	Nitrate+Nitrite as Nitrogen	1.6	J

200-HWTL-22

Depth	Analyte	Result	Flag
0	Cyanide, Total	0.028	J
0	Nitrate+Nitrite as Nitrogen	2.4	J
1	Cyanide, Total	0.022	J
1	Nitrate+Nitrite as Nitrogen	3	J

200-HWTL-23

Depth	Analyte	Result	Flag
0	Cyanide, Total	0.037	J
0	Nitrate+Nitrite as Nitrogen	3.5	J
1	Chloride	17	J
1	Cyanide, Total	0.037	J
1	Nitrate+Nitrite as Nitrogen	2.5	J RB

200-HWTL-24

Depth	Analyte	Result	Flag
0	Chloride	16	J
0	Cyanide, Total	0.05	J
0	Nitrate+Nitrite as Nitrogen	3.3	J RB
1	Chloride	20	J
1	Cyanide, Total	0.054	J
1	Nitrate+Nitrite as Nitrogen	7.2	RB

200-HWTL-25

Depth	Analyte	Result	Flag
0	Chloride	16	J
0	Nitrate+Nitrite as Nitrogen	3.1	J RB
0	Perchlorate	0.0011	J
1	Chloride	18	J
1	Cyanide, Total	0.02	J
1	Nitrate+Nitrite as Nitrogen	6.4	
1	Perchlorate	0.0014	J

200-HWTL-26

Depth	Analyte	Result	Flag
0	Chloride	137	
0	Cyanide, Total	0.033	J
0	Nitrate+Nitrite as Nitrogen	40	
0	Perchlorate	0.002	J
1	Chloride	105	
1	Cyanide, Total	0.02	J
1	Nitrate+Nitrite as Nitrogen	27.5	
1	Perchlorate	0.0015	J

Hazardous Waste Transmission Line
Other Inorganic Compound Detections
200 Area Location

Split-Spoon Sample — PVC, Removed

Hand Auger Sample — Stainless Steel, Removed

Indicates exceedance of soil to groundwater target concentration.

Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifer flag definitions.

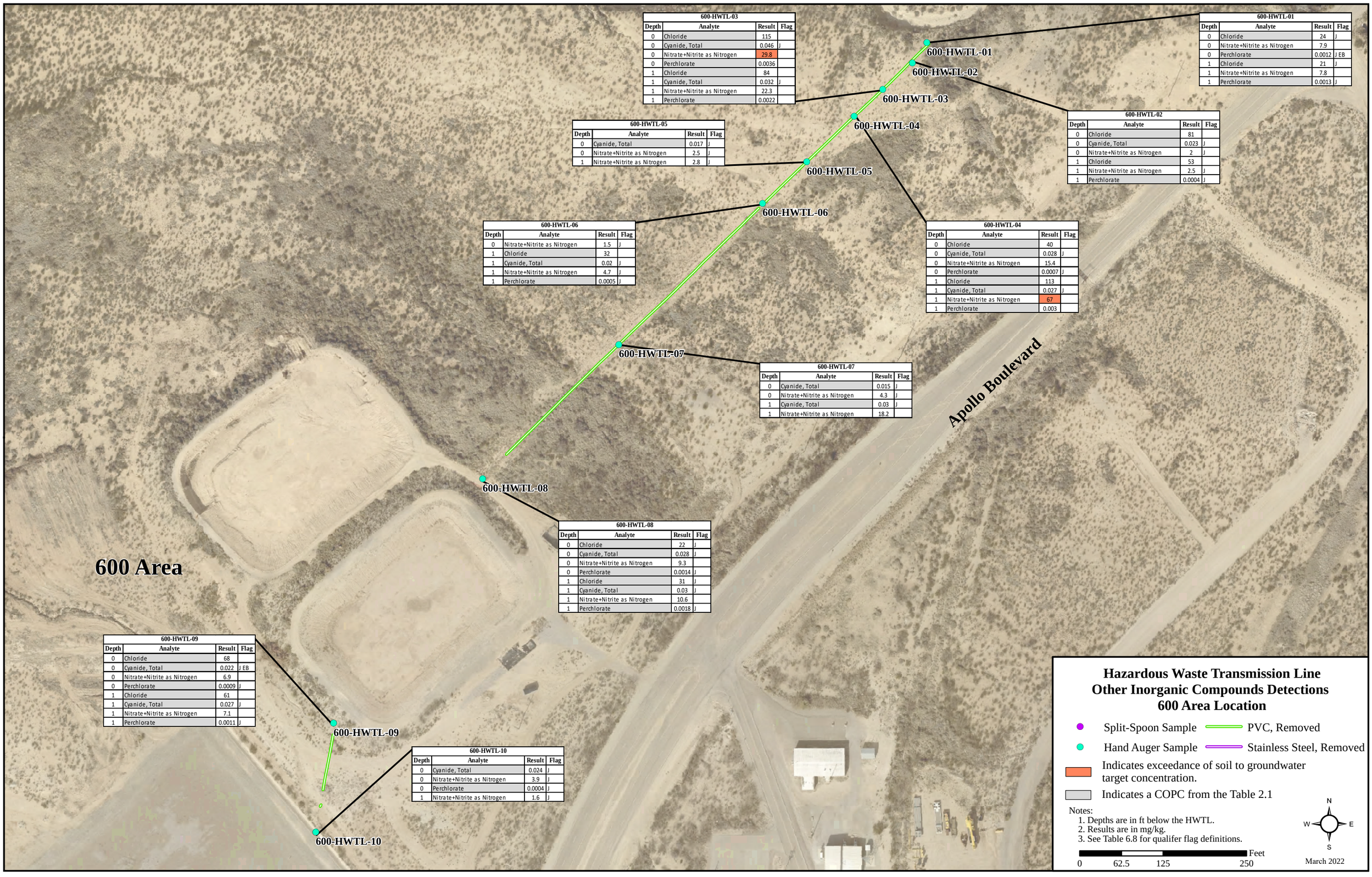
0 62.5 125 250 Feet

N W E S

March 2022

Figure 6.21 SWMU 10 HWTLs 600 Area Other Inorganic Compounds Detections

(SEE NEXT PAGE)



600-HWTL-03

Depth	Analyte	Result	Flag
0	Chloride	115	
0	Cyanide, Total	0.046	J
0	Nitrate+Nitrite as Nitrogen	29.8	
0	Perchlorate	0.0036	
1	Chloride	84	
1	Cyanide, Total	0.032	J
1	Nitrate+Nitrite as Nitrogen	22.3	
1	Perchlorate	0.0022	

600-HWTL-01

Depth	Analyte	Result	Flag
0	Chloride	24	J
0	Nitrate+Nitrite as Nitrogen	7.9	
0	Perchlorate	0.0012	J EB
1	Chloride	21	J
1	Nitrate+Nitrite as Nitrogen	7.8	
1	Perchlorate	0.0013	J

600-HWTL-05

Depth	Analyte	Result	Flag
0	Cyanide, Total	0.017	J
0	Nitrate+Nitrite as Nitrogen	2.5	J
1	Nitrate+Nitrite as Nitrogen	2.8	J

600-HWTL-02

Depth	Analyte	Result	Flag
0	Chloride	81	
0	Cyanide, Total	0.023	J
0	Nitrate+Nitrite as Nitrogen	2	J
1	Chloride	53	
1	Nitrate+Nitrite as Nitrogen	2.5	J
1	Perchlorate	0.0004	J

600-HWTL-06

Depth	Analyte	Result	Flag
0	Nitrate+Nitrite as Nitrogen	1.5	J
1	Chloride	32	
1	Cyanide, Total	0.02	J
1	Nitrate+Nitrite as Nitrogen	4.7	J
1	Perchlorate	0.0005	J

600-HWTL-04

Depth	Analyte	Result	Flag
0	Chloride	40	
0	Cyanide, Total	0.028	J
0	Nitrate+Nitrite as Nitrogen	15.4	
0	Perchlorate	0.0007	J
1	Chloride	113	
1	Cyanide, Total	0.027	J
1	Nitrate+Nitrite as Nitrogen	67	
1	Perchlorate	0.003	

600-HWTL-07

Depth	Analyte	Result	Flag
0	Cyanide, Total	0.015	J
0	Nitrate+Nitrite as Nitrogen	4.3	J
1	Cyanide, Total	0.03	J
1	Nitrate+Nitrite as Nitrogen	18.2	

600-HWTL-08

Depth	Analyte	Result	Flag
0	Chloride	22	J
0	Cyanide, Total	0.028	J
0	Nitrate+Nitrite as Nitrogen	9.3	
0	Perchlorate	0.0014	J
1	Chloride	31	J
1	Cyanide, Total	0.03	J
1	Nitrate+Nitrite as Nitrogen	10.6	
1	Perchlorate	0.0018	J

600-HWTL-09

Depth	Analyte	Result	Flag
0	Chloride	68	
0	Cyanide, Total	0.022	J EB
0	Nitrate+Nitrite as Nitrogen	6.9	
0	Perchlorate	0.0009	J
1	Chloride	61	
1	Cyanide, Total	0.027	J
1	Nitrate+Nitrite as Nitrogen	7.1	
1	Perchlorate	0.0011	J

600-HWTL-10

Depth	Analyte	Result	Flag
0	Cyanide, Total	0.024	J
0	Nitrate+Nitrite as Nitrogen	3.9	J
0	Perchlorate	0.0004	J
1	Nitrate+Nitrite as Nitrogen	1.6	J

Hazardous Waste Transmission Line
Other Inorganic Compounds Detections
600 Area Location

Split-Spoon Sample
Hand Auger Sample
PVC, Removed
Stainless Steel, Removed
Indicates exceedance of soil to groundwater target concentration.
Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifer flag definitions.

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0 62.5 125 250 Feet

March 2022

Figure 6.22 SWMU 10 HWTLs 200 Industrial Area Dioxin Detections

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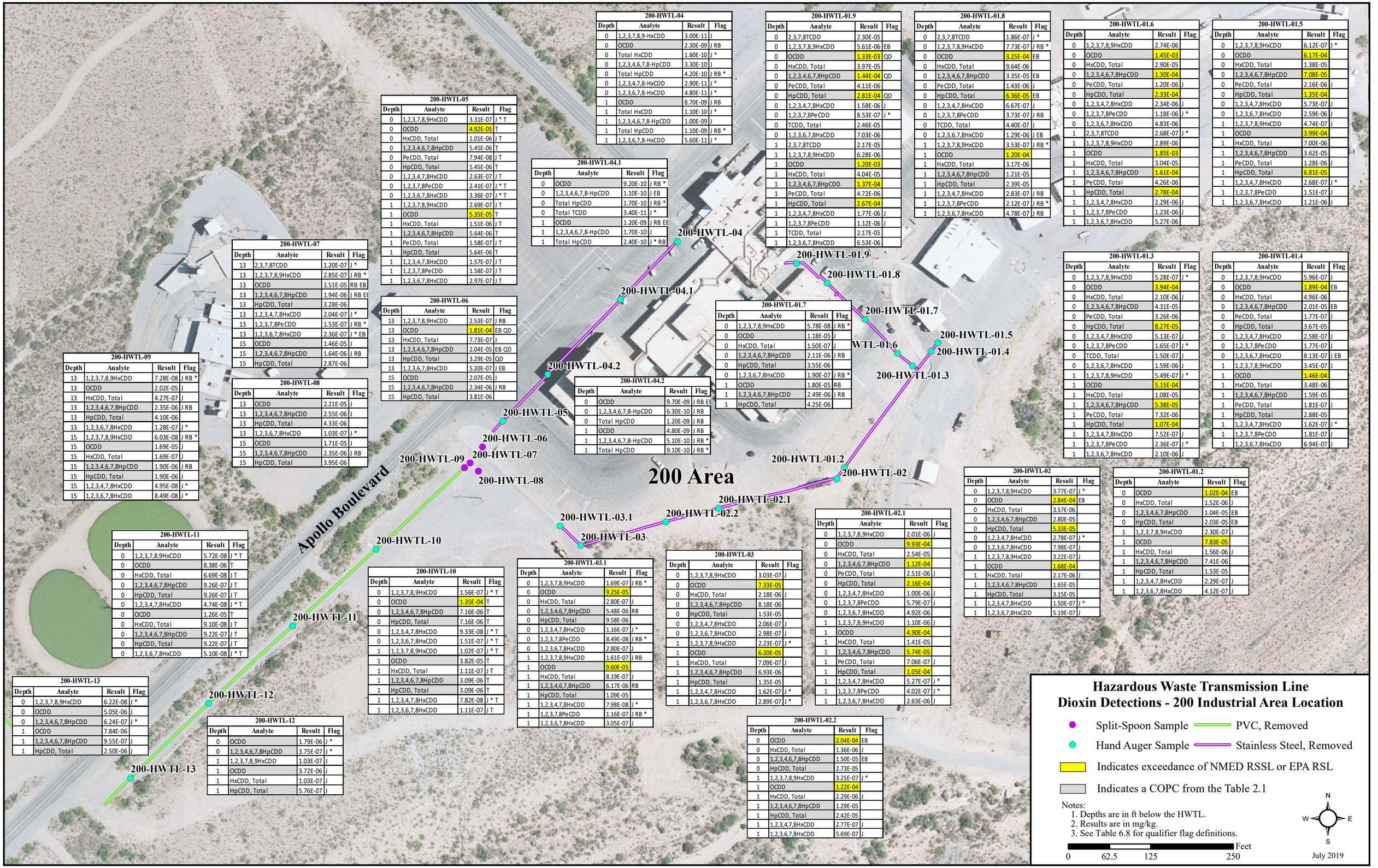


200-HWTL-04

Depth	Analyte	Result	Flag
0	1,2,3,7,8,9-HxCDD	3.00E-11	J
0	OCDD	2.30E-09	J RB
0	Total HxCDD	1.60E-10	J *
0	1,2,3,4,6,7,8-HpCDD	3.30E-10	J
0	Total HpCDD	4.20E-10	J RB *
0	1,2,3,4,7,8-HxCDD	2.90E-11	J *
0	1,2,3,6,7,8-HxCDD	4.80E-11	J *
1	OCDD	8.70E-09	J RB
1	Total HxCDD	1.10E-10	J *
1	1,2,3,4,6,7,8-HpCDD	1.00E-09	J
1	Total HpCDD	1.10E-09	J RB *
1	1,2,3,6,7,8-HxCDD	5.60E-11	J *

200-HWTL-05

Depth	Analyte	Result	Flag
0	1,2,3,7,8,9HxCDD	3.31E-07	J * T
0	OCDD	4.92E-05	T
0	HxCDD, Total	1.01E-06	J T
0	1,2,3,4,6,7,8HpCDD	5.45E-06	T
0	PeCDD, Total	7.94E-08	J T
0	HpCDD, Total	5.45E-06	T
0	1,2,3,4,7,8HxCDD	2.63E-07	J T
0	1,2,3,7,8PeCDD	2.41E-07	J * T
0	1,2,3,6,7,8HxCDD	3.36E-07	J * T
1	1,2,3,7,8,9HxCDD	2.69E-07	J T
1	OCDD	5.35E-05	T
1	HxCDD, Total	1.51E-06	J T
1	1,2,3,4,6,7,8HpCDD	5.64E-06	T
1	PeCDD, Total	1.58E-07	J T
1	HpCDD, Total	5.64E-06	T
1	1,2,3,4,7,8HxCDD	1.57E-07	J T
1	1,2,3,7,8PeCDD	1.58E-07	J T
1	1,2,3,6,7,8HxCDD	2.97E-07	J T

200-HWTL-04.1

Depth	Analyte	Result	Flag
0	OCDD	9.20E-10	J RB *
0	1,2,3,4,6,7,8-HpCDD	1.10E-10	J EB
0	Total HpCDD	1.70E-10	J RB *
0	Total TCDD	3.40E-11	J *
1	OCDD	1.20E-09	J RB EB
1	1,2,3,4,6,7,8-HpCDD	1.70E-10	J
1	Total HpCDD	2.40E-10	J * RB

200-HWTL-06

Depth	Analyte	Result	Flag
13	2,3,7,8TCDD	2.53E-07	J RB
13	OCDD	1.81E-04	EB QD
13	HxCDD, Total	7.73E-07	J
13	1,2,3,4,6,7,8HpCDD	2.04E-05	EB QD
13	HpCDD, Total	3.29E-05	QD
13	1,2,3,6,7,8HxCDD	5.20E-07	J EB
15	OCDD	2.07E-05	J
15	1,2,3,4,6,7,8HpCDD	2.34E-06	J RB
15	HpCDD, Total	3.81E-06	

200-HWTL-07

Depth	Analyte	Result	Flag
13	2,3,7,8TCDD	1.20E-07	J *
13	1,2,3,7,8,9HxCDD	2.85E-07	J RB *
13	OCDD	1.51E-05	RB EB
13	1,2,3,4,6,7,8HpCDD	1.94E-06	J RB EB
13	HpCDD, Total	3.28E-06	
13	1,2,3,4,7,8HxCDD	2.04E-07	J *
13	1,2,3,7,8PeCDD	1.53E-07	J RB *
13	1,2,3,6,7,8HxCDD	2.36E-07	J * EB
15	OCDD	1.46E-05	J
15	1,2,3,4,6,7,8HpCDD	1.64E-06	J RB
15	HpCDD, Total	2.87E-06	

200-HWTL-08

Depth	Analyte	Result	Flag
13	OCDD	2.21E-05	J
13	1,2,3,4,6,7,8HpCDD	2.55E-06	J
13	HpCDD, Total	4.33E-06	
13	1,2,3,6,7,8HxCDD	1.03E-07	J *
15	OCDD	1.71E-05	J
15	1,2,3,4,6,7,8HpCDD	2.35E-06	J RB
15	HpCDD, Total	3.95E-06	

200-HWTL-09

Depth	Analyte	Result	Flag
13	1,2,3,7,8,9HxCDD	7.28E-08	J RB *
13	OCDD	2.02E-05	J
13	HxCDD, Total	4.27E-07	J
13	1,2,3,4,6,7,8HpCDD	2.35E-06	J RB
13	HpCDD, Total	4.10E-06	
13	1,2,3,6,7,8HxCDD	1.28E-07	J *
15	1,2,3,7,8,9HxCDD	6.03E-08	J RB *
15	OCDD	1.69E-05	J
15	HxCDD, Total	1.69E-07	J
15	1,2,3,4,6,7,8HpCDD	1.90E-06	J RB
15	HpCDD, Total	1.90E-06	J
15	1,2,3,4,7,8HxCDD	4.95E-08	J *
15	1,2,3,6,7,8HxCDD	8.49E-08	J *

200-HWTL-10

Depth	Analyte	Result	Flag
0	1,2,3,7,8,9HxCDD	1.56E-07	J * T
0	OCDD	1.35E-04	T
0	1,2,3,4,6,7,8HpCDD	7.16E-06	T
0	HpCDD, Total	7.16E-06	T
0	1,2,3,4,7,8HxCDD	9.33E-08	J * T
0	1,2,3,6,7,8HxCDD	1.51E-07	J * T
1	1,2,3,7,8,9HxCDD	1.02E-07	J * T
1	OCDD	3.82E-05	T
1	HxCDD, Total	1.11E-07	J T
1	1,2,3,4,6,7,8HpCDD	3.09E-06	T
1	HpCDD, Total	3.09E-06	T
1	1,2,3,4,7,8HxCDD	7.82E-08	J * T
1	1,2,3,6,7,8HxCDD	1.11E-07	J T

200-HWTL-11

Depth	Analyte	Result	Flag
0	1,2,3,7,8,9HxCDD	5.72E-08	J * T
0	OCDD	8.38E-06	T
0	HxCDD, Total	6.69E-08	J T
0	1,2,3,4,6,7,8HpCDD	9.26E-07	J T
0	HpCDD, Total	9.26E-07	J T
0	1,2,3,4,7,8HxCDD	4.74E-08	J * T
0	OCDD	1.26E-05	T
0	HxCDD, Total	9.10E-08	J T
0	1,2,3,4,6,7,8HpCDD	9.22E-07	J T
0	HpCDD, Total	9.22E-07	J T
0	1,2,3,6,7,8HxCDD	5.10E-08	J * T

200-HWTL-12

Depth	Analyte	Result	Flag
0	OCDD	1.79E-06	J *
0	1,2,3,4,6,7,8HpCDD	3.75E-07	J *
1	1,2,3,7,8,9HxCDD	1.03E-07	J
1	OCDD	3.72E-06	J
1	HxCDD, Total	1.03E-07	J
1	HpCDD, Total	5.76E-07	J

200-HWTL-13

Depth	Analyte	Result	Flag
0	1,2,3,7,8,9HxCDD	6.22E-08	J *
0	OCDD	5.05E-06	J
0	1,2,3,4,6,7,8HpCDD	6.24E-07	J *
1	OCDD	7.84E-06	
1	1,2,3,4,6,7,8HpCDD	9.55E-07	J
1	HpCDD, Total	2.50E-06	J

200-HWTL-03.1

Depth	Analyte	Result	Flag
0	1,2,3,7,8,9HxCDD	1.69E-07	J RB *
0	OCDD	9.25E-05	
0	HxCDD, Total	2.80E-07	J
0	1,2,3,4,6,7,8HpCDD	5.48E-06	RB
0	HpCDD, Total	9.58E-06	
0	1,2,3,4,7,8HxCDD	1.16E-07	J *
0	1,2,3,7,8PeCDD	8.49E-08	J RB *
0	1,2,3,6,7,8HxCDD	2.80E-07	J
1	1,2,3,7,8,9HxCDD	1.61E-07	J RB
1	OCDD	9.60E-05	
1	HxCDD, Total	8.19E-07	J
1	1,2,3,4,6,7,8HpCDD	6.17E-06	RB
1	HpCDD, Total	1.09E-05	
1	1,2,3,4,7,8HxCDD	7.98E-08	J *
1	1,2,3,7,8PeCDD	1.16E-07	J RB *
1	1,2,3,6,7,8HxCDD	3.05E-07	J

200-HWTL-03

Depth	Analyte	Result	Flag
0	1,2,3,7,8,9HxCDD	3.03E-07	J
0	OCDD	7.33E-05	
0	HxCDD, Total	2.18E-06	J
0	1,2,3,4,6,7,8HpCDD	8.18E-06	
0	HpCDD, Total	1.53E-05	
0	1,2,3,4,7,8HxCDD	2.06E-07	J
0	1,2,3,6,7,8HxCDD	2.98E-07	J
1	1,2,3,7,8,9HxCDD	2.23E-07	J *
1	OCDD	6.20E-05	
1	HxCDD, Total	7.09E-07	J
1	1,2,3,4,6,7,8HpCDD	6.93E-06	
1	HpCDD, Total	1.35E-05	
1	1,2,3,4,7,8HxCDD	1.62E-07	J *
1	1,2,3,6,7,8HxCDD	2.89E-07	J *

200-HWTL-02.2

Depth	Analyte	Result	Flag
0	OCDD	2.04E-04	EB
0	HxCDD, Total	1.36E-06	J
0	1,2,3,4,6,7,8HpCDD	1.50E-05	EB
0	HpCDD, Total	2.73E-05	
1	1,2,3,7,8,9HxCDD	3.25E-07	J *
1	OCDD	1.22E-04	
1	HxCDD, Total	2.29E-06	J
1	1,2,3,4,6,7,8HpCDD	1.29E-05	
1	HpCDD, Total	2.42E-05	
1	1,2,3,4,7,8HxCDD	2.77E-07	J
1	1,2,3,6,7,8HxCDD	5.69E-07	J

200-HWTL-02.1

Depth	Analyte	Result	Flag
0	1,2,3,7,8,9HxCDD	2.01E-06	J
0	OCDD	9.93E-04	
0	HxCDD, Total	2.54E-05	
0	1,2,3,4,6,7,8HpCDD	1.12E-04	
0	PeCDD, Total	2.51E-06	J
0	HpCDD, Total	2.16E-04	
0	1,2,3,4,7,8HxCDD	1.00E-06	J
0	1,2,3,7,8PeCDD	5.79E-07	J
0	1,2,3,6,7,8HxCDD	4.92E-06	
1	1,2,3,7,8,9HxCDD	1.10E-06	J
1	OCDD	4.90E-04	
1	HxCDD, Total	1.41E-05	
1	1,2,3,4,6,7,8HpCDD	5.74E-05	
1	PeCDD, Total	7.06E-07	J
1	HpCDD, Total	1.05E-04	
1	1,2,3,4,7,8HxCDD	5.27E-07	J *
1	1,2,3,7,8PeCDD	4.02E-07	J *
1	1,2,3,6,7,8HxCDD	2.63E-06	J

200-HWTL-02

Depth	Analyte	Result	Flag
0	1,2,3,7,8,9HxCDD	3.77E-07	J *
0	OCDD	2.84E-04	EB
0	HxCDD, Total	3.57E-06	
0	1,2,3,4,6,7,8HpCDD	2.80E-05	
0	HpCDD, Total	5.33E-05	
0	1,2,3,4,7,8HxCDD	2.78E-07	J *
0	1,2,3,6,7,8HxCDD	7.98E-07	J
1	1,2,3,7,8,9HxCDD	3.22E-07	J
1	OCDD	1.68E-04	
1	HxCDD, Total	2.17E-06	J
1	1,2,3,4,6,7,8HpCDD	1.65E-05	
1	HpCDD, Total	3.15E-05	
1	1,2,3,4,7,8HxCDD	1.50E-07	J *
1	1,2,3,6,7,8HxCDD	5.19E-07	J

200-HWTL-01.2

Depth	Analyte	Result	Flag
0	OCDD	1.02E-04	EB
0	HxCDD, Total	1.52E-06	J
0	1,2,3,4,6,7,8HpCDD	1.04E-05	EB
0	HpCDD, Total	2.03E-05	EB
1	1,2,3,7,8,9HxCDD	2.30E-07	J
1	OCDD	7.83E-05	
1	HxCDD, Total	1.56E-06	J
1	1,2,3,4,6,7,8HpCDD	7.41E-06	
1	HpCDD, Total	1.53E-05	
1	1,2,3,4,7,8HxCDD	2.29E-07	J
1	1,2,3,6,7,8HxCDD	4.12E-07	J

200-HWTL-01.9

Depth	Analyte	Result	Flag
0	2,3,7,8TCDD	2.30E-05	
0	1,2,3,7,8,9HxCDD	5.61E-06	EB
0	OCDD	1.33E-03	QD
0	HxCDD, Total	3.97E-05	
0	1,2,3,4,6,7,8HpCDD	1.44E-04	QD
0	PeCDD, Total	4.11E-06	
0	HpCDD, Total	2.81E-04	QD
0	1,2,3,4,7,8HxCDD	1.58E-06	J
0	1,2,3,7,8PeCDD	8.53E-07	J *
0	TCDD, Total	2.46E-05	
0	1,2,3,6,7,8HxCDD	7.03E-06	
1	2,3,7,8TCDD	2.17E-05	
1	1,2,3,7,8,9HxCDD	6.28E-06	
1	OCDD	1.20E-03	
1	HxCDD, Total	4.04E-05	
1	1,2,3,4,6,7,8HpCDD	1.37E-04	
1	PeCDD, Total	4.72E-06	
1	HpCDD, Total	2.67E-04	
1	1,2,3,4,7,8HxCDD	1.77E-06	J
1	1,2,3,7,8PeCDD	1.12E-06	J
1	TCDD, Total	2.17E-05	
1	1,2,3,6,7,8HxCDD	6.53E-06	

200-HWTL-01.8

Depth	Analyte	Result	Flag
0	2,3,7,8TCDD	1.86E-07	J *
0	1,2,3,7,8,9HxCDD	7.73E-07	J RB *
0	OCDD	3.25E-04	EB
0	HxCDD, Total	9.64E-06	
0	1,2,3,4,6,7,8HpCDD	3.35E-05	EB
0	PeCDD, Total	1.43E-06	J
0	HpCDD, Total	6.36E-05	EB
0	1,2,3,4,7,8HxCDD	6.67E-07	J
0	1,2,3,7,8PeCDD	3.73E-07	J RB
0	TCDD, Total	4.40E-07	J
0	1,2,3,6,7,8HxCDD	1.29E-06	J EB
1	1,2,3,7,8,9HxCDD	3.53E-07	J RB *
1	OCDD	1.20E-04	
1	HxCDD, Total	3.17E-06	
1	1,2,3,4,6,7,8HpCDD	1.21E-05	
1	HpCDD, Total	2.39E-05	
1	1,2,3,4,7,8HxCDD	2.83E-07	J RB
1	1,2,3,7,8PeCDD	2.12E-07	J RB *
1	1,2,3,6,7,8HxCDD	4.78E-07	J RB

200-HWTL-01.7

Depth	Analyte	Result	Flag
0	1,2,3,7,8,9HxCDD	5.78E-08	J RB *
0	OCDD	1.18E-05	J
0	HxCDD, Total	1.50E-07	J
0	1,2,3,4,6,7,8HpCDD	2.11E-06	J RB
0	HpCDD, Total	3.55E-06	
0	1,2,3,6,7,8HxCDD	1.90E-07	J RB *
1	OCDD	1.80E-05	RB
1	1,2,3,4,6,7,8HpCDD	2.49E-06	J RB
1	HpCDD, Total	4.25E-06	

200-HWTL-01.6

Depth	Analyte	Result	Flag
0	1,2,3,7,8,9HxCDD	2.74E-06	
0	OCDD	1.45E-03	
0	HxCDD, Total	2.90E-05	
0	1,2,3,4,6,7,8HpCDD	1.30E-04	
0	PeCDD, Total	1.20E-06	J
0	HpCDD, Total	2.33E-04	
0	1,2,3,4,7,8HxCDD	2.34E-06	J
0	1,2,3,7,8PeCDD	1.18E-06	J *
0	1,2,3,6,7,8HxCDD	4.83E-06	
0	2,3,7,8TCDD	2.68E-07	J *
1	1,2,3,7,8,9HxCDD	2.89E-06	
1	OCDD	1.85E-03	
1	HxCDD, Total	3.04E-05	
1	1,2,3,4,6,7,8HpCDD	1.61E-04	
1	PeCDD, Total	4.26E-06	
1	HpCDD, Total	2.78E-04	
1	1,2,3,4,7,8HxCDD	2.29E-06	J
1	1,2,3,7,8PeCDD	1.23E-06	J
1	1,2,3,6,7,8HxCDD	5.27E-06	

200-HWTL-01.5

Depth	Analyte	Result	Flag
0	1,2,3,7,8,9HxCDD	6.12E-07	J *
0	OCDD	6.17E-04	
0	HxCDD, Total	1.38E-05	
0	1,2,3,4,6,7,8HpCDD	7.08E-05	
0	PeCDD, Total	2.16E-06	J
0	HpCDD, Total	1.35E-04	
0	1,2,3,4,7,8HxCDD	5.73E-07	J
0	1,2,3,6,7,8HxCDD	2.59E-06	J
1	1,2,3,7,8,9HxCDD	4.74E-07	J
1	OCDD	3.99E-04	
1	HxCDD, Total	7.00E-06	
1	1,2,3,4,6,7,8HpCDD	3.62E-05	
1	PeCDD, Total	1.28E-06	J
1	HpCDD, Total	6.81E-05	
1	1,2,3,4,7,8HxCDD	2.68E-07	J *
1	1,2,3,7,8PeCDD	1.51E-07	J
1	1,2,3,6,7,8HxCDD	1.21E-06	J

200-HWTL-01.4

Depth	Analyte	Result	Flag
0	1,2,3,7,8,9HxCDD	5.96E-07	J
0	OCDD	1.89E-04	EB
0	HxCDD, Total	4.96E-06	
0	1,2,3,4,6,7,8HpCDD	2.01E-05	EB
0	PeCDD, Total	1.77E-07	J
0	HpCDD, Total	3.67E-05	
0	1,2,3,4,7,8HxCDD	2.58E-07	J
0	1,2,3,7,8PeCDD	1.77E-07	J
0	1,2,3,6,7,8HxCDD	8.13E-07	J EB
1	1,2,3,7,8,9HxCDD	3.45E-07	J
1	OCDD	1.46E-04	
1	HxCDD, Total	3.48E-06	
1	1,2,3,4,6,7,8HpCDD	1.59E-05	
1	PeCDD, Total	1.81E-07	J
1	HpCDD, Total	2.88E-05	
1	1,2,3,4,7,8HxCDD	1.62E-07	J *
1	1,2,3,7,8PeCDD	1.81E-07	J
1	1,2,3,6,7,8HxCDD	6.94E-07	J

200-HWTL-01.3

Depth	Analyte	Result	Flag
0	1,2,3,7,8,9HxCDD	5.28E-07	J *
0	OCDD	3.94E-04	
0	HxCDD, Total	2.10E-06	J
0	1,2,3,4,6,7,8HpCDD	4.31E-05	
0	PeCDD, Total	3.26E-06	
0	HpCDD, Total	8.27E-05	
0	1,2,3,4,7,8HxCDD	5.13E-07	J
0	1,2,3,7,8PeCDD	1.65E-07	J *
0	TCDD, Total	1.50E-07	J
0	1,2,3,6,7,8HxCDD	1.59E-06	J
1	1,2,3,7,8,9HxCDD	5.49E-07	J *
1	OCDD	5.15E-04	
1	HxCDD, Total	1.08E-05	
1	1,2,3,4,6,7,8HpCDD	5.38E-05	
1	PeCDD, Total	7.32E-06	
1	HpCDD, Total	1.07E-04	
1	1,2,3,4,7,8HxCDD	7.52E-07	J
1	1,2,3,7,8PeCDD	2.36E-07	J *
1	1,2,3,6,7,8HxCDD	2.10E-06	J

200-HWTL-01

Depth	Analyte	Result	Flag
0	1,2,3,7,8,9HxCDD	1.86E-06	J
0	OCDD	1.04E-03	
0	HxCDD, Total	2.90E-05	
0	1,2,3,4,6,7,8HpCDD	1.30E-04	
0	PeCDD, Total	1.20E-06	J
0	HpCDD, Total	2.33E-04	
0	1,2,3,4,7,8HxCDD	2.34E-06	J
0	1,2,3,7,8PeCDD	1.18E-06	J *
0	1,2,3,6,7,8HxCDD	4.83E-06	
0	2,3,7,8TCDD	2.68E-07	J *
1	1,2,3,7,8,9HxCDD	2.89E-06	
1	OCDD	1.85E-03	
1	HxCDD, Total	3.04E-05	
1	1,2,3,4,6,7,8HpCDD	1.61E-04	
1	PeCDD, Total	4.26E-06	
1	HpCDD, Total	2.78E-04	
1	1,2,3,4,7,8HxCDD	2.29E-06	J
1	1,2,3,7,8PeCDD	1.23E-06	J
1	1,2,3,6,7,8HxCDD	5.27E-06	

Hazardous Waste Transmission Line
Dioxin Detections - 200 Industrial Area Location

Split-Spoon Sample — PVC, Removed

Hand Auger Sample — Stainless Steel, Removed

Indicates exceedance of NMED RSSL or EPA RSL

Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifier flag definitions.

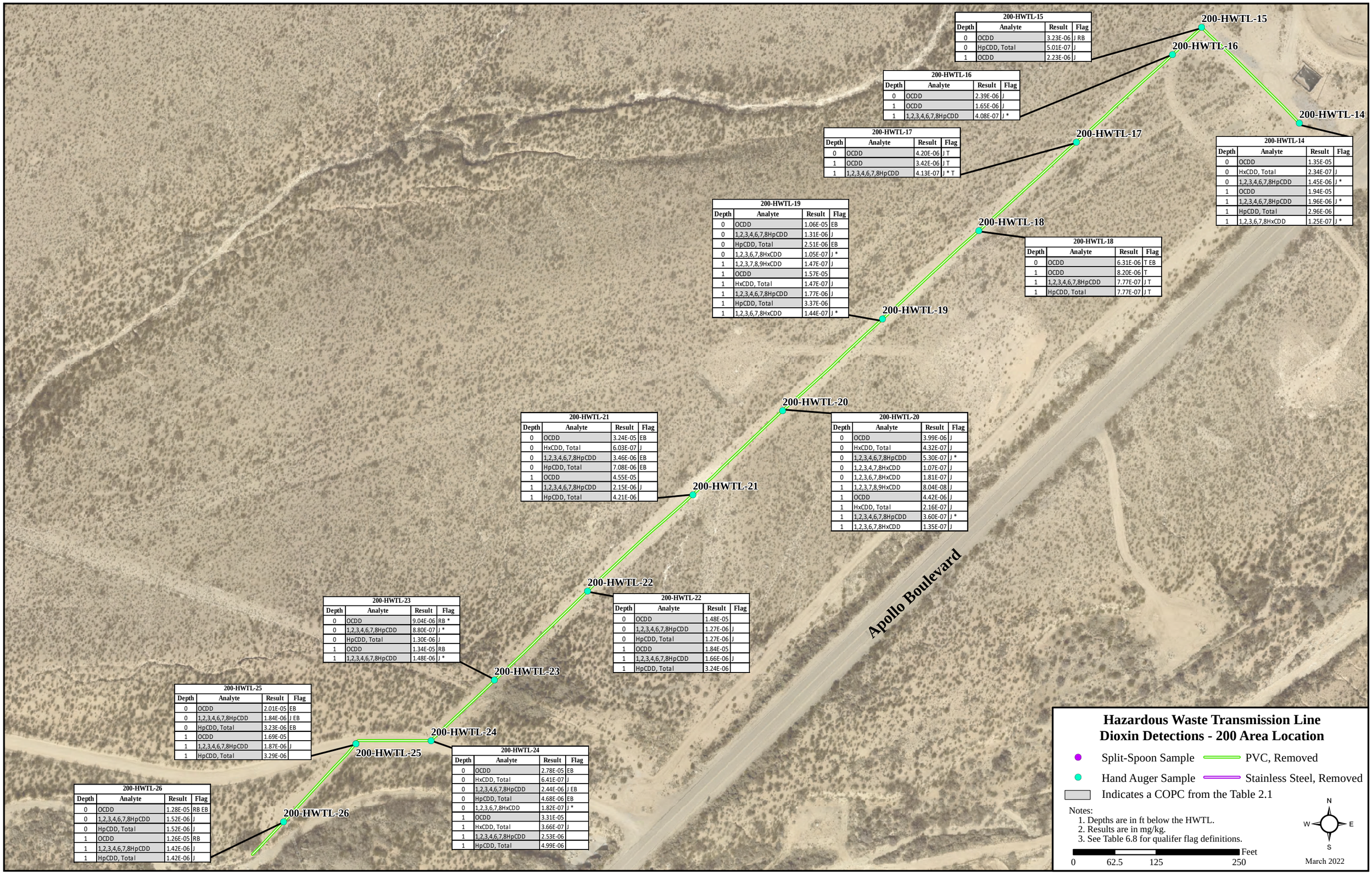
0 62.5 125 250 Feet

N W E S

July 2019

Figure 6.23 SWMU 10 HWTLs 200 Area Dioxin Detections

(SEE NEXT PAGE)



200-HWTL-15

Depth	Analyte	Result	Flag
0	OCDD	3.23E-06	J RB
0	HpCDD, Total	5.01E-07	J
1	OCDD	2.23E-06	J

200-HWTL-16

Depth	Analyte	Result	Flag
0	OCDD	2.39E-06	J
1	OCDD	1.65E-06	J
1	1,2,3,4,6,7,8HpCDD	4.08E-07	J *

200-HWTL-14

Depth	Analyte	Result	Flag
0	OCDD	1.35E-05	
0	HxCDD, Total	2.34E-07	J
0	1,2,3,4,6,7,8HpCDD	1.45E-06	J *
1	OCDD	1.94E-05	
1	1,2,3,4,6,7,8HpCDD	1.96E-06	J *
1	HpCDD, Total	2.96E-06	
1	1,2,3,6,7,8HxCDD	1.25E-07	J *

200-HWTL-17

Depth	Analyte	Result	Flag
0	OCDD	4.20E-06	J T
1	OCDD	3.42E-06	J T
1	1,2,3,4,6,7,8HpCDD	4.13E-07	J * T

200-HWTL-18

Depth	Analyte	Result	Flag
0	OCDD	6.31E-06	T EB
1	OCDD	8.20E-06	T
1	1,2,3,4,6,7,8HpCDD	7.77E-07	J T
1	HpCDD, Total	7.77E-07	J T

200-HWTL-19

Depth	Analyte	Result	Flag
0	OCDD	1.06E-05	EB
0	1,2,3,4,6,7,8HpCDD	1.31E-06	J
0	HpCDD, Total	2.51E-06	EB
0	1,2,3,6,7,8HxCDD	1.05E-07	J *
1	1,2,3,7,8,9HxCDD	1.47E-07	J
1	OCDD	1.57E-05	
1	HxCDD, Total	1.47E-07	J
1	1,2,3,4,6,7,8HpCDD	1.77E-06	J
1	HpCDD, Total	3.37E-06	
1	1,2,3,6,7,8HxCDD	1.44E-07	J *

200-HWTL-20

Depth	Analyte	Result	Flag
0	OCDD	3.99E-06	J
0	HxCDD, Total	4.32E-07	J
0	1,2,3,4,6,7,8HpCDD	5.30E-07	J *
0	1,2,3,4,7,8HxCDD	1.07E-07	J
0	1,2,3,6,7,8HxCDD	1.81E-07	J
1	1,2,3,7,8,9HxCDD	8.04E-08	J
1	OCDD	4.42E-06	J
1	HxCDD, Total	2.16E-07	J
1	1,2,3,4,6,7,8HpCDD	3.60E-07	J *
1	1,2,3,6,7,8HxCDD	1.35E-07	J

200-HWTL-21

Depth	Analyte	Result	Flag
0	OCDD	3.24E-05	EB
0	HxCDD, Total	6.03E-07	J
0	1,2,3,4,6,7,8HpCDD	3.46E-06	EB
0	HpCDD, Total	7.08E-06	EB
1	OCDD	4.55E-05	
1	1,2,3,4,6,7,8HpCDD	2.15E-06	J
1	HpCDD, Total	4.21E-06	

200-HWTL-22

Depth	Analyte	Result	Flag
0	OCDD	1.48E-05	
0	1,2,3,4,6,7,8HpCDD	1.27E-06	J
0	HpCDD, Total	1.27E-06	J
1	OCDD	1.84E-05	
1	1,2,3,4,6,7,8HpCDD	1.66E-06	J
1	HpCDD, Total	3.24E-06	

200-HWTL-23

Depth	Analyte	Result	Flag
0	OCDD	9.04E-06	RB *
0	1,2,3,4,6,7,8HpCDD	8.80E-07	J *
0	HpCDD, Total	1.30E-06	J
1	OCDD	1.34E-05	RB
1	1,2,3,4,6,7,8HpCDD	1.48E-06	J *

200-HWTL-24

Depth	Analyte	Result	Flag
0	OCDD	2.78E-05	EB
0	HxCDD, Total	6.41E-07	J
0	1,2,3,4,6,7,8HpCDD	2.44E-06	J EB
0	HpCDD, Total	4.68E-06	EB
0	1,2,3,6,7,8HxCDD	1.82E-07	J *
1	OCDD	3.31E-05	
1	HxCDD, Total	3.66E-07	J
1	1,2,3,4,6,7,8HpCDD	2.53E-06	
1	HpCDD, Total	4.99E-06	

200-HWTL-25

Depth	Analyte	Result	Flag
0	OCDD	2.01E-05	EB
0	1,2,3,4,6,7,8HpCDD	1.84E-06	J EB
0	HpCDD, Total	3.23E-06	EB
1	OCDD	1.69E-05	
1	1,2,3,4,6,7,8HpCDD	1.87E-06	J
1	HpCDD, Total	3.29E-06	

200-HWTL-26

Depth	Analyte	Result	Flag
0	OCDD	1.28E-05	RB EB
0	1,2,3,4,6,7,8HpCDD	1.52E-06	J
0	HpCDD, Total	1.52E-06	J
1	OCDD	1.26E-05	RB
1	1,2,3,4,6,7,8HpCDD	1.42E-06	J
1	HpCDD, Total	1.42E-06	J

Hazardous Waste Transmission Line
Dioxin Detections - 200 Area Location

Split-Spoon Sample — PVC, Removed

Hand Auger Sample — Stainless Steel, Removed

Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifer flag definitions.

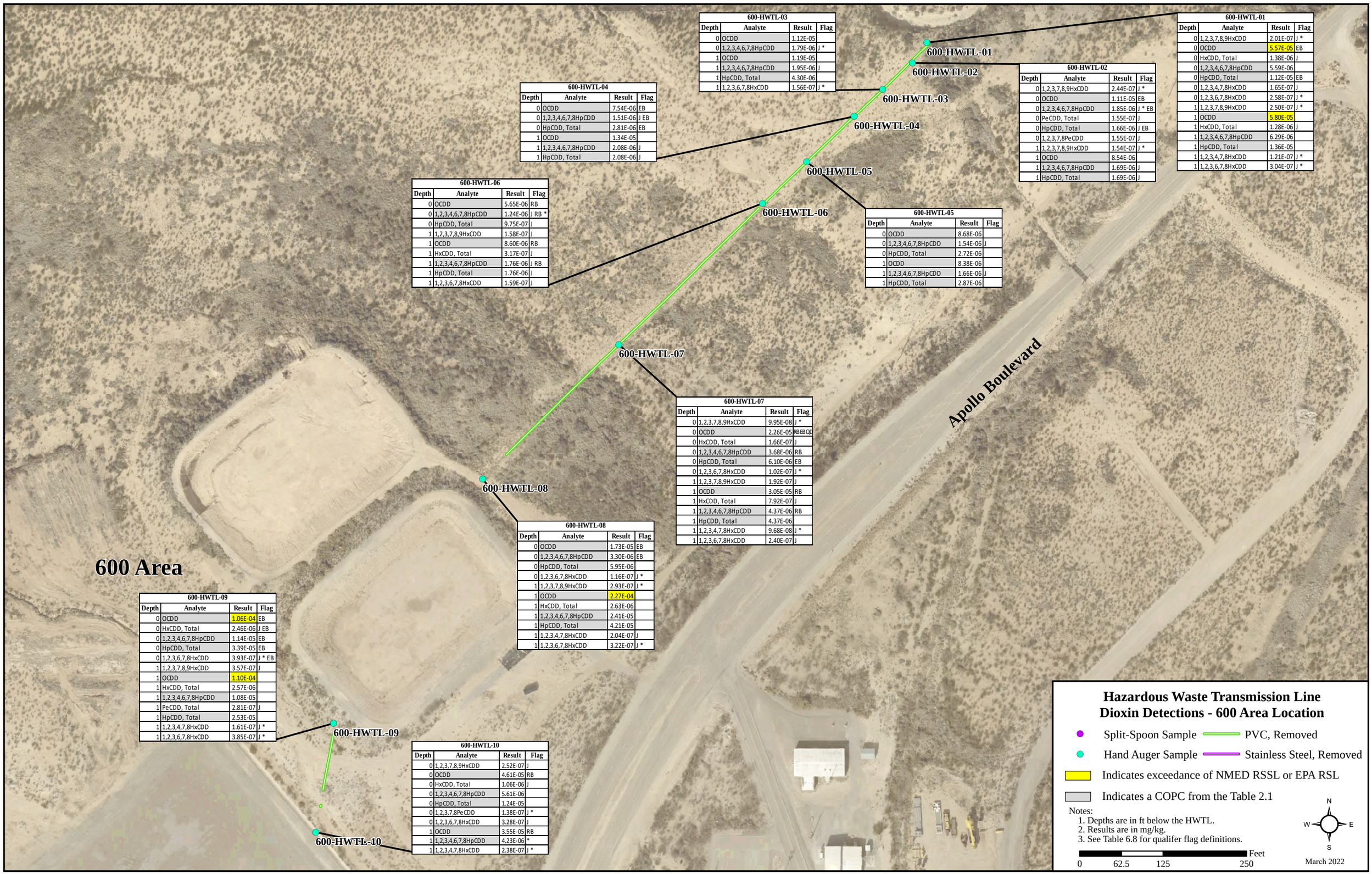
0 62.5 125 250 Feet

N W E S

March 2022

Figure 6.24 SWMU 10 HWTLs 600 Area Dioxin Detections

(SEE NEXT PAGE)



600-HWTL-01

Depth	Analyte	Result	Flag
0	1,2,3,7,8,9HxCDD	2.01E-07	J *
0	OCDD	5.57E-05	EB
0	HxCDD, Total	1.38E-06	J
0	1,2,3,4,6,7,8HpCDD	5.59E-06	
0	HpCDD, Total	1.12E-05	EB
0	1,2,3,4,7,8HxCDD	1.65E-07	J
0	1,2,3,6,7,8HxCDD	2.58E-07	J *
1	1,2,3,7,8,9HxCDD	2.50E-07	J *
1	OCDD	5.80E-05	
1	HxCDD, Total	1.28E-06	J
1	1,2,3,4,6,7,8HpCDD	6.29E-06	
1	HpCDD, Total	1.36E-05	
1	1,2,3,4,7,8HxCDD	1.21E-07	J *
1	1,2,3,6,7,8HxCDD	3.04E-07	J *

600-HWTL-02

Depth	Analyte	Result	Flag
0	1,2,3,7,8,9HxCDD	2.44E-07	J *
0	OCDD	1.11E-05	EB
0	1,2,3,4,6,7,8HpCDD	1.85E-06	J * EB
0	PeCDD, Total	1.55E-07	J
0	HpCDD, Total	1.66E-06	J EB
0	1,2,3,7,8PeCDD	1.55E-07	J
1	1,2,3,7,8,9HxCDD	1.54E-07	J *
1	OCDD	8.54E-06	
1	1,2,3,4,6,7,8HpCDD	1.69E-06	J
1	HpCDD, Total	1.69E-06	J

600-HWTL-03

Depth	Analyte	Result	Flag
0	OCDD	1.12E-05	
0	1,2,3,4,6,7,8HpCDD	1.79E-06	J *
1	OCDD	1.19E-05	
1	1,2,3,4,6,7,8HpCDD	1.95E-06	J
1	HpCDD, Total	4.30E-06	
1	1,2,3,6,7,8HxCDD	1.56E-07	J *

600-HWTL-04

Depth	Analyte	Result	Flag
0	OCDD	7.54E-06	EB
0	1,2,3,4,6,7,8HpCDD	1.51E-06	J EB
0	HpCDD, Total	2.81E-06	EB
1	OCDD	1.34E-05	
1	1,2,3,4,6,7,8HpCDD	2.08E-06	J
1	HpCDD, Total	2.08E-06	J

600-HWTL-05

Depth	Analyte	Result	Flag
0	OCDD	8.68E-06	
0	1,2,3,4,6,7,8HpCDD	1.54E-06	J
0	HpCDD, Total	2.72E-06	
1	OCDD	8.38E-06	
1	1,2,3,4,6,7,8HpCDD	1.66E-06	J
1	HpCDD, Total	2.87E-06	

600-HWTL-06

Depth	Analyte	Result	Flag
0	OCDD	5.65E-06	RB
0	1,2,3,4,6,7,8HpCDD	1.24E-06	J RB *
0	HpCDD, Total	9.75E-07	J
1	1,2,3,7,8,9HxCDD	1.58E-07	J
1	OCDD	8.60E-06	RB
1	HxCDD, Total	3.17E-07	J
1	1,2,3,4,6,7,8HpCDD	1.76E-06	J RB
1	HpCDD, Total	1.76E-06	J
1	1,2,3,6,7,8HxCDD	1.59E-07	J

600-HWTL-07

Depth	Analyte	Result	Flag
0	1,2,3,7,8,9HxCDD	9.95E-08	J *
0	OCDD	2.26E-05	RB EB QD
0	HxCDD, Total	1.66E-07	J
0	1,2,3,4,6,7,8HpCDD	3.68E-06	RB
0	HpCDD, Total	6.10E-06	EB
0	1,2,3,6,7,8HxCDD	1.02E-07	J *
1	1,2,3,7,8,9HxCDD	1.92E-07	J
1	OCDD	3.05E-05	RB
1	HxCDD, Total	7.92E-07	J
1	1,2,3,4,6,7,8HpCDD	4.37E-06	RB
1	HpCDD, Total	4.37E-06	
1	1,2,3,4,7,8HxCDD	9.68E-08	J *
1	1,2,3,6,7,8HxCDD	2.40E-07	J

600-HWTL-08

Depth	Analyte	Result	Flag
0	OCDD	1.73E-05	EB
0	1,2,3,4,6,7,8HpCDD	3.30E-06	EB
0	HpCDD, Total	5.95E-06	
0	1,2,3,6,7,8HxCDD	1.16E-07	J *
1	1,2,3,7,8,9HxCDD	2.93E-07	J *
1	OCDD	2.27E-04	
1	HxCDD, Total	2.63E-06	
1	1,2,3,4,6,7,8HpCDD	2.41E-05	
1	HpCDD, Total	4.21E-05	
1	1,2,3,4,7,8HxCDD	2.04E-07	J
1	1,2,3,6,7,8HxCDD	3.22E-07	J *

600-HWTL-09

Depth	Analyte	Result	Flag
0	OCDD	1.06E-04	EB
0	HxCDD, Total	2.46E-06	J EB
0	1,2,3,4,6,7,8HpCDD	1.14E-05	EB
0	HpCDD, Total	3.39E-05	EB
0	1,2,3,6,7,8HxCDD	3.93E-07	J * EB
1	1,2,3,7,8,9HxCDD	3.57E-07	J
1	OCDD	1.10E-04	
1	HxCDD, Total	2.57E-06	
1	1,2,3,4,6,7,8HpCDD	1.08E-05	
1	PeCDD, Total	2.81E-07	J
1	HpCDD, Total	2.53E-05	
1	1,2,3,4,7,8HxCDD	1.61E-07	J *
1	1,2,3,6,7,8HxCDD	3.85E-07	J *

600-HWTL-10

Depth	Analyte	Result	Flag
0	1,2,3,7,8,9HxCDD	2.52E-07	J
0	OCDD	4.61E-05	RB
0	HxCDD, Total	1.06E-06	J
0	1,2,3,4,6,7,8HpCDD	5.61E-06	
0	HpCDD, Total	1.24E-05	
0	1,2,3,7,8PeCDD	1.38E-07	J *
0	1,2,3,6,7,8HxCDD	3.28E-07	J
1	OCDD	3.55E-05	RB
1	1,2,3,4,6,7,8HpCDD	4.23E-06	*
1	1,2,3,4,7,8HxCDD	2.38E-07	J *

Hazardous Waste Transmission Line
Dioxin Detections - 600 Area Location

Split-Spoon Sample — PVC, Removed

Hand Auger Sample — Stainless Steel, Removed

Indicates exceedance of NMED RSSL or EPA RSL

Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifer flag definitions.

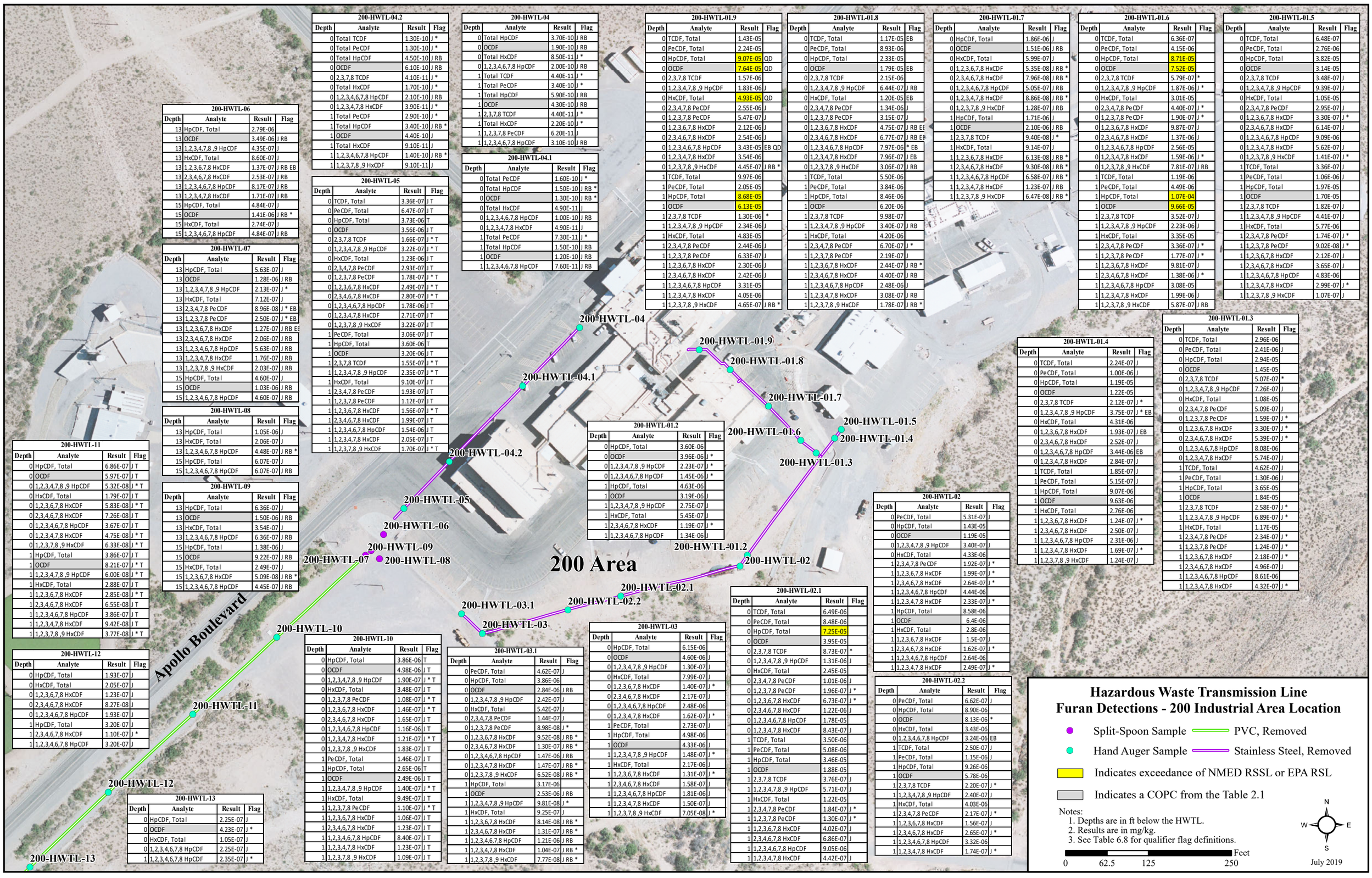
0 62.5 125 250 Feet

N W E S

March 2022

Figure 6.25 SWMU 10 HWTLs 200 Industrial Area Furan Detections

(SEE NEXT PAGE)



200-HWTL-04

Depth	Analyte	Result	Flag
0	Total HpCDF	3.70E-10	J RB
0	OCDF	1.90E-10	J RB
0	Total HxCDF	8.50E-11	J *
0	1,2,3,4,6,7,8 HpCDF	2.00E-10	J RB
1	Total TCDF	4.40E-11	J *
1	Total PeCDF	3.40E-10	J *
1	Total HpCDF	5.90E-10	J RB
1	OCDF	4.30E-10	J RB
1	2,3,7,8 TCDF	4.40E-11	J *
1	Total HxCDF	2.20E-10	J *
1	1,2,3,7,8 PeCDF	6.20E-11	J
1	1,2,3,4,6,7,8 HpCDF	3.10E-10	J RB

200-HWTL-04.1

Depth	Analyte	Result	Flag
0	Total PeCDF	1.60E-10	J *
0	Total HpCDF	1.50E-10	J RB *
0	OCDF	1.30E-10	J RB *
0	Total HxCDF	4.90E-11	J
0	1,2,3,4,6,7,8 HpCDF	1.00E-10	J RB
0	1,2,3,4,7,8 HxCDF	4.90E-11	J
1	Total PeCDF	7.30E-11	J *
1	Total HpCDF	1.50E-10	J RB
1	OCDF	1.20E-10	J RB
1	1,2,3,4,6,7,8 HpCDF	7.60E-11	J RB

200-HWTL-04.2

Depth	Analyte	Result	Flag
0	Total TCDF	1.30E-10	J *
0	Total PeCDF	1.30E-10	J *
0	Total HpCDF	4.50E-10	J RB
0	OCDF	6.10E-10	J RB
0	2,3,7,8 TCDF	4.10E-11	J *
0	Total HxCDF	1.70E-10	J *
0	1,2,3,4,6,7,8 HpCDF	2.10E-10	J RB
0	1,2,3,4,7,8 HxCDF	3.90E-11	J *
1	Total PeCDF	2.90E-10	J *
1	Total HpCDF	3.40E-10	J RB *
1	OCDF	4.40E-10	J
1	Total HxCDF	9.10E-11	J
1	1,2,3,4,6,7,8 HpCDF	1.40E-10	J RB *
1	1,2,3,7,8 ,9 HxCDF	9.10E-11	J

200-HWTL-05

Depth	Analyte	Result	Flag
0	TCDF, Total	3.36E-07	J T
0	PeCDF, Total	6.47E-07	J T
0	HpCDF, Total	3.73E-06	T
0	OCDF	3.56E-06	J T
0	2,3,7,8 TCDF	1.66E-07	J * T
0	1,2,3,4,7,8 ,9 HpCDF	3.22E-07	J * T
0	HxCDF, Total	1.23E-06	J T
0	2,3,4,7,8 PeCDF	2.93E-07	J T
0	1,2,3,7,8 PeCDF	1.78E-07	J * T
0	1,2,3,6,7,8 HxCDF	2.49E-07	J * T
0	2,3,4,6,7,8 HxCDF	2.80E-07	J * T
0	1,2,3,4,6,7,8 HpCDF	1.78E-06	J T
0	1,2,3,4,7,8 HxCDF	2.71E-07	J T
0	1,2,3,7,8 ,9 HxCDF	3.22E-07	J T
1	PeCDF, Total	3.06E-07	J T
1	HpCDF, Total	3.60E-06	T
1	OCDF	3.20E-06	J T
1	2,3,7,8 TCDF	1.55E-07	J * T
1	1,2,3,4,7,8 ,9 HpCDF	2.35E-07	J * T
1	HxCDF, Total	9.10E-07	J T
1	2,3,4,7,8 PeCDF	1.93E-07	J T
1	1,2,3,7,8 PeCDF	1.12E-07	J T
1	1,2,3,6,7,8 HxCDF	1.56E-07	J * T
1	2,3,4,6,7,8 HxCDF	1.99E-07	J T
1	1,2,3,4,6,7,8 HpCDF	1.54E-06	J T
1	1,2,3,4,7,8 HxCDF	2.05E-07	J T
1	1,2,3,7,8 ,9 HxCDF	1.70E-07	J * T

200-HWTL-06

Depth	Analyte	Result	Flag
13	HpCDF, Total	2.79E-06	
13	OCDF	3.49E-06	J RB
13	1,2,3,4,7,8 ,9 HpCDF	4.35E-07	J
13	HxCDF, Total	8.60E-07	J
13	1,2,3,6,7,8 HxCDF	1.37E-07	J RB EB
13	2,3,4,6,7,8 HxCDF	2.53E-07	J RB
13	1,2,3,4,6,7,8 HpCDF	8.17E-07	J RB
13	1,2,3,4,7,8 HxCDF	1.71E-07	J RB
15	HpCDF, Total	4.84E-07	J
15	OCDF	1.41E-06	J RB *
15	HxCDF, Total	2.74E-07	J
15	1,2,3,4,6,7,8 HpCDF	4.84E-07	J RB

200-HWTL-07

Depth	Analyte	Result	Flag
13	HpCDF, Total	5.63E-07	J
13	OCDF	1.28E-06	J RB
13	1,2,3,4,7,8 ,9 HpCDF	2.13E-07	J *
13	HxCDF, Total	7.12E-07	J
13	2,3,4,7,8 PeCDF	8.96E-08	J * EB
13	1,2,3,7,8 PeCDF	2.50E-07	J * EB
13	1,2,3,6,7,8 HxCDF	1.27E-07	J RB EB
13	2,3,4,6,7,8 HxCDF	2.06E-07	J RB
13	1,2,3,4,6,7,8 HpCDF	5.63E-07	J RB
13	1,2,3,4,7,8 HxCDF	1.76E-07	J RB
13	1,2,3,7,8 ,9 HxCDF	2.03E-07	J RB
15	HpCDF, Total	4.60E-07	J
15	OCDF	1.03E-06	J RB
15	1,2,3,4,6,7,8 HpCDF	4.60E-07	J RB

200-HWTL-08

Depth	Analyte	Result	Flag
13	HpCDF, Total	1.05E-06	J
13	HxCDF, Total	2.06E-07	J
13	1,2,3,4,6,7,8 HpCDF	4.48E-07	J RB *
15	HpCDF, Total	6.07E-07	J
15	1,2,3,4,6,7,8 HpCDF	6.07E-07	J RB

200-HWTL-09

Depth	Analyte	Result	Flag
13	HpCDF, Total	6.36E-07	J
13	OCDF	1.50E-06	J RB
13	HxCDF, Total	3.54E-07	J
13	1,2,3,4,6,7,8 HpCDF	6.36E-07	J RB
15	HpCDF, Total	1.38E-06	J
15	OCDF	9.22E-07	J RB
15	HxCDF, Total	2.49E-07	J
15	1,2,3,6,7,8 HxCDF	5.09E-08	J RB *
15	1,2,3,4,6,7,8 HpCDF	4.45E-07	J RB

200-HWTL-10

Depth	Analyte	Result	Flag
0	HpCDF, Total	3.86E-06	T
0	OCDF	4.98E-06	J T
0	1,2,3,4,7,8 ,9 HpCDF	1.90E-07	J * T
0	HxCDF, Total	3.48E-07	J T
0	1,2,3,7,8 PeCDF	1.08E-07	J * T
0	1,2,3,6,7,8 HxCDF	1.46E-07	J * T
0	2,3,4,6,7,8 HxCDF	1.65E-07	J T
0	1,2,3,4,6,7,8 HpCDF	1.16E-06	J T
0	1,2,3,4,7,8 HxCDF	1.21E-07	J * T
0	1,2,3,7,8 ,9 HxCDF	1.83E-07	J T
1	PeCDF, Total	1.46E-07	J T
1	HpCDF, Total	2.65E-06	T
1	OCDF	2.49E-06	J T
1	1,2,3,4,7,8 ,9 HpCDF	1.40E-07	J * T
1	HxCDF, Total	9.49E-07	J T
1	1,2,3,7,8 PeCDF	1.10E-07	J * T
1	1,2,3,6,7,8 HxCDF	1.06E-07	J T
1	2,3,4,6,7,8 HxCDF	1.23E-07	J T
1	1,2,3,4,6,7,8 HpCDF	8.40E-07	J T
1	1,2,3,4,7,8 HxCDF	1.23E-07	J T
1	1,2,3,7,8 ,9 HxCDF	1.09E-07	J T

200-HWTL-11

Depth	Analyte	Result	Flag
0	HpCDF, Total	6.86E-07	J T
0	OCDF	5.97E-07	J T
0	1,2,3,4,7,8 ,9 HpCDF	5.32E-08	J * T
0	HxCDF, Total	1.79E-07	J T
0	1,2,3,6,7,8 HxCDF	5.83E-08	J * T
0	2,3,4,6,7,8 HxCDF	7.26E-08	J T
0	1,2,3,4,6,7,8 HpCDF	3.67E-07	J T
0	1,2,3,4,7,8 HxCDF	4.75E-08	J * T
0	1,2,3,7,8 ,9 HxCDF	6.33E-08	J * T
1	HpCDF, Total	3.86E-07	J T
1	OCDF	8.21E-07	J * T
1	1,2,3,4,7,8 ,9 HpCDF	6.00E-08	J * T
1	HxCDF, Total	2.88E-07	J T
1	1,2,3,6,7,8 HxCDF	2.85E-08	J * T
1	2,3,4,6,7,8 HxCDF	6.55E-08	J T
1	1,2,3,4,6,7,8 HpCDF	3.86E-07	J T
1	1,2,3,4,7,8 HxCDF	9.42E-08	J T
1	1,2,3,7,8 ,9 HxCDF	3.77E-08	J * T

200-HWTL-12

Depth	Analyte	Result	Flag
0	HpCDF, Total	1.93E-07	J
0	HxCDF, Total	2.05E-07	J
0	1,2,3,6,7,8 HxCDF	1.23E-07	J
0	2,3,4,6,7,8 HxCDF	8.27E-08	J
0	1,2,3,4,6,7,8 HpCDF	1.93E-07	J
1	HpCDF, Total	3.20E-07	J
1	2,3,4,6,7,8 HxCDF	1.10E-07	J *
1	1,2,3,4,6,7,8 HpCDF	3.20E-07	J

200-HWTL-13

Depth	Analyte	Result	Flag
0	HpCDF, Total	2.25E-07	J
0	OCDF	4.23E-07	J *
0	HxCDF, Total	1.05E-07	J
0	1,2,3,4,6,7,8 HpCDF	2.25E-07	J
1	1,2,3,4,6,7,8 HpCDF	2.35E-07	J *

200-HWTL-01.9

Depth	Analyte	Result	Flag
0	TCDF, Total	1.43E-05	
0	PeCDF, Total	2.24E-05	
0	HpCDF, Total	9.07E-05	QD
0	OCDF	7.64E-05	QD
0	2,3,7,8 TCDF	1.57E-06	
0	1,2,3,4,7,8 ,9 HpCDF	1.83E-06	J
0	HxCDF, Total	4.93E-05	QD
0	2,3,4,7,8 PeCDF	2.55E-06	J
0	1,2,3,7,8 PeCDF	5.47E-07	J
0	1,2,3,6,7,8 HxCDF	2.12E-06	J
0	2,3,4,6,7,8 HxCDF	2.54E-06	J
0	1,2,3,4,6,7,8 HpCDF	3.43E-05	EB QD
0	1,2,3,4,7,8 HxCDF	3.54E-06	
0	1,2,3,7,8 ,9 HxCDF	4.45E-07	J RB *
1	TCDF, Total	9.97E-06	
1	PeCDF, Total	2.05E-05	
1	HpCDF, Total	8.68E-05	
1	OCDF	6.13E-05	
1	2,3,7,8 TCDF	1.30E-06	*
1	1,2,3,4,7,8 ,9 HpCDF	2.34E-06	J
1	HxCDF, Total	4.83E-05	
1	2,3,4,7,8 PeCDF	2.44E-06	J
1	1,2,3,7,8 PeCDF	6.33E-07	J
1	1,2,3,6,7,8 HxCDF	2.30E-06	J
1	2,3,4,6,7,8 HxCDF	2.42E-06	J
1	1,2,3,4,6,7,8 HpCDF	3.31E-05	
1	1,2,3,4,7,8 HxCDF	4.05E-06	
1	1,2,3,7,8 ,9 HxCDF	4.65E-07	J RB *

200-HWTL-01.8

Depth	Analyte	Result	Flag
0	TCDF, Total	1.17E-05	EB
0	PeCDF, Total	8.93E-06	
0	HpCDF, Total	2.33E-05	
0	OCDF	1.79E-05	EB
0	2,3,7,8 TCDF	2.15E-06	
0	1,2,3,4,7,8 ,9 HpCDF	6.44E-07	J RB
0	HxCDF, Total	1.20E-05	EB
0	2,3,4,7,8 PeCDF	1.34E-06	J
0	1,2,3,7,8 PeCDF	3.15E-07	J
0	1,2,3,6,7,8 HxCDF	4.75E-07	J RB EB
0	2,3,4,6,7,8 HxCDF	6.77E-07	J RB EB
0	1,2,3,4,6,7,8 HpCDF	7.97E-06	* EB
0	1,2,3,4,7,8 HxCDF	7.96E-07	J EB
0	1,2,3,7,8 ,9 HxCDF	3.06E-07	J RB
1	TCDF, Total	5.50E-06	
1	PeCDF, Total	3.84E-06	
1	HpCDF, Total	8.46E-06	
1	OCDF	6.20E-06	
1	2,3,7,8 TCDF	9.98E-07	
1	1,2,3,4,7,8 ,9 HpCDF	3.40E-07	J RB
1	HxCDF, Total	4.20E-06	
1	2,3,4,7,8 PeCDF	6.70E-07	J *
1	1,2,3,7,8 PeCDF	2.19E-07	J
1	1,2,3,6,7,8 HxCDF	2.44E-07	J RB *
1	2,3,4,6,7,8 HxCDF	4.40E-07	J RB
1	1,2,3,4,6,7,8 HpCDF	2.48E-06	J
1	1,2,3,4,7,8 HxCDF	3.08E-07	J RB
1	1,2,3,7,8 ,9 HxCDF	1.78E-07	J RB *

200-HWTL-01.7

Depth	Analyte	Result	Flag
0	HpCDF, Total	1.86E-06	J
0	OCDF	1.51E-06	J RB
0	HxCDF, Total	5.99E-07	J
0	1,2,3,6,7,8 HxCDF	5.35E-08	J RB *
0	2,3,4,6,7,8 HxCDF	7.96E-08	J RB *
0	1,2,3,4,6,7,8 HpCDF	5.05E-07	J RB
0	1,2,3,4,7,8 HxCDF	8.86E-08	J RB *
0	1,2,3,7,8 ,9 HxCDF	1.28E-07	J RB
1	HpCDF, Total	1.71E-06	J
1	OCDF	2.10E-06	J RB
1	2,3,7,8 TCDF	9.40E-08	J *
1	HxCDF, Total	9.14E-07	J
1	1,2,3,6,7,8 HxCDF	6.13E-08	J RB *
1	2,3,4,6,7,8 HxCDF	9.30E-08	J RB *
1	1,2,3,4,6,7,8 HpCDF	6.58E-07	J RB *
1	1,2,3,4,7,8 HxCDF	1.23E-07	J RB
1	1,2,3,7,8 ,9 HxCDF	6.47E-08	J RB *

200-HWTL-01.6

Depth	Analyte	Result	Flag
0	TCDF, Total	6.36E-07	
0	PeCDF, Total	4.15E-06	
0	HpCDF, Total	8.71E-05	
0	OCDF	7.52E-05	
0	2,3,7,8 TCDF	5.79E-07	*
0	1,2,3,4,7,8 ,9 HpCDF	1.87E-06	J *
0	HxCDF, Total	3.01E-05	
0	2,3,4,7,8 PeCDF	4.40E-07	J *
0	1,2,3,7,8 PeCDF	1.90E-07	J *
0	1,2,3,6,7,8 HxCDF	9.87E-07	J
0	2,3,4,6,7,8 HxCDF	1.37E-06	J
0	1,2,3,4,6,7,8 HpCDF	2.56E-05	
0	1,2,3,4,7,8 HxCDF	1.59E-06	J *
0	1,2,3,7,8 ,9 HxCDF	7.81E-07	J RB
1	TCDF, Total	1.19E-06	
1	PeCDF, Total	4.49E-06	
1	HpCDF, Total	1.07E-04	
1	OCDF	9.66E-05	
1	2,3,7,8 TCDF	3.52E-07	J
1	1,2,3,4,7,8 ,9 HpCDF	2.23E-06	J
1	HxCDF, Total	3.35E-05	
1	2,3,4,7,8 PeCDF	3.36E-07	J *
1	1,2,3,7,8 PeCDF	1.77E-07	J *
1	1,2,3,6,7,8 HxCDF	9.81E-07	J
1	2,3,4,6,7,8 HxCDF	1.38E-06	J *
1	1,2,3,4,6,7,8 HpCDF	3.08E-05	
1	1,2,3,4,7,8 HxCDF	1.99E-06	J
1	1,2,3,7,8 ,9 HxCDF	5.87E-07	J RB

200-HWTL-01.5

Depth	Analyte	Result	Flag
0	TCDF, Total	6.48E-07	
0	PeCDF, Total	2.76E-06	
0	HpCDF, Total	3.82E-05	
0	OCDF	3.14E-05	
0	2,3,7,8 TCDF	3.48E-07	J
0	1,2,3,4,7,8 ,9 HpCDF	9.39E-07	J
0	HxCDF, Total	1.05E-05	
0	2,3,4,7,8 PeCDF	2.95E-07	J
0	1,2,3,6,7,8 HxCDF	3.30E-07	J *
0	2,3,4,6,7,8 HxCDF	6.14E-07	J
0	1,2,3,4,6,7,8 HpCDF	9.09E-06	
0	1,2,3,4,7,8 HxCDF	5.62E-07	J
0	1,2,3,7,8 ,9 HxCDF	1.41E-07	J *
1	TCDF, Total	3.36E-07	J
1	PeCDF, Total	1.06E-06	J
1	HpCDF, Total	1.97E-05	
1	OCDF	1.70E-05	
1	2,3,7,8 TCDF	1.82E-07	J
1	1,2,3,4,7,8 ,9 HpCDF	4.41E-07	J
1	HxCDF, Total	5.77E-06	
1	2,3,4,7,8 PeCDF	1.74E-07	J *
1	1,2,3,7,8 PeCDF	9.02E-08	J *
1	1,2,3,6,7,8 HxCDF	2.12E-07	J
1	2,3,4,6,7,8 HxCDF	3.65E-07	J
1	1,2,3,4,6,7,8 HpCDF	4.83E-06	
1	1,2,3,4,7,8 HxCDF	2.99E-07	J *
1	1,2,3,7,8 ,9 HxCDF	1.07E-07	J

200-HWTL-01.4

Depth	Analyte	Result	Flag
0	TCDF, Total	2.24E-07	J
0	PeCDF, Total	1.00E-06	J
0	HpCDF, Total	1.19E-05	
0	OCDF	1.22E-05	
0	2,3,7,8 TCDF	2.12E-07	J *
0	1,2,3,4,7,8 ,9 HpCDF	3.75E-07	J * EB
0	HxCDF, Total	4.31E-06	
0	1,2,3,6,7,8 HxCDF	1.93E-07	J EB
0	2,3,4,6,7,8 HxCDF	2.52E-07	J
0	1,2,3,4,6,7,8 HpCDF	3.44E-06	EB
0	1,2,3,4,7,8 HxCDF	2.84E-07	J
1	TCDF, Total	1.85E-07	J
1	PeCDF, Total	5.15E-07	J
1	HpCDF, Total	9.07E-06	
1	OCDF	9.63E-06	
1	HxCDF, Total	2.76E-06	
1	1,2,3,6,7,8 HxCDF	1.24E-07	J *
1	2,3,4,6,7,8 HxCDF	2.50E-07	J
1	1,2,3,4,6,7,8 HpCDF	2.31E-06	J
1	1,2,3,4,7,8 HxCDF	1.69E-07	J *
1	1,2,3,7,8 ,9 HxCDF	1.24E-07	J

200-HWTL-01.3

Depth	Analyte	Result	Flag
0	TCDF, Total	2.96E-06	
0	PeCDF, Total	2.41E-06	J
0	HpCDF, Total	2.94E-05	
0	OCDF	1.45E-05	
0	2,3,7,8 TCDF	5.07E-07	*
0	1,2,3,4,7,8 ,9 HpCDF	7.26E-07	J
0	HxCDF, Total	1.08E-05	
0	2,3,4,7,8 PeCDF	5.09E-07	J
0	1,2,3,7,8 PeCDF	1.59E-07	J *
0	1,2,3,6,7,8 HxCDF	3.30E-07	J *
0	2,3,4,6,7,8 HxCDF	5.39E-07	J *
0	1,2,3,4,6,7,8 HpCDF	8.08E-06	
0	1,2,3,4,7,8 HxCDF	5.74E-07	J
1	TCDF, Total	4.62E-07	J
1	PeCDF, Total	1.30E-06	J
1	HpCDF, Total	3.65E-05	
1	OCDF	1.84E-05	
1	2,3,7,8 TCDF	2.58E-07	J *
1	1,2,3,4,7,8 ,9 HpCDF	6.89E-07	J *
1	HxCDF, Total	1.17E-05	
1	2,3,4,7,8 PeCDF	2.34E-07	J *
1	1,2,3,7,8 PeCDF	1.24E-07	J *
1	1,2,3,6,7,8 HxCDF	2.18E-07	J *
1	2,3,4,6,7,8 HxCDF	4.96E-07	J
1	1,2,3,4,6,7,8 HpCDF	8.61E-06	
1	1,2,3,4,7,8 HxCDF	4.32E-07	J *

200-HWTL-01.2

Depth	Analyte	Result	Flag
0	HpCDF, Total	3.60E-06	
0	OCDF	3.96E-06	J *
0	1,2,3,4,7,8 ,9 HpCDF	2.23E-07	J *
0	1,2,3,4,6,7,8 HpCDF	1.45E-06	J *
1	HpCDF, Total	4.63E-06	
1	OCDF	3.19E-06	J
1	1,2,3,4,7,8 ,9 HpCDF	2.75E-07	J
1	HxCDF, Total	5.45E-07	J
1	2,3,4,6,7,8 HxCDF	1.19E-07	J *
1	1,2,3,4,6,7,8 HpCDF	1.34E-06	J

200-HWTL-02

Depth	Analyte	Result	Flag
0	PeCDF, Total	5.31E-07	J
0	HpCDF, Total	1.43E-05	
0	OCDF	1.19E-05	
0	1,2,3,4,7,8 ,9 HpCDF	3.40E-07	J
0	HxCDF, Total	4.33E-06	
1	2,3,4,7,8 PeCDF	1.92E-07	J *
1	1,2,3,6,7,8 HxCDF	1.99E-07	J *
1	2,3,4,6,7,8 HxCDF	2.64E-07	J *
1	1,2,3,4,6,7,8 HpCDF	4.44E-06	
1	1,2,3,4,7,8 HxCDF	2.33E-07	J *
1	HpCDF, Total	8.58E-06	
1	OCDF	6.4E-06	
1	HxCDF, Total	2.8E-06	
1	1,2,3,6,7,8 HxCDF	1.5E-07	J
1	2,3,4,6,7,8 HxCDF	1.62E-07	J *
1	1,2,3,4,6,7,8 HpCDF	2.64E-06	
1	1,2,3,4,7,8 HxCDF	2.49E-07	J *

200-HWTL-02.1

Depth	Analyte	Result	Flag
0	TCDF, Total	6.49E-06	
0	PeCDF, Total	8.48E-06	
0	HpCDF, Total	7.25E-05	
0	OCDF	3.95E-05	
0	2,3,7,8 TCDF	8.73E-07	*
0	1,2,3,4,7,8 ,9 HpCDF	1.31E-06	J
0	HxCDF, Total	2.45E-05	
0	2,3,4,7,8 PeCDF	1.01E-06	J
0	1,2,3,7,8 PeCDF	1.96E-07	J *
0	1,2,3,6,7,8 HxCDF	6.73E-07	J *
0	2,3,4,6,7,8 HxCDF	1.22E-06	J
0	1,2,3,4,6,7,8 HpCDF	1.78E-05	
0	1,2,3,4,7,8 HxCDF	8.43E-07	J
1	TCDF, Total	3.50E-06	
1	PeCDF, Total	5.08E-06	
1	HpCDF, Total	3.46E-05	
1	OCDF	1.88E-05	
1	2,3,7,8 TCDF	3.76E-07	J
1	1,2,3,4,7,8 ,9 HpCDF	5.71E-07	J
1	HxCDF, Total	1.22E-05	
1	2,3,4,7,8 PeCDF	1.84E-07	J *
1	1,2,3,7,8 PeCDF	1.30E-07	J *
1	1,2,3,6,7,8 HxCDF	4.02E-07	J
1	2,3,4,6,7,8 HxCDF	6.86E-07	J
1	1,2,3,4,6,7,8 HpCDF	9.05E-06	
1	1,2,3,4,7,8 HxCDF	4.42E-07	J

200-HWTL-02.2

Depth	Analyte	Result	Flag
0	PeCDF, Total	6.62E-07	J
0	HpCDF, Total	8.90E-06	
0	OCDF	8.13E-06	*
0	HxCDF, Total	3.43E-06	
0	1,2,3,4,6,7,8 HpCDF	3.24E-06	EB
1	TCDF, Total	2.50E-07	J
1	PeCDF, Total	1.15E-06	J
1	HpCDF, Total	9.26E-06	
1	OCDF	5.78E-06	
1	2,3,7,8 TCDF	2.20E-07	J *
1	1,2,3,4,7,8 ,9 HpCDF	2.40E-07	J
1	HxCDF, Total	4.03E-06	
1	2,3,4,7,8 PeCDF	2.17E-07	J *
1	1,2,3,6,7,8 HxCDF	1.56E-07	J
1	2,3,4,6,7,8 HxCDF	2.65E-07	J *
1	1,2,3,4,6,7,8 HpCDF	3.32E-06	
1	1,2,3,4,7,8 HxCDF	1.74E-07	J *

200-HWTL-03

Depth	Analyte	Result	Flag
0	HpCDF, Total	6.15E-06	
0	OCDF	4.60E-06	J
0	1,2,3,4,7,8 ,9 HpCDF	1.30E-07	J
0	HxCDF, Total	7.99E-07	J
0	1,2,3,6,7,8 HxCDF	1.40E-07	J *
0	2,3,4,6,7,8 HxCDF	2.17E-07	J
0	1,2,3,4,6,7,8 HpCDF	2.48E-06	
0	1,2,3,4,7,8 HxCDF	1.62E-07	J *
1	PeCDF, Total	2.73E-07	J
1	HpCDF, Total	4.98E-06	
1	OCDF	4.33E-06	J
1	1,2,3,4,7,8 ,9 HpCDF	1.48E-07	J *
1	HxCDF, Total	2.17E-06	J
1	1,2,3,6,7,8 HxCDF	1.31E-07	J *
1	2,3,4,6,7,8 HxCDF	1.58E-07	J
1	1,2,3,4,6,7,8 HpCDF	1.81E-06	J
1	1,2,3,4,7,8 HxCDF	1.50E-07	J
1	1,2,3,7,8 ,9 HxCDF	7.05E-08	J *

200-HWTL-03.1

Depth	Analyte	Result	Flag
0	PeCDF, Total	4.62E-07	J
0	HpCDF, Total	3.86E-06	
0	OCDF	2.84E-06	J RB
0	1,2,3,4,7,8 ,9 HpCDF	2.42E-07	J
0	HxCDF, Total	5.42E-07	J
0	2,3,4,7,8 PeCDF	1.44E-07	J
0	1,2,3,7,8 PeCDF	8.98E-08	J *
0	1,2,3,6,7,8 HxCDF	9.52E-08	J RB *
0	2,3,4,6,7,8 HxCDF	1.30E-07	J RB *
0	1,2,3,4,6,7,8 HpCDF	1.47E-06	J RB
0	1,2,3,4,7,8 HxCDF	1.47E-07	J RB *
0	1,2,3,7,8 ,9 HxCDF	6.52E-08	J RB *
1	HpCDF, Total	3.17E-06	
1	OCDF	2.53E-06	J RB
1	1,2,3,4,7,8 ,9 HpCDF	9.81E-08	J *
1	HxCDF, Total	9.25E-07	J
1	1,2,3,6,7,8 HxCDF	8.14E-08	J RB *
1	2,3,4,6,7,8 HxCDF	1.31E-07	J RB *
1	1,2,3,4,6,7,8 HpCDF	1.21E-06	J RB
1	1,2,3,4,7,8 HxCDF	1.04E-07	J RB *
1	1,2,3,7,8 ,9 HxCDF	7.77E-08	J RB *

Hazardous Waste Transmission Line
Furan Detections - 200 Industrial Area Location

- Split-Spoon Sample
- Hand Auger Sample
- PVC, Removed
- Stainless Steel, Removed
- Indicates exceedance of NMED RSSL or EPA RSL
- Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifier flag definitions.

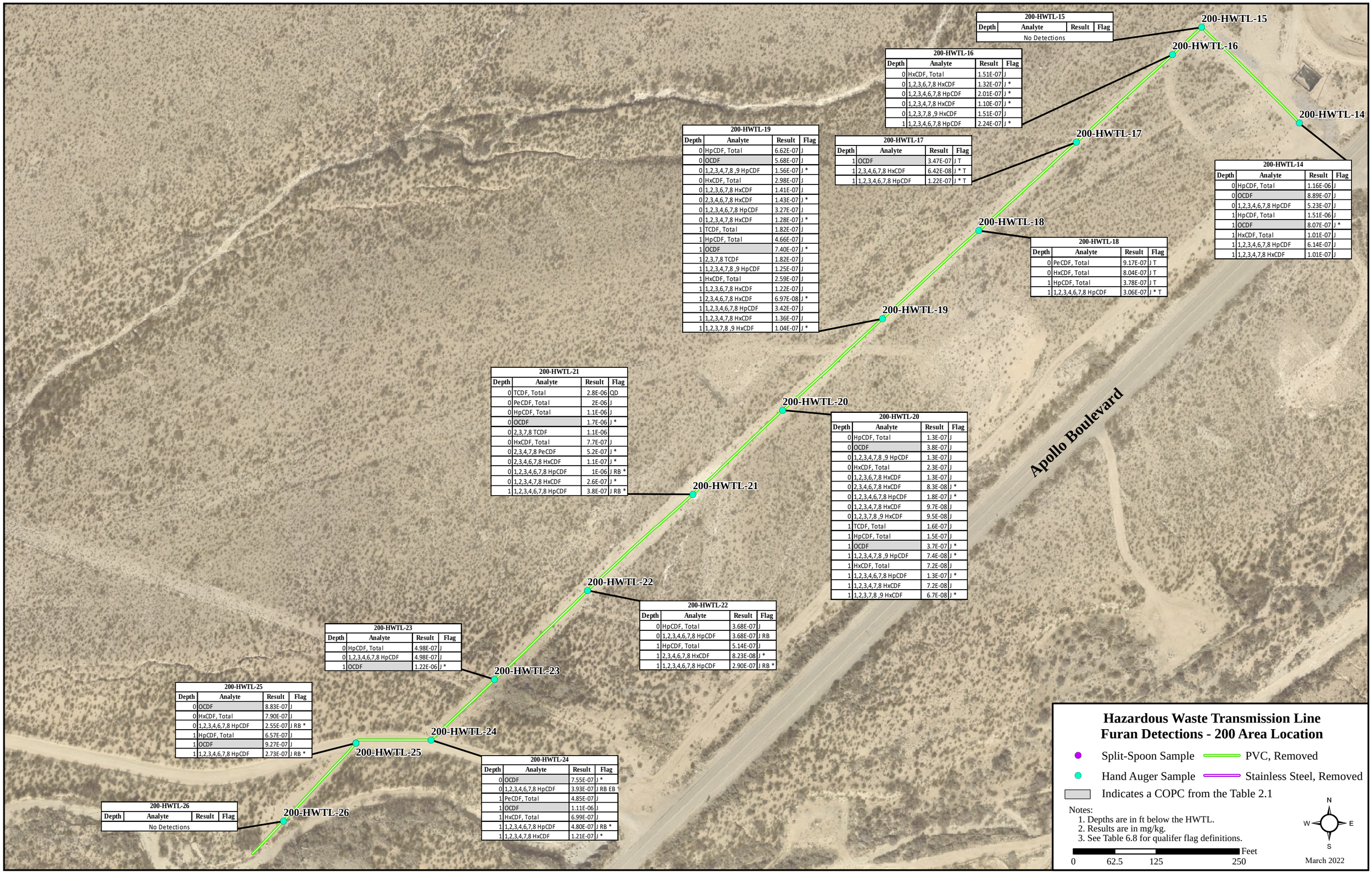
0 62.5 125 250 Feet

N W E S

July 2019

Figure 6.26 SWMU 10 HWTLs 200 Area Furan Detections

(SEE NEXT PAGE)



200-HWTL-15

Depth	Analyte	Result	Flag
No Detections			

200-HWTL-16

Depth	Analyte	Result	Flag
0	HxCDF, Total	1.51E-07	J
0	1,2,3,6,7,8 HxCDF	1.32E-07	J *
0	1,2,3,4,6,7,8 HpCDF	2.01E-07	J *
0	1,2,3,4,7,8 HxCDF	1.10E-07	J *
0	1,2,3,7,8 ,9 HxCDF	1.51E-07	J
1	1,2,3,4,6,7,8 HpCDF	2.24E-07	J *

200-HWTL-14

Depth	Analyte	Result	Flag
0	HpCDF, Total	1.16E-06	J
0	OCDF	8.89E-07	J
0	1,2,3,4,6,7,8 HpCDF	5.23E-07	J
1	HpCDF, Total	1.51E-06	J
1	OCDF	8.07E-07	J *
1	HxCDF, Total	1.01E-07	J
1	1,2,3,4,6,7,8 HpCDF	6.14E-07	J
1	1,2,3,4,7,8 HxCDF	1.01E-07	J

200-HWTL-17

Depth	Analyte	Result	Flag
1	OCDF	3.47E-07	J T
1	2,3,4,6,7,8 HxCDF	6.42E-08	J * T
1	1,2,3,4,6,7,8 HpCDF	1.22E-07	J * T

200-HWTL-18

Depth	Analyte	Result	Flag
0	PeCDF, Total	9.17E-07	J T
0	HxCDF, Total	8.04E-07	J T
1	HpCDF, Total	3.78E-07	J T
1	1,2,3,4,6,7,8 HpCDF	3.06E-07	J * T

200-HWTL-19

Depth	Analyte	Result	Flag
0	HpCDF, Total	6.62E-07	J
0	OCDF	5.68E-07	J
0	1,2,3,4,7,8 ,9 HpCDF	1.56E-07	J *
0	HxCDF, Total	2.98E-07	J
0	1,2,3,6,7,8 HxCDF	1.41E-07	J
0	2,3,4,6,7,8 HxCDF	1.43E-07	J *
0	1,2,3,4,6,7,8 HpCDF	3.27E-07	J
0	1,2,3,4,7,8 HxCDF	1.28E-07	J *
1	TCDF, Total	1.82E-07	J
1	HpCDF, Total	4.66E-07	J
1	OCDF	7.40E-07	J *
1	2,3,7,8 TCDF	1.82E-07	J
1	1,2,3,4,7,8 ,9 HpCDF	1.25E-07	J
1	HxCDF, Total	2.59E-07	J
1	1,2,3,6,7,8 HxCDF	1.22E-07	J
1	2,3,4,6,7,8 HxCDF	6.97E-08	J *
1	1,2,3,4,6,7,8 HpCDF	3.42E-07	J
1	1,2,3,4,7,8 HxCDF	1.36E-07	J
1	1,2,3,7,8 ,9 HxCDF	1.04E-07	J *

200-HWTL-20

Depth	Analyte	Result	Flag
0	HpCDF, Total	1.3E-07	J
0	OCDF	3.8E-07	J
0	1,2,3,4,7,8 ,9 HpCDF	1.3E-07	J
0	HxCDF, Total	2.3E-07	J
0	1,2,3,6,7,8 HxCDF	1.3E-07	J
0	2,3,4,6,7,8 HxCDF	8.3E-08	J *
0	1,2,3,4,6,7,8 HpCDF	1.8E-07	J *
0	1,2,3,4,7,8 HxCDF	9.7E-08	J
0	1,2,3,7,8 ,9 HxCDF	9.5E-08	J
1	TCDF, Total	1.6E-07	J
1	HpCDF, Total	1.5E-07	J
1	OCDF	3.7E-07	J *
1	1,2,3,4,7,8 ,9 HpCDF	7.4E-08	J *
1	HxCDF, Total	7.2E-08	J
1	1,2,3,4,6,7,8 HpCDF	1.3E-07	J *
1	1,2,3,4,7,8 HxCDF	7.2E-08	J
1	1,2,3,7,8 ,9 HxCDF	6.7E-08	J *

200-HWTL-21

Depth	Analyte	Result	Flag
0	TCDF, Total	2.8E-06	QD
0	PeCDF, Total	2E-06	J
0	HpCDF, Total	1.1E-06	J
0	OCDF	1.7E-06	J *
0	2,3,7,8 TCDF	1.1E-06	
0	HxCDF, Total	7.7E-07	J
0	2,3,4,7,8 PeCDF	5.2E-07	J *
0	2,3,4,6,7,8 HxCDF	1.1E-07	J *
0	1,2,3,4,6,7,8 HpCDF	1E-06	J RB *
0	1,2,3,4,7,8 HxCDF	2.6E-07	J *
1	1,2,3,4,6,7,8 HpCDF	3.8E-07	J RB *

200-HWTL-22

Depth	Analyte	Result	Flag
0	HpCDF, Total	3.68E-07	J
0	1,2,3,4,6,7,8 HpCDF	3.68E-07	J RB
1	HpCDF, Total	5.14E-07	J
1	2,3,4,6,7,8 HxCDF	8.23E-08	J *
1	1,2,3,4,6,7,8 HpCDF	2.90E-07	J RB *

200-HWTL-23

Depth	Analyte	Result	Flag
0	HpCDF, Total	4.98E-07	J
0	1,2,3,4,6,7,8 HpCDF	4.98E-07	J
1	OCDF	1.22E-06	J *

200-HWTL-25

Depth	Analyte	Result	Flag
0	OCDF	8.83E-07	J
0	HxCDF, Total	7.90E-07	J
0	1,2,3,4,6,7,8 HpCDF	2.55E-07	J RB *
1	HpCDF, Total	6.57E-07	J
1	OCDF	9.27E-07	J
1	1,2,3,4,6,7,8 HpCDF	2.73E-07	J RB *

200-HWTL-24

Depth	Analyte	Result	Flag
0	OCDF	7.55E-07	J *
0	1,2,3,4,6,7,8 HpCDF	3.93E-07	J RB EB
1	PeCDF, Total	4.85E-07	J
1	OCDF	1.11E-06	J
1	HxCDF, Total	6.99E-07	J
1	1,2,3,4,6,7,8 HpCDF	4.80E-07	J RB *
1	1,2,3,4,7,8 HxCDF	1.21E-07	J *

200-HWTL-26

Depth	Analyte	Result	Flag
No Detections			

Hazardous Waste Transmission Line
Furan Detections - 200 Area Location

Split-Spoon Sample — PVC, Removed

Hand Auger Sample — Stainless Steel, Removed

Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifer flag definitions.

N W E S

0 62.5 125 250 Feet

March 2022

Figure 6.27 SWMU 10 HWTLs 600 Area Furan Detections

(SEE NEXT PAGE)

600 Area

600-HWTL-01

Depth	Analyte	Result	Flag
0	TCDF, Total	9.97E-07	
0	PeCDF, Total	8.25E-07	J
0	HpCDF, Total	3.77E-06	EB
0	OCDF	2.45E-06	J *
0	2,3,7,8 TCDF	4.12E-07	J
0	1,2,3,4,7,8 ,9 HpCDF	2.00E-07	J *
0	HxCDF, Total	1.04E-06	J
0	2,3,4,7,8 PeCDF	3.37E-07	J
0	1,2,3,6,7,8 HxCDF	1.66E-07	J
0	2,3,4,6,7,8 HxCDF	1.93E-07	J *
0	1,2,3,4,6,7,8 HpCDF	1.48E-06	J EB
0	1,2,3,4,7,8 HxCDF	1.83E-07	J
1	TCDF, Total	1.40E-06	
1	PeCDF, Total	8.06E-07	J
1	HpCDF, Total	4.15E-06	
1	OCDF	3.32E-06	J
1	2,3,7,8 TCDF	6.02E-07	
1	1,2,3,4,7,8 ,9 HpCDF	2.34E-07	J
1	HxCDF, Total	1.21E-06	J
1	2,3,4,7,8 PeCDF	3.81E-07	J *
1	1,2,3,7,8 PeCDF	1.80E-07	J
1	1,2,3,6,7,8 HxCDF	1.82E-07	J *
1	2,3,4,6,7,8 HxCDF	2.21E-07	J
1	1,2,3,4,6,7,8 HpCDF	1.48E-06	J
1	1,2,3,4,7,8 HxCDF	2.55E-07	J *
1	1,2,3,7,8 ,9 HxCDF	8.67E-08	J *

600-HWTL-02

Depth	Analyte	Result	Flag
0	TCDF, Total	3.45E-07	J
0	HpCDF, Total	6.97E-07	J EB
0	OCDF	1.48E-06	J EB
0	1,2,3,7,8 PeCDF	1.74E-07	J *
0	1,2,3,4,6,7,8 HpCDF	4.75E-07	J * EB
1	HpCDF, Total	1.02E-06	J
1	OCDF	8.76E-07	J *
1	1,2,3,7,8 PeCDF	1.17E-07	J *
1	1,2,3,4,6,7,8 HpCDF	3.33E-07	J

600-HWTL-03

Depth	Analyte	Result	Flag
0	HpCDF, Total	1.13E-06	J
0	OCDF	7.77E-07	J *
0	1,2,3,4,6,7,8 HpCDF	4.48E-07	J
1	HpCDF, Total	1.52E-06	J
1	OCDF	1.11E-06	J
1	1,2,3,4,6,7,8 HpCDF	5.90E-07	J

600-HWTL-04

Depth	Analyte	Result	Flag
0	HpCDF, Total	2.75E-07	J EB
0	OCDF	7.82E-07	J EB
0	1,2,3,4,6,7,8 HpCDF	2.75E-07	J EB
1	OCDF	1.16E-06	J
1	HxCDF, Total	2.28E-07	J
1	1,2,3,4,6,7,8 HpCDF	4.65E-07	J *

600-HWTL-05

Depth	Analyte	Result	Flag
0	HpCDF, Total	1.04E-06	J
0	OCDF	8.21E-07	J
0	HxCDF, Total	1.60E-07	J
0	1,2,3,4,6,7,8 HpCDF	3.17E-07	J
1	HpCDF, Total	1.13E-06	J
1	OCDF	8.48E-07	J
1	1,2,3,4,6,7,8 HpCDF	3.54E-07	J

600-HWTL-06

Depth	Analyte	Result	Flag
0	TCDF, Total	7.67E-07	
0	1,2,3,4,7,8 ,9 HpCDF	1.23E-07	J *
0	1,2,3,4,6,7,8 HpCDF	3.20E-07	J RB *
1	HpCDF, Total	1.08E-06	J
1	OCDF	1.69E-06	J
1	1,2,3,4,7,8 ,9 HpCDF	1.85E-07	J
1	HxCDF, Total	3.84E-07	J
1	1,2,3,6,7,8 HxCDF	9.93E-08	J *
1	2,3,4,6,7,8 HxCDF	1.41E-07	J
1	1,2,3,4,6,7,8 HpCDF	3.40E-07	J RB *
1	1,2,3,4,7,8 HxCDF	1.20E-07	J *
1	1,2,3,7,8 ,9 HxCDF	1.37E-07	J *

600-HWTL-07

Depth	Analyte	Result	Flag
0	HpCDF, Total	2.71E-06	
0	OCDF	2.80E-06	J EB
0	HxCDF, Total	7.86E-07	J EB
0	1,2,3,6,7,8 HxCDF	5.23E-08	J *
0	2,3,4,6,7,8 HxCDF	8.89E-08	J
0	1,2,3,4,6,7,8 HpCDF	6.54E-07	J RB EB
0	1,2,3,4,7,8 HxCDF	6.94E-08	J *
1	HpCDF, Total	1.39E-06	J
1	OCDF	2.38E-06	J
1	1,2,3,4,7,8 ,9 HpCDF	1.19E-07	J *
1	HxCDF, Total	2.46E-07	J
1	2,3,4,6,7,8 HxCDF	1.24E-07	J *
1	1,2,3,4,6,7,8 HpCDF	4.97E-07	J RB *
1	1,2,3,4,7,8 HxCDF	8.59E-08	J *

600-HWTL-08

Depth	Analyte	Result	Flag
0	HpCDF, Total	5.50E-07	J EB
0	OCDF	1.55E-06	J EB
0	1,2,3,4,6,7,8 HpCDF	5.50E-07	J EB
1	HpCDF, Total	1.16E-06	J
1	OCDF	4.01E-06	J
1	1,2,3,4,7,8 ,9 HpCDF	4.49E-07	J *
1	HxCDF, Total	7.16E-07	J
1	1,2,3,6,7,8 HxCDF	1.54E-07	J *
1	2,3,4,6,7,8 HxCDF	2.52E-07	J *
1	1,2,3,4,6,7,8 HpCDF	1.16E-06	J
1	1,2,3,4,7,8 HxCDF	2.38E-07	J

600-HWTL-09

Depth	Analyte	Result	Flag
0	HpCDF, Total	7.31E-06	EB
0	OCDF	7.13E-06	* EB
0	HxCDF, Total	2.22E-07	J EB
0	2,3,4,6,7,8 HxCDF	2.22E-07	J EB
0	1,2,3,4,6,7,8 HpCDF	1.47E-06	J EB
0	1,2,3,4,7,8 HxCDF	2.23E-07	J * EB
1	HpCDF, Total	3.85E-06	
1	OCDF	5.50E-06	
1	HxCDF, Total	1.45E-06	J
1	2,3,4,7,8 PeCDF	1.17E-07	J *
1	1,2,3,6,7,8 HxCDF	1.11E-07	J *
1	2,3,4,6,7,8 HxCDF	2.03E-07	J
1	1,2,3,4,6,7,8 HpCDF	1.15E-06	J *
1	1,2,3,4,7,8 HxCDF	2.82E-07	J

600-HWTL-10

Depth	Analyte	Result	Flag
0	OCDF	3.28E-06	J
0	HxCDF, Total	9.76E-07	J
0	2,3,4,7,8 PeCDF	1.24E-07	J *
0	1,2,3,6,7,8 HxCDF	1.29E-07	J *
0	2,3,4,6,7,8 HxCDF	1.89E-07	J *
0	1,2,3,4,6,7,8 HpCDF	9.14E-07	J *
0	1,2,3,4,7,8 HxCDF	1.49E-07	J *
1	OCDF	2.58E-06	J *
1	HxCDF, Total	6.89E-07	J
1	1,2,3,4,6,7,8 HpCDF	1.19E-06	J *

600-HWTL-01
600-HWTL-02
600-HWTL-03
600-HWTL-04
600-HWTL-05
600-HWTL-06
600-HWTL-07
600-HWTL-08
600-HWTL-09
600-HWTL-10

Apollo Boulevard

Hazardous Waste Transmission Line
Furan Detections - 600 Area Location

Split-Spoon Sample
Hand Auger Sample
PVC, Removed
Stainless Steel, Removed
Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifer flag definitions.

N
W E
S

0 62.5 125 250 Feet

March 2022

Figure 6.28 SWMU 10 HWTLs 200 Industrial Area Hydrazine Detections

(SEE NEXT PAGE)

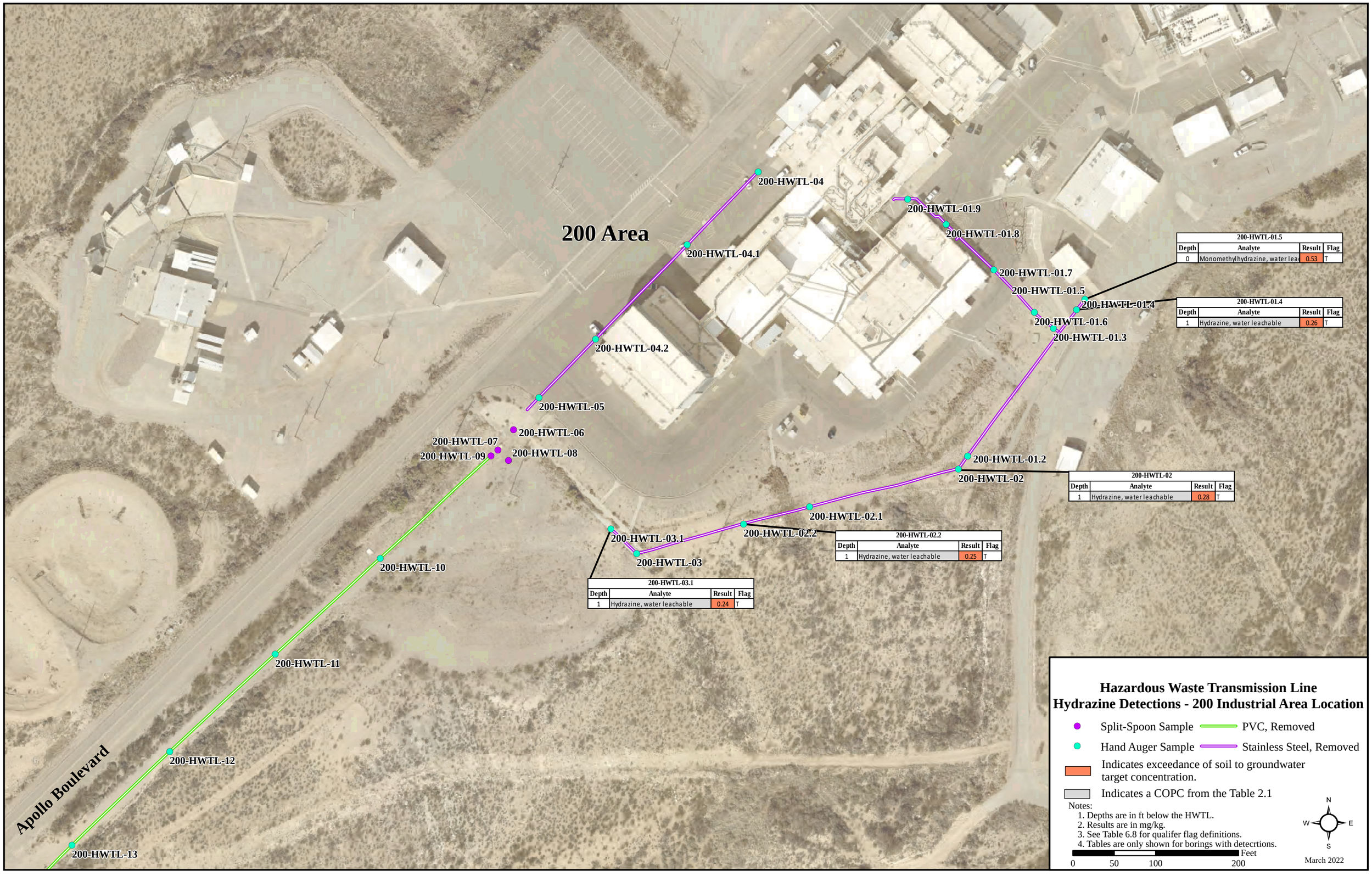

200 Area
200-HWTL-04
200-HWTL-04.1
200-HWTL-04.2
200-HWTL-05
200-HWTL-06
200-HWTL-07
200-HWTL-09
200-HWTL-08
200-HWTL-10
200-HWTL-11
200-HWTL-12
200-HWTL-13
Apollo Boulevard
200-HWTL-03.1
200-HWTL-03
200-HWTL-02.1
200-HWTL-02.2
200-HWTL-02
200-HWTL-01.2
200-HWTL-01.9
200-HWTL-01.8
200-HWTL-01.7
200-HWTL-01.5
200-HWTL-01.4
200-HWTL-01.6
200-HWTL-01.3
200-HWTL-01.5
Depth | Analyte | Result | Flag
0 | Monomethylhydrazine, water lea | 0.53 | T
200-HWTL-01.4
Depth | Analyte | Result | Flag
1 | Hydrazine, water leachable | 0.26 | T
200-HWTL-02
Depth | Analyte | Result | Flag
1 | Hydrazine, water leachable | 0.28 | T
200-HWTL-02.2
Depth | Analyte | Result | Flag
1 | Hydrazine, water leachable | 0.25 | T
200-HWTL-03.1
Depth | Analyte | Result | Flag
1 | Hydrazine, water leachable | 0.24 | T
Hazardous Waste Transmission Line
Hydrazine Detections - 200 Industrial Area Location
Split-Spoon Sample
PVC, Removed
Hand Auger Sample
Stainless Steel, Removed
Indicates exceedance of soil to groundwater target concentration.
Indicates a COPC from the Table 2.1
Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifer flag definitions.
4. Tables are only shown for borings with detecrtions.
Feet
0
50
100
200
N
W
E
S
March 2022

Figure 6.29 SWMU 10 HWTLs 200 Area Hydrazine Detections

(SEE NEXT PAGE)

200-HWTL-15
200-HWTL-16
200-HWTL-14
200-HWTL-17
200-HWTL-18
200-HWTL-19
200-HWTL-20
200-HWTL-21

200-HWTL-21			
Depth	Analyte	Result	Flag
0	Hydrazine, water leachable	0.26	T

200-HWTL-22

200-HWTL-22			
Depth	Analyte	Result	Flag
0	Hydrazine, water leachable	0.3	T

200-HWTL-23
200-HWTL-24
200-HWTL-25
200-HWTL-26

Apollo Boulevard

Hazardous Waste Transmission Line
Hydrazine Detections - 200 Area Location

Split-Spoon Sample
Hand Auger Sample
PVC, Removed
Stainless Steel, Removed
Indicates exceedance of soil to groundwater target concentration.
Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifer flag definitions.
4. Tables are only shown for borings with detecrtions.

Feet
0 62.5 125 250

N
W E
S

March 2022

Figure 6.30 SWMU 10 HWTLs 600 Area Hydrazine Detections

(SEE NEXT PAGE)

600-HWTL-01
600-HWTL-02
600-HWTL-03
600-HWTL-04
600-HWTL-05
600-HWTL-06
600-HWTL-07
600-HWTL-08
600-HWTL-09
600-HWTL-10

600-HWTL-06			
Depth	Analyte	Result	Flag
0	Hydrazine, water leachable	0.25	T

Apollo Boulevard

600 Area

Hazardous Waste Transmission Line
Hydrazine Detections - 600 Area Location

Split-Spoon Sample
Hand Auger Sample
PVC, Removed
Stainless Steel, Removed
Indicates exceedance of soil to groundwater target concentration.
Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft below the HWTL.
2. Results are in mg/kg.
3. See Table 6.8 for qualifer flag definitions.
4. Tables are only shown for borings with detecrtions.

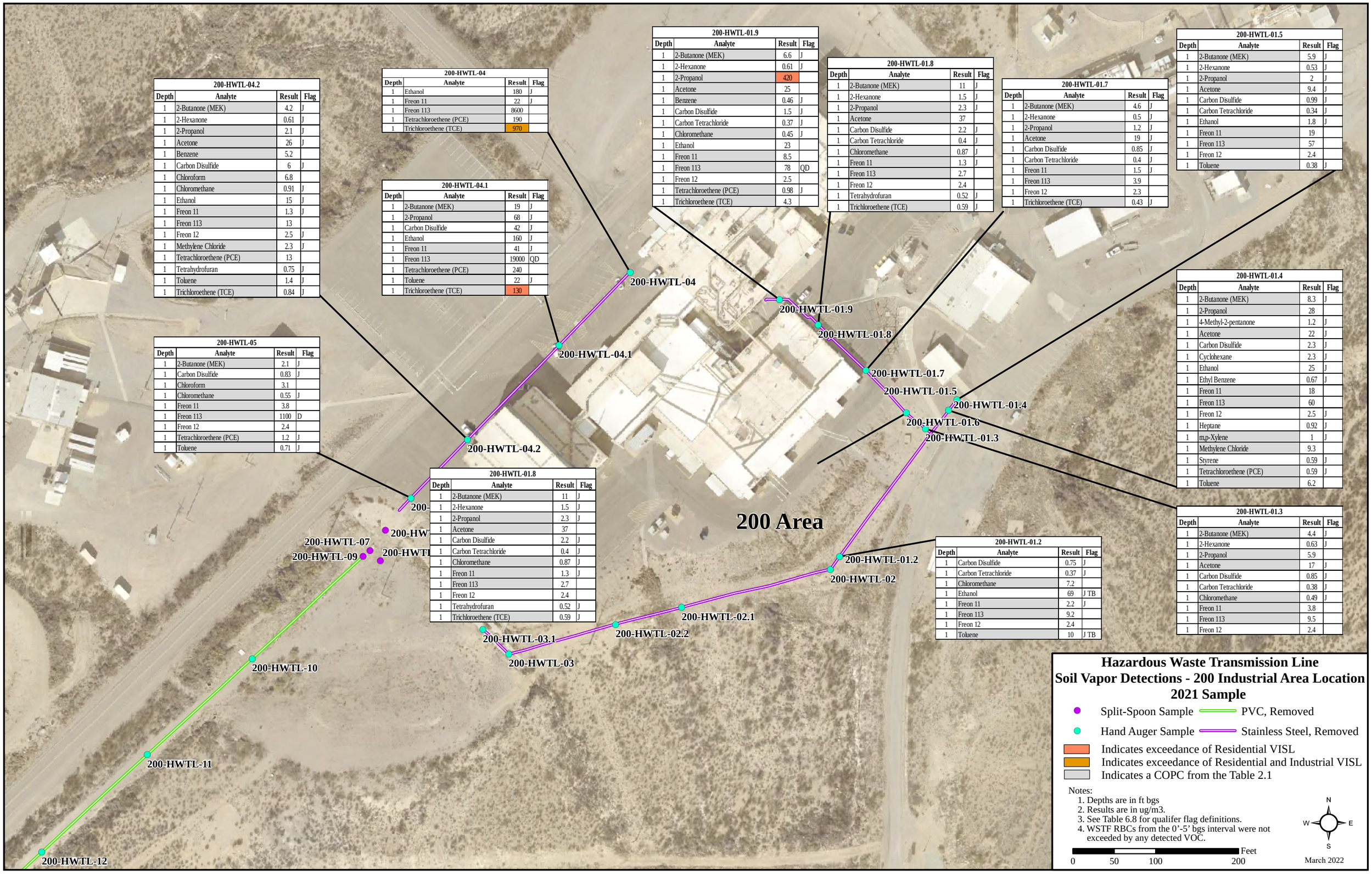
Feet
0 62.5 125 250

N
W E
S

March 2022

Figure 6.31 SWMU 10 HWTLs Soil Vapor Detections – 200 Industrial Area Location

(SEE NEXT PAGE)



200-HWTL-04.2

Depth	Analyte	Result	Flag
1	2-Butanone (MEK)	4.2	J
1	2-Hexanone	0.61	J
1	2-Propanol	2.1	J
1	Acetone	26	J
1	Benzene	5.2	
1	Carbon Disulfide	6	J
1	Chloroform	6.8	
1	Chloromethane	0.91	J
1	Ethanol	15	J
1	Freon 11	1.3	J
1	Freon 113	13	
1	Freon 12	2.5	J
1	Methylene Chloride	2.3	J
1	Tetrachloroethene (PCE)	13	
1	Tetrahydrofuran	0.75	J
1	Toluene	1.4	J
1	Trichloroethene (TCE)	0.84	J

200-HWTL-04

Depth	Analyte	Result	Flag
1	Ethanol	180	J
1	Freon 11	22	J
1	Freon 113	8600	
1	Tetrachloroethene (PCE)	190	
1	Trichloroethene (TCE)	970	

200-HWTL-04.1

Depth	Analyte	Result	Flag
1	2-Butanone (MEK)	19	J
1	2-Propanol	68	J
1	Carbon Disulfide	42	J
1	Ethanol	160	J
1	Freon 11	41	J
1	Freon 113	19000	QD
1	Tetrachloroethene (PCE)	240	
1	Toluene	22	J
1	Trichloroethene (TCE)	130	

200-HWTL-05

Depth	Analyte	Result	Flag
1	2-Butanone (MEK)	2.1	J
1	Carbon Disulfide	0.83	J
1	Chloroform	3.1	
1	Chloromethane	0.55	J
1	Freon 11	3.8	
1	Freon 113	1100	D
1	Freon 12	2.4	
1	Tetrachloroethene (PCE)	1.2	J
1	Toluene	0.71	J

200-HWTL-01.9

Depth	Analyte	Result	Flag
1	2-Butanone (MEK)	6.6	J
1	2-Hexanone	0.61	J
1	2-Propanol	420	
1	Acetone	25	
1	Benzene	0.46	J
1	Carbon Disulfide	1.5	J
1	Carbon Tetrachloride	0.37	J
1	Chloromethane	0.45	J
1	Ethanol	23	
1	Freon 11	8.5	
1	Freon 113	78	QD
1	Freon 12	2.5	
1	Tetrachloroethene (PCE)	0.98	J
1	Trichloroethene (TCE)	4.3	

200-HWTL-01.8

Depth	Analyte	Result	Flag
1	2-Butanone (MEK)	11	J
1	2-Hexanone	1.5	J
1	2-Propanol	2.3	J
1	Acetone	37	
1	Carbon Disulfide	2.2	J
1	Carbon Tetrachloride	0.4	J
1	Chloromethane	0.87	J
1	Freon 11	1.3	J
1	Freon 113	2.7	
1	Freon 12	2.4	
1	Tetrahydrofuran	0.52	J
1	Trichloroethene (TCE)	0.59	J

200-HWTL-01.7

Depth	Analyte	Result	Flag
1	2-Butanone (MEK)	4.6	J
1	2-Hexanone	0.5	J
1	2-Propanol	1.2	J
1	Acetone	19	J
1	Carbon Disulfide	0.85	J
1	Carbon Tetrachloride	0.4	J
1	Freon 11	1.5	J
1	Freon 113	3.9	
1	Freon 12	2.3	
1	Trichloroethene (TCE)	0.43	J

200-HWTL-01.5

Depth	Analyte	Result	Flag
1	2-Butanone (MEK)	5.9	J
1	2-Hexanone	0.53	J
1	2-Propanol	2	J
1	Acetone	9.4	J
1	Carbon Disulfide	0.99	J
1	Carbon Tetrachloride	0.34	J
1	Ethanol	1.8	J
1	Freon 11	19	
1	Freon 113	57	
1	Freon 12	2.4	
1	Toluene	0.38	J

200-HWTL-01.4

Depth	Analyte	Result	Flag
1	2-Butanone (MEK)	8.3	J
1	2-Propanol	28	
1	4-Methyl-2-pentanone	1.2	J
1	Acetone	22	J
1	Carbon Disulfide	2.3	J
1	Cyclohexane	2.3	J
1	Ethanol	25	J
1	Ethyl Benzene	0.67	J
1	Freon 11	18	
1	Freon 113	60	
1	Freon 12	2.5	J
1	Heptane	0.92	J
1	m,p-Xylene	1	J
1	Methylene Chloride	9.3	
1	Styrene	0.59	J
1	Tetrachloroethene (PCE)	0.59	J
1	Toluene	6.2	

200-HWTL-01.3

Depth	Analyte	Result	Flag
1	2-Butanone (MEK)	4.4	J
1	2-Hexanone	0.63	J
1	2-Propanol	5.9	
1	Acetone	17	J
1	Carbon Disulfide	0.85	J
1	Carbon Tetrachloride	0.38	J
1	Chloromethane	0.49	J
1	Freon 11	3.8	
1	Freon 113	9.5	
1	Freon 12	2.4	

200-HWTL-01.2

Depth	Analyte	Result	Flag
1	Carbon Disulfide	0.75	J
1	Carbon Tetrachloride	0.37	J
1	Chloromethane	7.2	
1	Ethanol	69	J TB
1	Freon 11	2.2	J
1	Freon 113	9.2	
1	Freon 12	2.4	
1	Toluene	10	J TB

200-HWTL-01.8

Depth	Analyte	Result	Flag
1	2-Butanone (MEK)	11	J
1	2-Hexanone	1.5	J
1	2-Propanol	2.3	J
1	Acetone	37	
1	Carbon Disulfide	2.2	J
1	Carbon Tetrachloride	0.4	J
1	Chloromethane	0.87	J
1	Freon 11	1.3	J
1	Freon 113	2.7	
1	Freon 12	2.4	
1	Tetrahydrofuran	0.52	J
1	Trichloroethene (TCE)	0.59	J

Hazardous Waste Transmission Line
Soil Vapor Detections - 200 Industrial Area Location
2021 Sample

Split-Spoon Sample — PVC, Removed

Hand Auger Sample — Stainless Steel, Removed

Indicates exceedance of Residential VISL

Indicates exceedance of Residential and Industrial VISL

Indicates a COPC from the Table 2.1

Notes:
1. Depths are in ft bgs
2. Results are in ug/m3.
3. See Table 6.8 for qualifer flag definitions.
4. WSTF RBCs from the 0'-5' bgs interval were not exceeded by any detected VOC.

N W E S

0 50 100 200 Feet

March 2022

Figure 7.1 SWMU 10 HWTLs Soil-to-Groundwater Scenario SL-SSL Exceedances

(SEE NEXT PAGE)

200 Area

200-HWTL-1.8			
Depth	Analyte	Result	Flag
0	Disulfoton	0.014	J

200-HWTL-1.5			
Depth	Analyte	Result	Flag
0	Monomethylhydrazine	0.53	T

200-HWTL-1.4			
Depth	Analyte	Result	Flag
1	Hydrazine	0.26	T

200-HWTL-02			
Depth	Analyte	Result	Flag
1	Hydrazine	0.28	T

200-HWTL-2.2			
Depth	Analyte	Result	Flag
1	Hydrazine	0.25	T

200-HWTL-3.1			
Depth	Analyte	Result	Flag
1	Hydrazine	0.24	T

200-HWTL-21			
Depth	Analyte	Result	Flag
0	Hydrazine	0.26	T

200-HWTL-22			
Depth	Analyte	Result	Flag
0	Hydrazine	0.3	T

600-HWTL-06			
Depth	Analyte	Result	Flag
0	Hydrazine	0.25	T

Location of former 200 Area Sewage Lagoon

Location of former 100 Area Sewage Lagoon

Gardner Spring Arroyo

600 Area

600 Area HWMU

100 Area

SWMU 10 HWTLs Soil-to-Groundwater Scenario SL-SSL Exceedances

- Disulfoton
- MMH
- Hydrazine
- Hand Auger HWTL Sample Location
- Auger Rig HWTL Boring
- Indicates exceedance of soil-to-groundwater SL-SSL
- Removed HWTL-PVC
- Removed HWTL-Stainless Steel
- Indicates a COPC from Table 2.1

Notes:

1. Units for results are mg/kg.
2. J - The result is an estimated value less than the quantitation limit, but greater than or equal to the detection limit.
3. T - The sample was analyzd outside the specified holding time or temperature.
4. HWTLs - Hazardous Waste Transmission Lines.
5. MMH - Monomethylhydrazine.
6. SL-SSL - Soil Leachate-Soil Screening Level.
7. SWMU - Solid Waste Management Unit.

N W E S

March 2022

0 100 200 400 Feet

Tables

Table 2.1 List of Preliminary COPCs for the SWMU 10 HWTLs Investigation

Constituent	Sample Type
Chloride	ANION
Cyanide	CYANIDE
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	DIOXINS/FURANS
Heptachlorodibenzo-p-dioxins (HpCDD), Total	DIOXINS/FURANS
Octachlorodibenzofuran (OCDF)	DIOXINS/FURANS
Octachlorodibenzo-p-dioxin (OCDD)	DIOXINS/FURANS
Hydrazine	HYDRAZINE
Monomethylhydrazine (MMH)	HYDRAZINE
Unsymmetrical Dimethylhydrazine (UDMH)	HYDRAZINE
Aluminum	METALS
Antimony	METALS
Arsenic	METALS
Barium	METALS
Beryllium	METALS
Boron	METALS
Cadmium	METALS
Calcium	METALS
Chromium (Total)	METALS
Chromium (VI)	METALS
Cobalt	METALS
Copper	METALS
Lead	METALS
Mercury	METALS
Molybdenum	METALS
Nickel	METALS
Selenium	METALS
Silver	METALS
Strontium	METALS
Thallium	METALS
Tin	METALS
Vanadium	METALS
Zinc	METALS
Bromacil	BROMACIL
N-Nitrosodimethylamine	NITROSAMINES
Nitrate	NITROGEN
Nitrite	NITROGEN
Perchlorate	PERCHLORATE
Bis(2-ethylhexyl) Phthalate	SVOC
Di-n-butyl Phthalate	SVOC
1,1,1-Trichloroethane	VOC
1,1,2-Trichloroethane	VOC
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	VOC
1,1-Dichloroethene	VOC
1,2-Dichloro-1,1,2-trifluoroethane (Freon 123a)	VOC
1,2-Dichloroethane	VOC
2,2-Dichloro-1,1,1-trifluoroethane (Freon 123)	VOC
2-Butanone (Methyl Ethyl Ketone)	VOC
2-Propanol	VOC
Acetone	VOC
Benzene	VOC
Bromodichloromethane	VOC

Constituent	Sample Type
Bromoform	VOC
Chlorobenzene	VOC
Chloroform	VOC
Chloromethane	VOC
Dibromochloromethane	VOC
Dichlorofluoromethane (Freon 21)	VOC
Methyl tert-Butyl Ether	VOC
Methylene Chloride	VOC
m-Xylene & p-Xylene	VOC
Tetrachloroethene (PCE)	VOC
Toluene	VOC
Trichloroethene (TCE)	VOC
Trichlorofluoromethane (Freon 11)	VOC

Notes: * = List of Preliminary COPCs taken from 200 Area HIS (NASA, 2012b).

Table 3.1 HWTLs and Soil Sample Depths Below Ground Surface

Sample Location	Former HWTLs Piping Depth (ft bgs)	Target Depth of Upper Sample[1,3] (ft bgs)	Target Depth of Lower Sample[2,3] (ft bgs)
200-HWTL-01.2	2	2-2.5	3-4
200-HWTL-01.3	2	2-2.5	3-4
200-HWTL-01.4	2.5	2.5-3	3.5-4.5
200-HWTL-01.5	2.5	2.5-3	3.5-4.5
200-HWTL-01.6	2	2-2.5	3-4
200-HWTL-01.7	1.5	1.5-2	2.5-3.5
200-HWTL-01.8	1.5	1.5-2	2.5-3.5
200-HWTL-01.9	2	2-2.5	3-4
200-HWTL-02	2	2-2.5	3-4
200-HWTL-02.1	2	2-2.5	3-4
200-HWTL-02.2	2	2-2.5	3-4
200-HWTL-03	1	1-1.5	2-3
200-HWTL-03.1	1.5	1.5-2	2.5-3.5
200-HWTL-04	3	3-3.5	4-5
200-HWTL-04.1	3	3-3.5	4-5
200-HWTL-04.2	3	3-3.5	4-5
200-HWTL-05	3.5	3.5-4	4.5-5.5
200-HWTL-06	NA	13-15	15-17
200-HWTL-07	NA	13-15	15-17
200-HWTL-08	NA	13-15	15-17
200-HWTL-09	NA	13-15	15-17
200-HWTL-10	2	2-2.5	3-4
200-HWTL-11	2	2-2.5	3-4
200-HWTL-12	2	2-2.5	3-4
200-HWTL-13	2	2-2.5	3-4
200-HWTL-14	2	2-2.5	3-4
200-HWTL-15	1.5	1.5-2	2.5-3.5
200-HWTL-16	1.5	1.5-2	2.5-3.5
200-HWTL-17	1	1-1.5	2-3
200-HWTL-18	3	3-3.5	4-5
200-HWTL-19	4	4-4.5	5-6
200-HWTL-20	3.5	3.5-4	4.5-5.5
200-HWTL-21	4	4-4.5	5-6
200-HWTL-22	3	3-3.5	4-5
200-HWTL-23	2	2-2.5	3-4
200-HWTL-24	1.5	1.5-2	2.5-3.5
200-HWTL-25	1.5	1.5-2	2.5-3.5
200-HWTL-26	4	4-4.5	5-6

Sample Location	Former HWTLs Piping Depth (ft bgs)	Target Depth of Upper Sample[1,3] (ft bgs)	Target Depth of Lower Sample[2,3] (ft bgs)
600-HWTL-01	3	3-3.5	4-5
600-HWTL-02	1	1-1.5	2-3
600-HWTL-03	1	1-1.5	2-3
600-HWTL-04	1	1-1.5	2-3
600-HWTL-05	1	1-1.5	2-3
600-HWTL-06	1	1-1.5	2-3
600-HWTL-07	1.5	1.5-2	2.5-3.5
600-HWTL-08	2	2-2.5	3-4
600-HWTL-09	2	2-2.5	3-4
600-HWTL-10	2	2-2.5	3-4

Notes:
bgs – below ground surface
ft – feet
HWTLs – Hazardous Waste Transmission Lines
[1] Depth below ground for samples collected from 0.0 to 0.5 ft below the HWTL. The 2016 sample locations were recorded with "000" suffix, i.e., "200-HWTL-01-**000**."
[2] Depth below ground for samples collected from 1 to 2 ft below the HWTL. The 2016 sample locations were recorded with "001" suffix, i.e., "200-HWTL-01-**001**."
[3] For 2021 VOC re-sampling, the sample numbers recorded final depth bgs reached for sampling within the target depth as allowed by field conditions.

Table 3.2 HWTLs Soil and Soil Vapor Analytical Methods

Constituent Class	Sample Media	Laboratory Analytical Method
Bromacil	Soil and Rinsate	SW-846 Method 8321
Chloride	Rinsate	SW-846 Method 9056A
Chloride	Soil	EPA Method 300.0 and SW-846 Method 9056A
Cyanide	Rinsate	SW-846 Method 9012B/Standard Method 4500-CN-E-2001
Cyanide	Soil	SW-846 Methods 9012B/9014
Dioxins/Furans	Rinsate	SW-846 Method 8290A
Dioxins/Furans	Soil	SW-846 Methods 8290/8290A
Hexavalent chromium	Rinsate	EPA Method 218.6 and SW-846 Methods 7196A/ 7199
Hexavalent chromium	Soil	SW-846 Methods 7196A/7199
Hydrazines	Soil and Rinsate	SW-846 Method 8315M
Metals	Rinsate	SW-846 Methods 6010C/6020A/7470A
Metals	Soil	SW-846 Methods 6010B/6010C/6020A/7471A/7471B
NDMA	Soil and Rinsate	EPA Method 607M
Nitrate/nitrite as nitrogen	Rinsate	EPA Method 353.2
Nitrate/nitrite as nitrogen	Soil	EPA Methods 353.2/353.2M
Perchlorate	Soil and Rinsate	SW-846 Method 6850
pH	Soil	SW-846 Method 9045D
SVOC	Soil and Rinsate	SW-846 Method 8270D
VOC	Soil and Rinsate (equipment blank)	SW-846 Method 8260C
VOC	Soil Vapor	EPA Method TO-15

Table 6.1 Summary of Soil Sample Detection Frequencies

Constituent	Sample Detection Frequency	Maximum Detection Concentration (mg/kg)	Minimum Detection Concentration (mg/kg)	Method Detection Limits (mg/kg)	Maximum Detection Location/Depth (ft bgs)
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	15/96	2.80E-03 J	1.90E-04 J	1.5E-04 – 7.3E-04	200-HWTL-04 / 3-3.5’
2-Butanone (MEK)	4/96	6.50E-03 J	2.50E-03 J	1.5E-03 – 7.3E-03	200-HWTL-4.2 / 4-5’
Acenaphthylene	1/96	4.80E-03 J	NA	9.5E-04 – 6.8E-02	600-HWTL-01 / 4-5’
Acetone	1/96	3.2E-02 J	NA	1.1E-02 – 5.5E-02	200-HWTL-04.2 / 4-5’
Aluminum	96/96	1.11E+04	1.72E+03	3.0E+00 – 1.0E+01	200-HWTL-2.1 / 2-2.5’
Anthracene	4/96	8.50E-03	2.40E-03 J	1.2E-03 – 6.8E-02	600-HWTL-01 / 4-5’
Antimony	8/96	1.30E+00 J	1.30E-01 J	1.0E-01 – 5.0E-01	200-HWTL-2.1 / 2-2.5’
Arsenic	96/96	3.00E+01	9.50E-01	1.5E-01 – 3.0E-01	200-HWTL-4.2 / 4-5’
Barium	96/96	2.19E+02	2.65E+01	1.4E-01 – 2.0E-01	600-HWTL-07 / 2.5-3.5’
Benz(a)anthracene	36/90	6.70E-02 QD	1.70E-03 J	1.2E-03 – 8.0E-02	200-HWTL-1.9 / 2-2.5’
Benzene	2/96	3.70E-04 J	2.80E-04 J	1.5E-04 – 7.3E-04	200-HWTL-03 / 2-3’
Benzo(a)pyrene	12/90	6.60E-02 QD	1.70E-03 J	1.2E-03 – 8.0E-02	200-HWTL-1.9 / 2-2.5’
Benzo(b)fluoranthene	15/90	8.30E-02 QD	1.70E-03 J	1.2E-03 – 1.0E-01	200-HWTL-1.9 / 2-2.5’
Benzo(g,h,i)perylene	9/90	5.30E-02	2.00E-03 J	2.0E-03 – 6.4E-02	600-HWTL-01 / 4-5’
Benzo(k)fluoranthene	6/90	3.30E-02 QD	1.70E-03 J	7.3E-04 – 1.6E-01	200-HWTL-1.9 / 2-2.5’
Benzyl Alcohol	3/96	1.60E-01 J	9.60E-02 J	9.9E-03 – 5.0E-02	200-HWTL-04 / 4-5’
Beryllium	96/96	5.90E-01	1.50E-01 J	1.0E-02 – 2.0E-02	200-HWTL-22 / 4-5’
Bis(2-ethylhexyl)Phthalate	90/96	6.90E-01 RB A	1.10E-01 J RB A T	4.6E-02 – 1.8E-01	200-HWTL-2.1 / 2-2.5’ and 3-4’
Boron	31/96	8.00E+00 J	1.60E+00 J	1.3E+00 – 5.0E+00	200-HWTL-1.2 / 3-4’; 200-HWTL-2.1 / 2-2.5’ and 3-4’; 200-HWTL-2.2 / 3-4’

Constituent	Sample Detection Frequency	Maximum Detection Concentration (mg/kg)	Minimum Detection Concentration (mg/kg)	Method Detection Limits (mg/kg)	Maximum Detection Location/Depth (ft bgs)
Bromoform (Tribromomethane)	2/96	2.10E-03 J	1.20E-03 J	3.6E-04 – 1.9E-03	200-HWTL-26 / 5-6’
Butyl Benzyl Phthalate	1/96	8.40E-03 J	NA	8.0E-03 – 1.7E-01	200-HWTL-1.3 / 2-2.5’
Cadmium	96/96	4.80E+00 T QD	4.00E-02 J	4.0E-02 – 5.8E-02	200-HWTL-11 / 2-2.5’
Calcium	96/96	1.74E+05	2.50E+03	1.4E+01 – 2.0E+03	200-HWTL-1.5 / 3.5-4.5’
Carbon Disulfide	1/96	7.10E-04 J	NA	2.1E-04 – 1.1E-03	200-HWTL-08 / 13-15'
Chloride	71/96	2.19E+02	1.20E+00 J	1.8E-01 – 6.0E+00	200-HWTL-1.2 / 3-4’
Chromium, Hexavalent	6/96	5.66E+00	2.80E-01 J	1.0E-02 – 5.0E-02	200-HWTL-2.1 / 2-2.5’
Chromium, Total	96/96	1.25E+02	2.14E+00 QD	1.0E-01 – 2.0E-01	200-HWTL-1.8 / 1.5-2’
Chrysene	12/96	7.70E-02 QD	1.70E-03 J	8.5E-04 – 1.1E-01	200-HWTL-1.9 / 2-2.5’
Cobalt	96/96	7.40E+00	1.80E+00 J	6.0E-02 – 6.9E-02	200-HWTL-2.2 / 3-4’
Copper	96/96	8.41E+01	2.20E+00	1.0E-01 – 2.0E-01	200-HWTL-2.1 / 2-2.5’
Cyanide	59/96	1.40E-01 J	1.50E-02 J	1.5E-02 – 1.2E-01	200-HWTL-3.1 / 1.5-2’
Cyclohexane	21/96	3.10E-03 J	2.80E-04 J	1.9E-04 – 9.5E-04	200-HWTL-1.2 / 2-2.5’
Dibenz(a,h)anthracene	3/96	7.80E-03	3.80E-03 J	1.2E-03 – 7.6E-02	600-HWTL-01 / 4-5’
Diethyl Phthalate	90/96	7.90E-02 J RB	2.50E-02 J RB	2.2E-02 – 1.0E-01	200-HWTL-1.7 / 1.5-2’
Di-n-butyl Phthalate	9/96	4.60E-01 RB A	3.40E-01 RB A	2.9E-02 – 3.4E-01	200-HWTL-1.2 / 3-4’ and 600-HWTL-06 / 1-1.5’
Di-n-octyl Phthalate	3/96	1.80E-01	4.20E-02 J	1.1E-02 – 5.7E-02	200-HWTL-1.8 / 1.5-2’
Diphenylamine	2/90	3.80E-02	1.50E-02 J	7.6E-03 – 8.5E-03	200-HWTL-1.7 / 2.5-3.5’
Disulfoton	1/96	1.40E-02 J	NA	3.3E-03 – 2.4E-01	200-HWTL-1.8 / 1.5-2’
Fluoranthene	23/96	7.60E-02 QD	1.70E-03 J T	9.9E-04 – 1.4E-01	200-HWTL-01.9 / 2-2.5’

Constituent	Sample Detection Frequency	Maximum Detection Concentration (mg/kg)	Minimum Detection Concentration (mg/kg)	Method Detection Limits (mg/kg)	Maximum Detection Location/Depth (ft bgs)
Fluorene	1/96	1.70E-03 J	NA	1.2E-03 – 7.2E-02	200-HWTL-20 / 4.5-5.5’
Hydrazine, water leachable	7/96	3.00E-01 T	2.40E-01 T	1.1E-01 – 2.1E-01	200-HWTL-22 / 3-3.5’
Indeno(1,2,3-cd)pyrene	9/96	4.60E-02	1.70E-03 J	1.2E-03 – 8.8E-02	600-HWTL-01 / 4-5’
Iron	96/96	1.86E+04	3.90E+03 QD	9.0E-01 – 5.0E+01	200-HWTL-2.2 / 3-4’
Isophorone	7/96	2.20E-02 J RB	1.20E-02 J	1.0E-02 – 6.8E-02	200-HWTL-2.1 / 2-2.5’
Lead	96/96	2.56E+01	2.40E+00	6.0E-02 – 4.0E-01	200-HWTL-2.1 / 2-2.5’
Magnesium	96/96	4.30E+04 T	1.04E+03	2.0E+00 – 5.6E+01	200-HWTL-10 / 2-2.5’
Manganese	96/96	3.48E+02	6.80E+01 SP	8.0E-02 – 1.2E-01	200-HWTL-23 / 2-2.5’
Mercury	48/96	5.93E+01	3.00E-03 J RB	3.0E-03 – 4.0E-01	200-HWTL-2.1 / 2-2.5’
Molybdenum	52/96	2.70E+00	8.00E-02 J RB	2.0E-02 – 1.0E-01	200-HWTL-4.2 / 4-5’
Monomethylhydrazine, water leachable	1/96	5.30E-01 T	NA	3.0E-01 – 5.5E-01	200-HWTL-1.5 / 2.5-3’
Naphthalene	1/96	2.10E-03 J	NA	1.1E-03 – 1.2E-01	200-HWTL-06 / 15-17'
Nickel	96/96	7.49E+01	2.80E+00 J	1.0E-01 – 2.0E-01	200-HWTL-1.8 / 1.5-2’
Nitrate/Nitrite as Nitrogen	90/96	6.70E+01	1.40E-01 J RB	2.7E-02 – 9.0E-01	600-HWTL-04 / 2-3’
Perchlorate	30/96	3.60E-03	3.90E-04 J	6.0E-05 – 3.9E-04	600-HWTL-03 / 1-1.5’
pH	96/96	9.92	7.65	NA pH units	600-HWTL-06 / 1-1.5’
Phenanthrene	45/96	1.20E-02 RB	1.70E-03 J T	1.3E-03 – 6.8E-02	200-HWTL-1.9 / 2-2.5’ and 200-HWTL-02 / 2-2.5’
Phenol	13/96	2.60E-02 J	1.50E-02 J	1.4E-02 – 7.2E-02	200-HWTL-1.7 / 2.5-3.5’
Potassium	96/96	2.46E+03	3.60E+02	4.0E+00 – 6.0E+00	600-HWTL-01 / 4-5’

Constituent	Sample Detection Frequency	Maximum Detection Concentration (mg/kg)	Minimum Detection Concentration (mg/kg)	Method Detection Limits (mg/kg)	Maximum Detection Location/Depth (ft bgs)
Pyrene	17/96	8.40E-02 QD	1.80E-03 J T	1.2E-03 – 4.8E-02	200-HWTL-1.9 / 2-2.5’
Selenium	42/96	3.00E+00	1.50E-01 J	1.0E-01 – 7.0E-01	200-HWTL-1.6 / 3-4’
Silver	3/96	1.00E+00 J	5.00E-01 J	3.0E-02 – 5.0E-01	200-HWTL-2.1 / 2-2.5’
Sodium	96/96	4.10E+02	3.60E+01 J	1.1E+01 – 5.2E+01	200-HWTL-1.2 / 3-4’
Strontium	96/96	6.10E+02	1.63E+01	2.0E-01 – 1.0E+00	200-HWTL-04.1 / 4-5’
Tetrachloroethene (PCE)	4/96	3.80E-03 J	8.00E-04 J	1.7E-04 – 8.4E-04	200-HWTL-04 / 3-3.5’
Thallium	19/96	2.50E+00 T	6.50E-02 J	5.0E-02 – 2.9E+00	200-HWTL-10 / 2-2.5’
Tin	8/96	9.10E+01	2.40E+00	1.2E+00 – 4.0E+00	200-HWTL-2.1 / 2-2.5’
Toluene	1/96	3.500E-03 J	NA	1.5E-03 – 7.3E-03	200-HWTL-04 / 4-5’
Trichloroethene (TCE)	4/96	8.20E-03	3.50E-04 J	1.6E-04 – 8.0E-04	200-HWTL-04 / 3-3.5’
Vanadium	96/96	4.96E+01	7.50E+00 QD	2.0E-01 – 3.5E-01	200-HWTL-3.1 / 2.5-3.5’
Zinc	96/96	1.24E+02	9.60E+00 QD	2.0E-01 – 6.9E-01	200-HWTL-2.1 / 2-2.5’
2,3,7,8-TCDD	5/90	2.30E-05	1.20E-07 J	2.9E-08 – 6.26E-07	200-HWTL-1.9 / 2-2.5’
TCDD, Total	5/96	2.46E-05	3.40E-08 J	2.9E-08 – 6.26E-07	200-HWTL-1.9 / 2-2.5’
1,2,3,7,8-PeCDD	20/90	1.23E-06 J	8.49E-08 J RB	1.04E-08 – 6.44E-07	200-HWTL-1.6 / 3-4’
PeCDD, Total	17/96	7.32E-06	7.94E-08 J T	1.04E-08 – 6.44E-07	200-HWTL-1.3 / 3-4’
1,2,3,4,7,8-HxCDD	37/96	2.34E-06 J	2.90E-08 J	7.27E-09 – 4.38E-07	200-HWTL-1.6 / 2-2.5’
1,2,3,6,7,8-HxCDD	53/96	7.03E-06	4.80E-08 J	7.27E-09 – 4.43E-07	200-HWTL-1.9 / 2-2.5’
1,2,3,7,8,9-HxCDD	47/96	6.28E-06	3.00E-08 J	6.78E-09 – 4.14E-07	200-HWTL-1.9 / 3-4’
HxCDD, total	52/96	4.04E-05	6.69E-08 J T	7.08E-09 – 4.31E-07	200-HWTL-1.9 / 3-4’
1,2,3,4,6,7,8-HpCDD	90/96	1.61E-04	1.10E-07 J EB	9.48E-09 – 9.09E-07	200-HWTL-1.6 / 3-4’

Constituent	Sample Detection Frequency	Maximum Detection Concentration (mg/kg)	Minimum Detection Concentration (mg/kg)	Method Detection Limits (mg/kg)	Maximum Detection Location/Depth (ft bgs)
HpCDD, Total	82/96	2.81E-04 QD	1.70E-07 J RB	9.48E-09 – 9.09E-07	200-HWTL-1.9 / 2-2.5’
OCDD	96/96	1.85E-03	9.20E-07 J RB EB	2.15E-08 – 9.20E-07	200-HWTL-1.6 / 3-4’
2,3,7,8-TCDF	23/96	2.15E-06	4.10E-08 J	7.66E-09 – 7.66E-07	200-HWTL-1.8 / 1.5-2’
TCDF, Total	25/96	1.43E-05	4.40E-08 J	7.66E-09 – 7.66E-07	200-HWTL-1.9 / 2-2.5’
1,2,3,7,8-PeCDF	21/96	6.33E-07 J	6.20E-08 J	1.52E-08 – 3.94E-07	200-HWTL-1.9 / 3-4’
2,3,4,7,8-PeCDF	23/96	2.55E-06 J	8.96E-08 J EB	1.58E-08 – 4.24E-07	200-HWTL-1.9 / 2-2.5’
PeCDF, Total	32/96	2.24E-05	7.30E-08 J	1.55E-08 – 4.08E-07	200-HWTL-1.9 / 2-2.5’
1,2,3,4,7,8-HxCDF	50/96	4.05E-06	3.90E-08 J	8.78E-09 – 4.52E-07	200-HWTL-1.9 / 3-4’
1,2,3,6,7,8-HxCDF	44/96	2.30E-06 J	2.85E-08 J T	8.47E-09 – 4.16E-07	200-HWTL-1.9 / 3-4’
1,2,3,7,8,9-HxCDF	28/96	7.81E-07 J RB	3.77E-08 J T	1.24E-08 – 5.66E-07	200-HWTL-1.6 / 2-2.5’
2,3,4,6,7,8-HxCDF	49/96	2.54E-06 J	4.26E-08 J T	9.28E-09 – 4.65E-07	200-HWTL-1.9 / 2-2.5’
HxCDF, Total	66/96	4.93E-05 QD	4.90E-08 J	9.48E-09 – 4.69E-07	200-HWTL-1.9 / 2-2.5’
1,2,3,4,6,7,8-HpCDF	89/96	3.43E-05 EB QD	7.60E-08 J RB	6.24E-09 – 4.52E-07	200-HWTL-1.9 / 2-2.5’
1,2,3,4,7,8,9-HpCDF	39/96	2.34E-06 J	4.84E-08 J T	6.85E-09 – 5.42E-07	200-HWTL-1.9 / 3-4’
HpCDF, Total	77/96	1.07E-04	9.65E-08 J	6.64E-09 – 4.96E-07	200-HWTL-1.6 / 3-4’
OCDF	77/96	9.66E-05	1.20E-07 J RB	3.8E-08 – 2.15E-06	200-HWTL-1.6 / 3-4’

Notes:
A The result of a constituent for a laboratory control sample (LCS), initial calibration verification (ICV) or continuing calibration verification (CCV) was outside standard limits.
EB The constituent was detected in the equipment blank.
J The result is an estimated value less than the quantitation limit, but greater than or equal to the detection limit.
QD The relative percent difference for a field duplicate was outside standard limits.
RB The constituent was detected in the method blank.
SP The matrix spike recovery and/or the relative percent difference for matrix spike duplicates was outside standard limits.

T The sample was analyzed outside the specified holding time or temperature.
1. Where the original sample detected the constituent, duplicates were not counted as part of the sample detection frequency. Duplicates that detected the constituent are counted where the original sample was non-detect.
2. Maximum and minimum detection limits include detection limits for non-detects.

Table 6.2 Volatile Organic Compound Detection Summary

Volatile Organic Constituent	Minimum Concentration (mg/kg)	Sample Location/Depth bgs	Maximum Concentration (mg/kg)	Sample Location/Depth bgs
200 Industrial Area				
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	1.9E-04	200-HWTL-05-005	2.8E-03	200-HWTL-04-3.5
2-Butanone (MEK)[1]	--	--	2.5E-03	200-HWTL-06-013
Acetone[1]	--	--	3.2E-02	200-HWTL-04.2-4.5
Benzene	2.8E-04	200-HWTL-01.2-2.5	3.7E-04	200-HWTL-03-2.5
Carbon Disulfide[1]	--	--	7.1E-04	200-HWTL-08-013
Cyclohexane[1]	--	--	3.1E-03	200-HWTL-01.2-2.5
Tetrachloroethene (PCE)	8.0E-04	200-HWTL-04.1-3.5	3.8E-03	200-HWTL-04-3.5
Toluene[1]	--	--	3.5E-03	200-HWTL-04-4.5
Trichloroethene (TCE)	3.5E-04	200-HWTL-04.1-3.5	8.2E-03	200-HWTL-04-3.5
200 Area				
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	3.3E-04	200-HWTL-18-002	5.3E-04	200-HWTL-14-3.5
Bromoform	1.2E-03	200-HWTL-16-003	2.1E-03	200-HWTL-26-5.5
Cyclohexane	6.6E-04	200-HWTL-21-2.5	9.8E-04	200-HWTL-17-1.5
600 Area				
Cyclohexane	6.8E-04	600-HWTL-03-1.5	1.4E-03	600-HWTL-09-2.5

Notes:
mg/kg milligrams per kilogram
[1] See Table 6.1 for full range of detection limits per VOC constituent.

Table 6.3 Semi-volatile Organic Compound Detection Summary
Part I. Polynuclear Aromatic Hydrocarbons (PAH)[1]

HWTL Area	Boring Location and Depth (Sample Identification)	Number of Compounds Detected	PAH Compound if Detected Alone	Total PAH (mg/Kg)
200 Industrial Area	200-HWTL-01.2-000	6		1.56E-02
	200-HWTL-01.2-001	10		3.74E-02
	200-HWTL-01.4-000	6		1.71E-02
	200-HWTL-01.5-000	1	Benz(a)anthracene	2.1E-03
	200-HWTL-01.5-001	1	Benz(a)anthracene	2.1E-03
	200-HWTL-01.6-001	3		9.1E-03
	200-HWTL-01.7-001	1	Phenanthrene	2.2E-03
	200-HWTL-01.8-000	1	Phenanthrene	3.1E-03
	200-HWTL-01.8-001	2		2.7E-03
	200-HWTL-01.9-000	12		5.59E-01
	200-HWTL-01.9-001	10		7.45E-02
	200-HWTL-02.1-000	3		8.7E-03
	200-HWTL-02.1-001	3		6.5E-03
	200-HWTL-02.2-000	9		2.58E-02
	200-HWTL-02.2-001	9		2.67E-02
	200-HWTL-02-000	11		2.82E-01
	200-HWTL-02-001	7		1.94E-02
	200-HWTL-03.1-000	1	Phenanthrene	2.0E-03
	200-HWTL-03.1-001	1	Phenanthrene	2.4E-03
	200-HWTL-03-000	2		4E-03
	200-HWTL-03-001	2		4.1E-03
	200-HWTL-05-000	1	Phenanthrene	2.5E-03
	200-HWTL-05-001	4		8.5E-03
	200-HWTL-06-013	6		2.01E-02
	200-HWTL-06-015	2		1.17E-02
	200-HWTL-07-013	1	Phenanthrene	2.4E-03
	200-HWTL-08-013	1	Phenanthrene	2.1E-03
	200-HWTL-08-015	1	Phenanthrene	2.1E-03
	200-HWTL-09-013	6		1.9E-02
	200-HWTL-09-015	1	Phenanthrene	2.1E-03
	200-HWTL-10-000	5		1.26E-02
	200-HWTL-10-001	1	Phenanthrene	2.4E-03
	200-HWTL-11-000	1	Phenanthrene	2.5E-03
	200-HWTL-11-001	1	Phenanthrene	2.6E-03
	200-HWTL-12-001	1	Phenanthrene	2.1E-03
	200-HWTL-13-000	2		4.5E-03
	200-HWTL-13-001	1	Phenanthrene	1.9E-03

HWTL Area	Boring Location and Depth (Sample Identification)	Number of Compounds Detected	PAH Compound if Detected Alone	Total PAH (mg/Kg)
200 Area	200-HWTL-14-000	1	Phenanthrene	2.1E-03
	200-HWTL-14-001	1	Phenanthrene	2.1E-03
	200-HWTL-15-001	1	Benz(a)anthracene	1.7E-03
	200-HWTL-17-001	2		3.7E-03
	200-HWTL-18-000	1	Phenanthrene	1.7E-03
	200-HWTL-19-000	1	Benz(a)anthracene	1.7E-03
	200-HWTL-19-001	1	Benz(a)anthracene	2E-03
	200-HWTL-20-000	4		1.42E-02
	200-HWTL-20-001	12		4.74E-02
	200-HWTL-21-000	1	Benz(a)anthracene	2E-03
	200-HWTL-22-000	1	Benz(a)anthracene	1.7E-03
	200-HWTL-22-001	4		1.36E-02
	200-HWTL-23-001	1	Benz(a)anthracene	2E-03
600 Area	600-HWTL-01-000	4		7.7E-03
	600-HWTL-01-001	12		2.29E-01
	600-HWTL-04-000	1	Benz(a)anthracene	2E-03
	600-HWTL-05-001	1	Benz(a)anthracene	2E-03
	600-HWTL-09-000	2		5.1E-03
	600-HWTL-09-001	2		4.7E-03
	600-HWTL-10-000	1	Phenanthrene	6E-03
	600-HWTL-10-001	2		6.1E-03

Part II. Phthalates (Bis(2-ethylhexyl) Phthalate and Diethyl Phthalate)

HWTL Area	Boring Location and Depth (Sample identification)	Number of Compounds Detected[2]	Phthalate Compound if More Than Two Present in Sample	Total Phthalate (mg/Kg)
200 Industrial Area	200-HWTL-01.2-000	2		2.81E-01
	200-HWTL-01.2-001	3	Di-n-butyl Phthalate	8.28E-01
	200-HWTL-01.3-000	3	Butyl Benzyl Phthalate	3.52E-01
	200-HWTL-01.3-001	2		3.21E-01
	200-HWTL-01.4-000	2		2.36E-01
	200-HWTL-01.4-001	2		3.23E-01
	200-HWTL-01.5-000	2		2.58E-01
	200-HWTL-01.5-001	2		1.93E-01
	200-HWTL-01.6-000	2		2.24E-01
	200-HWTL-01.6-001	2		1.98E-01
	200-HWTL-01.7-000	2		2.79E-01
	200-HWTL-01.7-001	2		3.46E-01
	200-HWTL-01.8-000	3	Di-n-octyl Phthalate	5.99E-01
	200-HWTL-01.8-001	3	Di-n-octyl Phthalate	3.80E-01
	200-HWTL-01.9-000	2		2.90E-01
	200-HWTL-01.9-001	2		2.24E-01
	200-HWTL-02.1-000	2		7.54E-01
	200-HWTL-02.1-001	2		7.55E-01
	200-HWTL-02.2-000	2		3.49E-01
	200-HWTL-02.2-001	2		3.15E-01
	200-HWTL-02-000	2		2.62E-01
	200-HWTL-02-001	2		1.92E-01
	200-HWTL-03.1-000	2		2.51E-01
	200-HWTL-03.1-001	2		2.79E-01
	200-HWTL-03-000	2		2.39E-01
	200-HWTL-03-001	2		2.39E-01
	200-HWTL-05-000	2		2.21E-01
	200-HWTL-05-001	2		2.52E-01
	200-HWTL-06-013	3	Di-n-butyl Phthalate	6.68E-01
	200-HWTL-06-015	2		2.11E-01
	200-HWTL-07-013	3	Di-n-butyl Phthalate	6.76E-01
	200-HWTL-07-015	2		2.32E-01
	200-HWTL-08-013	2		2.84E-01
	200-HWTL-08-015	2		2.72E-01
	200-HWTL-09-013	3	Di-n-butyl Phthalate	6.57E-01
	200-HWTL-09-015	2		3.70E-01
	200-HWTL-10-000	2		2.50E-01

HWTL Area	Boring Location and Depth (Sample identification)	Number of Compounds Detected[2]	Phthalate Compound if More Than Two Present in Sample	Total Phthalate (mg/Kg)
200 Industrial Area	200-HWTL-10-001	2		1.75E-01
	200-HWTL-11-000	2		2.59E-01
	200-HWTL-11-001	2		2.74E-01
	200-HWTL-12-000	2		2.28E-01
	200-HWTL-12-001	2		2.25E-01
200 Area	200-HWTL-13-000	3	Di-n-octyl Phthalate	3.90E-01
	200-HWTL-13-001	2		2.93E-01
	200-HWTL-14-000	2		2.38E-01
	200-HWTL-14-001	2		2.39E-01
	200-HWTL-15-000	2		2.68E-01
	200-HWTL-15-001	2		2.63E-01
	200-HWTL-16-000	2		2.49E-01
	200-HWTL-16-001	2		2.67E-01
	200-HWTL-17-000	2		2.64E-01
	200-HWTL-17-001	2		2.56E-01
	200-HWTL-18-000	2		2.62E-01
	200-HWTL-18-001	2		2.32E-01
	200-HWTL-19-000	2		3.48E-01
	200-HWTL-19-001	2		2.54E-01
	200-HWTL-20-000	2		3.33E-01
	200-HWTL-20-001	2		2.45E-01
	200-HWTL-21-000	2		3.85E-01
	200-HWTL-21-001	2		1.82E-01
	200-HWTL-22-000	2		2.37E-01
	200-HWTL-22-001	2		2.19E-01
	200-HWTL-23-000	2		1.75E-01
	200-HWTL-23-001	2		2.82E-01
	200-HWTL-24-000	2		3.15E-01
	200-HWTL-24-001	2		2.31E-01
	200-HWTL-25-000	2		3.52E-01
	200-HWTL-25-001	2		2.55E-01
	200-HWTL-26-000	2		2.90E-01
	200-HWTL-26-001	2		2.42E-01
600 Area	600-HWTL-01-000	2		2.00E-01
	600-HWTL-01-001	2		2.36E-01
	600-HWTL-02-000	2		2.22E-01
	600-HWTL-02-001	2		2.26E-01
	600-HWTL-03-000	3	Di-n-butyl Phthalate	7.74E-01

HWTL Area	Boring Location and Depth (Sample identification)	Number of Compounds Detected[2]	Phthalate Compound if More Than Two Present in Sample	Total Phthalate (mg/Kg)
600 Area	600-HWTL-03-001	3	Di-n-butyl Phthalate	6.65E-01
	600-HWTL-04-000	2		3.16E-01
	600-HWTL-04-001	2		2.85E-01
	600-HWTL-05-000	2		2.72E-01
	600-HWTL-05-001	3	Di-n-butyl Phthalate	6.65E-01
	600-HWTL-06-000	3	Di-n-butyl Phthalate	8.84E-01
	600-HWTL-06-001	2		3.15E-01
	600-HWTL-07-000	2		2.14E-01
	600-HWTL-07-001	3	Di-n-butyl Phthalate	7.07E-01
	600-HWTL-08-000	2		1.75E-01
	600-HWTL-08-001	2		2.00E-01
	600-HWTL-09-000	2		2.95E-01
	600-HWTL-09-001	2		2.71E-01
	600-HWTL-10-000	2		2.96E-01
	600-HWTL-10-001	2		3.05E-01

[1] PAHs detected in one or more samples along the HWTL cumulatively included Acenapthylene, Anthracene, Benz(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, Chrysene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyrene, Napththalene, Phenanthrene, and Pyrene.

[2] Default is two (Bis(2-ethylhexyl) Phthalate and Diethyl Phthalate).

Table 6.4 Metal Detection Summary

Metal	Minimum Concentration (mg/kg)	Sample Location Depths (bHWTLs)	Maximum Concentration (mg/kg)	Sample Location Depths (bHWTLs)
Metals				
Aluminum, Total	1.72E+03	600-HWTL-06-000	1.11E+04	200-HWTL-02.1-000
Antimony	1.3E-01	200-HWTL-04-001	1.3E+00	200-HWTL-02.1-000
Arsenic	9.5E-01	200-HWTL-04-000	3E+01	200-HWTL-04.2-001
Barium, Total	2.65E+01	200-HWTL-07-015[1]	2.19E+02	600-HWTL-07-001
Beryllium, Total	1.5E-01	600-HWTL-06-000	5.9E-01	200-HWTL-22-001
Boron	1.6E+00	200-HWTL-04.2-000	8E+00	200-HWTL-02.2-001
Cadmium, Total	4E-02	200-HWTL-03-001	4.8E+00	200-HWTL-11-000
Chromium, Hexavalent	2.8E-01	200-HWTL-01.8-000	5.66E+00	200-HWTL-02.1-000
Chromium, Total	2.14E+00	600-HWTL-02-000	1.25E+02	200-HWTL-01.8-000
Cobalt, Total	1.8E+00	200-HWTL-21-000	7.4E+00	200-HWTL-02.2-001
Copper, Total	2.2E+00	200-HWTL-20-000	8.41E+01	200-HWTL-02.1-000
Iron, Total	3.9E+03	600-HWTL-02-000	1.86E+04	200-HWTL-02.2-001
Lead	2.4E+00	200-HWTL-04-000	2.56E+01	200-HWTL-02.1-000
Manganese	6.8E+01	200-HWTL-04-000	3.48E+02	200-HWTL-23-000
Mercury, Total	3E-03	200-HWTL-08-013[1]	5.93E+01	200-HWTL-02.1-000
Molybdenum, Total	8E-02	600-HWTL-10-001	2.7E+00	200-HWTL-04.2-001
Nickel, Total	2.8E+00	200-HWTL-15-000	7.49E+01	200-HWTL-01.8-000
Selenium	1.5E-01	200-HWTL-04-001	3E+00	200-HWTL-01.6-001
Silver, Total	5E-01	200-HWTL-02.1-001	1E+00	200-HWTL-02.1-000
Strontium	1.63E+01	600-HWTL-07-000	6.1E+02	200-HWTL-04.1-001
Thallium	6.5E-02	200-HWTL-04.1-001	2.5E+00	200-HWTL-10-000
Tin	2.4E+00	200-HWTL-04-000	9.1E+01	200-HWTL-02.1-000
Vanadium, Total	7.5E+00	600-HWTL-02-000	4.96E+01	200-HWTL-03.1-001
Zinc, Total	9.6E+00	200-HWTL-20-000	1.24E+02	200-HWTL-02.1-000
Essential Nutrients				
Calcium	2.5E+03	200-HWTL-04-000	1.74E+05	200-HWTL-01.5-001
Chloride	1.2E+00	200-HWTL-04.2-000	2.19E+02	200-HWTL-01.2-001
Magnesium, Total	1.04E+03	600-HWTL-06-000	4.3E+04	200-HWTL-10-000
Potassium, Total	3.6E+02	600-HWTL-06-000	2.46E+03	600-HWTL-01-001
Sodium, Total	3.6E+01	600-HWTL-07-000	4.1E+02	200-HWTL-01.2-001

[1] – The three-digit suffix for sample locations 200-HWTL-07-015 and 200-HWTL-08-013 indicate the sample depth in feet below ground surface instead of in feet below the HWTLs.

Table 6.5 Perchlorate Detection Summary

HWTL Area	Number of unique Locations	Boring Location and Depth (Sample Identification)	Perchlorate Concentration (mg/kg)
200 Industrial Area	5	200-HWTL-01.2-001	6E-04
		200-HWTL-01.9-000	4.2E-04
		200-HWTL-02.2-000	6.1E-04
		200-HWTL-02.2-001	5.6E-04
		200-HWTL-02-000	1E-03
		200-HWTL-02-001	8.1E-04
		200-HWTL-08-013	7.6E-04
200 Area	6	200-HWTL-09-015	4.3E-04
		200-HWTL-17-000	1.1E-03
		200-HWTL-17-001	5.8E-04
		200-HWTL-18-000	5.8E-04
		200-HWTL-18-001	5.5E-04
		200-HWTL-19-000	8.5E-04
		200-HWTL-19-001	5.5E-04
		200-HWTL-25-000	1.1E-03
		200-HWTL-25-001	1.4E-03
		200-HWTL-26-000	2E-03
		200-HWTL-26-001	1.5E-03
600 Area	8	600-HWTL-01-000	1.2E-03
		600-HWTL-01-001	1.3E-03
		600-HWTL-02-001	3.9E-04
		600-HWTL-03-000	3.6E-03
		600-HWTL-03-001	2.2E-03
		600-HWTL-04-000	6.8E-04
		600-HWTL-04-001	3E-03
		600-HWTL-06-001	4.7E-04
		600-HWTL-08-000	1.4E-03
		600-HWTL-08-001	1.8E-03
		600-HWTL-09-000	9.3E-04
		600-HWTL-09-001	1.1E-03
		600-HWTL-10-000	4.1E-04

Table 6.6 Cyanide Detection Summary

HWTL Area	Description of Spatial Occurrence		Summary Statistics			
				All Depths	0.5 ft[1]	1.0 ft
200 Industrial Area	Number of Boring Locations Where Cyanide was Detected, any depth	14	Number of Detections	22	12	10
	Number of Boring Locations Where Cyanide was not Detected	10	Average Concentration (mg/kg)	0.047	0.045	0.048
	(200-HWTL-01.5, 200-HWTL-01.9, 200-HWTL-04, 200-HWTL-04.1, 200-HWTL-04.2, 200-HWTL-06, 200-HWTL-07, 200-HWTL-08, 200-HWTL-10, 200-HWTL-11)		Minimum Concentration (mg/kg)	0.017	0.017	0.025
			Maximum Concentration (mg/kg)	0.140	0.140	0.117
			Std deviation	0.033	0.037	0.028
200 Area	Number of Boring Locations Where Cyanide was Detected, any depth	14	Number of Detections	23	11	12
	Number of Boring Locations Where Cyanide was not Detected	0	Average Concentration (mg/kg)	0.029	0.030	0.028
			Minimum Concentration (mg/kg)	0.018	0.019	0.018
			Maximum concentration (mg/kg)	0.054	0.050	0.054
			Std deviation	0.010	0.010	0.010
600 Area	Number of Boring Locations Where Cyanide was Detected, any depth	14	Number of Detections	14	8	6
	Number of Boring Locations Where Cyanide was not Detected	2	Average Concentration (mg/kg)	0.026	0.025	0.028
	(600-HWTL-01, 600-HWTL-02)		Minimum Concentration (mg/kg)	0.015	0.015	0.020
			Maximum Concentration (mg/kg)	0.046	0.046	0.032
			Std deviation	0.008	0.010	0.004

[1] For location 200-HWTL-09, this refers to the 13 ft depth sample (200-HWTL-09-013).

Table 6.7 Dioxin/Furan Detection Summary

HWTL Area	Boring Location and Depth (Sample Identification)	Number of Dioxin/Furan Congener Compounds Detected [1]	Toxicity Equivalent (TEQ) (mg/kg) [2]	Notes
200 Industrial Area	200-HWTL-01.2-000	5	1.53E-07	
	200-HWTL-01.2-001	9	8.14E-06	
	200-HWTL-01.3-000	15	1.42E-06	
	200-HWTL-01.3-001	15	1.58E-06	
	200-HWTL-01.4-000	13	7.37E-07	
	200-HWTL-01.4-001	12	5.97E-07	
	200-HWTL-01.5-000	14	1.67E-06	
	200-HWTL-01.5-001	16	1.06E-06	
	200-HWTL-01.6-000	16	4.87E-06	
	200-HWTL-01.6-001	17	5.70E-06	
	200-HWTL-01.7-000	10	8.99E-08	
	200-HWTL-01.7-001	9	8.11E-08	
	200-HWTL-01.8-000	17	2.21E-06	
	200-HWTL-01.8-001	16	9.35E-07	
	200-HWTL-01.9-000	17	2.93E-05	
	200-HWTL-01.9-001	17	2.82E-05	
	200-HWTL-02.1-000	15	3.66E-06	
	200-HWTL-02.1-001	15	1.90E-06	
	200-HWTL-02.2-000	4	2.46E-07	
	200-HWTL-02.2-001	13	4.67E-07	
	200-HWTL-02-000	12	6.89E-07	
	200-HWTL-02-001	10	3.99E-07	
	200-HWTL-03.1-000	15	3.32E-07	
	200-HWTL-03.1-001	13	3.14E-07	
	200-HWTL-03-000	11	2.64E-07	
	200-HWTL-03-001	12	2.27E-07	
	200-HWTL-04.1-000	5	7.31E-09	
	200-HWTL-04.1-001	4	2.86E-09	
	200-HWTL-04.2-000	6	1.95E-08	
	200-HWTL-04.2-001	5	1.72E-08	
	200-HWTL-04-000	7	2.06E-08	
	200-HWTL-04-001	7	2.10E-08	
	200-HWTL-05-000	16	6.47E-07	
	200-HWTL-05-001	16	4.71E-07	
	200-HWTL-06-013	10	4.05E-07	(13 ft)
	200-HWTL-06-015	4	3.49E-08	(15 ft)

HWTL Area	Boring Location and Depth (Sample Identification)	Number of Dioxin/Furan Congener Compounds Detected [1]	Toxicity Equivalent (TEQ) (mg/kg) [2]	Notes
200 Industrial Area	200-HWTL-07-013	16	4.83E-07	(13 ft)
	200-HWTL-07-015	4	2.57E-08	(15 ft)
	200-HWTL-08-013	4	4.69E-08	(13 ft)
	200-HWTL-08-015	3	3.47E-08	(15 ft)
	200-HWTL-09-013	6	5.64E-08	(13 ft)
	200-HWTL-09-015	8	5.34E-08	(15 ft)
	200-HWTL-10-000	13	2.32E-07	
	200-HWTL-10-001	13	1.31E-07	
	200-HWTL-11-000	12	5.74E-08	
	200-HWTL-11-001	10	4.54E-08	
	200-HWTL-12-000	5	2.68E-08	
	200-HWTL-12-001	4	2.56E-08	
	200-HWTL-13-000	5	1.64E-08	
	200-HWTL-13-001	3	1.43E-08	
200 Area	200-HWTL-14-000	4	2.40E-08	
	200-HWTL-14-001	6	5.44E-08	
	200-HWTL-15-000	1	9.69E-10	
	200-HWTL-15-001	1	6.69E-10	
	200-HWTL-16-000	4	3.99E-08	
	200-HWTL-16-001	3	6.81E-09	
	200-HWTL-17-000	1	1.26E-09	
	200-HWTL-17-001	5	1.29E-08	
	200-HWTL-18-000	1	1.89E-09	
	200-HWTL-18-001	3	1.33E-08	
	200-HWTL-19-000	9	7.30E-08	
	200-HWTL-19-001	12	1.18E-07	
	200-HWTL-20-000	11	7.89E-08	
	200-HWTL-20-001	9	4.25E-08	
	200-HWTL-21-000	8	3.52E-07	
	200-HWTL-21-001	3	3.89E-08	
	200-HWTL-22-000	3	2.08E-08	
	200-HWTL-22-001	4	3.32E-08	
	200-HWTL-23-000	3	1.65E-08	
	200-HWTL-23-001	3	1.92E-08	
	200-HWTL-24-000	5	5.51E-08	
	200-HWTL-24-001	5	5.25E-08	
	200-HWTL-25-000	4	2.72E-08	

HWTL Area	Boring Location and Depth (Sample Identification)	Number of Dioxin/Furan Congener Compounds Detected [1]	Toxicity Equivalent (TEQ) (mg/kg) [2]	Notes
200 Area	200-HWTL-25-001	4	2.68E-08	
	200-HWTL-26-000	2	1.90E-08	
	200-HWTL-26-001	2	1.80E-08	
600 Area	600-HWTL-01-000	13	3.49E-07	
	600-HWTL-01-001	15	4.20E-07	
	600-HWTL-02-000	6	1.98E-07	
	600-HWTL-02-001	6	4.20E-08	
	600-HWTL-03-000	4	2.60E-08	
	600-HWTL-03-001	5	4.49E-08	
	600-HWTL-04-000	4	2.03E-08	
	600-HWTL-04-001	4	2.98E-08	
	600-HWTL-05-000	4	2.14E-08	
	600-HWTL-05-001	4	2.29E-08	
	600-HWTL-06-000	4	1.85E-08	
	600-HWTL-06-001	11	1.07E-07	
	600-HWTL-07-000	9	9.22E-08	
	600-HWTL-07-001	10	1.34E-07	
	600-HWTL-08-000	5	5.58E-08	
	600-HWTL-08-001	11	4.73E-07	
	600-HWTL-09-000	7	2.46E-07	
	600-HWTL-09-001	11	3.39E-07	
	600-HWTL-10-000	11	3.60E-07	
	600-HWTL-10-001	5	8.94E-08	

TEQ Toxicity Equivalent.

[1] cumulatively include 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD); 1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD); 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD); 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD); 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD); 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD); Octachlorodibenzo-p-dioxin (OCDD),Total; 2,3,7,8-Tetrachlorodibenzofuran (TCDF); 1,2,3,7,8-Pentachlorodibenzofuran (PeCDF); 2,3,4,7,8-Pentachlorodibenzofuran (PeCDF); 1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF); 1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF); 1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF); 2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF); 1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF); 1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF); and Octachlorodibenzofuran (OCDF), Total.

[2] Excluding Total concentration dioxin / furan congener compounds by EPA 8290 or 8290A: Tetrachlorodibenzo-p-dioxins (TCDD), Total; Pentachlorodibenzo-p-dioxin (PeCDD), Total; Heptachlorodibenzo-p-dioxins (HpCDD), Total; Tetrachlorodibenzofurans (TCDF), Total; B138Pentachlorodibenzofurans (PeCDF), Total; Hexachlorodibenzofurans (HxCDF), Total; and Heptachlorodibenzofurans (HpCDF), Total.

Table 6.8 Definitions of Data Qualifiers

Qualifier	Definition
*	User defined qualifier. See quality assurance narrative.
A	The result of an analyte for a laboratory control sample (LCS), initial calibration verification (ICV) or continuing calibration verification (CCV) was outside standard limits.
AD	Relative percent difference for analyst (laboratory) duplicates was outside standard limits.
D	The reported result is from a dilution.
EB	The analyte was detected in the equipment blank.
FB	The analyte was detected in the field blank.
G	The result is an estimated value greater than the upper calibration limit.
i	The result, quantitation limit, and/or detection limit may have been affected by matrix interference.
J	The result is an estimated value less than the quantitation limit, but greater than or equal to the detection limit.
NA	The value/result was either not analyzed for or not applicable.
ND	The analyte was not detected above the detection limit.
Q	The result for a blind control sample was outside standard limits.
QD	The relative percent difference for a field duplicate was outside standard limits.
R	The result is rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
RB	The analyte was detected in the method blank.
S	The result was determined by the method of standard addition.
SP	The matrix spike recovery and/or the relative percent difference for matrix spike duplicates was outside standard limits.
T	The sample was analyzed outside the specified holding time or temperature.
TB	The analyte was detected in the trip blank.
TIC	The analyte was tentatively identified by a GC/MS library search and the amount reported is an estimated value.

Table 6.9 Summary of Soil Vapor Sample Detection Frequencies

Constituent	Soil Vapor Implant Detection Frequency	Detection Concentration		Detection Limit		Maximum Detection Implant Location
		Maximum (µg/m³)	Minimum (µg/m³)	Maximum (µg/m³)	Minimum (µg/m³)	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	12/12	1.90E+04 QD	2.70E+00	1.90E+01	3.40E-01	200-HWTL-04.1
2-Butanone (Methyl ethyl ketone, MEK)	10/12	1.90E+01 J	2.10E+00 J	2.70E+01	4.80E-01	200-HWTL-04.1
2-Hexanone	7/12	1.50E+00 J	5.00E-01 J	1.60E+01	2.90E-01	200-HWTL-01.8
2-Propanol (Isopropanol, Isopropyl alcohol)	8/12	4.20E+02	1.10E+00 J	5.50E+01	9.60E-01	200-HWTL-01.9
4-Methyl-2-pentanone (Methyl isobutyl ketone, MIBK)	1/12	1.20E+00 J	NA	1.80E+01	3.20E-01	200-HWTL-01.4
Acetone	8/12	3.70E+01	7.10E+00 J	3.00E+02	5.20E+00	200-HWTL-01.8
Benzene	2/12	5.20E+00	4.60E-01 J	1.90E+01	3.30E-01	200-HWTL-04.2
Carbon Disulfide	10/12	4.20E+01 J	7.50E-01 J	4.00E+01	7.00E-01	200-HWTL-04.1
Carbon Tetrachloride	6/12	4.00E-01 J	3.30E-01 J	1.80E+01	3.20E-01	200-HWTL-01.7 200-HWTL-01.8
Chloroform	2/12	6.80E+00	3.10E+00	1.80E+01	3.10E-01	200-HWTL-04.2
Chloromethane	6/12	7.20E+00	4.50E-01 J	2.10E+01	3.70E-01	200-HWTL-01.2
Cyclohexane	1/12	2.30E+00 J	NA	3.70E+01	6.50E-01	200-HWTL-01.4
Dichlorodifluoromethane (Freon 12)	11/12	2.50E+00 J	2.30E+00	2.20E+01	3.80E-01	200-HWTL-01.4 200-HWTL-01.9 200-HWTL-04.2
Ethanol	6/12	1.80E+02 J	1.80E+00 J	9.20E+01	1.60E+00	200-HWTL-04
Ethyl Benzene	1/12	6.70E-01 J	NA	1.90E+01	3.30E-01	200-HWTL-01.4
Heptane	1/12	9.20E-01 J	NA	2.10E+01	3.70E-01	200-HWTL-01.4
m,p-Xylene	1/12	1.00E+00 J	NA	3.50E+01	6.10E-01	200-HWTL-01.4
Methylene Chloride (Dichloromethane)	2/12	9.30E+00	2.30E+00 J	3.70E+01	6.50E-01	200-HWTL-01.4
Styrene	1/12	5.90E-01 J	NA	2.10E+01	3.70E-01	200-HWTL-01.4
Tetrachloroethene (PCE)	6/12	2.40E+02	5.90E-01 J	1.70E+01	3.00E-01	200-HWTL-04.1
Tetrahydrofuran	2/12	7.50E-01 J	5.20E-01 J	1.70E+01	2.90E-01	200-HWTL-04.2
Toluene	6/12	2.20E+01 J	3.10E-01 J	1.60E+01	2.80E-01	200-HWTL-04.1
Trichloroethene (TCE)	6/12	9.70E+02	4.30E-01 J	1.80E+01	3.10E-01	200-HWTL-04
Trichlorofluoromethane (Freon 11)	12/12	4.10E+01 J	1.30E+00 J	2.00E+01	3.50E-01	200-HWTL-04.1

Notes:
J The result is an estimated value less than the quantitation limit, but greater than or equal to the detection limit.

QD The relative percent difference for a field duplicate was outside standard limits.

1. COPC constituents from Table 1.1 that had detectable concentrations for SWMU 10 investigation data are shaded in gray in Table 2.2. 13 detected constituents were anticipated COPCs from Table 1.1, and 12 of the 25 VOC COPCs from Table 1.1 were not detected in soil vapor.
2. Where the original sample detected the constituent, duplicates were not counted as part of the sample detection frequency. Duplicates that detected the constituent are counted where the original sample was non-detect.
3. Maximum and minimum detection limits include detection limits for non-detects.

Table 7.1 Summary of the Exposure Scenarios and the Cumulative Risks/Hazards

Exposure Scenario	Media or Pathway	Last Screening Step or Exceedances	Site Risk/HI	Target	Exceeds Target?
Residential cancer	Soil	UCL95[1]	5.08E-06		
	Soil Vapor	Maximum[2], VISLs[3]	2.29E-06		
Total			7.37E-06	1E-05	No
Residential non-cancer	Soil	UCL95[1]	6.58E-01		
	Soil Vapor[1,4]	UCL95[1], RBCs[4]	5.63E-01		
Total			**1.22E+00**	1	**Yes**
Industrial/Commercial cancer	Soil	NA	NA		
	Soil Vapor[2,3]	Maximum[2], VISLs[3]	4.66E-07		
Total			4.66E-07	1E-05	No
Industrial/Commercial non-cancer	Soil	NA	NA		
	Soil Vapor[1,4]	UCL95[1], RBCs[4]	4.69E-02		
Total			4.69E-02	1	No
Construction Worker cancer	Soil[2]	Maximum[2]	2.50E-07		
	Soil Vapor	NA	NA		
Total			2.50E-07	1E-05	No
Construction Worker non-cancer	Soil[2]	Maximum[2]	9.25E-01		
	Soil Vapor	NA	NA		
Total			9.25E-01	1	No
Soil-to-Groundwater	Soil-to-groundwater	Disulfoton[5]	**3.40E-03**	9.40E-04	**Yes**
		Hydrazine[5]	**1.28E-01**	3.81E-05	**Yes**
		Monomethylhydrazine (MMH)[5]	**4.90E-01**	1.30E-05	**Yes**
Ecological	Burrowing	Tier II Deer Mouse	8.01E-02		No
		Tier II Horned Lark	3.42E-01		No
		Tier II Plants	**1.08E+00**	1	**Yes**

Notes:
Bold font indicates exceedance of target.

NA Not applicable
[1] Indicates calculated Upper Confidence Limit (UCL)95 concentrations were used.
[2] Indicates maximum concentrations were used.
[3] Indicates NMED Vapor Intrusion Screening Levels (NMED, 2021) were used.
[4] Indicates White Sands Test Facility Risk-Based Concentrations (NASA, 2020a) were used.
[5] Indicates COPC refined exposure point concentration (EPC) is compared with soil leachate-soil screening level (SL-SSL) target.

Appendix A
Photographic Documentation

Condition of the Hazardous Waste Transmission Lines (HWTL) stainless steel piping (northwest of 200 Area Building complex adjacent to Apollo Boulevard.) View to the southwest. Notice several minor rust colored spots on the outside of the piping, but not piping breaches or integrity issues.

SWMU 10 HWTLs PVC pipe condition in the trench between the 200 and 600 Areas. View to the west. Notice the piping also has a PVC capped end in good condition.

Cut HWTLs piping sealed with tape from removal of piping during sewer line installation at WSTF.

Excavating the SWMU 10 HWTLs to the northwest (in front) of Building 201 at WSTF. View to the southeast.

Figure A.5 **SWMU 10 – Hand Augering a Soil Boring**

This photograph shows hand augering (2-in. diameter) a soil boring along the HWTLs after piping removal. Samples were taken from the hand auger and placed in the stainless steel bowl, then into sampling containers.

This photograph shows the Central Mine Equipment-75 Hollow Stem Auger drilling rig over boring 200-HWTL-07. The yellow barrier posts surround 200 Area soil vapor monitoring well 200-SV-13, completed in a previous 200 Area investigation in 2014/2015. View to the southeast.

Soil samples were collected, photographed, and placed in sample containers. The soil is visible in the 3 ft long by 3-in. diameter split spoon. Well names are listed, along with the depth of the soil sample.

Figure A.8 **SWMU 10 – Potholing to Locate the HWTLs**

Potholing was conducted prior to trenching to locate the exact positions and depth of the HWTLs and to ensure utilities and underground structures were not damaged.

SWMU 10 PVC HWTLs were located in the same trench as the 200 Area Sewer Overflow lines leading from the 200 Area to the 600 Area Sewage Overflow Lagoons. The HWTLs are located below the sewer line.

Many investigations have been conducted in the 200 Area. Soil boring SH-200-1B was installed in 1994 to investigate SWMUs (specifically the south Highbay discharge pipe). The boring was adjacent to the HWTLs. View to the northeast.

Figure A.11 **SWMU 10 – 200 Area Stainless Steel Leak**

This photograph shows a stainless steel line leak identified after excavation of the HWTLs in the 200 Area. This location was sampled as 200-HWTL-1.2.

Figure A.12 **SWMU 10 - 200 Area Stainless Steel Leak**

This photograph shows another stainless steel leak identified in the 200 Area after excavation of the HWTLs. This location was sampled as 200-HWTL-1.3.

This photograph shows the welded cap installed at the far northeast end of the HWTLs in the 200 Area. This area was sampled as 200-HWTL-1.5.

Figure A.14 **SWMU 10 – Pinhole Leak in Stainless Steel Lines**

This photograph shows a pinhole lead in the HWTLs identified during inspection of the lines following excavation in the 200 Area. This location was sampled as 200-HWTL-2.1.

Figure A.15 **SWMU 10 – Damaged HWTLs Stainless Steel Piping**

SWMU 10 HWTLs stainless steel damaged piping near the South Highbay showing crushed and open end. This area was sampled as 200-HWTL-3.1.

The HWTLs were apparently also used as conduit for a smaller 1” diameter nitrogen line associated with operations at the ETU. The HWTLs and nitrogen line were both removed together. This location was sampled as 200-HWTL-10. View to the southeast.

Figure A.17 **SWMU 10 – Flooding within the HWTLs trench**

Rain water flooded the HWTLs trench in the 200 Area. Soil sample 200-HWTL-13 could not be obtained as planned and had to be moved 60 ft upgradient to avoid the flood water. View to the northeast.

Figure A.18 **SWMU 10 – Damage to Stainless Steel HWTLs**

This photograph shows damage to the stainless steel HWTLs/bent lines in the 200 Area. This location was near breathing air lines installed in the 200 Area in association with the ETUs.

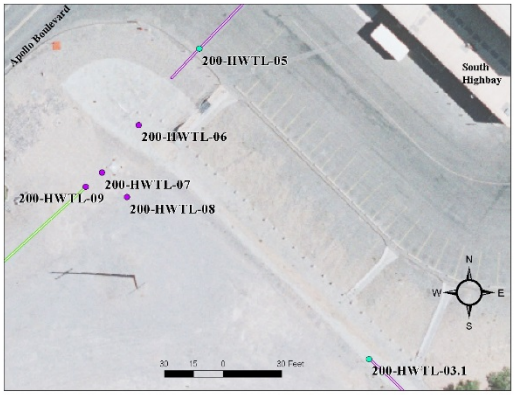
PVC HWTLs piping break, believed to have occurred after abandonment of HWTLs. No moist or discolored soil or odors were present in the field. This location was sampled as 600-HWTL-04. View to the west.

This photograph shows the PVC HWTLs in the 600 Area at a break in the line. Notice the soil with roots growing within the line. This location was sampled as 600-HWTL-08.

Appendix B
Field Notes (Lithologic Logs, Sampling Notes)

SOIL BORING LITHOLOGIC LOG

LOCATION MAP:

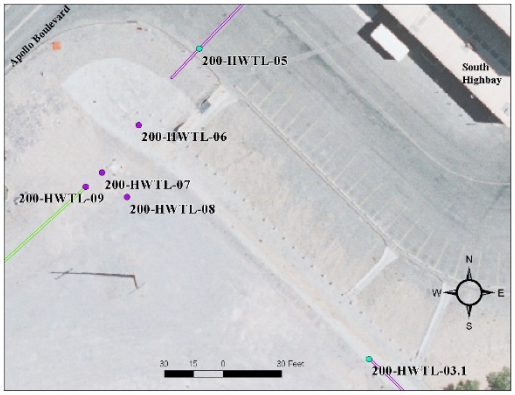


SITE ID: NASA-WSTF **LOCATION ID:** 200-HWTL-06
SITE COORDINATES (ft.) N: 552,039.18 **E:** 1,531,872.13
GROUND ELEVATION (ft. MSL): Not Surveyed
STATE: New Mexico **COUNTY:** Doña Ana
DRILLING METHOD: Hollow Stem Auger
SAMPLING METHOD: 3-inch Split Spoon
DRILLING CONTR./DRILLER: Terracon/M. Dueñez
DATE STARTED: 6/22/2016 **DATE COMPLETED:** 6/22/2016
FIELD REPS.: J. Hennessey (Navarro) **TOTAL DEPTH:** 17'
COMMENTS: Boring located in the historical mobile tanker area and coincident with the only documented HWTL leak. Chemical samples collected for VOC, Semivolatiles, Inorganics, Dioxins/Furans, Hexavalent Chromium, Perchlorate, Chloride, Nitrate/Nitrite as Nitrogen, pH, NDMA, Bromacil, and Hydrazines analyses.

DEPTH (ft. bgs)	SOIL CORE			SOIL SAMPLE			LITHOLOGIC DESCRIPTION
	Sample Depth (ft) From	To	% Core Rec. with 100 Blow Counts	TYPE (Soil Grab, Soil Gas, Soil Chemical, Soil Geotechnical, Hex. Chrom.)	WSTF 10-DIGIT SAMPLE NUMBER(S) (yrmmddtttt)	USCS Group	Color, sorting/grading, consistency/density, grain size proportions (%), rounding/shape, consolidation/cementation, moisture content, distinguishing features
0 5					1606220700 (Trip Blank)	SM	0'-13': Silty, Sand with Cobbles, color is medium brown, dry, loose, non-plastic, poorly sorted. Casts are subangular to subrounded, primarily limestone with <20% volcanics (rhyolite). No odor. Upper 8 ft contains higher concentration of cobbles. Part of disturbed soil from re-grading area after mobile tankers were removed.
10						SM	
15	13	15	<20 65 65	Soil Chemical	1606220720-0731 (Equipment Blank/Rinsate) 1606220740-0744; 1606220746-0747 1606220750-0754; 1606220756-0757 (Duplicate)	SM	13'-15': Silty, Sand with Gravel, medium brown, clasts are cobbles 40-45%, subrounded to subangular, mostly limestone with minor volcanics. Matrix contains 5% clay, non-plastic, loose, slightly moist. PID = 0.0 ppm.
17	15	17	~50 ~50	Soil Chemical	1606220800-0804; 1606220806-0807	SM	**15'-17':** Silty , Sand with Gravel, medium brown, loose, dry. Clasts ~40% are pebbles and cobbles, subrounded, and predominantly limestone with 15% rhyolite and quartzite clasts. No odor. PID = 0.0 ppm

SOIL BORING LITHOLOGIC LOG

LOCATION MAP:

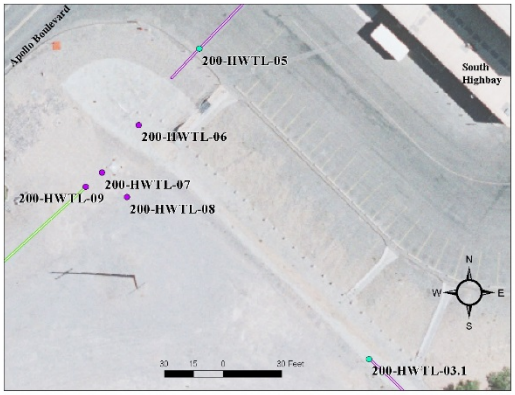


SITE ID: NASA-WSTF **LOCATION ID:** 200-HWTL-07
SITE COORDINATES (ft.) N: 552,014.79 **E:** 1,531,853.31
GROUND ELEVATION (ft. MSL): Not Surveyed
STATE: New Mexico **COUNTY:** Doña Ana
DRILLING METHOD: Hollow Stem Auger
SAMPLING METHOD: 3-inch Split Spoon
DRILLING CONTR./DRILLER: Terracon/M. Dueñez
DATE STARTED: 6/21/2016 **DATE COMPLETED:** 6/21/2016
FIELD REPS.: G. Giles (Navarro) **TOTAL DEPTH:** 17'
COMMENTS: Boring located in the historical mobile tanker area and coincident with the only documented HWTL leak. Chemical samples collected for VOC, Semivolatiles, Inorganics, Dioxins/Furans, Hexavalent Chromium, Perchlorate, Chloride, Nitrate/Nitrite as Nitrogen, pH, NDMA, Bromacil, and Hydrazines analyses.

DEPTH (ft. bgs)	SOIL CORE			SOIL SAMPLE			LITHOLOGIC DESCRIPTION
	Sample Depth (ft) From	To	% Core Rec. with 100 Blow Counts	TYPE (Soil Grab, Soil Gas, Soil Chemical, Soil Geotechnical, Hex. Chrom.)	WSTF 10-DIGIT SAMPLE NUMBER(S) (yrmmddtttt)	USCS Group	Color, sorting/grading, consistency/density, grain size proportions (%), rounding/shape, consolidation/cementation, moisture content, distinguishing features
0 5					1606210700 (Trip Blank)	SM	0'-13': Silty, Sandy Gravel, color is medium brown, dry, loose, non-plastic, poorly sorted. Casts are subangular to subrounded, primarily limestone with <20% volcanics (rhyolite). No odor. PID = 0.0 ppm. Part of disturbed soil from re-grading area after mobile tankers were removed.
10						SM	
15	13	15	<20	Soil Chemical	1606210915-0926 (Equipment Blank/Rinsate) 1606210940-0944; 1606210946-0947	SM	13'-15': Silty, Sandy Gravel, medium orange brown, clasts 40%, cobbles present, mostly fossiliferous limestone. Matrix contains 5% clay, non-plastic, loose, slightly moist. PID = 0.0 ppm.
17	15	17	80	Soil Chemical	1606211000-1004; 1606211006-1007	SM	**15'-17':** Silty , Sand with Gravel, medium orange brown, loose, slihtly moist, <5% clay, no odor. Clasts ~20% are ¼-in. to 2-in. diameter, subangular to subrounded, and predominantly grainy (fossiliferous) limestone with 15% rhyolite and quartzite clasts.

SOIL BORING LITHOLOGIC LOG

LOCATION MAP:

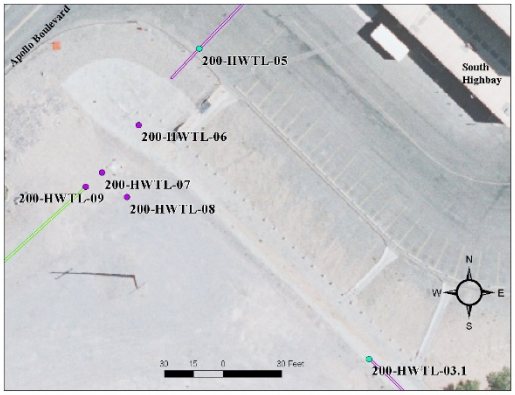


SITE ID: NASA-WSTF **LOCATION ID:** 200-HWTL-08
SITE COORDINATES (ft.) N: 552,002.38 **E:** 1,531,866.09
GROUND ELEVATION (ft. MSL): Not Surveyed
STATE: New Mexico **COUNTY:** Doña Ana
DRILLING METHOD: Hollow Stem Auger
SAMPLING METHOD: 3-inch Split Spoon
DRILLING CONTR./DRILLER: Terracon/M. Dueñez
DATE STARTED: 6/22/2016 **DATE COMPLETED:** 6/22/2016
FIELD REPS.: J. Hennessey (Navarro) **TOTAL DEPTH:** 17'
COMMENTS: Boring located in the historical mobile tanker area and coincident with the only documented HWTL leak. Chemical samples collected for VOC, Semivolatiles, Inorganics, Dioxins/Furans, Hexavalent Chromium, Perchlorate, Chloride, Nitrate/Nitrite as Nitrogen, pH, NDMA, Bromacil, and Hydrazines analyses.

DEPTH (ft. bgs)	SOIL CORE			SOIL SAMPLE			LITHOLOGIC DESCRIPTION
	Sample Depth (ft) From	To	% Core Rec. with 100 Blow Counts	TYPE (Soil Grab, Soil Gas, Soil Chemical, Soil Geotechnical, Hex. Chrom.)	WSTF 10-DIGIT SAMPLE NUMBER(S) (yrmmddtttt)	USCS Group	Color, sorting/grading, consistency/density, grain size proportions (%), rounding/shape, consolidation/cementation, moisture content, distinguishing features
0 5						SM	0'-13': Silty, Sand with Gravel, color is medium brown, dry, loose, non-plastic, poorly sorted. Casts are subangular to subrounded, primarily limestone with <20% volcanics (rhyolite). No odor. Part of disturbed soil from re-grading area after mobile tankers were removed.
10						SM	
15	13	15	55	Soil Chemical	1606220900-0904; 1606220906-0907	GM	13'-15': Silty, Sand with Gravel, medium brown, clasts 50%, cobbles present, mostly limestone. Matrix contains 5% clay, non-plastic, loose, dry, no odor. PID = 0.0 ppm.
17	15	17	<20 60	Soil Chemical	1606220920-0924; 1606220926-0927	SM	**15'-17':** Sandy Silt with Gravel, reddish brown, loose, 60% silt and clay, 30% fine to medium sand, no odor. Clasts ~10%, subrounded, and predominantly limestone with minor rhyolite and quartzite clasts.

SOIL BORING LITHOLOGIC LOG

LOCATION MAP:



SITE ID: NASA-WSTF **LOCATION ID:** 200-HWTL-09
SITE COORDINATES (ft.) N: 552,007.70 **E:** 1,531,844.97
GROUND ELEVATION (ft. MSL): Not Surveyed
STATE: New Mexico **COUNTY:** Doña Ana
DRILLING METHOD: Hollow Stem Auger
SAMPLING METHOD: 3-inch Split Spoon
DRILLING CONTR./DRILLER: Terracon/M. Dueñez
DATE STARTED: 6/21/2016 **DATE COMPLETED:** 6/21/2016
FIELD REPS.: G. Giles (Navarro) **TOTAL DEPTH:** 17'
COMMENTS: Boring located in the historical mobile tanker area and coincident with the only documented HWTL leak. Chemical samples collected for VOC, Semivolatiles, Inorganics, Dioxins/Furans, Hexavalent Chromium, Perchlorate, Chloride, Nitrate/Nitrite as Nitrogen, pH, NDMA, Bromacil, and Hydrazines analyses.

DEPTH (ft. bgs)	SOIL CORE			SOIL SAMPLE			LITHOLOGIC DESCRIPTION
	Sample Depth (ft) From	To	% Core Rec. with 100 Blow Counts	TYPE (Soil Grab, Soil Gas, Soil Chemical, Soil Geotechnical, Hex. Chrom.)	WSTF 10-DIGIT SAMPLE NUMBER(S) (yrmmddtttt)	USCS Group	Color, sorting/grading, consistency/density, grain size proportions (%), rounding/shape, consolidation/cementation, moisture content, distinguishing features
0 5						SM	0'-13': Silty, Sandy Gravel, color is medium brown, dry, loose, non-plastic, poorly sorted. Casts are subangular to subrounded, primarily limestone with <20% volcanics (rhyolite). No odor. Part of disturbed soil from re-grading area after mobile tankers were removed.
10						SM	
15	13	15	30 30	Soil Chemical	1606211300-1304; 1606211306-1307	SM	13'-15': Silty, Sandy Gravel, medium tan brown, poorly sorted, moderately graded, clasts 30%, ¼-in. to 2-in. in diameter, subangular, mostly limestone (fossiliferous to micritic) 10% volcanic clasts (rhyolite). Matrix contains 5% clay, dry, on-plastic, loose, no odor. PID = 0.0 ppm.
17	15	17	80	Soil Chemical	1606211315-1319; 1606211321-1322	SM	**15'-17':** Silty , Sand with Gravel, medium red brown, loose, dry to slihtly moist, non-plastic, pootly sorted, moderately graded, 5% clay, no odor. Clasts ~20% are ¼-in. to 1-in. diameter, subangular to subrounded, and predominantly (fossiliferous and micritic) limestone with 15-20% quartzite clasts. PID = 0.0 ppm

Appendix B – General Soil Description of Shallow Soil Borings at SWMU 10

Boring IDs	Boring Depth (ft below HWTL[1,2])	Sampling Depths (ft below HWTL)	Soil Description
200-HWTL-1.2 200-HWTL-1.3 200-HWTL-1.4 200-HWTL-1.5 200-HWTL-1.6 200-HWTL-1.7 200-HWTL-1.8 200-HWTL-1.9 200-HWTL-02 200-HWTL-2.1 200-HWTL-2.2 200-HWTL-03 200-HWTL-3.1 200-HWTL-04 200-HWTL-4.1 200-HWTL-4.2 200-HWTL-05 200-HWTL-06 200-HWTL-07 200-HWTL-08 200-HWTL-09 200-HWTL-10 200-HWTL-11 200-HWTL-12 200-HWTL-13	2	0-0.5 1-2	Surrounding the 200 area (and to the east of Apollo Boulevard), the HWTL trench was infilled with sand, or under pavement/asphalt areas, crusher fine gravel with diameter < $^{3}/_{16}$-inch (in.). Above the sand or crusher fine material, the trench was back-filled with sifted native fill (mostly sand) with cobbles < 1 ½-in diameter. The trench-fill was installed from ground surface to a maximum of approximately 1 ft below the HWTL. Native alluvium below the trench fill consisted of poorly sorted, dry, light brown silty, sandy, gravel with clasts up to 40%, angular to subrounded, predominantly dark gray limestone with some volcanic clasts.
200-HWTL-14 200-HWTL-15 200-HWTL-16 200-HWTL-17 200-HWTL-18 200-HWTL-19 200-HWTL-20 200-HWTL-21 200-HWTL-22 200-HWTL-23 200-HWTL-24 200-HWTL-25 200-HWTL-26 600-HWTL-01 600-HWTL-02 600-HWTL-03 600-HWTL-04 600-HWTL-05 600-HWTL-06 600-HWTL-07 600-HWTL-08 600-HWTL-09 600-HWTL-10	2	0-0.5 1-2	In borings west of Apollo Boulevard and within the 600 Area, the HWTL trench was infilled with sand. Above the sand, the trench was back-filled with sifted native fill – non-plastic, dry to slightly moist, moderately to well sorted fine to medium-grained medium brown sand with 10% gravel up to ¼-in diameter and 5% clay. The trench-fill was installed from ground surface to a maximum of approximately 1 ft below the HWTL. Native alluvium below the trench fill consisted of poorly sorted, dry to slightly moist, light to medium brown silty, sandy, gravel with 10% clay and clasts up to 10%, up to ¾-in. diameter, angular to subrounded, and predominantly limestone clasts coated with caliche with some volcanic clasts.

[1]HWTL = Hazardous Waste Transmission Line

[2]HWTL was buried 1.5 to 4 ft below ground surface, so 0-2 ft below HWTL would equate to a minimum of 1.5 ft to a maximum of 6 ft below ground surface.

PROJECT HWTL SOIL & RINSate Samples

Notebook No. HWTL

Continued from Page N/A

F. Gallegos & T. Kondy. present weather is clear & HOT.

2000-HWTL-01.2 RINSates TAKen From carboy G-2"

Sample #	Analysis	Pres	LOT #	LAB	CONT
1606141815	VOC by 8260C	ICE/HCl	6000804	ALS	(3) 40ml Vial
0816	SVOC by 8270D	ICE	042516-1BLK	"	(2)(1) Liter Amber
0817	DIOXINS/Furans by 8290	"	"	"	(1) Liter Amber
0818	TOTAL metals by 6010C/7470A	ICE/HNO3	113015-1MAN	"	(1) 500ml poly
0819	perchlorate by 6850	ICE	041116-2AA0	"	(1) 250ml poly
0820	NO3/NO2 by TKN(300)	ICE/H2SO4	"	"	"
0821	Chloride (Anions) by 9056	ICE	"	"	"
0822	TOTAL cyanide by 9012	ICE/NaOH	"	"	"
0823	Hexchrome by 218.6	ICE/Buffer	"	"	"
0824	NDMA by 607	ICE	042516-1BLK	Southwest	(1) Liter amber
0825	Hydrazines by 8315	ICE/H2SO4	050816	week	125ml Amber
0826	Bromacil by 8321B	ICE	N/A	"	(1) 40ml Vial (Amber)

2000-HWTL-01.2 TRIP BLANKS TAKen From Manipure 1W BLDG 6 ST.

Sample #	Analysis	Pres	LOT #	LAB	CONT
160614 0700	VOC by 8260C	ICE/HCl	5317007	ALS	(3) 40ml Vial

2000-HWTL-01.2 0'-0.5'

Sample #	Analysis	Pres	LOT #	LAB	CONT
1606140915	VOC by 8260C	DI WTR with methanol	6-027-001	ALS	(3) 40ml Vial
0916	SVOC by 8270D perchlorate by 6850	ICE	02136-1BNK	"	(1) 8oz Jar
0917	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
0918	DIOXINS Furans	"	"	"	"
0919	cyanide/NO2/NO3/Hexchrome/chloride/ph	"	02136-1BNK	"	(1) 8oz Jar
0920	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
0921	NDMA by 607	"	02136-1BNK	Southwest	(1) 8oz Jar
0922	Hydrazines by 8315 Bromacil by 8321B	"	N/A	week	(1) 4oz Jar

Continued on Page 41

Signed — Date: 6-14-16

Read and Understood By

Signed — Date: 14-Jun-16

200-HWTL-01.2 1-2'

Sample #	Analysis	Pres	Lot #	LAB	cont
160614 0930	VOC by 8260C SVOC by 8270D	DI WTR Methanol	6-027-001	ALS	(3) 40mL vial
0931	Perchlorate by 6850	ICE	02136-1BNU	"	(1) 8oz Jar
0932	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
0933	Dioxins/Furans	"	"	"	"
0934	Cyan./NO2/NO3/ Hexchrome/chlorid/ph	"	02136-1BNU	"	(1) 8oz Jar
0935	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
0936	NDMA by 6007	"	02136-1BNU	southwest	(1) 8oz Jar
0937	Hydrazines by 8315 Bromacil by 8321B	"	N/A	week	(1) 4oz Jar

200-HWTL-01.3 0-0.5'

Sample #	Analysis	Pres	Lot #	LAB	cont
160614 1330	VOC by 8260C	DI WTR Methanol	6-027-001	ALS	(3) 40mL vial
1331	SVOC by 8270D Perchlorate by 6850	ICE	02136-1BNU	"	(1) 8oz Jar
1332	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
1333	DIOXINS/Furans	"	"	"	"
1334	Cyan./NO2/NO3/ Hexchrome/chlorid/ph	"	02136-1BNU	"	(1) 8oz Jar
1335	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
1336	NDMA by 6007	"	02136-1BNU	SW	(1) 8oz Jar
1337	Hydrazines by 8315 Bromacil by 8321B	"	~~022216-1BNS~~ N/A	~~week~~	(1) 4oz Jar

200-HWTL-01.3 1-2'

Sample #	Analysis	Pres	Lot #	LAB	cont
160614 1340	VOC by 8260C	DI WTR Methanol	6-027-001	ALS	(3) 40mL vial
1341	SVOC by 8270D Perchlorate by 6850	ICE	02136-1BNU	"	(1) 8oz Jar
1342	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
1343	DIOXINS/Furans	"	"	"	"
1344	Cyanide/NO2/NO3/ Hexchrome/chloride/ph	"	02136-1BNU	"	(1) 8oz Jar
1345	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
1346	NDMA by 6007	"	02136-1BNU	southwest	(1) 8oz Jar
1347	Hydrazines by 8315 Bromacil by 8321B	"	N/A	week	(1) 4oz Jar

Continued on Page N/A

Read and Understood By

Signed — Date: 6-14-16

Signed — Date: 14-Jun-16

2000-HWTL-01.2 TRIP BLNKS

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date:

Sample Location: **HWTL**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
160614 0700	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Analytical Requirement

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Analytical Requirement

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	6-14-16 (1015)		A. Egan	6.14.16 (1100) 1015

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

2000-HWTL-01.2 Rinsate

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-14-16 Page 1 of 1

Sample Location: **HWTL 2000-01.2**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
160614 0815	3	A	X							16EEHWTL
" 0816	2	"		X						16EEHWTL
" 0817	1	"			X					16EEHWTL
" 0818	1	"				X				16EEHWTL
" 0819	1	"					X			16EEHWTL
" 0820	1	"						X		16EEHWTL
" 0821	1	"							X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
160614 0822	1	A	X							16EEHWTL
" 0823	1	"		X						16EEHWTL
" 0824	1	"			X					16EEHWTL
" 0825	2	"				X				16EEHWTL
" 0826	1	"					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-14-16 (0848)		P. Egan	6.14.16 (1015)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-01.2 0-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-14-16 Page 1 of 1

Sample Location: **HWTL 200-01:2**

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160061140915	3	S	X						16EEHWTL
0916	1	|		X					16EEHWTL
0917	1	|			X				16EEHWTL
0918	1	|				X			16EEHWTL
0919	1	|					X		16EEHWTL
0920	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) ~~Bromacil (8321)~~	~~Bromacil (8321)~~				Charge Number
160614 0921	1	S	X						16EEHWTL
—— 0922	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-14-16 (1015)		[signature]	6.14.16 (1015)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

2000-HWTL-01.2 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-14-16 Page 1 of 1

Sample Location: **HWTL 2000-01.2**

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160614 0930	3	S	X						16EEHWTL
— 0931	1	|		X					16EEHWTL
— 0932	1	|			X				16EEHWTL
— 0933	1	|				X			16EEHWTL
— 0934	1	|					X		16EEHWTL
— 0935	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)					Charge Number
160614 0936	1	S	X							16EEHWTL
— 0937	1			X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	6-14-16 (1015)		D. Egan	6.14.16 (1015)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-01.3 0-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-14-16 Page 1 of 1

Sample Location: **HWTL 200-01.3**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160614 1330	3	S	X						16EEHWTL
—— 1331	1			X					16EEHWTL
—— 1332	1				X				16EEHWTL
—— 1333	1					X			16EEHWTL
—— 1334	1						X		16EEHWTL
—— 1335	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)				Charge Number
160614 1336	1	S	X						16EEHWTL
—— 1337	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-14-16 (1500)		[signature]	6-15-16 /1000

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTC-01.3 1'-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-14-16 Page 1 of 1

Sample Location: **HWTL** 200-01.3

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160614 1340	3	S	X						16EEHWTL
1341	1			X					16EEHWTL
1342	1				X				16EEHWTL
1343	1					X			16EEHWTL
1344	1						X		16EEHWTL
1345	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)				Charge Number
160614 1346	1	S	X						16EEHWTL
1347	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	6-14-16 (1500)			6-15-16 1000

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

PROJECT HWTL soil & Rinsate samples

Notebook No. HWTL-2

Continued from Page N/A

~~2000-HWTL-0104 Rinsates~~

F. Gallegos & Tilcondy present, WEATHER IS Clear & HOT.

2000-HWTL-0104 Rinsates Ran on 6-4

Sample #	Analysis	Prep	Lot #	Lab	Cont
1606230730	Voc by 8260C	ICE & HCl	6060004	ALS	(3) 40mL Vial
0731	SVOC by 8270D	ICE	0423516-1BLT	"	(2) 1 Liter Amber
0732	Dioxins/furans by 8290	"	"	"	(1) Liter Amber
0733	Total metals by 6010C/7470A	ICE/HNO3	94116-2AA0	"	(1) 250 mL Poly
0734	Perchlorate by 6850	ICE	"	"	"
0735	NO2/NO3 by TKN 3000	ICE/H2SO4	"	"	"
0736	Chloride/Anions by 9056	ICE	"	"	"
0737	Total Cyanide by 9012	ICE/NaOH	"	"	"
0738	Hexchrome by 218.6	ICE/Buffer	"	"	"
0739	NDMA by 6007	ICE	0423516-1BLT	Southwest	(1) Liter Amber
0740	Hydrazines by 8315	ICE/H2SO4	5050703	week	(2) 250 mL Amber
0741	Bromacil by 8321B	ICE	N/A	"	(1) 40mL Amber Vial

2000-HWTL-0104 Trip Blanks

Sample #	Analysis	Prep	Lot #	Lab	Cont.
1606230700	Voc by 8260C	ICE & HCl	5317002	ALS	(3) 40mL Vial

2000-HWTL-0104 0-05'

Sample #	Analysis	Prep	Lot #	Lab	Cont
1606230815	Voc by 8260C	DI Water Methanol	6-027-00	ALS	(3) 40mL Vial
0816	SVOC by 8270 Perchlorate by 6850	ICE	0209204	"	(1) 8oz Jar
0817	Total metals	"	0309901Z	"	(1) 4oz Jar
0818	Dioxins/furans	"	0309901Z	"	"
0819	Cyanide/NO2/NO3/ Hexchrome/chloride/ph	"	0209204	"	(1) 8oz Jar
0820	TCLP metals	"	0309901Z	"	(1) 4oz Jar
0821	NDMA by 6007	"	0209204	Southwest	(1) 8oz Jar
0822	Hydrazines by 8315 Bromacil by 8321B	"	N/A	week	(1) 4oz Jar

Continued on Page 3

Read and Understood By

t/ Signed — 6-23-16 Date

DT Wiles Signed — 6/23/16 Date

PROJECT HWTL SOIL & RINSATE SAMPLES

Notebook No. HWTL-2

Continued from Page 52

200-HWTL-01.4 1-2'

Sample #	Analysis	Pres	LOT #	LAB	Cont
160623 0830	VOC by 8260C	DI WTR Methanol	6-027-001	ALS	(3) 40mL vial
— 0831	SVOC by 8270D Perchlorate by 6850	ICE	0209201y	"	(1) 8oz Jar
— 0832	TOTAL metals	"	0309901z	"	(1) 4oz Jar
— 0833	DIOXINS/Furans	"	0309901z	"	"
— 0834	Cyanide/Nox/Nox/Hexchrome/chloride/ph	"	0209201y	"	(1) 8oz Jar
— 0835	TCLP metals	"	0309901z	"	(1) 4oz Jar
— 0836	NDMA by 607	"	0209201y	Southwest	(1) 8oz Jar
— 0837	Hydrazines by 8315 Bromacil by 8321B	"	N/A	week	(1) 4oz Jar

200-HWTL-01.5 0-0.5'

Sample #	Analysis	Pres	LOT #	LAB	Cont
160623 0850	VOC by 8260C	DI WTR Methanol	6-027-001	ALS	(3) 40mL vial
— 0851	SVOC by 8270D Perchlorate by 6850	ICE	0209201y	"	(1) 8oz Jar
— 0852	TOTAL metals	"	0309901z	"	(1) 4oz Jar
— 0853	DIOXINS/Furans	"	0309901z	"	"
— 0854	Cyanide/Nox/Nox/Hexchrome/chloride/ph	"	0209201y	"	(1) 8oz Jar
— 0855	TCLP metals	"	0309901z	"	(1) 4oz Jar
— 0856	NDMA by 607	"	0209201y	Southwest	(1) 8oz Jar
— 0857	Hydrazines by 8315 Bromacil by 8321B	"	N/A	week	(1) 4oz Jar

200-HWTL-01.5 1-2'

Sample #	Analysis	Pres	LOT #	LAB	Cont
160623 0915	VOC by 8260C	DI WTR Methanol	6-027-001	ALS	(3) 40mL vial
— 0916	SVOC by 8270D Perchlorate by 6850	ICE	0209201y	"	(1) 8oz Jar
— 0917	TOTAL metals	"	0309901z	"	(1) 4oz Jar
— 0918	DIOXINS/Furans	"	0309901z	"	"
— 0919	Cyanide/Nox/Nox/Hexchrome/chloride/ph	"	0209201y	"	(1) 8oz Jar
— 0920	TCLP metals	"	0309901z	"	(1) 4oz Jar
— 0921	NDMA by 607	"	0209201y	Southwest	(1) 8oz Jar
— 0922	Hydrazines by 8315 Bromacil by 8321B	"	N/A	week	(1) 4oz Jar

Decon between each boring/Hole.

Continued on Page N/A

Read and Understood By

Signed	Date	Signed	Date
[signature]	6-23-16	DTWieb	6/23/16

200-HWTL-01.4 TRIP BLNKS

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-23-2016 Page 1 of 1

Sample Location: **HWTL 200-01.4**

Pertinent Notes (if any) Aqueous Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
1606230700	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-23-16(1000)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-01.4 RINSATES

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-23-2016 Page 1 of 1

Sample Location: **HWTL 200-01.4**

Pertinent Notes (if any) Aqueous Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
160623 0730	3	A	X							16EEHWTL
— 0731	2	|		X						16EEHWTL
— 0732	1	|			X					16EEHWTL
— 0733	1	|				X				16EEHWTL
— 0734	1	|					X			16EEHWTL
— 0735	1	|						X		16EEHWTL
— 0736	1	|							X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
160623 0737	1	A	X							16EEHWTL
— 0738	1	|		X						16EEHWTL
— 0739	1	|			X					16EEHWTL
— 0740	2	|				X				16EEHWTL
— 0741	1	|					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	6-23-16 (0745)	Pamela Egan	6-23-16 (0930)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-01.4 0-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-23-16 Page 1 of 1

Sample Location: **HWTL** 200-01.4

Pertinent Notes (if any)
Soil Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
1606230815	3	S	X						16EEHWTL
— 0816	1	|		X					16EEHWTL
— 0817	1	|			X				16EEHWTL
— 0818	1	|				X			16EEHWTL
— 0819	1	|					X		16EEHWTL
— 0820	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) & Perchlorate (8321) ~~Bromacil (8321)~~					Charge Number
1606230821	1	S	X						16EEHWTL
— 0822	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-23-16 (1000)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

2000-HWTL-01.4 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-23-16 Page 1 of 1

Sample Location: **HWTL 2000-01.4**

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160623 0830	3	S	X						16EEHWTL
— 0831	1			X					16EEHWTL
— 0832	1				X				16EEHWTL
— 0833	1					X			16EEHWTL
— 0834	1						X		16EEHWTL
— 0835	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)					Charge Number
160623 0836	1	S							16EEHWTL
— 0837	1	L							16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-23-16 (1000)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

2000-HWTL-01.5 0'-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-23-16 Page 1 of 1

Sample Location: **HWTL 2000-01.5**

Analytical Requirement

Pertinent Notes (if any) Soil Samples — Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
1600623 0850	3	S	X						16EEHWTL
— 0851	1	|		X					16EEHWTL
— 0852	1	|			X				16EEHWTL
— 0853	1	|				X			16EEHWTL
— 0854	1	|					X		16EEHWTL
— 0855	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Analytical Requirement

Pertinent Notes (if any) — Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	~~Bromacil (8321)~~					Charge Number
1600623 0856	1	S	X							16EEHWTL
— 0857	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-23-16 (1000			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-01.5 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-23-16 Page 1 of 1

Sample Location: **HWTL 200-01.5**

Pertinent Notes (if any) Soil Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160623 0915	3	S	X						16EEHWTL
— 0916	1	|		X					16EEHWTL
— 0917	1	|			X				16EEHWTL
— 0918	1	|				X			16EEHWTL
— 0919	1	|					X		16EEHWTL
— 0920	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	~~Bromacil (8321)~~					Charge Number
160623 0921	1	S	X							16EEHWTL
— 0922	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	6-23-16 (1000)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

F. G. 11695 & T. K. Cloudy PRESENT WEATHER IS CLOUDY AND COOL.

200-HWTL-01.7 0-0.5'

Sample #	Analysis	Pres	LOT #	LAB	CONT
160726 0845	VOC by 8260C	DI WTR Methanol	6-027-001	ALS	(3) 40mL Vial
" 0846	SVOC by 8270D Perchlorate by 6850	ICE	02136-1BNN	"	(1) 8oz Jar
" 0847	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
" 0848	Dioxins/furans	"	"	"	"
" 0849	Cyanide/Nox/Nos/ Hexchrome/Phi/chloride	"	02136-1BNN	"	(1) 8oz Jar
" 0850	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
" 0851	NDMA by 607	"	02136-1BNN	Southwest	(1) 8oz Jar
" 0852	Hydrazines by 8315 Bromacil by 8321B	"	N/A	Week	(1) 4oz Jar

200-HWTL-01.7 1-2'

Sample #	Analysis	Pres	LOT #	LAB	CONT
160726 0900	VOC by 8260C	DI WTR Methanol	6-027-001	ALS	(3) 40mL Vial
" 0901	SVOC by 8270D Perchlorate by 6850	ICE	02136-1BNN	"	(1) 8oz Jar
" 0902	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
" 0903	Dioxins/furans	"	"	"	"
" 0904	Cyanide/Nox/Nos/ Hexchrome/phi/chloride	"	02136-1BNN	"	(1) 8oz Jar
" 0905	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
" 0906	NDMA by 607	"	02136-1BNN	Southwest	(1) 8oz Jar
" 0907	Hydrazines by 8315 Bromacil by 8321B	"	N/A	Week	(1) 4oz Jar

200-HWTL-01.7 TRIP BLANKS From WANI Pump Blanks 637

Sample #	Analysis	Pres	LOT #	LAB	CONT
160726 0900	VOC by 8260C	Methanol	53 17002	ALS	(3) 40mL Vial

Continued on Page N/A

Read and Understood By

Signed — Date 7-26-16

Signed — Date 7/28/16

2000-HWTL-01.7 Trip Blanks

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-26-16 Page 1 of 1

Sample Location: **HWTL** 2000-01.7

Analytical Requirement

Pertinent Notes (if any) Aqueous Samples — Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
1607260700a	3	A	x							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Analytical Requirement

Pertinent Notes (if any) — Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	7-26-16 0900 (1000)			7-26-16 / 0945

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

2000-HWTL-01.7 0-0.5

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-26-16 Page 1 of 1

Sample Location: **HWTL 2000-01.7**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160726 0845	3	S	X						16EEHWTL
— 0846	1	|		X					16EEHWTL
— 0847	1	|			X				16EEHWTL
— 0848	1	|				X			16EEHWTL
— 0849	1	|					X		16EEHWTL
— 0850	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321) ~~Bromacil (8321)~~					Charge Number
160726 0851	1	S	X						16EEHWTL
— 0852	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	7-26-16 0900 (1000)		[signature]	7-26-16 / 0945

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-01.7 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-26-16 Page 1 of 1

Sample Location: **HWTL 200-01.7**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160726 0900	3	S	X						16EEHWTL
— 0901	1	|		X					16EEHWTL
— 0902	1	|			X				16EEHWTL
— 0903	1	|				X			16EEHWTL
— 0904	1	|					X		16EEHWTL
— 0905	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)				Charge Number
160726 0906	1	S	X						16EEHWTL
— 0907	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	7-26-16 0900			7-26-16 / 0945

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

F Gallegos & Present Weather is .

200-HWTL-01.8 Rinsates from CARBOY 'G-2'

Sample #	Analysis	Pres	LOT #	LAB	CONT
160725 0730	Voc by 8260c	ICE & HCl	600000	ALS	(3) 40mL Vial
" 0731	SVOC by 8270D	ICE	94516-1BLT	"	(2) (L) Liter Amber
" 0732	Dioxins/Furans by 8290 / 1613C	"	"	"	(1) Liter Amber
" 0733	TOTAL metals 7470A	ICE/HNO3	94116-2MA0	"	(1) 250mL Poly
" 0734	perchlorate by 6850	ICE	"	"	"
" 0735	NO2/NO3 by TKN300	ICE/H2SO4	"	"	"
" 0736	Chloride/Anions by 9056	ICE	"	"	"
" 0737	TOTAL cyanide by 9012	ICE/NaOH	"	"	"
" 0738	Hexchrome by 218.6	ICE/Buffer	"	"	"
" 0739	NDMA by 607	ICE	94516-1BLT	Southwest	(1) Liter Amber
" 0740	Hydrazine by 8315	ICE/H2SO4	5050703	Weck	(1) 250mL amber
" 0741	Bromacil by 8321B	ICE	N/A	"	(1) 40mL Amber Vial

200-HWTL-01.8 TRIP BLANKS FROM WAN1 Pack 6 dg 63

Sample #	Analysis	Pres	LOT #	LAB	CONT
160725 0700	Voc by 8260c	ICE & HCl	5711002	ALS	(3) 40mL Vial

200-HWTL-01.8 0-0.5'

Sample #	Analysis	Pres	LOT #	LAB	CONT
160725 0930	Voc by 8260	DI WTR/Methanol	6-027-001	ALS	(3) 40mL Vial
" 0931	SVOC by 8270D Perchlorate by 6850	ICE	02136-1BNN	"	(1) 8oz Jar
" 0932	TOTAL metals	"	022216-1BN3	"	(1) 4oz Jar
" 0933	Dioxins/Furans	"	"	"	"
" 0934	Cyanide/Nitrate/Nitrite/Chromium/Perchlorate	"	02136-1BNN	"	(1) 8oz Jar
" 0935	TCL/Metals	"	022216-1BN3	"	(1) 4oz Jar
" 0936	NDMA by 607	"	02136-1BNN	Southwest	(1) 8oz Jar
" 0937	Hydrazine by 8315 Bromacil by 8321B	"	N/A	Weck	(1) 4oz Jar

Continued on Page 67

Read and Understood By

Signed — 7-25-16 Date — Signed — 7/25/16 Date

PROJECT HWTL soil & rinsate samples

Notebook No. HWTL-2

Continued from Page 66

200-HWTL-01.8 1-2'

Sample #	Analysis	Prep	Lot #	LAB	Cont
160725 0945	VOC by 8260C	DI water methanol	6-027-001	ALS	(3) 40mL vial
0946	SVOC by 8270D Perchlorate by 6850	ICE	02136-1BNA	"	(1) 8oz Jar
0947	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
0948	Dioxins/furans	"	"	"	(1) 8oz Jar
0949	cyanide/NO2/NO3/ Hexchrome/chloride/ph	"	02136-1BNA	"	(1) 8oz Jar
0950	TCL metals	"	022216-1BNS	"	(1) 4oz Jar
0951	NDMA by 607	"	02136-1BNA	Southwest	(1) 8oz Jar
0952	Hydrazines by 8315 Bromacil by 8321B	"	N/A	rock	(1) 4oz Jar

200-HWTL-01.6 0-0.5'

Sample #	Analysis	Prep	Lot #	LAB	Cont
160725 1330	VOC by 8260C	DI water methanol	6-027-001	ALS	(3) 40mL vial
1331	SVOC by 8270D Perchlorate by 6850	ICE	02136-1BNA	"	(1) 8oz Jar
1332	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
1333	Dioxins/furans	"	"	"	"
1334	cyanide/NO2/NO3/ Hexchrome/chloride/ph	"	02136-1BNA	"	(1) 8oz Jar
1335	TCL metals	"	022216-1BNS	"	(1) 4oz Jar
1336	NDMA by 607	"	02136-1BNA	Southwest	(1) 8oz Jar
1337	Hydrazines by 8315 Bromacil by 8321B	"	N/A	rock	(1) 4oz Jar

200-HWTL 01.6 1-2'

Sample #	Analysis	Prep	Lot #	LAB	Cont
160725 1345	VOC by 8260C	DI water methanol	6-027-001	ALS	(3) 40mL vial
1346	SVOC by 8270D Perchlorate by 6850	ICE	02136-1BNA	"	(1) 8oz Jar
1347	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
1348	Dioxins/furans	"	"	"	"
1349	cyanide/NO2/NO3/ Hexchrome/chloride/ph	"	02136-1BNA	"	(1) 8oz Jar
1350	TCL metals	"	022216-1BNS	"	(1) 4oz Jar
1351	NDMA by 607	"	02136-1BNA	Southwest	(1) 4oz Jar
1352	Hydrazines by 8315 Bromacil by 8321B	"	N/A	rock	(1) 4oz Jar

Continued on Page N/A

Read and Understood By

Signed — Date — Signed — Date

7-25-16

7/25/16

200-HWTL-01.8 TRIP BLNKS

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-25-16 Page 1 of 1

Sample Location: **HWTL** 200-01.8

Pertinent Notes (if any) Aqueous Samples — Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
1607250700	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) — Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	7-25-16 (1000)		[signature]	7-26-16 / 0945

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-01.8 Rinsates

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-25-16 Page 1 of 1

Sample Location: **HWTL 200-01.8**

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
160725 0730	3	A	X							16EEHWTL
— 0731	2	|		X						16EEHWTL
— 0732	1	|			X					16EEHWTL
— 0733	1	|				X				16EEHWTL
— 0734	1	|					X			16EEHWTL
— 0735	1	|						X		16EEHWTL
— 0736	1	|							X	16EEHWTL

Pertinent Notes (if any)
Aqueous Samples

Sample Location: **HWTL**

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
160725 0737	1	A	X							16EEHWTL
— 0738	1	|		X						16EEHWTL
— 0739	1	|			X					16EEHWTL
— 0740	2	|				X				16EEHWTL
— 0741	1	|					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	7-25-16 (0800)		[signature]	7/25/16 0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-01.6 0-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-25-16 Page 1 of 1

Sample Location: **HWTL 200-01.6**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160725 1330	5	S	X						16EEHWTL
— 1331	1	|		X					16EEHWTL
— 1332	1	|			X				16EEHWTL
— 1333	1	|				X			16EEHWTL
— 1334	1	|					X		16EEHWTL
— 1335	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	~~Bromacil (8321)~~					Charge Number
160725 1336	1	S	X							16EEHWTL
— 1337	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	7-25-16 (1430)		[signature]	7-26-16 / 0945

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-01.6 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-25-16 Page 1 of 1

Sample Location: **HWTL 200-01.6**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160725 1345	3	S	X						16EEHWTL
— 1346	1			X					16EEHWTL
— 1347	1				X				16EEHWTL
— 1348	1					X			16EEHWTL
— 1349	1						X		16EEHWTL
— 1350	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	~~Bromacil (8321)~~				Charge Number
160725 1351	1	S	X						16EEHWTL
— 1352	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	7-25-16 (1430)		[signature]	7-26-16 / 0945

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-01.8 0-0.5

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-25-16 Page 1 of 1

Sample Location: **HWTL 2000-01.8**

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
1607250930	3	S	X						16EEHWTL
— 0931	1	|		X					16EEHWTL
— 0932	1	|			X				16EEHWTL
— 0933	1	|				X			16EEHWTL
— 0934	1	|					X		16EEHWTL
— 0935	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	~~Bromacil (8321)~~					Charge Number
1607250936	1	S	X							16EEHWTL
— 0937	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	7-25-16 (1000)		[signature]	7-26-16 /0945

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-01.8 1-2

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-25-16 Page _____ of _____

Sample Location: **HWTL 200-01.8**

Sample Number	# of Containers	Sample Matrix*	VOC	SVOC	Total Metals	Total Cyanide	Dioxins/Furan	Nitrate/Nitrite	Perchlorate	Charge Number
160725 0945	3	S	X							16EEHWTL
— 0946	1	|		X						16EEHWTL
— 0947	1	|			X					16EEHWTL
— 0948	1	|					X			16EEHWTL
— 0949	1	|				X				16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Sample Number	# of Containers	Sample Matrix*	Hex Chrom	Chloride	pH	TCLP Metals	Bromacil Hydrazine	Hydrazine	NDMA	Charge Number
160725 0950	1	S				X				16EEHWTL
— 0951	1	S							X	16EEHWTL
— 0952	1	S					X			16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	7-25-16 (0000)		[signature]	7-26-16 / 0945

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

T. Foody, C Delfierro present. Weather is cool and raining.

200 - HWTL - 01.9 Rinsate

Sample #	Analysis	Preserv	Lot #	Lab	Cont.
1608030830	8260C	Ice, HCL	606004	ALS	(3) 40 ml Vial
— 0831	8270D	Ice	04516-1BLT	"	(2) 1 LT Amber
— 0832	Dioxins/Furans	"	"	"	(1) 1 LT Amber
— 0833	Total Metals	Ice, HNO_3	04116-2AA0	"	(1) 250 ml Poly
— 0834	Perchlorate	Ice	"	"	"
— 0835	NO_2/NO_3	Ice, H_2SO_4	"	"	"
— 0836	Chloride (Anions)	Ice	"	"	"
— 0837	Total cyanide	Ice, NaOH	"	"	"
— 0838	Hex Chrome	Ice, Buffer	"	"	"
— 0839	NDMA	Ice	04516-1BLT	SRI	(1) 1 LITER
— 0840	Hydrazine	Ice, H_2SO_4	5050703	WECK	(2) 250 ml Amber
— 0841	Bromacil	Ice	NA	"	(1) 40 ml Vial

200 - HWTL - 01.9 (0 - 0.5)

Sample #	Analysis	Preserv	Lot #	Lab	Cont.
1608030920	8260C	Ice, Methanol DI water	6-027-001	ALS	(3) 40 ml Vial
— 0921	8270 D perchlorate	Ice	02136-1BNV	"	(1) 8 oz JAR
— 0922	Total Metals	"	022216-1BNS	"	(1) 4 oz JAR
— 0923	Dioxins/Furans	"	"	"	"
— 0924	cyanide, NO_2/NO_3 Hex chrome, chloride, pH	"	02136-1BNV	"	(1) 8 oz JAR
— 0925	TCLP Metals	"	022216-1BNS	"	(1) 4 oz JAR
— 0926	NDMA	"	02136-1BNV	SRI	(1) 8 oz JAR
— 0927	Hydrazine Bromacil	"	NA	WECK	(1) 4 oz JAR
		Dupl			
— 0930	8260C	Ice, DI water Ice, Methanol	6-027-001	ALS	(3) 40 ml Vial
— 0931	8270 D perchlorate	Ice	02136-1BNV	"	(1) 8 oz JAR
— 0932	Total Metals	"	022216-1BNS	"	(1) 4 oz JAR
— 0933	Dioxins/furans	"	"	"	"
— 0934	cyanide, NO_2/NO_3 Hex Chrome, chloride, pH	"	02136-1BNV	"	(1) 8 oz JAR
— 0935	TCLP Metals	"	022216-1BNS	"	(1) 4 oz JAR
— 0936	NDMA	"	02136-1BNV	SRI	(1) 8 oz JAR
— 0937	Hydrazine Bromacil	"	NA	WECK	(1) 4oz JAR

Continued on Page

Read and Understood By

Signed — 8-3-16 Date

Signed — 8/18/16 Date

200-HWTL-01.9 (1-2)

Sample #	Analysis	Preserv	Lot #	Lab	Cont.
1608030940	8260C 8270D	DI water ice, Methanol	6-027-001	ALS	(3) 40 ml Vial
— 0941	perchlorate	ice	02136-IBNV	"	(1) 8 oz JAR
— 0942	Total Metals	"	022216-IBNS	"	(1) 4 oz JAR
— 0943	Dioxins/Furans	"	"	"	"
— 0944	Cyanide, NO2, NO3 Hex chrome, chloride, pH	"	02136-IBNV	"	(1) 8 oz JAR
— 0945	TCLP Metals	"	022216-IBNS	"	(1) 4 oz JAR
— 0946	NDMA. Hydrazine Bromacil	"	02136-IBNV	SRI	(1) 8 oz JAR
— 0947		"	022216-IBNS	WECK	(1) 4 oz JAR

EB 200-HWTL-01.9

1608030815	8260	ice, HCL	53[illegible]002	ALS	(3) 40ml Vial

Continued on Page

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Signed — Date 8-3-16

Signed — Date 8/10/16

F. Gallegos & T. Kondy present. Weather is

200-HWTL-02 Rinsate Taken from CABOV 6-5

Sample #	Analysis	Pre	LOT #	LAB	CONT
1606130815	VOC by 8260C	/CE/HCl	606004	ALS	(3) 40mL Vial
— 0816	SVOC by 8270D	/CE	042516-1BLT	"	(2) (1) Liter Amber
— 0817	Dioxins/Furans by 8290	"	"	"	(1) Liter Amber
— 0818	Total Metals by 6010C/7470A	/CE/HNO3	113015-2AAW	"	(1) 500mL poly
— 0819	Perchlorate by 6850	/CE	041116-2AAO	"	(1) 250mL poly
— 0820	NO2/NO3 by TKN 300	/CE/H2SO4	"	"	"
— 0821	Chloride (Anions) by 9056	/CE	"	"	"
— 0822	TOTAL cyanid by 9012	/CE/NaOH	"	"	"
— 0823	Hexachlorobutadiene by 8260C	/CE/HCl	"	"	"
— 0824	NDMA by 607	/CE	042516-1BLT	Southwest	(1) Liter Amber
— 0825	Hydrazines by 8315	/CE/H2SO4	5050703	WECK	(2) 250mL Amber
— 0826	Bromacil by 8321B	/CE	N/A	"	(1) 40mL Vial

200-HWTC-0201 Tribunks from Nanny Flat 657.

Sample #	Analysis	Pre	LOT #	LAB	CONT
1606130700	VOC by 8260C	/CE/HCl	5317002	ALS	(3) 40mL Vial

200-HWTL-02.1 ~~to 200-HWTL-02~~ 0-0.5'

Sample #	Analysis	Pre	LOT #	LAB	CONT
1606130900	VOC by 8260C	DI WATER/ Methanol	6-027-001	ALS	(3) 40mL Vial
— 0901	SVOC by 8270D Perchlorate by 6850	/CE	2156-1BNW	"	(1) 8oz Jar
— 0902	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
— 0903	DIOXINS/Furans	"	~~2156-1BNW~~	"	"
— 0904	cyanide/hexane/NO3/ Hexachlorobutadiene/chloride/Pb	"	2156-1BNW	"	(1) 8oz Jar
— 0905	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
— 0906	NDMA by 607	"	2156-1BNW	Southwest	(1) 8oz Jar
— 0907	Hydrazine by 8315 Bromacil by 8321B	"	N/A	WECK	(1) 4oz Jar

Continued on Page 36

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PROJECT HWTL SOIL & RINSATE samples

Notebook No. _____

Continued from Page 35

~~600-200-HWTL-2.1 1-2'~~ RH

~~600-HWTL-02 0-0.5' (Dup)~~

Sample #	Analysis	Pres	LOT #	LAB	COND
1600613 0915	VOC by 8260C	DI water/ methanol	6-027-001	ACS	(3) 40 mL vial
— 0916	2 VOC by 8270D Perchlorate by 6850	ICE	02156-1BNW		(1) 8oz Jar
— 0917	TOTAL metals	"	02216-1BNS		(1) 4oz Jar
— 0918	Dioxins/Furans	"	"		"
— 0919	cyanide/NO2/NO3/ Hexchrome/chloride/ph	"	02156-1BNW		(1) 8oz Jar
— 0920	TCLP metals	"	02216-1BNS		(1) 4oz Jar
— 0921	NDMA by 607	"	02156-1BNW	Southwest	(1) 8oz Jar
— 0922	Hydrazines by 8315 Bromacil by 8321B	"	N/A	Weck	(1) 40z Jar

600-HWTL-02 1-2'

Sample #	Analysis	Pres	LOT #	LAB	COND
	VOC by 8260C	DI WTR/ methanol	6-027-001	ACS	(3) 40 mL vial
	SVOC by 8270D Perchlorate by 6850	ICE	02156-1BNW	"	(1) 8oz Jar
	TOTAL metals	"	02216-1BNS	"	(1) 4oz Jar
	DIOXINS/furans	"	02216-1BNS	"	"
	cyanide/NO2/NO3/ Hexchrome/chloride/ph	"	02156-1BNW	"	(1) 8oz Jar
	TCLP metals	"	02216-1BNS	"	(1) 4oz Jar
	NDMA by 607	"	02156-1BNW	Southwest	(1) 8oz Jar
	Hydrazines by 8315 Bromacil by 8321B	"	N/A	Weck	(1) 40z Jar

600-HWTL-02.1 0-0.5'

Sample #	Analysis	Pres	LOT #	LAB	COND
	VOC by 8260C	DI WTR/ methanol	6-027-001	ACS	(3) 40 mL vial
	SVOC by 8270D Perchlorate by 6850	ICE	02156-1BNW	"	(1) 8oz Jar
	TOTAL metals	"	02216-1BNS	"	(1) 4oz Jar
	DIOXINS/furans	"	"	"	"
	cyanide/NO2/NO3/ Hexchrome/chloride/ph	"	02156-1BNW	"	(1) 8oz Jar
	TCLP metals	"	02216-1BNS	"	(1) 4oz Jar
	NDMA by 607	"	02156-1BNW	Southwest	(1) 8oz Jar
	Hydrazines by 8315 Bromacil by 8321B	"	N/A	Weck	(1) 4oz Jar

Continued on Page 37

Signed _____ Date 6-13-16

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600-HWTL-02.1 (1-2)

Sample #	Analysis	Pres	LOT #	LAB	CONT
	VOC by 8260C	DI WTR Methanol	6-027-001	ALS	(3) 40mL vial
	SVOC by 8270D	ICE	02156-1BNC	"	(1) 8oz Jar
	Perchlorate by 6850	"	02156-1BNC	"	(1) 8oz Jar
	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
	Dioxins/furans	"	"	"	"
	Cyanide/Nitrite/Nitrate/ Hexchrome/chloride/ph	"	02156-1BNC	"	(1) 8oz Jar
	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
	NDMA by 607	"	02156-1BNC	Southwest	(1) 8oz Jar
	Hydrazines by 8315 Bromacil by 8321B	"	022216-1BNS	Week	(1) 4oz Jar

600-HWTL- (0-0.5)

Sample #	Analysis	Pres	LOT #	LAB	CONT
	VOC by 8260C	DI WTR Methanol	6-027-001	ALS	(3) 40mL vial
	SVOC by 8270D	ICE	02156-1BNC	"	(1) 8oz Jar
	Perchlorate by 6850	"	02156-1BNC	"	(1) 8oz Jar
	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
	Dioxins/Furans	"	"	"	"
	Cyanide/Nitrite/Nitrate/ Hexchrome/chloride/ph	"	02156-1BNC	"	(1) 8oz Jar
	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
	NDMA by 607	"	02156-1BNC	Southwest	(1) 8oz Jar
	Hydrazines by 8315 Bromacil by 8321B	"	N/A	Week	(1) 4oz Jar

NOT taken

600-HWTL- (1-2)

Sample #	Analysis	Pres	LOT #	LAB	CONT
	VOC by 8260C	DI WTR Methanol	6-027-001	ALS	(3) 40mL vial
	SVOC by 8270D Perchlorate by 6850	ICE	02156-1BNC	"	(1) 8oz Jar
	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
	Dioxins/furans	"	"	"	"
	Cyan.de/Nitrite/Nitrate/ Hexchrome/chloride/ph	"	02156-1BNC	"	(1) 8oz Jar
	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
	NDMA by 607	"	02156-1BNC	Southwest	(1) 8oz Jar
	Hydrazines by 8315 Bromacil by 8321B	"	N/A	Week	(1) 4oz Jar

Continued on Page N/A

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Date

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6/13/16

Date

PROJECT 28 HWTL SOIL & RINSate

Notebook No. HWTL-2

Continued from Page 37

200-HWTL-03

Example #	Analysis	Pres	LOT #	LAB	COND
	VOC by 8260C SVOC by 8270D Perchlorate by 6850 TOTAL metals DIOXINS/Furans Cyanide/NO2/NO3 Hexchrome, chloride/ph NDMA by 6007 Hydrazine				

200-HWTL-03 0-0.5'

Sample #	Analysis	Pres	LOT #	LAB	COND
160613515	VOC by 8260C	DI WTR/ Methanol	6-027-001	ALS	(3) 40mL vial
1316	SVOC by 8270D Perchlorate by 6850	ICE	02136-1	BNL	(1) 8oz jar
1317	TOTAL metals	"	022216-1	BNS	(1) 4oz jar
1318	DIOXINS/Furans	"	"	"	"
1319	Cyanide/NO2, NO3/ Hexchrome/chloride/ph	"	02136-1	BNL	(1) 8oz jar
1320	TCLP metals	"	022216-1	BNS	(1) 4oz jar
1321	NDMA by 6007	"	02136-1	BNL Southwest	(1) 8oz jar
1322	Hydrazines by 8315 Biomass by 8321B	"	N/A	week	(1) 4oz jar

200-HWTL-03 0-0.5' (MS)

Sample #	Analysis	Pres	LOT #	LAB	COND
160613325	VOC by 8260C	DI WTR/ Methanol	6-027-001	ALS	(3) 40mL vial
1326	SVOC by 8270D Perchlorate by 6850	ICE	02136-1	BNL	(1) 8oz jar
1327	TOTAL metals	"	022216-1	BNS	(1) 4oz jar
1328	Dioxins/Furans	"	"	"	"
1329	Cyanide/NO2/NO3 Hexchrome/chloride/ph	"	02136-1	BNL	(1) 8oz jar
1330	TCLP metals	"	022216-1	BNS	(1) 4oz jar
1331	NDMA by 6007	"	02136-1	BNL Southwest	(1) 8oz jar
1332	Hydrazines by 8315 Biomass by 8321B	"	N/A	week	(1) 4oz jar

Continued on Page 39

Signed

6-13-16

Date

Read and Understood By

Signed

6/13/16

Date

200-HWTL-03 1-2

Sample #	Analysis	Ref	LOT #	LAB	Cont
1606033134 00	VOC by 8260C	STLTR Method	6-027-001	ACS	(3) 40mL vial
1341	SVOC by 8270D PCB/Pesticides by 8082	ICE	02136-IBNW		(1) 8oz Jar
1342	TOTAL metals	"	02226-IBNS		(1) 4oz Jar
1343	Dioxins/Furans	"	"		"
1344	Cyanide/Nitrate/Nitrite/ Hexchrom/Chloride/pH	"	02136-IBNW		(1) 8oz Jar
1345	TCLP metals	"	02226-IBNS		(1) 4oz Jar
1346	NDMA by 607	"	02136-IBNW	Southwest	(1) 8oz Jar
1347	Hydrazines by 8315 Formaldehyde by 8252	"	N/A	Week	(1) 4oz Jar

Continued on Page N/A

Signed

6-13-16

Date

Read and Understood By

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6/13/16

Date

200-HWTL-02.1 TRIP BLNKS

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-13-16 Page 1 of 1

Sample Location: **HWTL 200-02.1**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
1606130700	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	6-13-16 (1000)	Pamela Egan	6.13.16 (1000)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

2000-HWTL-02.1 RINSATES

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-13-16 Page 1 of 1

Sample Location: **HWTL 2000.02.1**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
1606130815	3	A	X							16EEHWTL
0816	2			X						16EEHWTL
0817	1				X					16EEHWTL
0818	1					X				16EEHWTL
0819	1						X			16EEHWTL
0820	1							X		16EEHWTL
0821	1								X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
1606130822	1	A	X							16EEHWTL
0823	1			X						16EEHWTL
0824	1				X					16EEHWTL
0825	2					X				16EEHWTL
0826	1						X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	6-13-16 (0830)	Pamela Egan	6-13-16 (1000)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-02.1 0'-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-13-16 Page 1 of 1

Sample Location: **HWTL 200-2.1**

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160613 0900	3	S	X						16EEHWTL
—— 0901	1	|		X					16EEHWTL
—— 0902	1	|			X				16EEHWTL
—— 0903	1	|				X			16EEHWTL
—— 0904	1	|					X		16EEHWTL
—— 0905	1	|						X	16EEHWTL
									16EEHWTL

Pertinent Notes (if any): Soil Samples

Sample Location: **HWTL**

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	~~Bromacil (8321)~~				Charge Number
160613 0906	1	S	X						16EEHWTL
—— 0907	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-13-16 (1000)		Pamela Egan	6.13.16 (1000)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-02.1 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-13-16 Page 1 of 1

Sample Location: **HWTL 200-02.1**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160613 0915	3	S	X						16EEHWTL
—— 0916	1	|		X					16EEHWTL
—— 0917	1	|			X				16EEHWTL
—— 0918	1	|				X			16EEHWTL
—— 0919	1	|					X		16EEHWTL
—— 0920	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)					Charge Number
160613 0921	1	S	X						16EEHWTL
—— 0922	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-13-16 (1000)		Pamela Egan	6-13-16 (1000)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-03 0-0.5

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-13-16

Sample Location: **HWTL 200-03**

Pertinent Notes (if any)
Soil Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160613 1315	3	S	X						16EEHWTL
— 1316	1	|		X					16EEHWTL
— 1317	1	|			X				16EEHWTL
— 1318	1	|				X			16EEHWTL
— 1319	1	|					X		16EEHWTL
— 1320	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)					Charge Number
160613 1321	1	S	X							16EEHWTL
— 1322	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	6-13-16 (1430)	[signature]	6.14.16 (1015)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

2000-HWTL-03 0-0.5 (MS) ✓

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-13-16

Sample Location: **HWTL 2000-03**

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160613 1325	3	S	X						16EEHWTL
— 1326	1	|		X					16EEHWTL
— 1327	1	|			X				16EEHWTL
— 1328	1	|				X			16EEHWTL
— 1329	1	|					X		16EEHWTL
— 1330	1	|						X	16EEHWTL
									16EEHWTL

Pertinent Notes (if any)
Soil Samples

Sample Location: **HWTL**

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) ~~Bromacil (8321)~~	~~Tebuthiuron (8321)~~					Charge Number
160613 1331	1	S	X							16EEHWTL
— 1332	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Pertinent Notes (if any)

Analytical Requirement

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-13-16 (1430)		D. Eguru	6.14.16 (1015)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

2000-HWTL-03 1-2' ✓

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-13-16

Sample Location: **HWTL 2000-03**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160613 1340	3	S	X						16EEHWTL
— 1341	1	|		X					16EEHWTL
— 1342	1	|			X				16EEHWTL
— 1343	1	|				X			16EEHWTL
— 1344	1	|					X		16EEHWTL
— 1345	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)					Charge Number
160613 1346	1	S	X							16EEHWTL
— 1347	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-13-16 (1430)		P. Egan	6.14.16 (1015)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

PROJECT HWTL SOIL & Rinsate Samples

Notebook No. HWTL

Continued from Page N/A

F. Gallegos & Tilordy present, weather is clear & HOT.

2000-HWTL-02.2 Rinsates carboy "G"

Sample #	Analysis	Pres	LOT #	LAB	cont
1606160915	VOC by 8260C	ICE/HCl	4060024	ALS	(3) 40mL Vial
0916	SVOC by 8270D	ICE	042516-1BT	"	(2)(1) Liter Amber
0917	Dioxins/Furans by 8290	"	"	"	(1) Liter Amber
0918	TOTAL metals by 6010C/7470A	ICE/HNO3	13015-2AW	"	(1) 500mL poly
0919	Perchlorate by 6850	ICE	041116-2AA0	"	(1) 250mL poly ✓
0920	NO2/NO3 by TKN by 300	ICE/H2SO4	"	"	"
0921	Chloride (Anions) by 9056	ICE	"	"	"
0922	TOTAL cyanide by 9012	ICE/NaOH	"	"	"
0923	Hexchrome by 218.6	ICE/Buffer	"	"	(1) 250mL ~~Amber~~ poly
0924	NDMA by 607	ICE	042516-1BC	Southwest	(1) Lt amber
0925	Hydrazines by 8315	ICE/H2SO4	5050703	Weck	(1) 250mL Amber
0926	Bromacil by 8321B	ICE	N/A	"	N/A

TRIP BLANKS TAKEN FROM MANIBURE, NBCOG 637.

Sample #	Analysis	Pres	LOT #	LAB	cont
1606160700	VOC by 8260C	ICE/HCl	5317002	ALS	(3) 40mL Vial ✓

2000-HWTL-02.2 0'-0.5'

Sample #	Analysis	Pres	LOT #	LAB	cont
1606160950	VOC by 8260C	DI water/methanol	6-027-0001	ALS	(3) 40mL Vial
0951	SVOC by 8270D Perchlorate by 6850	ICE	2156-1BNN	"	(1) 8oz Jar
0952	TOTAL metals	"	042216-1BN5	"	(1) 4oz Jar
0953	Dioxins/Furans	"	"	"	" ✓
0954	Cyanide/NO2/NO3/Hexchrome/Chloride/pH	"	2156-1BNN	"	(1) 8oz Jar
0955	TCLP metals	"	042216-1BN5	"	(1) 4oz Jar
0956	NDMA by 607	"	2156-1BNN	Southwest	(1) 8oz Jar
0957	Hydrazines by 8315 Bromacil by 8321B	"	N/A	Weck	(1) 4oz Jar

(GB)

Continued on Page 45

Read and Understood By

Signed	Date	Signed	Date
[signature]	6-16-16	[signature]	6/16/16

2000-HWTL-007.Z 1:2'

Sample #	Analysis	Pres	LOT #	LAB	CONT
6006161000	VOC by 8760C	DI WTR/ Methanol	4-027-001	ACS	(3) 40ml vial
— 1001	SVOC by 8270D Perchlorate by 6850	ICE	2156-1BN4	"	(1) 8oz jar
— 1002	TOTAL metals	"	022216-1BN5	"	(1) 4oz jar
— 1003	Dioxins/Furans	"	2156-1BN4	"	"
— 1004	Cyan. by 9012B/ Hex chrom/Chlor. by 4	"	022216-1BN5	"	(1) 8oz jar
— 1005	TCLP metals	"	2156-1BN4	"	(1) 4oz jar
— 1006	ND MA by 6PA	"	022216-1BN5	Soxhlet	(1) 8oz jar
— 1007	Hydrazine by 8315 Bromacil by 8321B	"	N/A	Week	(1) 4oz jar

Continued on Page N/A

Read and Understood By

[signature] Signed 6-16-16 Date [signature] Signed 6/16/16 Date

TRIP BLNKS 200-HWTL-02.2

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-16-16 Page 1 of 1

Sample Location: **HWTL** 200-02.2

Pertinent Notes (if any) Aqueous Samples / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC	SVOC	Dioxins/Furans	Total Metals	Perchlorate	Nitrate/Nitrite	Chloride (Anions)	Charge Number
1606160070 00	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: Total Cyanide	Hex Chrom	NDMA	Hydrazine	Bromacil		TCLP Metals	Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-16-16 (1030)		Pamela Egan	6.16.16 (1030)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-02.2 RINSates

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-16-16 Page 1 of 1

Sample Location: **HWTL 200-02.2**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
160616 0915	3	A	X							16EEHWTL
—— 0916	2	|		X						16EEHWTL
—— 0917	1	|			X					16EEHWTL
—— 0918	1	|				X				16EEHWTL
—— 0919	1	|					X			16EEHWTL
—— 0920	1	|						X		16EEHWTL
—— 0921	1	|							X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
160616 0922	1	A	X							16EEHWTL
—— 0923	1	|		X						16EEHWTL
—— 0924	1	|			X					16EEHWTL
—— 0925	2	|				X				16EEHWTL
—— 0926	1	|					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-16-16 (0940)		Pamela Egan	6.16.16 (1030)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-02.2 0-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-16-16 Page 1 of 1

Sample Location: **HWTL 200-02.2**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160616 0950	3	S	X						16EEHWTL
— 0951	1			X					16EEHWTL
— 0952	1				X				16EEHWTL
— 0953	1					X			16EEHWTL
— 0954	1						X		16EEHWTL
— 0955	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	~~Bromacil (8321)~~				Charge Number
160616 0956	1	S	X						16EEHWTL
— 0957	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	6-16-16 (1030)	Pamela Egan	6-16-16 (1030)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-02.2 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-16-16 Page 1 of 1

Sample Location: **HWTL 200-02.2**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160616 10000	3	S	X						16EEHWTL
—— 10001	1	|		X					16EEHWTL
—— 10002	1	|			X				16EEHWTL
—— 10003	1	|				X			16EEHWTL
—— 10004	1	|					X		16EEHWTL
—— 10005	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321) Bromacil (8321)					Charge Number
160616 10006	1	S	X						16EEHWTL
—— 10007	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-16-16 (1030)		Pamela Egan	6.16.16 (1030)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

PROJECT HWTL SOIL & Rinsate Samples

Notebook No. HWTL

Continued from Page N/A

F. Gallegos & T. Kordy present. WEATHER is Clear & HOT.

2000-HWTL-02 Rinsate CARBOY "6-5"

Sample#	Analysis	Pres	Lot #	LAB	Cont
1606150815	VOC by 8260C	ICE & HCl	6060004	ALS	(3) 40 mL vial
—— 0816	SVOC by 8270D	ICE	042516-1BLT	"	(4) 1 L amber
—— 0817	DIOXINS/Furans by 8290	"	"	"	(1) 1 L amber
—— 0818	TOTAL metals by 6010C/7470A	ICE/HNO3	130615-2AAW	"	(1) 500 mL poly
—— 0819	Perchlorate by 6850	ICE	041116-2AAD	"	(1) 250 mL poly
—— 0820	NO2/NO3 by TKN by 300	ICE/H2SO4	"	"	"
—— 0821	Chloride (Anions) by 9056	ICE	"	"	"
—— 0822	TOTAL Cyanide by 9012	ICE/NaOH	"	"	"
—— 0823	Hex Chrome by 218.6	ICE/Buffer	"	"	"
—— 0824	NDMA by 607	ICE	042516-1BLT	Southwest	(1) 1 L amber
—— 0825	Hydrazines by 8315	ICE/H2SO4	5050703	Weck	(2) 250 mL Amber
—— 0826	Bromacil by 8321B	ICE	N/A	"	(1) 40 mL Amber vial.

TRIP BLNKs TAKEN FROM NANIPACE IN BLDG 637.

Sample#	Analysis	Pres	Lot #	LAB	Cont
1606150700	VOC by 8260C	ICE & HCl	5317002	ALS	(3) 40 mL vial

2000-HWTL-02 0'-0.5'

Sample#	Analysis	Pres	Lot #	LAB	Cont
1606151315	VOC by 8260C	DI Water/methanol	6-027-001	ALS	(3) 40 mL Vial
—— 1316	SVOC by 8270D Perchlorate by 6850	ICE	2156-1BNU	"	(1) 8 oz Jar
—— 1317	TOTAL metals	"	022216-1BNS	"	(1) 4 oz Jar
—— 1318	DIOXINS/Furans	"	"	"	"
—— 1319	Cyanide/NO2/NO3/ Hex Chrome/Chloride/Ph	"	2156-1BNU	"	(1) 8 oz Jar
—— 1320	TCL Pmetals	"	022216-1BNS	"	(1) 4 oz Jar
—— 1321	NDMA by 607	"	2156-1BNU	Southwest	(1) 8 oz Jar
—— 1322	Hydrazines by 8315 Bromacil by 8321B	"	N/A	Weck	(1) 4 oz Jar

Continued on Page 43

Read and Understood By

Signed — Date: 6-15-16

Signed — Date: 6/15/16

2000-HWTL-02 1-2

Sample #	Analysis	Pres	LOT #	LAB	COMT
160615/340	VOC by 8260C	DI WTR/ Methanol	6-027-001	ALS	(4) 40mL VOA-1
1341	Sulfide by 8270D Perchlorate by 6850	ICE	2156-1BNW		(1) 8oz Jar
1342	TOTAL metals	"	02216-1BNS	"	(1) 4oz Jar
1343	Dioxins/furans	"	"	"	"
1344	cyanide/sulfide/ Hexavalent chromium/Hg	"	2156-1BNW	"	(1) 8oz Jar
1345	TCLP metals	"	02216-1BNS	"	(1) 4oz Jar
1346	NDMA by 607	"	2156-1BNW Southwest		(1) 8oz Jar
1347	Hydrazines by 8315 Phenacil by 8321B	"	N/A	WCK	(1) 4oz Jar

Continued on Page NA

Read and Understood By

Signed

6-15-16

Date

Signed

6/15/16

Date

700-HWTL-02 TRIP BLNKS

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-15-16

Sample Location: **HWTL 700-02**

Pertinent Notes (if any) Aqueous Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
160615-0700	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	6-15-16 (1430)	Pamela Egan	6-16-16 (1030)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-02 Rinsates

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-15-16

Sample Location: **HWTL 200-02**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
160615 0815	3	A	X							16EEHWTL
—— 0816	2	|		X						16EEHWTL
—— 0817	1	|			X					16EEHWTL
—— 0818	1	|				X				16EEHWTL
—— 0819	1	|					X			16EEHWTL
—— 0820	1	|						X		16EEHWTL
—— 0821	1	|							X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
160615 0822	1	A	X							16EEHWTL
—— 0823	1	|		X						16EEHWTL
—— 0824	1	|			X					16EEHWTL
—— 0825 ✓	2	|				X				16EEHWTL
—— 0826	1	|					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
	6-15-16 (1015)		6-15-16 (1020)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-02 0-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-15-16

Sample Location: **HWTL 200-02**

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160615 1315	3	S	X						16EEHWTL
— 1316	1	|		X					16EEHWTL
— 1317	1	|			X				16EEHWTL
— 1318	1	|				X			16EEHWTL
— 1319	1	|					X		16EEHWTL
— 1320	1	|						X	16EEHWTL
									16EEHWTL

Pertinent Notes (if any)
Soil Samples

Sample Location: **HWTL**

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321) ~~Bromacil (8321)~~					Charge Number
160615 1321	1	S	X						16EEHWTL
— 1322	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Pertinent Notes (if any)

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	6-15-16 (1430)	Pamela Egan	6.16.16 (1030)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

2000-HWTL-02 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-15-16

Sample Location: **HWTL 2000-02**

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160615 1340	3	S	X						16EEHWTL
— 1341	1	|		X					16EEHWTL
— 1342	1	|			X				16EEHWTL
— 1343	1	|				X			16EEHWTL
— 1344	1	|					X		16EEHWTL
— 1345	1	|						X	16EEHWTL
									16EEHWTL

Pertinent Notes (if any)
Soil Samples

Sample Location: **HWTL**

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromate (8321)	Bromate (8321)					Charge Number
160615 1346	1	S	X							16EEHWTL
— 1347	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Pertinent Notes (if any)

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
	6-15-16 (1450)	Pamela Egan	6-16-16 (1130)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

JECT HWTL SOIL & RINSates Samples

Notebook No. HWTL

Continued from Page N/A

T. Gallegos & T. Kondy present. WEATHER IS HOT.

13:15

200-HWTL-01 Rinsates carboy (G-5)

Sample #	Analysis	Pres	Lot #	Lab	Cont
0621 0915	VOC by 8260C	ICE/HCl	6060004	ALS	(5) 40ml Vial
— 0916	SVOC by 8270D	ICE	842516-1BLT	"	(2)(1) Liter Amber
— 0917	DIOXINS/Furans	"	"	"	(1) Liter Amber
— 0918	TOTAL metals	ICE/HNO3	841116-2AA0	"	(1) 250ml poly
— 0919	Perchlorate	ICE	"	"	"
— 0920	NO2/NO3	ICE/H2SO4	"	"	"
— 0921	Chloride	ICE	"	"	"
— 0922	TOTAL cyanide	ICE/NaOH	"	"	"
— 0923	Hexchrome	ICE/Buffer	"	"	"
— 0924	NDMA	ICE	842516-1BLT	Sacramento	(1) Liter Amber
— 0925	Hydrazines	ICE/H2SO4	5960703	Week	(2) 250ml Amber
— 0926	Bromacil	ICE	N/A	"	(1) 40ml Amber Vial

200-HWTL-03.1 0-0.5'

Sample #	Analysis	Pres	Lot #	Lab	Cont
0621 0815	VOC by 8260C	DI WTR/methanol	6-027-001	ALS	(3) 40ml Vial
— 0816	SVOC by 8270 Perchlorate by 6850	ICE	2156-1BNU	"	(1) 8oz Jar
— 0817	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
— 0818	DIOXINS/Furans	"	"	"	"
— 0819	Cyanide/NO2/NO3/ Hexchrome/chloride/ph	"	2156-1BNU	"	(1) 8oz Jar
— 0820	TCL metals	"	022216-1BNS	"	(1) 4oz Jar
— 0821	NDMA by 607	"	2156-1BNU	Southwest	(1) 8oz Jar
— 0822	Hydrazines by 8315 Bromacil by 8321B	"	N/A	Week	(1) 4oz Jar

200-HWTL-03.1 1-2'

Sample #	Analysis	Pres	Lot #	Lab	Cont
0621 0830	VOC by 8260C	DI WTR/methanol	6-027-001	ALS	(3) 40ml Vial
— 0831	SVOC by 8270D Perchlorate by 6850	ICE	2156-1BNU	"	(1) 8oz Jar
— 0832	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
— 0833	DIOXINS/Furans	"	"	"	"
— 0834	Cyanide/NO2/NO3/ Hexchrome/chloride/ph	"	2156-1BNU	"	(1) 8oz Jar
— 0835	TCL metals	"	022216-1BNS	"	(1) 4oz Jar
— 0836	NDMA by 607	"	2156-1BNU	Southwest	(1) 8oz Jar

Continued on Page 47

Read and Understood By

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6-21-16

Date

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6/21/16

Date

ZOO-HWTL-03.1 1'-2'

Sample #	Analysis	Pres	Lot #	Lab	Cont
600621 0837	Hydrazines by 8315 Biomarker by 8321B	ICE	N/A	Week	(1) 40z Jar

ZOO-HWTL-07 13'-15'

Sample #	Analysis	Pres	Lot #	Lab	Cont
600621 0940	VOC by 8260C	DI WTR/ Methanol	6-027-001	ALS	(3) 40 mL Vial
0941	SVOC by 8270C Perchlorate by 6850	ICE	21561BNW	"	(1) 8oz Jar
0942	TOTAL Metals	"	022216-1BNS	"	(1) 4oz Jar
0943	Dioxins/Furans	"	"	"	"
0944	Cyanide/Nitrate/Nitrite/ Hexavalent Chromium/Chloride/Flo	"	2156-1BNW	"	(1) 8oz Jar
0945	TCLP Metals	"	022216-1BNS	"	(1) 4oz Jar
0946	NDMA by 607	"	2156-1BNW	Southwest	(1) 8oz Jar
0947	Hydrazines by 8315 Biomarker by 8321B	"	N/A	Week	(1) 4oz Jar

ZOO-HWTL-07 15'-17'

Sample #	Analysis	Pres	Lot #	Lab	Cont
600621 0000	VOC by 8260C	DI WTR/ Methanol	6-027-001	ALS	(3) 40 mL Vial
0001	SVOC by 8270C Perchlorate by 6850	ICE	2156-1BNW	"	(1) 8oz Jar
0002	TOTAL Metals	"	022216-1BNS	"	(1) 4oz Jar
0003	Dioxins/Furans	"	"	"	"
0004	Cyanide/Nitrate/Nitrite/ Hexavalent Chloride/Flo	"	2156-1BNW	"	(1) 8oz Jar
0005	TCLP Metals	"	022216-1BNS	"	(1) 4oz Jar
0006	NDMA by 607	"	2156-1BNW	Southwest	(1) 8oz Jar
0007	Hydrazines by 8315 Biomarker by 8321B	"	N/A	Week	(1) 4oz Jar

ZOO-HWTL-07 15'-17' TRIP BLANKS From Night (BLDG 607)

Sample #	Analysis	Pres	Lot #	Lab	Cont
600621 0700	VOC by 8260C	ICE	5717002	ALS	(3) 40 mL Vial

Continued on Page 48

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6-21-16 — 6/21/16

CT HWTL SOIL & RINSate samples

Notebook No. HWTL

Continued from Page 47

200-HWTL-09 13-15'

Sample #	Analysis	Pres	Matrix	Lot #	Lab	Cont
0621 1300	VOC by 8260C	DI WTR/Methanol		6-027-001	ALS	(3) 40 mL vial
— 1301	SVOC by 8270 Perchlorate by 6850	ICE		2156-1BN4	"	(1) 8oz Jar
— 1302	TOTAL Metals	"		022216-1BN5	"	(1) 4oz Jar
— 1303	Dioxins/furans	"		"	"	"
— 1304	Cyanide/Nitrate/Sulfide Hexachromium/chloride/Ph	"		2156-1BN4	"	(1) 8oz Jar
— 1305	TCLP metals	"		022216-1BN5	"	(1) 4oz Jar
— 1306	NDMA by 607	"		2156-1BN4	Southwest	(1) 8oz Jar
— 1307	Hydrazine by 8315 Bromacil by 8321B	"		N/A	Week	(1) 4oz Jar

200-HWTL-09 15-17'

Sample #	Analysis	Pres	Matrix	Lot #	Lab	Cont
0621 1315	VOC by 8260C	DI WTR/Methanol		6-027-001	ALS	(3) 40 mL vial
— 1316	SVOC by 8270 Perchlorate by 6850	ICE		2156-1BN4	"	(1) 8oz Jar
— 1317	TOTAL Metals	"		022216-1BN5	"	(1) 4oz Jar
— 1318	Dioxins/furans	"		"	"	"
— 1319	Cyanide/Nitrate/Sulfide Hexachromium/chloride/Ph	"		2156-1BN4	"	(1) 8oz Jar
— 1320	TCLP metals	"		022216-1BN5	"	(1) 4oz Jar
— 1321	NDMA by 607	"		2156-1BN4	Southwest	(1) 8oz Jar
— 1322	Hydrazine by 8315 Bromacil by 8321B	"		N/A	Week	(1) 4oz Jar

Continued on Page N/A

Read and Understood By

Signed — Date 6-21-16

Signed — Date 6/21/16

200-HWTL-07 TRIP BLNKS

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-21-16 Page 1 of 1

Sample Location: **HWTL 200-07**

Pertinent Notes (if any) Aqueous Samples	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
Sample Number			Analytical Requirement							
160621 0700	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
Sample Number			Analytical Requirement							
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-21-16 (1030)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-03.1 0-0.5

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-21-16 Page 1 of 1

Sample Location: **HWTL 200-03.1**

Analytical Requirement

Pertinent Notes (if any) Soil Samples — Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160621 0815	3	S	X						16EEHWTL
—— 0816	1	|		X					16EEHWTL
—— 0817	1	|			X				16EEHWTL
—— 0818	1	|				X			16EEHWTL
—— 0819	1	|					X		16EEHWTL
—— 0820	1	|						X	16EEHWTL
		|							16EEHWTL

Sample Location: **HWTL**

Analytical Requirement

Pertinent Notes (if any) — Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	~~Bromacil (8321)~~					Charge Number
160621 0821	1	S	X							16EEHWTL
—— 0822	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	6-21-16 (0900)	Pamela Egan	6.21.16 (0930)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

2000-HWTL-03.1 1:2

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-21-16 Page 1 of 1

Sample Location: **HWTL 200-03.1**

Analytical Requirement

Pertinent Notes (if any) Soil Samples — Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160621 0830	3	S	X						16EEHWTL
— 0831	1			X					16EEHWTL
— 0832	1				X				16EEHWTL
— 0833	1					X			16EEHWTL
— 0834	1						X		16EEHWTL
— 0835	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Analytical Requirement

Pertinent Notes (if any) — Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	~~Bromacil (8321)~~					Charge Number
160621 0836	1	S	X							16EEHWTL
— 0837	1			X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	6-21-16 (0900)	Pamela Egan	6-21-16 (0930)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-07 13-15 Rinsate

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-21-16 Page 1 of 1

Sample Location: **HWTL 200-07**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
160621 0915	3	A	X							16EEHWTL
— 0916	2	|		X						16EEHWTL
— 0917	1	|			X					16EEHWTL
— 0918	1	|				X				16EEHWTL
— 0919	1	|					X			16EEHWTL
— 0920	1	|						X		16EEHWTL
— 0921	1	|							X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
160621 0922	1	A	X							16EEHWTL
— 0923	1	|		X						16EEHWTL
— 0924	1	|			X					16EEHWTL
— 0925	2	|				X				16EEHWTL
— 0926	1	|					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-21-16(1030)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

2000-HWTL-07 13'-15'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-21-16 Page 1 of 1

Sample Location: **HWTL 2000-07**

Analytical Requirement

Pertinent Notes (if any) Soil Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160621 0940	3	S	X						16EEHWTL
— 0941	1	|		X					16EEHWTL
— 0942	1	|			X				16EEHWTL
— 0943	1	|				X			16EEHWTL
— 0944	1	|					X		16EEHWTL
— 0945	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Analytical Requirement

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Perchlorate (8321)	Bromacil (8321)				Charge Number
160621 0946	1	S	X						16EEHWTL
— 0947	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-21-16 0930			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-07 15-17

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-21-16 Page 1 of 1

Sample Location: **HWTL 200-07**

Analytical Requirement

Pertinent Notes (if any) Soil Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160621 0000	3	S	X						16EEHWTL
— 0001	1	|		X					16EEHWTL
— 0002	1	|			X				16EEHWTL
— 0003	1	|				X			16EEHWTL
— 0004	1	|					X		16EEHWTL
— 0005	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Analytical Requirement

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)					Charge Number
160621 0006	1	S	X							16EEHWTL
— 0007	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-21-16 (1030)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

TASK NO. 6EEHWTL-1

OJECT HWTL Soil Sampling : Kinsolves

Notebook No. HWTL-2

Continued from Page 2

200-HWTL-04.1 1'-2' Soil

Sample #	Analysis	Prep	LOT #	LAB	CONT
1605/20800	VOC by 8260c	DI WTR/ methanol	143424	TEST AMERICA	(3) 40 ml Vials
0801	SVOC, TOTAL metals, Nitrates by Chloride	ICP	020920ly	"	(8) 02 Jar
0802	Dioxin/Furans by 8290A	"	090990Iz	"	(4) 02 Jar
0803	Cyanide by 9012	"	"	"	"
0804	Perchlorate by 6850	"	"	"	"
0805	Hexchrome by 7199	"	"	"	"
0806	Ph by 90450	"	"	"	"
0807	NDMA by 607	"	020920ly	SOUTH WEST	(5) 02 Jar
0808	Hydrazine by 8315	"	090990Iz	WEEK	(4) 02 Jar
0809	Bromacil by 8321B	"	"	"	"

Bagged Soil Sample Screen with PID 0.0 PPM

200-HWTL-04.2 0'-0.5' Soil

Sample #	Analysis	Prep	LOT #	LAB	CONT
1605/20735	VOC by 8260c	DI WTR/ methanol	143424	TEST AMERICA	(3) 40 ml Vials
0736	SVOC, TOTAL metals, Nitrates, Chloride	ICP	020920ly	"	(8) 02 Jar
0737	Dioxin/Furans by 8290A	"	090990Iz	"	(4) 02 Jar
0738	Cyanide by 9012	"	"	"	"
0739	Perchlorate by 6850	"	"	"	"
0740	Hexchrome by 7199	"	"	"	"
0741	Ph by 90450	"	"	"	"
0742	NDMA by 607	"	020920ly	SOUTHWEST	(8) 02 Jar
0743	Hydrazine by 8315	"	090990Iz	WEEK	(4) 02 Jar
0744	Bromacil by 8321B	"	"	"	"

200-HWTL-04.2 1'-2' Soil

Sample #	Analysis	Prep	LOT #	LAB	CONT
1605/20755	VOC by 8260C	DI WTR/ methanol	143424	TEST AMERICA	(3) 40 ml Vials
0756	SVOC, TOTAL metals, Nitrates, Chloride	ICP	020920ly	"	(8) 02 Jar
0757	Dioxin/Furans by 8290A	"	090990Iz	"	(4) 02 Jar
0758	Cyanide by 9012	"	"	"	"
0759	Perchlorate by 6850	"	"	"	"
0800	Hexchrome by 7199	"	"	"	"
0801	Ph by 90450	"	"	"	"
0802	NDMA by 607	"	020920ly	SOUTHWEST	(8) 02 Jar
0803	Hydrazine by 8315	"	090990Iz	WEEK	(4) 02 Jar
0804	Bromacil by 8321B	"	"	"	"

Continued on Page 4

Signed

5-12-16

Date

Read and Understood By

Thomas A McCrory (4.1 only) 5/12/16

TASK NO. GEEHWTL-1

OJECT HWTL SOL sampling : RINSates

Notebook No. HWTL-2

Continued from Page 3

RINSates 200-HWTL-04.1

Sample #	Analysis	Preserv	LOT #	LAB	CONT
160512 0950	VOC by 8260C	ICE/HCl	5317002 4144070	ALS	(3) 40ml vial
— 0951	SVOC by 8270D	ICE	060815-1BLT	"	(2) 1 Liter Amber
— 0952	Dioxins/furans by 8290	"	"	"	(1) Liter Amber
— 0953	TOTAL metals 6010C/7470A	ICE/HNO3	042015-2AAW	"	(1) 500ml poly
— 0954	Perchlorate by 6850	ICE	072015-2AAO	"	(1) 250ml poly
— 0955	NO2/NO3 by 353.2	ICE/H2SO4	010416-2AAO	"	"
— 0956	Chloride by 300.0	ICE	"	"	"
— 0957	TOTAL Cyanide by 9012	ICE/NaOH	072015-2AAO	"	"
— 0958	Hex chrome by 7199	ICE	"	"	"
— 0959	NDMA by 607	"	0104101B	South West Water	(1) Lt amber
— 1000	Hydrazines by 8315	ICE/H2SO4	5050703		(2) 250ml Amber
— 1001	Bromide by 9211B	ICE	40860004	"	(1) 40ml vial

TRIP BLNKS 200-HWTL-04.1

Sample #	Analysis	Pres	LOT #	LAB	CONT
605121015	VOC by 8260C	ICE/HCl	5317002	ALS	(3) 40ml vial

NOTE: TRIP BLNKS TAKEN FROM Nonapure IN BLDG 637.

NOTE: TOOK 30 pieces of 10ft STAINLESS steel HWTL Line to Decon pad AT 637. Decon Piping AND STACKED PIPING IN corner of Decon pad. ON 5-13-16.

Continued on Page 5

Read and Understood By

Signed — 5-12-16 Date

Thomas A M Croy (RINSATE + TRIP BLANK) Signed — 5/12/16 Date

T Kenny + D. Halvorsen present. Weather is Warm and windy.

Rinsate 200-HWTC-04.2

Sample #	Analysis	Preserv	Lot #	Lab	Cont.
1605161000	VOC by 8260C	Ice, HCl	531702	ALS	(3) 40 ml Vial
1001	8270D	Ice	060815-12KT	"	(2) 1 <T Amber
1002	Dioxins/Furans	Ice	"	"	(1) 1 <T Amber
1003	Total Metals	Ice, HNO_3	042015-2AAW	"	(1) 500 ml poly
1004	perchlorate	Ice	072015-2AA0	"	(1) 250 ml poly
1005	Nitrate/Nitrite	Ice H_2SO_4	010416-2AA0	"	"
1006	chloride	Ice	"	"	"
1007	Total cyanide	Ice, NaOH	012015-2AA0	"	"
1008	Hex chrome	Ice	"	"	"
1009	NDMA	Ice	0604101B	Southwest	(1) 1 <T Amber
1010	Hydrazines	Ice, H_2SO_4	5050703	Week	(2) 250 ml Amber
1011	Bromacil	Ice	4086004	"	(1) 40 ml Vial

5' TF

200 HWTC HWS Soil 0-0.5

Sample #	Analysis	Preserv	Lot #	Lab	Cont.
1605161330	8260C	Ice, methanol	143424	TEST AMERICA	3 40 ml Vial
1331	8270D, total Metals, nitrate/nitrite, chloride	Ice	0209201y	"	(1) 8 oz Jar
1332	Dioxins/Furans	Ice	09099012	"	(1) 4 oz Jar
1333	cyanide	Ice	"	"	"
1334	perchlorate	Ice	"	"	"
1335	Hex Chrome	Ice	"	"	"
1336	pH	Ice	"	"	"
1337	NDMA	Ice	0209201y	SOUTHWEST	(1) 8 oz Jar
1338	Hydrazines	Ice	09099012	WEEK	(1) 4 oz Jar
1339	Bromacil	Ice	"	"	"

NOTE: THIS MORNING 5/16/16 S. MAESTAS & JTLH SHIPPED OUT THE RINSATE SAMPLE COLLECTED ABOVE (5/16/16) TO ALS. SWLI AND WEEK RINSATES STILL @ WSJF. THEY ALSO SHIPPED THE SOIL SAMPLES FOR 200-HWTC-04.2 0'-0.5' & 1'-2' COLLECTED THIS MORNING TO TEST AMERICA. THESE APPEAR ON P. 3 OF THIS NOTEBOOK! BACK-DATED. THE NDMA, HYDRAZINE, & BROMACIL SAMPLES FOR THESE SETS ARE STILL ON-SITE. THIS IS MY UNDERSTANDING. GCG

Continued on Page 6

Read and Understood By

PROJECT HWTL Soil and Rinsate Sampling

Notebook No. HWTL - 2

Continued from Page 5

200 - HWTL - 5 1 - 2 SOIL

Sample #	Analysis	Preserv	Lot #	Lab	Cont.
1605/161350	8260C	Ice, Methanol	143424	TEST AMERICA	(3) 40 ml Vial
— 1351	8270D, Total Metals #8/#03, Chloride	Ice	0209201Y	"	(1) 8 oz Jar
— 1352	Dioxins/Furans	"	090990122	"	(1) 4 oz Jar
— 1353	Cyanide	"	"	"	"
— 1354	Perchlorate	"	"	"	"
— 1355	Hex Chrome	"	"	"	"
— 1356	pH	"	"	"	"
— 1357	NDMA	"	0209201Y	SOUTHWEST	(1) 8 oz Jar
— 1358	Hydrazines	"	090990122	WEST	(1) 4oz Jar
— 1359	Bromide	"	"	"	"

Continued on Page

Read and Understood By

Tim Kong — Signed — 5-16-16 — Date

Scott Lyon — Signed — 5/16/16 — Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-12-16 Page 1 of 1

Sample Location: **HWTL** 200 HWTL-04.1 0'-0.5'

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOC	SVOC	Total Metals	Total Cyanide	Dioxins/Furan	Nitrate/Nitrite	Perchlorate	Charge Number
160512 0730	3	S	X							16EEHWTL
—— 0731	1	S		X	X			X		16EEHWTL
—— 0732	1	S					X			16EEHWTL
—— 0733	1	S				X				16EEHWTL
—— 0734	1	S							X	16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Hex Chrom	Chloride	pH	TCLP Metals	Bromacil	Hydrazine	NDMA	Charge Number
160512 0735	1	S	X							16EEHWTL
—— 0736	1	S			X					16EEHWTL
—— 0737	1	S							X	16EEHWTL
—— 0738	1	S						X		16EEHWTL
—— 0739	1	S					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	5-12-16 (0930)	Pamela Egan	5.12.16 (1130)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-12-16 Page 1 of 1

Sample Location: HWTL 200-HWTL-09.1 1'-2'

Analytical Requirement

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOC	SVOC	Total Metals	Total Cyanide	Dioxins/Furan	Nitrate/Nitrite	Perchlorate	Charge Number
1605120800	3	S	X							16EEHWTL
—— 0801	1	S		X	X		X	X		16EEHWTL
—— 0802	1	S					X			16EEHWTL
—— 0803	1	S				X				16EEHWTL
—— 0804	1	S							X	16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: HWTL

Analytical Requirement

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Hex Chrom	Chloride	pH	TCLP Metals	Bromacil	Hydrazine	NDMA	Charge Number
1605120805	1	S	X							16EEHWTL
—— 0806	1	S			X					16EEHWTL
—— 0807	1	S							X	16EEHWTL
—— 0808	1	S						X		16EEHWTL
—— 0809	1	S					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	5-12-16 (0945)	Pamela Egan	5.12.16 (1130)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-12-16 Page 1 of 1

Sample Location: **HWTL** 200-HWTL 04.1

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOC	SVOC	Total Metals	Total Cyanide	Dioxins/Furan	Nitrate/Nitrite	Perchlorate	Charge Number
1605120950	3	A	X							16EEHWTL
— 0951	2	A		X						16EEHWTL
— 0952	1	A					X			16EEHWTL
— 0953	1	A			X					16EEHWTL
— 0954	1	A							X	16EEHWTL
— 0955	1	A						X		16EEHWTL
— 0957	1	A				X				16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Hex Chrom	Chloride	pH	TCLP Metals	Bromacil	Hydrazine	NDMA	Charge Number
1605170956	1	A		X						16EEHWTL
— 0958	~~1~~ 2	A	X							16EEHWTL
— 0959	1	A							X	16EEHWTL
— 1000	~~1~~ 2	A						X		16EEHWTL
— 1001	1	A					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	5-12-16 (1010)	Pamela Egan	5.12.16 (1130)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-12-16 Page 1 of 1

Sample Location: **HWTL** 200-HWTL-04.1

Analytical Requirement

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOC	SVOC	Total Metals	Total Cyanide	Dioxins/Furan	Nitrate/Nitrite	Perchlorate	Charge Number
160512/015 (TB)	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Analytical Requirement

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Hex Chrom	Chloride	pH	TCLP Metals	Bromacil	Hydrazine	NDMA	Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	5-12-16 (1018)	Pamela Egan	5.12.16 (1130)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-16-16 Page _____ of _____

Sample Location: **HWTL** 4.2 0-0.5

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOC	SVOC	Total Metals	Total Cyanide	Dioxins/Furan	Nitrate/Nitrite	Perchlorate	Charge Number
1605160735	3	S	X							16EEHWTL
— 0736	1	|		X	X			X		16EEHWTL
— 0737	1	|					X			16EEHWTL
— 0738	1	|				X				16EEHWTL
— 0739	1	↓							X	16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL** 4.2 0-0.5

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Hex Chrom	Chloride	pH	TCLP Metals	Bromacil	Hydrazine	NDMA	Charge Number
1605160740	1	S	X							16EEHWTL
— 0741	1	|			X					16EEHWTL
— 0742	1	|							X	16EEHWTL
— 0743	1	|						X		16EEHWTL
— 0744	1	|					X			16EEHWTL
— 0736	1	↓		X						16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5/16/16			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-16-16 Page _____ of _____

Sample Location: **HWTL** 4.2 1-2

Sample Number	# of Containers	Sample Matrix*	VOC	SVOC	Total Metals	Total Cyanide	Dioxins/Furan	Nitrate/Nitrite	Perchlorate	Charge Number
160516 0755	3	S	X							16EEHWTL
— 0756	1			X	X			X		16EEHWTL
— 0757	1						X			16EEHWTL
— 0758	1					X				16EEHWTL
— 0759	1								X	16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL** 4.2 1-2

Sample Number	# of Containers	Sample Matrix*	Hex Chrom	Chloride	pH	TCLP Metals	Bromacil	Hydrazine	NDMA	Charge Number
160516 0800	1	S	X							16EEHWTL
— 0801	1				X					16EEHWTL
— 0802	1								X	16EEHWTL
— 0803	1							X		16EEHWTL
— 0804	1						X			16EEHWTL
— 0756	1			X						16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-16-16 Page _____ of _____

Sample Location: **HWTL** 200-HWTL-042

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOC	SVOC	Total Metals	Total Cyanide	Dioxins/Furan	Nitrate/Nitrite	Perchlorate	Charge Number
160516 1000	3	A	X							16EEHWTL
— 1001	2			X						16EEHWTL
— 1002	1						X			16EEHWTL
— 1003	1				X					16EEHWTL
— 1004	1								X	16EEHWTL
— 1005	1							X		16EEHWTL
— 1007						X				16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Hex Chrom	Chloride	pH	TCLP Metals	Bromacil	Hydrazine	NDMA	Charge Number
160516 1006	1	A		X						16EEHWTL
~~1007~~										~~16EEHWTL~~
— 1008			X							16EEHWTL
— 1009									X	16EEHWTL
— 1010								X		16EEHWTL
— 1011							X			16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-16-16			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-16-16 Page _____ of _____

Sample Location: **HWTL** 5 0-0.5

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC	SVOC	Total Metals	Total Cyanide	Dioxins/Furan	Nitrate/Nitrite	Perchlorate	Charge Number
160516 1330	3	S	X							16EEHWTL
— 1331	1	|		X	X			X		16EEHWTL
— 1332	1	|					X			16EEHWTL
— 1333	1	|				X				16EEHWTL
— 1334	1	|							X	16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	Hex Chrom	Chloride	pH	TCLP Metals	Bromacil	Hydrazine	NDMA	Charge Number
160516 1335	1	S	X							16EEHWTL
— 1336	1	|			X					16EEHWTL
— 1337	1	|							X	16EEHWTL
— 1338	1	|						X		16EEHWTL
— 1339	1	|					X			16EEHWTL
— 1331	1	|		X						16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
T. Kosky	5-16-16			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-16-16 Page _____ of _____

Sample Location: **HWTL - 5** 1-2

Sample Number	# of Containers	Sample Matrix*	VOC	SVOC	Total Metals	Total Cyanide	Dioxins/Furan	Nitrate/Nitrite	Perchlorate	Charge Number
160516 1350	3	S	X							16EEHWTL
— 1351	1	|		X	X			X		16EEHWTL
— 1352	1	|					X			16EEHWTL
— 1353	1	|				X				16EEHWTL
— 1354	1	|							X	16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Sample Number	# of Containers	Sample Matrix*	Hex Chrom	Chloride	pH	TCLP Metals	Bromacil	Hydrazine	NDMA	Charge Number
160516 1355	1	S	X							16EEHWTL
— 1356	1	|			X					16EEHWTL
— 1357	1	|							X	16EEHWTL
— 1358	1	|						X		16EEHWTL
— 1359	1	|					X			16EEHWTL
— 1351	1	|		X						16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-16-16			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

TASK NO. GEEHWTL1#

PROJECT HWTL Soil samples & Rinsates

Notebook No. HWTL-2

Continued from Page N/A

F. Gallegos & T. Kondy present. Weather is clear and warm. Soil samples will be taken from locations on the HWTL task memo. Samples will be taken with a hand auger at depths 0'-0-5' and 1'-2' below the excavated pipe every 200' in distance (approximately).

200-HWTL-04 0'-0-5' (SOIL)

Sample #	Analysis	Prep	Lot #	LAB	Cont
1605110900	VOC by 8260C	DI WTR/ Methanol/ICE	143424	TA	(3) 40mL ✓
0901	SVOC, Total metals, NO2/NO3, chloride	8270 ICE	0209201y	"	(1) oz Jars ✓
0902	Dioxin/ Furan	8290 "	0909901z	"	(4) oz Jars ✓
0903	Cyanide	~~9030~~ 9012 "	0909901z	"	" ✓
0904	Perchlorate	6850 "	"	"	" ✓
0905	Hex chrome	7199 "	"	"	" ✓
0906	pH	9045 "	"	"	" ✓
0907	NDMA	607 "	0209201y	SWRL	(8) oz Jars ✓
0908	Hydrazines	8315 "	0909901z	WECK	(4) oz Jars ✓
0909	Bromacil	8321A "	"	"	" ✓

NOTE: METHANOL HAS NOT EVAPORATED FROM TERRACORE

200-HWTL-04 1'-2' (SOIL)

Sample #	Analysis	Prep	Lot #	LAB	Cont
1605110930	VOC by 8260C	DI WTR/ Methanol/ICE	143424		(3) 40mL Vial ✓
0931	SVOC, Total metals, NO2/NO3, chloride	ICE	0209201y		(8) oz Jars ✓
0932	Dioxin/ Furan	"	0909901z		(4) oz Jars ✓
0933	Cyanide	"	"		" ✓
0934	Perchlorate	"	"		" ✓
0935	Hex chrome	"	"		" ✓
0936	pH	"	"		" ✓
0937	NDMA	"	0209201y		(8) oz Jars ✓
0938	Hydrazines	"	0909901z		(4) oz Jars ✓
0939	Bromacil	"	"		" ✓

NOTE: METHANOL HAS NOT EVAPORATED FROM TERRACORE

Continued on Page 2

Signed

5-11-16

Date

Read and Understood By

5/11/16

TASK NO. 6EEHWTL-1

OJECT HWTL Soil Sampling & RINSates

Notebook No. HWTL-2

Continued from Page 1

RINSates 200-HWTL-04

ample #	Analysis	Preserv	LOT#	LAB	CONT
1605111050	VOC by 8260C	ICE/HCl	4114070	ALS	(3) 40ml Vial ✓
1051	SVOC 8270D	ICE	060815-1BLT	"	(2) (1) Liter Amber ✓
1052	Dioxin/Furans by 8290	"	060815-1BLT	"	(1) Liter Amber ✓
1053	Total metals 6010C/7470A	ICE/HNO3	042015-2AAW	"	(1) 500ml poly ✓
1054	Perchlorate by 6850	ICE	072015-2AAD	"	(1) 250ml poly ✓
1055	NO2/NO3 by 353.2	ICE/H2SO4	010416-2AAO	"	" ✓
1056	Chloride by 300.0	ICE	010416-2AAO	"	" ✓
1057	TOTAL Cyanide by 9012	ICE/NaOH	072015-2AAO	"	" ✓
1058	Hex Chrome by 7199	ICE	072015-2AAO	"	" ✓
1059	NH3 by 607	"	0160101B	SWRS	(1) Lt amber ✓
1100	Hydrazines by 8315	ICE/H2SO4	5050703	Weck	(2) 250mL amber ✓
1101	Bromacil by 8321B	ICE	4086004	"	(1) 40mL Vial ✓

*Note HEX chrome had a buffer as a preservative. Carlyn said it was FINE.

200-HWTL-04.1 0'-0.5'

Sample #	Analysis	Preserv	LOT#	LAB	CONT
	VOC by 8260C	DI WTR Methanol	143424		(3) 40mL vials
	SVOC, Total metals, NO2/NO3, Chloride	ICE	0209201y		(5) 8 oz Jar
	Dioxin/Furan by 8290A	"	090990Iz		(4) 8 oz Jar
	Cyanide by 9012	"	"		"
	Perchlorate by 6850	"	"		"
	Hex Chrome by 7199	"	"		"
	PH by 9045D	"	"		"
	NH3 by 607	"	0209201y		(6) 8 oz Jar
	Hydrazines by 8315	"	090990Iz		(4) 8 oz Jar
	Bromacil by 8321B	"	"		"

Continued on Page 3

Read and Understood By

Signed — 5-11-16 Date

Signed — 5/11/16 Date

200-HWTL-04 0'-0-5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-11-16 Page 1 of 1

Sample Location: **HWTL**

Sample Number	Pertinent Notes (if any)	# of Containers	Sample Matrix*	VOC	SVOC	Total Metals	Total Cyanide	Dioxins/Furan	Nitrate/Nitrite	Perchlorate	Charge Number
160511 0900		3	S	X							16EEHWTL
— 0901		1			X	X			X		16EEHWTL
— 0902		1						X			16EEHWTL
— 0903		1					X				16EEHWTL
— 0904		1								X	16EEHWTL
											16EEHWTL
											16EEHWTL

Sample Location: **HWTL**

Sample Number	Pertinent Notes (if any)	# of Containers	Sample Matrix*	Hex Chrom	Chloride	pH	TCLP Metals	Bromacil	Hydrazine	NDMA	Charge Number
— 0905		1	S	X							16EEHWTL
— 0906		1			X	X					16EEHWTL
— 0907		1								X	16EEHWTL
— 0908		1							X		16EEHWTL
— 0909		1						X			16EEHWTL
											16EEHWTL
											16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-11-16 (1045)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

2000-HWTL-04 1'-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-16-16 Page 1 of 1

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOC	SVOC	Total Metals	Total Cyanide	Dioxins/Furan	Nitrate/Nitrite	Perchlorate	Charge Number
160511 0930	3	S	X							16EEHWTL
— 0931	1	S		X	X			X		16EEHWTL
— 0932	1	S					X			16EEHWTL
— 0933	1	S				X				16EEHWTL
— 0934	1	S							X	16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Hex Chrom	Chloride	pH	TCLP Metals	Bromacil	Hydrazine	NDMA	Charge Number
160511 0935	1	S	X							16EEHWTL
— 0936	1	S			X					16EEHWTL
— 0937	1	S							X	16EEHWTL
— 0938	1	S						X		16EEHWTL
— 0939	1	S					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-11-16 (1100)		Pamela Egan	5.12.16 (1130)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTC-04 RINSates

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-11-16 Page _____ of _____

Sample Location: **HWTL**

Sample Number	# of Containers	Sample Matrix*	VOC	SVOC	Total Metals	Total Cyanide	Dioxins/Furan	Nitrate/Nitrite	Perchlorate	Charge Number
Pertinent Notes (if any)										
16051/10050	3	A	X							16EEHWTL
—— 1051	2	A		X						16EEHWTL
—— 1052	1	A					X			16EEHWTL
—— 1053	1	A			X					16EEHWTL
—— 1054	1	A							X	16EEHWTL
—— 1055	1	A						X		16EEHWTL
—— 1057	1	A				X				16EEHWTL

Sample Location: **HWTL**

Sample Number	# of Containers	Sample Matrix*	Hex Chrom	Chloride	pH	TCLP Metals	Bromacil	Hydrazine	NDMA	Charge Number
Pertinent Notes (if any)										
16051/10056	1	A		X						16EEHWTL
—— 1058	1	A	X						X	16EEHWTL
—— 1059	1	A							X	16EEHWTL
—— 1100	2	A						X		16EEHWTL
—— 1101	1	A					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	5-11-16 (1110)	Pamela Egan	5-11-16 (1141)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

T. Tondy + D Halvorsen present. Weather is partly cloudy and cool.

200-HWTL-05 Rinsate

Sample #	Analysis	Preserv	Lot #	Lab	Cont.
1605171000	8260C	ICe, HCL	5317002	ALS	(3) 40 ml Vial
— 1001	8270D	Ice	060815-1BLT	"	(2) 1 LT Amber
— 1002	Dioxin/Furans	Ice	"	"	(1) 1 LT Amber
— 1003	Total Metals	Ice, HNO_3	042015-2AAW	"	(1) 500 ml poly
— 1004	Perchlorate	Ice	072015-2AAO	"	(1) 250 ml poly
— 1005	NO_2/NO_3	Ice, H_2SO_4	010416-2AAO	"	"
— 1006	chloride	Ice	"	"	"
— 1007	Total cyanide	Ice, NaOH	012015-2AAO	"	"
— 1008	Hex Chrome	Ice	"	"	"
— 1009	NDMA	Ice	0104/01B	South West	(1) 1 LT Amber
— 1010	Hydrazine	Ice, H_2SO_4	595 0703	Weck	(2) 250 ml Amber
— 1011	Bromacil	Ice	4086004	"	(1) 40 ml Vial

200-HWTL-10 Soil 0-0.5

Sample #	Analysis	Preserv	Lot #	Lab	Cont.
1605171315	8260C	Ice, Methanol	143424	Test America	(3) 40 ml Vial
— 1316	8270D, total Metals, perchlorate, chloride	Ice	02092015	"	(1) 8 oz Jar
— 1317	Dioxins/Furans	Ice	09099012	"	(1) 4 oz Jar
— 1318	cyanide	"	"	"	"
— 1319	perchlorate	"	"	"	"
— 1320	Hex Chrome	"	"	"	"
— 1321	pH	"	"	"	"
— 1322	NDMA	"	02092015	South West	(1) 8 oz Jar
— 1323	Hydrazine	"	09099012	Weck	(1) 4 oz Jar
— 1324	Bromacil	"	"	"	"
1325 DUPE					
DUPE					

Continued on Page 8

Read and Understood By

Signed — Date — Signed — Date

5-17-16 — 5/17/16

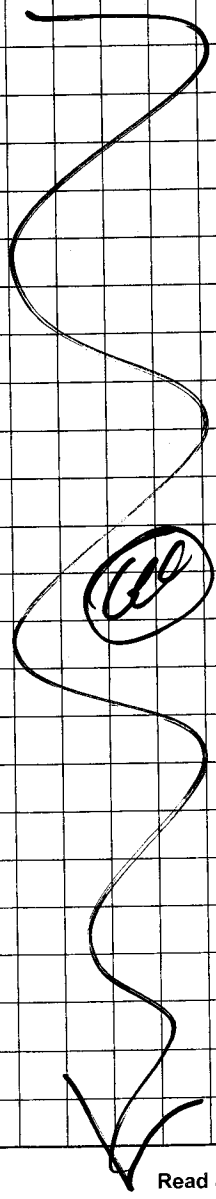
Notebook No. HWTL - 2

ROJECT HWTL Soil and Rinsate Samples

Continued from Page 7

200-HWTL-10 | Soil | 1-2'

Sample #	Analysis	Preserv.	Lot #	Lab	cont.
1605 17 1330	8260C	Ice, METHANOL	413424	Test America	(3) 40 ml Vial
1331	8270C, Total details Nitrates, chloride	Ice	0209201Y	"	(1) 8 oz Jar
1332	Dioxins/Furans	Ice	09099012	"	(1) 4 oz Jar
1333	cyanide	"	"	"	"
1334	perchlorate	"	"	"	"
1335	Hex Chrome	"	"	"	"
1336	pH	"	"	"	"
1337	NDMA	"	0209201Y	South West	(1) 8 oz Jar
1338	Hydrazine	"	09099012	Week	(1) 4 oz Jar
1339	Biomass	"	"	"	"



Continued on Page —

Read and Understood By

Tom Kopp 5-17-16 Date

Signed 5/17/16 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-17-16 Page _____ of _____

Sample Location: **HWTL** 200-HWTL-5

Pertinent Notes (if any)
Aqueous Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC	SVOC	Dioxins/Furans	Total Metals	Perchlorate	Nitrate/Nitrite	Chloride (Anions)	Charge Number
160517 1000	3	A	X							16EEHWTL
— 1001	2			X						16EEHWTL
— 1002	1				X					16EEHWTL
— 1003	1					X				16EEHWTL
— 1004	1						X			16EEHWTL
— 1005	1							X		16EEHWTL
— 1006	1								X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	Total Cyanide	Hex Chrom	NDMA	Hydrazine	Bromacil		TCLP Metals	Charge Number
160517 1007	1	A	X							16EEHWTL
— 1008	1			X						16EEHWTL
— 1009	1				X					16EEHWTL
— 1010	2					X				16EEHWTL
— 1011	1						X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
T Kane	5/17/16			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-17-16 Page _____ of _____

Sample Location: **HWTL - 10** 0-0.5

Analytical Requirement

Pertinent Notes (if any) Soil Samples / Sample Number	# of Containers	Sample Matrix*	VOC	SVOC, Total Metals, Nitrate/Nitrite, Chloride	Dioxins/Furans	Total Cyanide	Perchlorate	Hex Chrom	pH	Charge Number
1605171315	3	S	X							16EEHWTL
— 1316	1			X						16EEHWTL
— 1317	1				X					16EEHWTL
— 1318	1					X				16EEHWTL
— 1319	1						X			16EEHWTL
— 1320	1							X		16EEHWTL
— 1321	1	↓							X	16EEHWTL

Sample Location: **HWTL - 10** 0-0.5

Analytical Requirement

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	NDMA	Hydrazine	Bromacil					Charge Number
1605171322	1	S	X							16EEHWTL
— 1323	1	↓		X						16EEHWTL
— 1324	1	↓			X					16EEHWTL
		↓								16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-17-16			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-17-16 1'-2' ~~0-0.5~~ Page _____ of _____

Sample Location: **HWTL - 10**

Pertinent Notes (if any)
Soil Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC	SVOC, Total Metals, Nitrate/Nitrite, Chloride	Dioxins/Furans	Total Cyanide	Perchlorate	Hex Chrom	pH	Charge Number
160517 1330	3	S	X							16EEHWTL
— 1331	1			X						16EEHWTL
— 1332	1				X					16EEHWTL
— 1333	1					X				16EEHWTL
— 1334	1						X			16EEHWTL
— 1335	1							X		16EEHWTL
— 1336	1								X	16EEHWTL

Sample Location: **HWTL - 10** 1-2

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	NDMA	Hydrazine	Bromacil					Charge Number
160517 1337	1	S	X							16EEHWTL
1338	1			X						16EEHWTL
1339	1				X					16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-17-16			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

Gallegos & T. Kondy present. WEATHER IS HOT.

2000-HWTL-06 13:15 RINSates carboy "G-5"

Sample #	Analysis	Pres	LOT #	LAB	CONT
0622 0720	VOC by 8260C	ICE/HCl	6060004	ALS	(3) 40mL Vial
— 0721	SVOC by 8270D	ICE	0425/16-1BLT	"	(2) 1 Liter Amber
— 0722	Dioxins/Furans	"	"	"	4 Liter Amber
— 0723	TOTAL metals	ICE/HNO3	0411 6-2AA0	"	(1) 250mL Poly
— 0724	Perchlorate	ICE	"	"	"
— 0725	NO2/NO3	ICE/H2SO4	"	"	"
— 0726	Chloride	ICE	"	"	"
— 0727	TOTAL cyanide	ICE/NaOH	"	"	"
— 0728	Hex chrome	ICE/Buffer	"	"	~~1 Liter Amber~~
— 0729	NDMA by 607	ICE	0425/16 BLT	Southwest	(1) 1 Liter Amber
— 0730	Hydrazines	ICE/H2SO4	500507003	Week	(2) 250mL amber
— 0731	Bromacil	ICE	N/A	"	(1) 40mL amber Vial

2000-HWTL-06 TRIP BLNKS from NANI Aire IN BLDG 637.

Sample #	Analysis	Pres	LOT #	LAB	CONT
0622 0700	VOC by 8260C	ICE/HCl	5317007	ALS	(3) 40mL Vial

2000-HWTL-06 13:15

Sample #	Analysis	Pres	LOT #	LAB	CONT
0622 0740	VOC by 8260C	DI WTR/ Methanol	6-027-0001	ALS	(3) 40mL Vial
— 0741	SVOC by 8270 Perchlorate by 6850	ICE	2156-1BNW	"	(1) 8oz Jar
— 0742	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
— 0743	Dioxins/Furans	"	"	"	"
— 0744	Cyanide/NO2/NO3/ Hexchrome/chloride/ph	"	2156-1BNW	"	(1) 8oz Jar
— 0745	TCLP metals	"	022216 BNS	"	(1) 4oz Jar
— 0746	NDMA by 607	"	2156-1BNW	Southwest	(1) 8oz Jar
— 0747	Hydrazines by 8315 Bromacil by 8321B	"	N/A	Week	(1) 4oz Jar

Continued on Page 90

Read and Understood By

Signed — 6-22-16 Date — Signed — 6/22/16 Date

ECT HWTL - SOIL & RINSate samples

Notebook No. HWTL

Continued from Page 49

ZOO-HWTL-06 13:15 Dup

mple #	Analysis	Prep	Lot #	LAB	Cont
06220750	VOC by 8260C	DI WTR Method	6-027-001	ALS	(3) 40mL vial
— 0751	SVOC by 8270 Perchlorate by 6850	ICE	2156-1BNU	"	(1) 8oz Jar
— 0752	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
— 0753	Dioxins/Furans	"	2156-1BAU	"	"
— 0754	Cyanide/Hg/NO3/ Hexchrome/chloride/ph	"	2156-1BNU 022216-1BNS	"	(1) 8oz Jar
— 0755	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
— 0756	NDMA by 607	"	2156-1BNU	Southwest	(1) 8oz Jar
— 0757	Hydrazines by 8315 Bromacil by 8321B	N/A	N/A	week	(1) 4oz Jar

ZOO-HWTL-06 15-17'

mple #	Analysis	Prep	Lot #	LAB	Cont
06220800	VOC by 8260C	DI WTR Method	6-027-001	ALS	(3) 40mL vial
— 0801	SVOC by 8270 Perchlorate by 6850	ICE	2156-1BNU	"	(1) 8oz Jar
— 0802	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
— 0803	Dioxins/Furans	"	"	"	"
— 0804	Cyanide/Hg/NO3/ Hexchrome/chloride/ph	"	2156-1BNU	"	(1) 8oz Jar
— 0805	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
— 0806	NDMA by 607	"	2156-1BNU	Southwest	(1) 8oz Jar
0807	Hydrazines by 8315 Bromacil by 8321B	"	N/A	week	(1) 4oz Jar

ZOO-HWTL-06 13-15'

mple #	Analysis	Prep	Lot #	LAB	Cont
06220900	VOC by 8260C	DI WTR Method	6-027-001	ALS	(3) 40mL vial
— 0901	SVOC by 8270 Perchlorate by 6850	ICE	2156-1BNU	"	(1) 8oz Jar
— 0902	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
— 0903	Dioxins/furans	"	"	"	"
— 0904	Cyanide/Hg/NO3/ Hexchrome/chloride/ph	"	2156-1BNU	"	(1) 8oz Jar
— 0905	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
— 0906	NDMA by 607	"	2156-1BNU	Southwest	(1) 8oz Jar
— 0907	Hydrazines by 8315 Bromacil by 8321B	"	N/A	week	(1) 4oz Jar

Continued on Page 51

Read and Understood By

6-22-16

6/22/16
Date

200-HWTL-08 15'-17'

Sample	Analysis	Pres	Cont	LAB	Cont
0622 0920	VOCs by 8260C	DI WTR Method	6-027-001	ALS	3 (40mL) Vial
0921	Semivolatiles by 8270D	ICE	2156-1BNA	"	(1) 8oz Jar
0922	TOTAL Metals	"	022216-1BNS	"	(1) 4oz Jar
0923	Dioxins/Furans	"	"	"	"
0924	Cyanide (Reactive)/ Hexavalent Chromium/Chloride/pH	"	2156-1BNA	"	(1) 8oz Jar
0925	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
0926	NOMA (by GOO)	"	2156-1BNA	Southwest	(1) 8oz Jar
0927	Hydrazines by 8015 Bromate by 83218	"	N/A	week	(1) 4/02 Jar

Continued on Page N/A

Read and Understood By

Signed

6-22-16

Date

Signed

6/22/16

Date

200-HWTL-06 TRIP BLNKS

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-22-16 Page 1 of 1

Sample Location: **HWTL 200-06**

Pertinent Notes (if any) Aqueous Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
1608220700	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-22-16 (1020)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-06 13-15' Rinsates

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-22-16 Page 1 of 1

Sample Location: **HWTL 200-06**

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
160622 0720	3	A	X							16EEHWTL
" 0721	2	|		X						16EEHWTL
" 0722	1	|			X					16EEHWTL
" 0723	1	|				X				16EEHWTL
" 0724	1	|					X			16EEHWTL
" 0725	1	|						X		16EEHWTL
" 0726	1	|							✓	16EEHWTL

Pertinent Notes (if any)
Aqueous Samples

Sample Location: **HWTL**

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
160622 0727	1	A	X							16EEHWTL
" 0728	1	|		X						16EEHWTL
" 0729	1	|			X					16EEHWTL
" 0730	2	|				X				16EEHWTL
" 0731	1	|					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-22-16 (1020)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-06 13-15'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-22-16 Page 1 of 1

Sample Location: **HWTL 200-06**

Pertinent Notes (if any) Soil Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160622 0746	3	S	X						16EEHWTL
— 0741	1	|		X					16EEHWTL
— 0742	1	|			X				16EEHWTL
— 0743	1	|				X			16EEHWTL
— 0744	1	|					X		16EEHWTL
— 0745	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromoil (8321)	~~Bromoil (8321)~~					Charge Number
160622 0746	1	S	X							16EEHWTL
— 0747	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-22-16 (1020)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-06 13:15' (Dup)

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-22-16 Page 1 of 1

Sample Location: **HWTL 200-06**

Pertinent Notes (if any) Soil Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160622 0750	3	S	X						16EEHWTL
" 0751	1			X					16EEHWTL
" 0752	1				X				16EEHWTL
" 0753	1					X			16EEHWTL
" 0754	1						X		16EEHWTL
" 0755	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)					Charge Number
160622 0756	1	S	X						16EEHWTL
" 0757	1			X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-06 15-17'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-22-16 Page 1 of 1

Sample Location: **HWTL 200-06**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
1606220800	3	S	X						16EEHWTL
—— 0801	1			X					16EEHWTL
—— 0802	1				X				16EEHWTL
—— 0803	1					X			16EEHWTL
—— 0804	1						X		16EEHWTL
—— 0805	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)				Charge Number
1606220806	1	S	X						16EEHWTL
—— 0807	1			X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-22-16 (1020)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-08 15-15'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-22-16 Page 1 of 1

Sample Location: **HWTL 200-08**

Pertinent Notes (if any) Soil Samples — Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160622 0900	3	S	X						16EEHWTL
— 0901	1	|		X					16EEHWTL
— 0902	1	|			X				16EEHWTL
— 0903	1	|				X			16EEHWTL
— 0904	1	|					X		16EEHWTL
— 0905	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) — Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	~~Bromacil (8321)~~					Charge Number
160622 0906	1	S	X							16EEHWTL
— 0907	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-22-16 (1020)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-08 15'-17'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-22-16 Page 1 of 1

Sample Location: **HWTL 200-08**

Analytical Requirement

Pertinent Notes (if any) Soil Samples — Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160622 0920	3	S	X						16EEHWTL
— 0921	1	1		X					16EEHWTL
— 0922	1				X				16EEHWTL
— 0923	1					X			16EEHWTL
— 0924	1						X		16EEHWTL
— 0925	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Analytical Requirement

Pertinent Notes (if any) — Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	~~Bromacil (8321)~~					Charge Number
160622 0926	1	S	X							16EEHWTL
— 0927	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-22-16 (1020)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-09 13-15'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-21-16 Page 1 of 1

Sample Location: **HWTL 200-09**

Analytical Requirement

Pertinent Notes (if any) Soil Samples — Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160621 1300	3	S	X						16EEHWTL
— 1301	1	|		X					16EEHWTL
— 1302	1	|			X				16EEHWTL
— 1303	1	|				X			16EEHWTL
— 1304	1	|					X		16EEHWTL
— 1305	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Analytical Requirement

Pertinent Notes (if any) — Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)						Charge Number
160621 1306	1	S	X							16EEHWTL
— 1307	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	6-21-16 (1400)	Pamela Egan	6.22.16 (0930)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

2000-HWTL-09 15-17'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-21-16 Page 1 of 1

Sample Location: **HWTL 2000-09**

Sample Number	Pertinent Notes (if any) Soil Samples	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160621 1315		3	S	X						16EEHWTL
— 1316		1			X					16EEHWTL
— 1317		1				X				16EEHWTL
— 1318		1					X			16EEHWTL
— 1319		1						X		16EEHWTL
— 1320		1							X	16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Sample Number	Pertinent Notes (if any)	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	~~Bromacil (8321)~~				Charge Number
160621 1321		1	S	X						16EEHWTL
— 1322		1	1		X					16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-21-16 (1400)		Pamela Egan	6.22.16 (0930)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

SWMU 10

OJECT HWTL Soil and Rinsate

Notebook No. HWTL-2 9

Continued from Page —

T-Sunny + Freezing and cool.

Present Weather is cloudy

NOTE: THESE SOIL SAMPLES STARTED SHIPPING TO ALS (GB)

200-HWTL-11 0-0.5 Soil

Sample #	Analysis	Preserv	Lot #	Lab	cont.
1605180740	8260C	Ice, Methanol	143424	ALS	(3) 40 ml Vial
0741	8270D Total Metals NO2/NO3, Chloride	Ice	0209201Y	"	(1) 8 oz Jar
0742	Dioxins/Furans	"	090990128	"	(1) 4 oz Jar
0743	Cyanide	"	"	"	"
0744	Perchlorate	"	"	"	"
0745	Hex Chrome	"	"	"	"
0746	pH	"	"	"	"
0747	NDMA	"	0209021Y	Southwest	(1) 8 oz Jar
0748	Hydrazine	"	090990128	Work	(1) 4 oz Jar
0749	Bromacil	"	"	"	"

NOTE: THESE SOIL SAMPLES STARTED SHIPPING TO ALS (GB)

FIELD Duplicate 200-HWTL-11 Soil

Sample #	Analysis	Preserv	Lot #	Lab	cont.
1605180750	8260C	Ice, Methanol	143424	ALS	(3) 40 ml Vial
0751	8270D Total Metals NO2/NO3, chloride	Ice	0209201Y	"	(1) 8 oz Jar
0752	Dioxins/Furans	"	090990128	"	(1) 4 oz Jar
0753	Cyanide	"	"	"	"
0754	Perchlorate	"	"	"	"
0755	Hex Chrome	"	"	"	"
0756	pH	"	"	"	"
0757	NDMA	"	0209201Y	Southwest	(1) 8 oz Jar
0758	Hydrazine	"	090990128	Work	(1) 4 oz Jar
0759	Bromacil	"	"	"	"

Continued on Page 10

Read and Understood By

Signed 5-18-16 Date

Signed 5/18/16 Date

SWMU 10

ECT HWTL Soil and Rinsate Samples

Notebook No. HWTL-2

Continued from Page 9

	200-HWTL-11		RINSATE		
2400 #	Analysis	Preserv	Lot #	Lab	Cont
1605180950	8260C	Ice, HCl	5317002	ALS	(3) 40 ml Vial
— 0951	8270D	Ice	060815-1BLT	"	(2) 1 LT Amber
— 0952	Dioxin/Furans	Ice	"	"	(1) 1 LT Amber
— 0953	Total Metals	Ice, HNO_3	042015-2AAV	"	(1) 500 ml poly
— 0954	Perchlorate	Ice	072015-2AA0	"	(1) 250 ml poly
— 0955	NO_2/NO_3	Ice, H_2SO_4	0104116-2AA0	"	"
— 0956	Chloride	Ice	"	"	"
— 0957	Total Cyanide	Ice, NaOH	012015-2AA0	"	"
— 0958	Hex Chrome	Ice	"	"	"
— 0959	NDMA	Ice	0104101B	South West	(1) 1 LT Amber
— 1000	Hydrazine	Ice, H_2SO_4	5050703	Week	(2) 125 ml Amber
— 1001	Bromacil	Ice	4086004	"	(1) 40 ml Vial
200-HWTL-11		TRIP BLNKS FROM BLDG 637 Nonspike			
0518 0700	VOC by 8260C	ICE/HCl	5317002	ALS	(3) 40 ml Vial

200-HWTL-11 1'-2' SOIL

Sample #	Analysis	Preserv	LOT # 143424	LAB	CONT
	VOC by 8260C	ICE/HCl	5317002	ALS	(3) 40 ml Vial
	SVOC by 8270D	ICE	060815-1BLT	"	(2) 1 Liter Amber
	Dioxins/Furans by 8290	"	"	"	(1) Liter Amber
	TOTAL Metals 6010C/7470A	ICE/HNO3	042015-2AAV	"	(1) 500 mL

NOTE: THESE SOIL SAMPLES STAYED SHIPPING TO ALS (GG)

200-HWTL-11 1'-2' SOIL

Sample #	Analysis	Preserv	LOT #	LAB	CONT
1605180820	VOC by 8260C	DI into Methanol	143424	ICE America	(3) 40 ml vial
— 0821	SVOC by 8270 Acids, NO_2/NO_3 by Chloride	ICE	0209201Y	"	(5) 8 oz Jar
— 0822	Dioxin/Furans	"	0909901Z	"	(4) 8 oz Jar
— 0823	Cyanide	"	"	"	"
— 0824	Perchlorate	"	"	"	"
— 0825	Hex Chrome	"	"	"	"
— 0826	pH	"	"	"	"
— 0827	NDMA	"	0209201Y	South West	(5) 8 oz Jar
— 0828	Hydrazine	"	0909901Z	Week	(4) 8 oz Jar
— 0829	Bromacil	"	"	"	"

Continued on Page 11 (GG) HWTL

Read and Understood By

[signature] 5-18-16 Date

[signature] Signed 5/18/16 Date

SWMU 10

OJECT HWTL SOIL & RINSate Samples

Notebook No. HWTL-2

Continued from Page 10

200-HWTL-12 0-0.5'

Sample#	Analysis	Prep	LOT#	LAB	CONT
160518 1300	VOC by 8260C	DI WTR, methanol	143424	ALS	(3) 40 mL vial
—— 1301	SVOC, perchlorate 8270D 6850	ICE	9209201y	"	(5) 02 Jar
—— 1302	TOTAL metals	"	9102702z	"	(1) 02 Jar
—— 1303	Dioxins/furans	"	"	"	"
—— 1304	Cyanide, Nitrites, Mercury, Chloride, pH	"	9102602y	"	(1) 02 Jar
—— 1305	TCLP metals	"	9102902z	"	(1) 02 Jar
—— 1306	601 by NDMA	"	9209201y	Southwest	(3) 02 Jar
—— 1307	Hydrazines by 8315	"	9102902z	Weck	(1) 02 Jar
—— 1308	Bromacil by 8321B	"	"	"	(1) "

200-HWTL-12 1-2'

Sample#	Analysis	Prep	LOT#	LAB	CONT
160518 1315	VOC by 8260C	DI WTR, methanol	143424	ALS	(3) 40 mL vial
—— 1316	SVOC, perchlorate 8270D 6850	ICE	9209201y	"	(5) 02 Jar
—— 1317	TOTAL metals	"	9102902z	"	(1) 02 Jar
—— 1318	Dioxins/Furans	"	"	"	"
—— 1319	Cyanide, Nitrites, Mercury, Chloride, pH	"	9102602y	"	(1) 02 Jar
—— 1320	TCLP metals	"	9102902y	"	(1) 02 Jar
—— 1321	601 by NDMA	"	9209201y	Southwest	(3) 02 Jar
—— 1322	Hydrazines by 8315	"	9102902z	Weck	(1) 02 Jar
—— 1323	Bromacil by 8321B	"	"	"	"

Continued on Page —

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700-HWTL-11 0'-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-18-16 Page 1 of 1

Sample Location: **HWTL**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC	SVOC, Total Metals, Nitrate/Nitrite, Chloride	Dioxins/Furans	Total Cyanide	Perchlorate	Hex Chrom	pH	Charge Number
1605180740	3	S	X							16EEHWTL
—— 0741	1	|		X						16EEHWTL
—— 0742	1	|			X					16EEHWTL
—— 0743	1	|				X				16EEHWTL
—— 0744	1	|					X			16EEHWTL
—— 0745	1	|						X		16EEHWTL
—— 0746	1	|							X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA	Hydrazine	Bromacil					Charge Number
1605180747	1	S	X							16EEHWTL
—— 0748	1	|		X						16EEHWTL
—— 0749	1	|			X					16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-18-16 (0925)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-11 0-0.5' FIELD Duplicate

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: Page 1 of 1

Sample Location: **HWTL**

Pertinent Notes (if any)
Soil Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC	SVOC, Total Metals, Nitrate/Nitrite, Chloride	Dioxins/Furans	Total Cyanide	Perchlorate	Hex Chrom	pH	Charge Number
1605180750	3	S	X							16EEHWTL
— 0751	1	|		X						16EEHWTL
— 0752	1	|			X					16EEHWTL
— 0753	1	|				X				16EEHWTL
— 0754	1	|					X			16EEHWTL
— 0755	1	|						X		16EEHWTL
— 0756	1	|							X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	NDMA	Hydrazine	Bromacil					Charge Number
1605180757	1	S	X							16EEHWTL
— 0758	1	|		X						16EEHWTL
— 0759	1	|			X					16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-18-16 (0930)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-11 1'-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: Page 1 of 1

Sample Location: **HWTL**

Pertinent Notes (if any)
Soil Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC	SVOC, Total Metals, Nitrate/Nitrite, Chloride	Dioxins/Furans	Total Cyanide	Perchlorate	Hex Chrom	pH	Charge Number
160518 0820	3	S	X							16EEHWTL
— 0821	1	|		X						16EEHWTL
— 0822	1	|			X					16EEHWTL
— 0823	1	|				X				16EEHWTL
— 0824	1	|					X			16EEHWTL
— 0825	1	|						X		16EEHWTL
— 0826	1	|							X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	NDMA	Hydrazine	Bromacil					Charge Number
160518 0827	1	S	X							16EEHWTL
— 0828	1	|		X						16EEHWTL
— 0829	1	|			X					16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-18-16 (0935)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

Rinsate

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date:

Sample Location: **HWTL – 11**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC	SVOC	Dioxins/Furans	Total Metals	Perchlorate	Nitrate/Nitrite	Chloride (Anions)	Charge Number
160518 0950	3	A	X							16EEHWTL
— 0951	2	A		X						16EEHWTL
— 0952	1	A			X					16EEHWTL
— 0953	1	A				X				16EEHWTL
— 0954	1	A					X			16EEHWTL
— 0955	1	A						X		16EEHWTL
— 0956	1	A							X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Cyanide	Hex Chrom	NDMA	Hydrazine	Bromacil		TCLP Metals	Charge Number
160518 0957	1	A	X							16EEHWTL
— 0958	1	|		X						16EEHWTL
— 0959	1	|			X					16EEHWTL
— 1000	2	|				X				16EEHWTL
— 1001	1	|					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-18-16 (1040)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

Rinsates Trip Blank

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-18-16 Page 1 of 1

Sample Location: **HWTL – 11**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC	SVOC	Dioxins/Furans	Total Metals	Perchlorate	Nitrate/Nitrite	Chloride (Anions)	Charge Number
1605180700	3	A	x							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: Total Cyanide	Hex Chrom	NDMA	Hydrazine	Bromacil		TCLP Metals	Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-18-16 (0945)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-12 0-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-18-16 Page 1 of 2

Sample Location: **HWTL** SOIL

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (353.2), Hex Cr (7199), Chloride (300.0), pH	TCLP Metals	Charge Number
Pertinent Notes (if any) Soil Samples			Analytical Requirement						
160518 1300	3	S	X						16EEHWTL
— 1301	1	|		X					16EEHWTL
— 1302	1	|			X				16EEHWTL
— 1303	1	|				X			16EEHWTL
— 1304	1	|					X		16EEHWTL
— 1305	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Sample Number	# of Containers	Sample Matrix*	NDMA	Hydrazine	Bromacil				Charge Number
Pertinent Notes (if any)			Analytical Requirement						
160518 1306	1	S	X						16EEHWTL
— 1307	1	|		X					16EEHWTL
— 1308	1	|			X				16EEHWTL
— 1309	1	|				X			16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

PGE 5.19.16

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-18-16 (1430)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

2000-HWTL-12 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-18-16 Page 1 of 1

Sample Location: **HWTL** SOIL

Pertinent Notes (if any)
Soil Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (353.2), Hex Cr (7199), Chloride (300.0), pH	TCLP Metals	Charge Number
160518 1315	3	S	X						16EEHWTL
—— 1316	1	|		X					16EEHWTL
—— 1317	1	|			X				16EEHWTL
—— 1318	1	|				X			16EEHWTL
—— 1319	1	|					X		16EEHWTL
—— 1320	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	NDMA	Hydrazine	Bromacil				Charge Number
160518 1321	1	S	X						16EEHWTL
—— 1322	1	|		X					16EEHWTL
—— 1323	1	|			X				16EEHWTL
—— 1324	1	|			30				16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-18-16 (1430)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

F. Gelles & T. Kondy present. WEATHER IS CLEAR.

200-HWTC-13 0'-0.5'

Sample #	Analysis	Prep	LOT #	LAB	CONT
160519 0740	VOC by 8260c	DI WTR, methanol	143424	ALS	(3) 40ml Vial
— 0741	SVOC, perchlorate 8270D, 6850	ICE	0209201y	"	(8) oz Jar
— 0742	TOTAL metals	"	09029012	"	(4) oz Jar
— 0743	Dioxins/Furans	"	"	"	"
— 0744	Cyanide, Nitrate/Nitrite, Hexchrome, chloride, pH	"	0209201y	"	(8) oz Jar
— 0745	TCLP metals	"	09029012	"	(4) oz Jar
— 0746	607 by NOMA	"	0209201y	Southwest	(8) oz Jar
— 0747	Hydrazines by 8315	"	09029012	week	(4) oz Jar
— 0748	Bromacil by 8321B	"	"	"	"

200-HWTC-13 1'-2'

sample #	Analysis	Prep	LOT #	LAB	CONT
160519 0750	VOC by 8260c	DI WTR, methanol	143424	ALS	(3) 40ml Vial
— 0751	SVOC 8270D / perchlorate 6850	ICE	0209201y	"	(8) oz Jar
— 0752	TOTAL metals	"	09029012	"	(4) oz Jar
— 0753	Dioxins/furans	"	"	"	"
— 0754	cyanide, nitrate/nitrite, hexchrome, chloride, pH	"	0209201y	"	(8) oz Jar
— 0755	TCLP metals	"	09029012	"	(4) oz Jar
— 0756	607 by NOMA	"	0209201y	Southwest	(8) oz Jar
— 0757	Hydrazines by 8315	"	09029012	week	(4) oz Jar
— 0758	Bromacil by 8321B	"	"	"	"

200-HWTC-14 0'-05'

Samples #	Analysis	Prep	LOT #	LAB	CONT
160519 0930	VOC by 8260c	DI WTR/ methanol	143424	ALS	(3) 40ml Vial
— 0931	SVOC, perchlorate 8270D, 6850	ICE	0209201y	"	(8) oz Jar
— 0932	TOTAL metals	"	09029012	"	(4) oz Jar
— 0933	Dioxins/furans	"	"	"	"
— 0934	Cyanide, nitrate/nitrite, Hexchrome, chloride, pH	"	0209201y	"	(8) oz Jar
— 0935	TCLP metals	"	09029012	"	(4) oz Jar
— 0936	607 by NOMA	"	0209201y	Southwest	(8) oz Jar
— 0937	Hydrazines by 8315	"	09029012	week	(4) oz JAR
— 0938	Bromacil by 8321B	"	"	"	"

Continued on Page 13

Read and Understood By

5-19-16 Date

5/19/16 Date

SWMU 10

OJECT HWTL SOIL & RINSate samples

Notebook No. HWTL-2

Continued from Page 14

200-HWTL-14 1'-2'

Sample #	Analysis	Pres	LOT #	LAB	CONT
1605190940	VOC by 8260C	DI ENTRI Methanol	143424	ALS	(3) 40 mL vial
0941	EVOC 8270D / Perchlorate 6850	ICE	0709Z01y	"	(8) oz J-L
0942	TOTAL metals	"	0902901Z	"	(4) oz J-L
0943	Dioxins/Furans	"	"	"	"
0944	Cyanide, NO2/NO3, Hexchrome, chloride, PH		0209Z01y	"	(5) oz J-L
0945	TCLP metals	"	0902901Z	"	(4) oz J-L
0946	607 by NDMA	"	0209Z01y	Southwest	(3) oz J-L
0947	Hydrazines by 8315	"	0902901Z	Week	(4) oz J-L
0948	Bromacil by 8321B	"	"	"	"

FRB1 TRIP BLANKS 200-HWTL-14

Sample #	Analysis	Pres	LOT #	LAB	CONT
1605190700	VOC by 8260C	ICE/HCl	531700Z	ALS	(3) 40 mL vial

200-HWTL-14 RINSates 6-4 CARBOY

Sample #	Analysis	Preserve	LOT #	LAB	CONT
605/19/1030	VOC by 8260C	ICE/HCl	~~531700Z~~	ALS	(3) 40 mL vial
1031	SVOC by 8270D	ICE	060815-1BLT	"	(2) 1 Liter amber
1032	Dioxins/furans by 8290	"	"	"	(1) Liter Amber
1033	Perchlorate by 6850	"	~~0720Z015-2AA0~~		(1) 250 mL poly
1034	NO2/NO3 by TKN by 353.2 ICE/H2SO4		1C0416-2AA0		"
1035	Chloride by 300.0 ~~9250~~	ICE	"	"	"
1036	TOTAL cyanide by 9012 ICE/NaOH		0715-2AA0	"	"
1037	Hex chrome by 7199	ICE	"	"	"
1038	NDMA by 607	"	0104101B	Southwest	(3) Liter Amber
1039	Hydrazines by 8315	ICE/H2SO4	50507003	Week	(2) 250 mL amber
1040	Bromacil by 8321B	ICE	4086004	Week	(1) 40 mL vial
1041	~~TOTAL~~ TOTAL metals by 6010C/7470A	ICE/HNO3	042015-2AAW	ALS	(1) 500 mL poly

(CCB)

Continued on Page 14

Read and Understood By

Signed — Date: 5-19-16

Signed — Date: 5/19/16

Trip

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-19-16

Sample Location: **HWTL**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC	SVOC	Dioxins/Furans	Total Metals	Perchlorate	Nitrate/Nitrite	Chloride (Anions)	Charge Number
160519 0700 (TB)	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Cyanide	Hex Chrom	NDMA	Hydrazine	Bromacil		TCLP Metals	Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-19-16 (1030)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-13 0-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-19-16 Page 1 of 1

Sample Location: **HWTL**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (353.2), Hex Cr (7199), Chloride (300.0), pH	TCLP Metals	Charge Number
160519 0740	3	S	X						16EEHWTL
0741	1	|		X					16EEHWTL
0742	1	|			X				16EEHWTL
0743	1	|				X			16EEHWTL
0744	1	|					X		16EEHWTL
0745	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA	Hydrazine	Bromacil				Charge Number
160519 0746	1	S	X						16EEHWTL
0747	1	|		X					16EEHWTL
0748	1	|			X				16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-19-16 (1015)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-13 1'-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-19-16 Page 1 of 1

Sample Location: **HWTL**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (353.2), Hex Cr (7199), Chloride (300.0), pH	TCLP Metals	Charge Number
160519 0750	3	S	X						16EEHWTL
" 0751	1	|		X					16EEHWTL
" 0752	1	|			X				16EEHWTL
" 0753	1	|				X			16EEHWTL
" 0754	1	|					X		16EEHWTL
" 0755	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA	Hydrazine	Bromacil				Charge Number
160519 0756	1	S	X						16EEHWTL
" 0757	1	|		X					16EEHWTL
" 0758	1	|			X				16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-19-16 (1015)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-14 0'-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-19-16 Page _____ of _____

Sample Location: **HWTL**

Pertinent Notes (if any) Soil Samples — Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (353.2), Hex Cr (7199), Chloride (300.0), pH	TCLP Metals	Charge Number
1605190930	3	S	X						16EEHWTL
—— 0931	1	|		X					16EEHWTL
—— 0932	1	|			X				16EEHWTL
—— 0933	1	|				X			16EEHWTL
—— 0934	1	|					X		16EEHWTL
—— 0935	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) — Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: NDMA	Hydrazine	Bromacil					Charge Number
1605190936	1	S	X							16EEHWTL
—— 0937	1	|		X						16EEHWTL
—— 0938	1	|			X					16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-19-16 (1030)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-14 1'-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-19-16 Page 1 of 1

Sample Location: **HWTL**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (353.2), Hex Cr (7199), Chloride (300.0), pH	TCLP Metals	Charge Number
160519 0940	3	S	X						16EEHWTL
— 0941	1	|		X					16EEHWTL
— 0942	1	|			X				16EEHWTL
— 0943	1	|				X			16EEHWTL
— 0944	1	|					X		16EEHWTL
— 0945	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA	Hydrazine	Bromacil					Charge Number
160519 0946	1	S	X							16EEHWTL
— 0947	1	|		X						16EEHWTL
— 0948	1	|			X					16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-19-16 (1030)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-14 Rinsates

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-19-16 Page 1 of 1

Sample Location: **HWTL**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC	SVOC	Dioxins/Furans	Total Metals	Perchlorate	Nitrate/Nitrite	Chloride (Anions)	Charge Number
160519 1030	3	A	X							16EEHWTL
— 1031	2			X						16EEHWTL
— 1032	1				X					16EEHWTL
— 1033	1						X			16EEHWTL
— 1034	1							X		16EEHWTL
— 1035	1								X	16EEHWTL
~~— 1036~~	~~3~~								~~2~~	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Cyanide	Hex Chrom	NDMA	Hydrazine	Bromacil	Total metals	TCLP Metals	Charge Number
160519 1036	1	A	X							16EEHWTL
— 1037	1	A		X						16EEHWTL
— 1038	1	A			X					16EEHWTL
— 1039	2	A				X				16EEHWTL
— 1040	1	A					X			16EEHWTL
— 1041	1	A						X		16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-19-16 (1045)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

SWMU 10

4

PROJECT HWTL SOIL & RINSATES Samples

Notebook No. HWTL-2

Continued from Page 13 N/A

F. Gallegos & T. Kondy present. WEATHER IS clear & WARM.

200-HWTL-1ST TRIP BLNKS

Sample #	Analysis	Pres	LOT #	LAB	cont
160523 0900	VOC by 8260C	ICE & HCl	5317002	ALS	(3) 40mL Vial

200-HWTL-15 RINSates

Sample #	Analysis	Pres	LOT #	LAB	cont
160523 0930	VOC by 8260C	ICE/HCl	6010C/7470A 040416-1BLT	ALS	(3) 40mL Vial
0931	SVOC by 8270D	ICE	040416-1BLT	"	(2) 1 Liter Amber
0932	Dioxin & Furans by 8290	"	"	"	(1) Liter Amber
0933	TOTAL metals 6010C/7470A	ICE/HNO3	113015-2AAW	"	(1) 500mL poly
0934	perchlorate by 6850	ICE	041116-2AAO	"	(1) 250mL poly
0935	NO2/NO3 by EKN by 353.2	ICE/H2SO4	041116-2AAO	"	(1) 250mL poly
0936	Chloride (Anion) by 300.0	ICE	"	"	(1) 250mL poly
0937	Hexachrome by 7199	" (buffer)	041116-2AAO	"	(1) 250mL poly
0938	NDMA by 607	ICE	040416-1BLT	South West	(1) Liter Amber
0939	Hydrazines by 8315	ICE/H2SO4	50507003	week	(1) 250mL Amber
0940	Bromacil by 8321B	ICE	N/A	"	(1) 40mL Vial
0941	TOTAL cyanide by 9012	ICE/NaOH	041116-2AAO	ALS	(1) 250mL poly

200-HWTL-15 0'-0.5' SOIL Samples

Sample #	Analysis	Pres	LOT #	LAB	cont
160523 1320	VOC by 8260C	DI WTR/Methanol	6-027-000	ALS	(3) 40mL Vial
1321	SVOC 8270D / Perchlorate 6850	ICE	021516-1BNK	"	(5) 02 Jars
1322	TOTAL metals	"	022216-1BNK	"	(1) 02 Jars
1323	Dioxins / Furans	"	"	"	"
1324	Cyanide, NO2/NO3, Hexchrome, chloride	"	021516-1BNK	"	(8) 02 Jars
1325	TCLP metals	"	022216-1BNK	"	(4) 02 Jar
1326	Hydrazines by 8315	"	" week	"	"
1327	Bromacil by 8321B	"	"	"	(4) 02 Jar
1328	607 by NDMA	"	021516-1BNK	Southwest	(5) 02 Jar

[* OUT OF HOLDING TIME]

FIELD SCREEN W/ PID = 0.5 PPM

(600)

Continued on Page 15

Read and Understood By

5-23-16 Date

Signed

5/23/16 Date

SWMU 10

OJECT HWTL soil & Rinsate samples

Notebook No. HWTL-2

Continued from Page ~~NTF 14~~ (cc)

15

200-HWTL-15 1'-2' soil samples

Sample #	Analysis	Preservation	Lot #	Lab	Cont
600523 1345	VOC by 8260C (SVOC 82700 / Petroleum Hydrocarbons 6850)	DI WTR/ Methanol / ICE	6-027.001	ALS	(3) 40mL vial
1346			Q21516-1BNU		(8) 02 Jar
1347	TOTAL metals		Q22216-1BNS		(1) 02 Jar
1348	DIOXINS/Furans				
1349	Cyanide, Nitrate, Nitrite, Chloride, Ph		Q21516-1BNU		(8) 02 Jar
1350	TCLP metals		Q22216-1BNS		(4) 02 Jar
1351	6010 by NOMA		Q21516-1BNU	Sentinel	(8) 02 Jar
1352	Hydrides by 7315		Q22216-1BNS	Weck Laboratories	(1) 02 Jar
1353	Biomass by 9021B			Weck	

FIELD SCREEN W/ PID = 0.3 PPM

QC

Continued on Page —

Read and Understood By

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5-23-16

Date

Signed

5/23/16

Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-23-16 Page 1 of 1

Sample Location: **HWTL -15**

Pertinent Notes (if any)
Aqueous Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC	SVOC	Dioxins/Furans	Total Metals	Perchlorate	Nitrate/Nitrite	Chloride (Anions)	Charge Number
160523 0930	3	A	X							16EEHWTL
— 0931	2	A		X						16EEHWTL
— 0932	1	A			X					16EEHWTL
— 0933	1	A				X	X			16EEHWTL
— 0934	1	A					X			16EEHWTL
— 0935	1	A						X		16EEHWTL
— 0936	1	A							X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	Total Cyanide	Hex Chrom	NDMA	Hydrazine	Bromacil		TCLP Metals	Charge Number
160523 0937	1	A		X						16EEHWTL
— 0938	1	A			X					16EEHWTL
— 0939	2	A				X				16EEHWTL
— 0940	1	A					X			16EEHWTL
— 0941	1	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-23-16 (0945)		[signature]	5/23/16 9:45

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5.23.16 Page _____ of _____

Sample Location: **HWTL** 200-15 0'-05'

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
			Analytical Requirement						
160523 1320	3	S	X						16EEHWTL
—— 1321	1	S		X					16EEHWTL
—— 1322	1	S			X				16EEHWTL
—— 1323	1	S				X			16EEHWTL
—— 1324	1	S					X		16EEHWTL
—— 1325	1	S						X	16EEHWTL
									16EEHWTL

TCLP Metals on hold
5/25/16

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315)	Bromacil (8321)					Charge Number
			Analytical Requirement							
160523 1326	1	S		X						16EEHWTL
—— 1327	1	S			X					16EEHWTL
—— 1328	1	S	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-23-16(1445)		[signature]	5/24/16 9:00

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-23-16 Page 1 of 1

Sample Location: **HWTL 200-15 1-2'**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160523 1345	3	S	X						16EEHWTL
—— 1346	1			X					16EEHWTL
—— 1347	1				X				16EEHWTL
—— 1348	1					X			16EEHWTL
—— 1349	1						X		16EEHWTL
—— 1350	1							X	16EEHWTL
									16EEHWTL

↑ TCLP Metals on hold 5.25.16

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315)	Bromacil (8321)				Charge Number
160523 1351	1	S	X						16EEHWTL
—— 1352	1			X					16EEHWTL
—— 1353	1				X				16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	5-23-16 (1445)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-23-16 Page 1 of 1

Sample Location: **HWTL 200-15**

Pertinent Notes (if any)
Aqueous Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
160523 0700	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	5-23-16 (1445)			5/24/16 9:00

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

SWMU 10

PROJECT HWTL SOIL & RINSate Samples

Notebook No. HWTL-2

Continued from Page N/A

E. Gallegos & T. Kondy present. WEATHER IS Clear & COOL.

2000-HWTL-16 RINSates - Carboy G-5

Sample #	Analysis	Preserv	LOT #	LAB	CONT
160525 0750	VOC by 8260C	ICE/HCl	6060004	ALS	(3) 40mL vial
0751	SVOC by 8270D	ICE	040416-1BLT	"	(2) 1 Liter Amber
0752	Dioxin/Furan by 8290	"	"	"	(1) Liter Amber
0753	TOTAL metals by 6010B/7470A	ICE/HNO3	113015-2AAW	"	(1) 500mL poly
0754	Perchlorate by 6850	ICE	041116-2AA0	"	(1) 250mL poly
0755	Nitrite/Nitrate by TKN by 300	ICE/H2SO4	"	"	"
0756	Chloride (Anions) by 9056	ICE	"	"	"
0757	TOTAL cyanide by 9012	ICE/NaOH	"	"	"
0758	Hex chrome by 218.6	ICE/buffer	"	"	"
0759	NDMA by 1607	ICE	040416-1BLTSolvents		(1) Liter Amber
0800	Hydrazines by 8315	ICE/H2SO4	5050703	Week	(1) 250mL Amber
0801	Bromoethyl by 8321B	"	N/A	"	(1) 40mL vial

2000-HWTL-16 TRIP BLANKS From NANHure BCD6 637

Sample #	Analysis	Preserv	LOT #	LAB	CONT
160525 0700	VOC by 8260C	ICE/HCl	5317002	ALS	(3) 40mL vial

2000-HWTL-16 0'-6" SOIL

Sample #	Analysis	Preserv	LOT #	LAB	CONT
160525 0840	VOC by 8260C	DI WTR/Methanol	G-027-0001	ALS	(3) 40mL vial
0841	SVOC by 8270D Perchlorate by 6850	ICE	021516-1BNW	"	(1) 8oz Jar
0842	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
0843	Dioxin/Furan by 8290A	"	"	"	"
0844	Cyanide/Nitrate/Nitrite/Chloride/PH	"	021516-1BNW	"	(1) 8oz Jar
0845	TCL P metals	"	022216-1BNS	"	(1) 4oz Jar
0846	NDMA by 1607	"	021516-1BNW	Southwest	(1) 8oz Jar
0847	Hydrazines by 8315	"	N/A	Week	(1) 4oz Jar
0848	Bromoethyl by 8321B	"	"	"	"

Continued on Page 17

Read and Understood By

Signed — 5-25-16 Date

Signed — 5/25/16 Date

200-HWTL-16 0'-0.5' Duplicate Soil

Sample #	Analysis	Preserv	Lot #	LAB	Cont
160525 0850	VOC by 8260C	DI WTR/ Methanol	6-027-001	ALS	(3) 40mL vial
— 0851	SVOC by 8270D Perchlorate by 6850	ICE	021516-1BNW	"	(1) 8oz Jar
— 0852	TOTAL Metals	"	022216-1BNS	"	(1) 4oz Jar
— 0853	Dioxins/ Furans 8290A	"	"	"	"
— 0854	Cyanide/NO2/NO3/ Hexchrome/chloride/Ph	"	021516-1BNW	"	(1) 8oz Jar
— 0855	TCLP Metals	"	022216-1BNS	"	(1) 4oz Jar
— 0856	NDMA by 607	"	021516-1BNW Southwest	"	(1) 8oz Jar
— 0857	Hydrazines by 8315	"	~~022216~~-N/A	Weck	(1) 4oz Jar
— 0858	Bromacil by 8321B	"	"	"	"

200-HWTL-16 1'-2'

Sample #	Analysis	Preserv	Lot #	LAB	Cont
160525 0900	VOC by 8260C	DI WTR Methanol	6-027-001	ALS	(3) 40mL vial
— 0901	SVOC by 8270D Perchlorate by 6850	ICE	021516-1BNW	"	(1) 8oz Jar
— 0902	TOTAL Metals	"	022216-1BNS	"	(1) 4oz Jar
— 0903	Dioxins/ Furans 8290A	"	"	"	"
— 0904	Cyanide/NO2/NO3/ Hexchrome/chloride/Ph	"	021516-1BNW	"	(1) 8oz Jar
— 0905	TCLP Metals	"	022216-1BNS	"	(1) 4oz Jar
— 0906	NDMA by 607	"	021516-1BNW Southwest	"	(1) 8oz Jar
— 0907	Hydrazines by 8315	"	N/A	Weck	(1) 4oz Jar
— 0908	Bromacil by 8321B	"	"	"	"

200-HWTL-17 0'-0.5'

Sample #	Analysis	Preserv	Lot #	LAB	Cont
160525 1315	VOC by 8260C	DI WTR Methanol	6-027-001	ALS	(3) 40mL vial
— 1316	SVOC by 8270D Perchlorate by 6850	ICE	021516-1BNW	"	(1) 8oz Jar
— 1317	TOTAL Metals	"	022216-1BNS	"	(1) 4oz Jar
— 1318	Dioxins/ Furans 8290A	"	"	"	"
— 1319	Cyanide/NO2/NO3/ Hexchrome/chloride/Ph	"	021516-1BNW	"	(1) 8oz Jar
— 1320	TCLP metals	"	022216-1BNW	"	(1) 4oz Jar
— 1321	NDMA by 607	"	022216-1BNS Southwest		(1) 8oz Jar
— 1322	Hydrazines by 8315	"	N/A	Weck	(1) 4oz Jar
— 1323	Bromacil by 8321B	"	"	"	"

Continued on Page 18

Read and Understood By

Signed — Date 5-25-16

Signed — Date 5/25/16

SWMU 100

PROJECT HWTL Soil & Rinsate Samples

Notebook No. HWTL-2

Continued from Page 17

200-HWTK-17 1'-2'

Sample #	Analysis	Preservative	LOT #	LAB	CONT
160525/1325	VOC by 8260C	ICE 0°C to 6°C with methanol	6-GC7-001	ALS	(3) 40mL Vial
1326	SVOC by 8270D Perchlorate by 6850	Ice	02156-IBNW		(1) 8oz Jar
1327	TOTAL Metals		022216-IBNS		(1) 4oz Jar
1328	DIOXINS/Furans by 8270A	"	"		"
1329	Cyanide/Sulfide/NO3 Perchlorate/Chloride/Fl	"	02156-IBNW		(1) 8oz Jar
1330	TCLP Metals	"	02216-IBNS		(1) 4oz Jar
1331	NDMA by 607	"	02156-IBNW	Southwest	(1) 8oz "
1332	Hydrazine by 8315	"	N/A	Week	(1) 4oz Jar
1333	Bromacil by 8321B	"	"	"	"

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Continued on Page

Signed

5-25-16

Date

Read and Understood By

Signed

5/25/16

Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-25-16 0'-0.5' Page 1 of 1

Sample Location: **HWTL 200-16**

Pertinent Notes (if any)
Soil Samples
Terracore 5pt PSL

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (353.2), Hex Cr (7199), Chloride (300.0), pH	TCLP Metals	Charge Number
160525 0840	3	S	X						16EEHWTL
— 0841	1	|		X					16EEHWTL
— 0842	1	|			X				16EEHWTL
— 0843	1	|				X			16EEHWTL
— 0844	1	|					X		16EEHWTL
— 0845	1	|						X	16EEHWTL
									16EEHWTL

↑ TCLP metals on hold PZ 5.25.16

Sample

Sample Number	# of Containers	Sample Matrix*	NDMA	Hydrazine	Bromacil				Charge Number
160525 0846	1	S	X						16EEHWTL
— 0847	1	|		X					16EEHWTL
— 0848	1	|			X				16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-25-16 (0940)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-25-16 0'-0.5' Dup Page 1 of 1

Sample Location: **HWTL 200-16**

Pertinent Notes (if any)
Soil Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (353.2), Hex Cr (7199), Chloride (300.0), pH	TCLP Metals	Charge Number
160525 0850	3	S	X						16EEHWTL
— 0851	1	|		X					16EEHWTL
— 0852	1	|			X				16EEHWTL
— 0853	1	|				X			16EEHWTL
— 0854	1	|					X		16EEHWTL
— 0855	1	|						X	16EEHWTL
									16EEHWTL

Samp TCLP Metals on hold PCE 5.25.16

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	NDMA	Hydrazine	Bromacil				Charge Number
160525 0856	1	S	X						16EEHWTL
— 0857	1	|		X					16EEHWTL
— 0858	1	|			X				16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-25-16 (0940)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-25-16 1'-2' Page 1 of 1

Sample Location: **HWTL** 200-16

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (353.2), Hex Cr (7199), Chloride (300.0), pH	TCLP Metals	Charge Number
1605250900	3	S	X						16EEHWTL
—— 0901	1	|		X					16EEHWTL
—— 0902	1	|			X				16EEHWTL
—— 0903	1	|				X			16EEHWTL
—— 0904	1	|					X		16EEHWTL
—— 0905	1	|						X	16EEHWTL
									16EEHWTL

S TCLP Metals on hold
PM 5/25/16

Sample Number	# of Containers	Sample Matrix*	NDMA	Hydrazine	Bromacil				Charge Number
1605250906	1	S	X						16EEHWTL
—— 0907	1	|		X					16EEHWTL
—— 0908	1	|			X				16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-25-16 (0940)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-25-16 Page 1 of 1

Sample Location: **HWTL** 200-16

Pertinent Notes (if any)
Aqueous Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
160525 0750	3	A	X							16EEHWTL
—— 0751	2	|		X						16EEHWTL
—— 0752	1	|			X					16EEHWTL
—— 0753	1	|				X				16EEHWTL
—— 0754	1	|					X			16EEHWTL
—— 0755	1	|						X		16EEHWTL
—— 0756	1	|							X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
160525 0757	1	A	X							16EEHWTL
—— 0758	1	|		X						16EEHWTL
—— 0759	1	|			X					16EEHWTL
—— 0800	2	|				X				16EEHWTL
—— 0801	1	|					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-25-16 (0810)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-25-16 TRIP BNKS Page 1 of 1

Sample Location: **HWTL 2000-16**

Pertinent Notes (if any) Aqueous Samples / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
1605250700	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-25-16/0940			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-25-16 0-0.5' Page 1 of 1

Sample Location: **HWTL 200-17**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160525 1315	3	S	X						16EEHWTL
— 1316	1			X					16EEHWTL
— 1317	1				X				16EEHWTL
— 1318	1					X			16EEHWTL
— 1319	1						X		16EEHWTL
— 1320	1							X	16EEHWTL
									16EEHWTL

TCLP metals on hold
5.31.16

Sample Loc
P

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315)	Bromacil (8321)					Charge Number
160525 1321	1	S	X							16EEHWTL
— 1322	1			X						16EEHWTL
— 1323	1				X					16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	5-25-16 (1418)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

1'-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-25-16 Page 1 of 1

Sample Location: HWTL 208-17

Pertinent Notes (if any)
Soil Samples
Terracore Set PBZ

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160525 1325	3	S	X						16EEHWTL
— 1326	1	|		X					16EEHWTL
— 1327	1	|			X				16EEHWTL
— 1328	1	|				X			16EEHWTL
— 1329	1	|					X		16EEHWTL
— 1330	1	|						X	16EEHWTL
									16EEHWTL

— TCLP metals on hold 5/31/16

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315)	Bromacil (8321)					Charge Number
160525 1331	1	S	X							16EEHWTL
— 1332	1	|		X						16EEHWTL
— 1333	1	|			X					16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	5-25-16 (1410)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

HWTL soil & Rinsate samples

OJECT 200-HWTL-18 SWMU 10

Notebook No. HWTL 02 — 19

Continued from Page ~~1~~ NA

T. Gallegos & T. Klondy present. WEATHER is clear & cool.

200-HWTL-18 Rinsate carboy 6-2

Sample #	Analysis	Pres	LOT #	LAB	Cont
160526 0730	VOC by 8260C	ICE & HCl	6060001	ALS	(3) 40mL vial
0731	SVOC by 8270D	ICE	040416-1BLT	"	(2) 1 Liter Amber
0732	DIOXIN/Furan by 8290	"	"	"	(1) L. ter Amber
0733	TOTAL metals	ICE/HNO3	113015-2AAW	"	(1) 500mL poly
0734	Perchlorate by 6850	ICE	041116-2AAO	"	(1) 250mL poly
0735	NO2/NO3 by 300	ICE/H2SO4	"	"	"
0736	Chloride (Anions) 9056	ICE	"	"	"
0737	TOTAL Cyanide by 9012	ICE/NaOH	"	"	"
0738	Hexchrome by 218.6	ICE/Buffer	"	~~Southwest~~	"
0739	NDMA by 607	ICE	040416-1BLT	Southwest	(1) Liter Amber
0740	Hydrazines by 8315	ICE/H2SO4	5050703	Weck	(2) 250mL Amber
0741	Bromacil by 8321B	ICE	N/A	"	(1) 40mL vial

200-HWTL-18 TRIP BLNKS from Nonaqueous (NBLOG 637)

Sample #	Analysis	Pres	LOT #	LAB	CONT
160526 0700	VOC by 8260C	ICE & HCl	5317002	ALS	(3) 40mL vial

200-HWTC-18 0'-0.5' (PID Headspace = 0.4 ppm)

Sample #	Analysis	Pres	LOT #	LAB	Cont
160526 0815	VOC by 8260C	DI WTR/Methanol	6-027-001	ALS	(3) 40mL vial
0816	SVOC by 8270D Perchlorate by 6850	ICE	02156-1BNW	"	(1) 8oz jar
0817	TOTAL metals	"	022216-1BNS	"	(1) 4oz jar
0818	Dioxins/Furans by 8290A	"	"	"	"
0819	Cyanide/NO2/NO3, Hexchrome, chloride ph	"	02156-1BNW	"	(1) 8oz jar
0820	TCLP metals	"	022216-1BNS	"	(1) 4oz jar
0821	NDMA by 607	"	02156-1BNW	Southwest	(1) 8oz jar
0822	Hydrazine by 8315	"	N/A	Weck	(1) 4oz jar
0823	Bromacil by 8321B	"	"	"	"

Continued on Page 20

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200-HWTL-18 1-2' (PID Headspace = 1.1 ppm)

mple #	Analysis	Prep	LOT #	LAB	CONT
160526 0830	VOC by 8260C	DI WTR/ Methanol	6-027-001	ALS	(3) 40mL Vial
0831	SVOC by 8270D Perchlorate by 8350	ICE	022156-1BNA	"	(1) 8oz Jar
0832	TOTAL metals	"	022216-1BNS	"	(1) 4 oz Jar
0833	DIOXINS/Furans	"	"	"	"
0834	Cyanide/Nitrite/ Hexchrome/ Chloride/Ph	"	022156-1BNA	"	(1) 8oz Jar
0835	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
0836	%D DNA by 6PT	"	022156-1BNA	Sonoma	(1) 8oz Jar
0837	Hydrazine by 8315	"	N/A	Weck	(1) 4oz Jar
0838	Biomelli by 8321B	"	"	"	

2 HWTL-4 0-0.5' 200-HWTL-4, 4.1, 4.2 Resamples VOC by 8260C

mple #	Analysis	Prep	LOT #	LAB	CONT
160526 0940	VOC by 8260C	DI WTR/ Methanol	6-027-001	ALS	(3) 40mL Vial

200-HWTL-4 1-2'

mple #	Analysis	Prep	LOT #	LAB
160526 0941	VOC by 8260C	DI WTR/ Methanol	6-027-001	A

200-HWTL-4.1

Sample #	Analysis	Prep	LOT #	L
160526 0945	VOC by 8260C	DI WTR/ Methanol	6-027-001	A

200-HWTL-4.1

There are re-samples for ALS because Test Amer. had too much soil. 5.31.16

Sample #	Analysis	Prep	LOT #	LAB	CONT
160526 0946	VOC by 8260C	DI WTR/ Methanol	6-027-001	ALS	(3) 40mL Vial

200-HWTL-4.2 0-0.5'

Sample #	Analysis	Prep	LOT #	LAB	CONT
160526 0950	VOC by 8260C	DI WTR/ Methanol	6-027-001	ALS	(3) 40mL Vial

200-HWTL-4.2 1-2'

Sample #	Analysis	Prep	LOT #	LAB	CONT
160526 0951	VOC by 8260C	DI WTR/ Methanol	6-027-001	ALS	(3) 40mL Vial

Continued on Page

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Rinsates

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-26-16 Page 1 of 1

Sample Location: **HWTL** 2000-18

Pertinent Notes (if any)
Aqueous Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
160526 0730	3	A	X							16EEHWTL
— 0731	2	|		X						16EEHWTL
— 0732	1	|			X					16EEHWTL
— 0733	1	|				X				16EEHWTL
— 0734	1	|					X			16EEHWTL
— 0735	1	|						X		16EEHWTL
— 0736	1	|							X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
160526 0737	1	A	X							16EEHWTL
— 0738	1	|		X						16EEHWTL
— 0739	1	|			X					16EEHWTL
— 0740	2	|				X				16EEHWTL
— 0741	1	|					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-26-16 (0745)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

TRIP BLNKS

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-26-16 Page 1 of 1

Sample Location: **HWTL 200-18**

Pertinent Notes (if any)
~~Soil Samples~~
Aqueous samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (353.2), Hex Cr (7199), Chloride (300.0), pH	TCLP Metals	Charge Number
160526 0700	3	A	X						16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	NDMA	Hydrazine	Bromacil				Charge Number
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-26-16 (1030)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

0-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: Page _____ of _____

Sample Location: **HWTL 2000-18**

Pertinent Notes (if any) Soil Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160526 0815	3	S	X						16EEHWTL
—— 0816	1	|		X					16EEHWTL
—— 0817	1	|			X				16EEHWTL
—— 0818	1	|				X			16EEHWTL
—— 0819	1	|					X		16EEHWTL
—— 0820	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315)	Bromacil (8321)					Charge Number
160526 0821	1	S	X							16EEHWTL
—— 0822	1	|		X						16EEHWTL
—— 0823	1	|			X					16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	5-26-16 (0910)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

~~0-0.5'~~ 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-26-16 Page 1 of 1

Sample Location: **HWTL** C00-18

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160526 0830	3	S	X						16EEHWTL
— 0831	1	|		X					16EEHWTL
— 0832	1	|			X				16EEHWTL
— 0833	1	|				X			16EEHWTL
— 0834	1	|					X		16EEHWTL
— 0835	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315)	Bromacil (8321)				Charge Number
160526 0836	1	S	X						16EEHWTL
— 0837	1	|		X					16EEHWTL
— 0838	1	|			X				16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-26-16 (0910)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

Resamples VOC

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-26-16 Page 1 of 1

Sample Location: **HWTL 200-4**

Pertinent Notes (if any) Soil Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
1605260940 200-4 0-0.5'	3	S	X						16EEHWTL
1605260941 200-4 1-2'	3		X						16EEHWTL
1605260945 200-9.1, 0-0.5'	3		X						16EEHWTL
1605260946 200-4.1 1-2'	3		X						16EEHWTL
1605260950 200-4.2 0-0.5'	3		X						16EEHWTL
1605260951 200-4.2 1-2'	3		X						16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315)	Bromacil (8321)				Charge Number
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-26-16 (1050)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

F. Gallegos & T. Kondy PRESENT. WEATHER IS clear AND WARM

19

200-HWTL-RINSate CARBOY "G-5"

Sample #	Analysis	Pres	Lot #	LAB	CONT.
160531 0820	VOC by 8260C	ICE & HCl	606004	ALS	(3) 40mL Vial
0821	SVOC by 8270D	ICE	040416-1BLT	"	(2) 1 Liter Amber
0822	DIOXINS/Furans by 8290	"	"	"	(1) Liter Amber
0823	TOTAL metals	ICE/HNO3	113015-2AAN	"	(1) 500mL poly
0824	Perchlorate by 6850	ICE	040416-2AAO	"	(1) 250mL poly
0825	NO2 NO3 by 300	ICE/H2SO4	"	"	"
0826	Chloride (Anions) 9056	ICE	"	"	"
0827	TOTAL Cyanide by 9012	ICE/NaOH	"	"	"
0828	Hex Chrome by 218.6	ICE/Buffer	"	"	"
0829	NDMA by 607	ICE	040416-1BLT	South West	(1) Liter Amber
0830	Hydrazines by 8315	ICE/H2SO4	58050703	Week	(2) 250mL amber
0831	Bromacil by 8321B	ICE	N/A	"	(1) 40mL Vial

200-HWTL-19 TRIP BLANKS TAKEN FROM LAB Prep

Sample #	Analysis	Pres	Lot #	LAB	CONT.
160531 0700	VOC by 8260C	ICE & HCl	5317002	ALS	(3) 40mL Vial

200-HWTL-19 0'-0.5'

Sample #	Analysis	Pres	Lot #	LAB	CONT
160531 0900	VOC by 8260C	DI WTR Methanol	6-027-001	ALS	(3) 40mL Vial
0901	SVOC by 8270D Perchlorate by 6850	ICE	02156-1BNU	"	(1) 8oz Jar
0902	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
0903	Dioxins/Furans	"	"	"	"
0904	Cyanide/NO2/NO3/ Hexchrom, Chloride/Flr	"	02156-1BNU	"	(1) 8oz Jar
0905	TCL Metals	"	022216-1BNS	"	(1) 4oz Jar
0906	NDMA by 607	"	02156-1BNU	Southwest	(1) 8oz Jar
0907	Hydrazine by 8315	"	N/A	Week	(1) 4oz Jar
0908	Bromacil by 8321B	"	"	"	"

Continued on Page 22

Read and Understood By

Signed — Date 5-31-10

Signed — Date 5/31/16

2000

2000-HWTL-19 1'-2'

Sample #	Analysis	Preserv	LOT #	LAB	CONT
160531 0915	VOC by 8260C	DI WTR/ methanol	6-027-001	ALS	(3) 40mL vial
" 0916	SVOC by 8270D Perchlorate by 6850	ICE	02156-1BNU	"	(1) 8oz Jar
" 0917	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
" 0918	DIOXINS/Furans	"	"	"	"
" 0919	cyanide/NO2/NO3/ Hexchrome/chloride/Ph	"	02156-1BNU	"	(1) 8oz Jar
" 0920	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
" 0921	NDMA by 607	"	02156-1BNU	Southwest	(1) 8oz Jar
" 0922	Hydrazine by 8315	"	N/A	Week	(1) 4oz Jar
" 0923	Bromacil by 8321B	"	"	"	"

NOTE - LAB INDICATE HYD & BROMACIL CAN BE COLLECT IN ONE 40Z JAR (VERSUS

2000-HWTL-20 0'-0.5'

Sample #	Analysis	Preserv	LOT #	LAB	CONT
160531 1300	VOC by 8260C	DI WTR/ methanol	6-027-001	ALS	(3) 40mL vial
" 1301	SVOC by 8270D Perchlorate by 6850	ICE	02156-1BNU	"	(1) 8oz Jar
" 1307	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
" 1303	DIOXINS/Furans	"	"	"	"
" 1304	cyanide/NO2/NO3/ Hexchrome/chloride/Ph	"	02156-1BNU	"	(1) 8oz Jar
" 1305	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
" 1306	NDMA by 607	"	02156-1BNU	Southwest	(1) 8oz Jar
" 1307	Hydrazine (8315) / Bromacil (8321B)	"	N/A	Week	(1) 4oz Jar

2000-HWTL-20 0'-0.5' (MS) MATRIX SPIKE

Sample #	Analysis	Preserv	LOT #	LAB	CONT
160531 1315	VOC by 8260C	DI WTR/ methanol	6-027-001	ALS	(3) 40mL vial
" 1316	SVOC by 8270D Perchlorate by 6850	ICE	02156-1BNU	"	(1) 8oz Jar
" 1317	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
" 1318	DIOXINS/Furans	"	"	"	"
" 1319	cyanide/NO2/NO3/ Hexchrome, chloride, Ph	"	02156-1BNU	"	(1) 8oz Jar
" 1320	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
" 1321	NDMA by 607	"	02156-1BNU	Southwest	(1) 8oz Jar
" 1322	Hydrazine by 8315/ Bromacil by 8321B	"	N/A	Week	(1) 4oz Jar

Continued on Page 23

Read and Understood By

5-31-16
Signed / Date

5/31/16
Signed / Date

200-HWTL-20 (1'-2')

mple #	Analysis	Pres.	Lot #	LAB	Cont
00531325	VOC by 8260C	DI Water Blank #1 (FB)	6-027-001	ACS (3) 40mL Vial	
→ 1326	SVOC by 8270D/ Perchlorate by 6850	ICE	02156-1BN4	"	(1) 8oz Jar
→ 1327	TOTAL metals	"	02216-1BN5	"	(1) 4oz Jar
→ 1328	Dioxins/Furans cyanide/nitrate/NO3/ Hexchrome/chloride/ph	"	"	"	"
→ 1329		"	02156-1BN4	"	(1) 8oz Jar
→ 1330	TCLP metals	"	02216-1BN5	"	(1) 4oz Jar
→ 1331	NOMA by 6007	"	02156-1BN4	Southwest	(1) 8oz Jar
→ 1332	Hydrazine by 8315/ Bromacil by 8321B	"	N/A	Weck	(1) 40z Jar

Continued on Page NA

Read and Understood By

5-31-16 Signed Date

5/31/16 Signed Date

Trip Blank

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-31-16 Page 1 of 1

Sample Location: **HWTL 200-19**

Pertinent Notes (if any)
Aqueous Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC	SVOC	Dioxins/Furans	Total Metals	Perchlorate	Nitrate/Nitrite	Chloride (Anions)	Charge Number
160531 0700	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	Total Cyanide	Hex Chrom	NDMA	Hydrazine	Bromacil		TCLP Metals	Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-31-16 (0900)		P. Egan	6-1-16 / 1100

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

7000-HWTL-RINSATES

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-31-16 Page 1 of 1

Sample Location: **HWTL** 7000-19

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC	SVOC	Dioxins/Furans	Total Metals	Perchlorate	Nitrate/Nitrite	Chloride (Anions)	Charge Number
160531 0820	3	A	X							16EEHWTL
— 0821	2	|		X						16EEHWTL
— 0822	1	|			X					16EEHWTL
— 0823	1	|				X				16EEHWTL
— 0824	1	|					X			16EEHWTL
— 0825	1	|						X		16EEHWTL
— 0826	1	|							X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Cyanide	Hex Chrom	NDMA	Hydrazine	Bromacil		TCLP Metals	Charge Number
160531 0827	1	A	X							16EEHWTL
— 0828	1	|		X						16EEHWTL
— 0829	1	|			X					16EEHWTL
— 0830	2	|				X				16EEHWTL
— 0831	1	|					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-31-16 (0900)		[signature]	6·1·16 /1100

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-19 0-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-31-16 Page 1 of 1

Sample Location: **HWTL** 200-19 0005

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160531 0900	3	S	X						16EEHWTL
—— 0901	1	|		X					16EEHWTL
—— 0902	1	|			X				16EEHWTL
—— 0903	1	|				X			16EEHWTL
—— 0904	1	|					X		16EEHWTL
—— 0905	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315)	Bromacil (8321)				Charge Number
160531 0906	1	S	X						16EEHWTL
—— 0907	1	|		X					16EEHWTL
—— 0908	1	|			X				16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-31-16 (1000)		[signature]	6-1-16 / 1100

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

2000-HWTL-19 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-31-16 Page 1 of 1

Sample Location: **HWTL 2000-19 1-2'**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Chloride Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160531 0915	3	S	X						16EEHWTL
" 0916	1	"		X					16EEHWTL
" 0917	1	"			X				16EEHWTL
" 0918	1	"				X			16EEHWTL
" 0919	1	"					X		16EEHWTL
" 0920	1	"						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315)	Bromacil (8321)					Charge Number
160531 0920	1	S	X							16EEHWTL
" 0922	1	"		X						16EEHWTL
" 0923	1	"			X					16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-31-16 (1000)		P. Egan	6-1-16 / 1100

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-20 0-0.5

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-31-16 Page 1 of 1

Sample Location: **HWTL 200-20**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160531 1300	3	S	X						16EEHWTL
— 1301	1			X					16EEHWTL
— 1302	1				X				16EEHWTL
— 1303	1					X			16EEHWTL
— 1304	1						X		16EEHWTL
— 1305	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (821)	Bromacil (8321)				Charge Number
160531 1306	1	S	X						16EEHWTL
— 1307	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-31-16 (1420)		P. Egan	6.1.16 / 1100

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-20 0-0.5 (MS)

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-31-16 Page 1 of 1

Sample Location: **HWTL 200-20**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160531 1315	3	3	X						16EEHWTL
— 1316	1	|		X					16EEHWTL
— 1317	1	|			X				16EEHWTL
— 1318	1	|				X			16EEHWTL
— 1319	1	|					X		16EEHWTL
— 1320	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)					Charge Number
160531 1321	1	S	X							16EEHWTL
— 1322	1	W		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-31-16 (1420)		P. Egan	6-1-16 / 1100

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-20 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 5-31-16 Page 1 of 1

Sample Location: **HWTL 200-20**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160531 1325	3	S	X						16EEHWTL
— 1326	1			X					16EEHWTL
— 1327	1				X				16EEHWTL
— 1328	1					X			16EEHWTL
— 1329	1						X		16EEHWTL
— 1330	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)					Charge Number
160531 1331	1	S	X							16EEHWTL
— 1332	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	5-31-16 1420		F. Egan	6.1.16 / 1100

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

F. Gallegos E.T. Handy PRESENT. WEATHER IS Cloudy AND Cool.

2000-HWTL-21 Rinsate CARBOY G-5'

Sample #	Analysis	Pres	LOT #	LAB	CONT
1606020740	VOC by 8260C	ICE/HCl	606004	ALS	(3) 40mL vial
0741	SVOC by 8270D	ICE	040416-1BLT	"	(2) 1 Liter Amber
0742	Dioxins/Furans by 8290	"	"	"	(1) 1 Liter Amber
0743	TOTAL metals 6010C/7470A	ICE/HNO3	113015.2AAW	"	(1) 500mL poly
0744	Perchlorate by 6850	ICE	041116-2AAO	"	(1) 250mL poly
0745	NO2/NO3 by 353.2	ICE/H2SO4	"	"	"
0746	Chloride by 300.0	ICE	"	"	"
0747	TOTAL cyanide by 9012	ICE/NaOH	"	"	"
0748	Hexchrome by 7199	ICE/Buffer	"	"	"
0749	NDMA by 607	ICE	040416-1BLT	Southwest	(1) Liter Amber
0750	Hydrazines by 8315	ICE/H2SO4	5050703	week	(2) 250mL amber
0751	Bromacil by 8321B	ICE	N/A	week	(1) 40mL vial

2000-HWTL-21 TRIP BLANKS From NDMA Pair in Bldg 637

Sample #	Analysis	Pres	LOT #	LAB	CONT
1606020700	Voc by 8260C	ICE/HCl	5317007	ALS	(3) 40mL vial

2000-HWTL-21 0'-0.5'

Sample #	Analysis	Pres	LOT #	LAB	CONT
1606020830	VOC by 8260C	DI w/ MeOH	4-027-001	ALS	(3) 40mL vial
0831	SVOC by 8270D Perchlorate by 6850	ICE	021516-1BWW	"	(1) 8oz Jar
0832	TOTAL metals	"	022116-1BWS	"	(1) 4oz Jar
0833	Dioxins/Furans	"	"	"	"
0834	Cyanide/NO2/NO3/ Hexchrome, Chloride/Pe	"	021516-1BWW	"	(1) 8oz Jar
0835	TCLP metals	"	022116-1BWS	"	(1) 4oz Jar
0836	NDMA by 607	"	021516-1BWW	South west	(1) 8oz Jar
0837	Bromacil by 8321B Hydrazine by 8315	"	N/A	week	(1) 4oz Jar
	~~Bromacil by 8321B~~	"			

Continued on Page 25

Read and Understood By

Signed — Date 6-2-16

Signed — Date 6/2/16

2000-HWTC-21 0-0.5' (Dup)

Sample #	Analysis	Preservation	LOT #	LAB	CONT
6060720840	VOC by 8260C	DI WTR Methanol	6-027-001	ALS	(3) 40ml vial
0841	SVOC by 8270D Perchlorate by 6850	ICE	02156-1BNW	"	(1) 8oz Jar
0842	TOTAL metals	"	02216-1BNS	"	(1) 4oz Jar
0843	Dioxins/Furans	"	"	"	"
0844	Cyanide/NO2/NO3 Hexchrome/chloride/ph	"	02156-1BNW	"	(1) 8oz Jar
0845	TCLP metals	"	02216-1BNS	"	(1) 4oz Jar
0846	NDMA by 607	"	02156-1BNW	Sunset West	(1) 8oz Jar
0847 (6)	Bromide by 9211B Hydrazine by 8315	"	N/A	WETCK	(1) 4oz Jar

2000-HWTC-21 1-2'

Sample #	Analysis	Preservation	LOT #	LAB	CONT
6060720850	VOC by 8260C	DI WTR Methanol	6-027-001	ALS	(3) 40ml vial
0851	SVOC by 8270D Perchlorate by 6850	ICE	02156-1BNW	"	(1) 8oz Jar
0852	TOTAL metals	"	02216-1BNS	"	(1) 4oz Jar
0853	Dioxins/Furans	"	"	"	"
0854	Cyanide/NO2/NO3 Hexchrome/chloride/ph	"	02156-1BNW	"	(1) 8oz Jar
0855	TCLP metals	"	02216-1BNS	"	(1) 4oz Jar
0856	NDMA by 607	"	02156-1BNW	Sunset West	(1) 8oz Jar
0857	Bromide by 9211B Hydrazine by 8315	"	N/A	WETCK	(1) 4oz Jar

2000-HWTC-22 0-0.5'

Sample #	Analysis	Preservation	LOT #	LAB	CONT
6060720915	VOC by 8260C	DI WTR Methanol	6-027-001	ALS	(3) 40ml vial
0916	SVOC by 8270D Perchlorate by 6850	ICE	02156-1BNW	"	(1) 8oz Jar
0917	TOTAL metals	"	02216-1BNS	"	(1) 4oz Jar
0918	Dioxins/Furans	"	"	"	"
0919	Cyanide/NO2/NO3 Hexchrome/chloride/ph	"	02156-1BNW	"	(1) 8oz Jar
0920	TCLP metals	"	02216-1BNS	"	(1) 4oz Jar
0921	NDMA by 607	"	02156-1BNW	Sunset West	(1) 8oz Jar
0922	Bromide by 9211B Hydrazine by 8315	"	N/A	WETCK	(1) 4oz Jar

GDB

Continued on Page 26

Read and Understood By

Signed — 6-2-16 Date

Signed — 6/2/16 Date

PROJECT HWTL Soil & Rinsate Samples

Notebook No. HWTL-2

Continued from Page ~~N/A~~ 25

2000-HWTL-22 1-2'

Sample #	Analysis	Prep	LOT #	LAB	Cont
1606020930	VOC by 8260C	SW846 Method	6-027-001	ALS	(3) 40ml Vial
0931	SVOC by 8270D Perchlorate by 6850	ICE	02156-1BNN	"	(1) 8oz Jar
0932	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
0933	DIOXINS/Furans	"	"	"	"
0934	cyanide/ Napthol/ Hexachloroethane/Hg	"	02156-1BNN	"	(1) 8oz Jar
0935	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
0936	NDMA by 607	"	02156-1BNN	Southwest	(1) 8oz Jar
0937	Hydrazine by 8315 Bromide by 9211B	"	N/A	Rock	(1) 4oz Jar

GB

Continued on Page N/A

Read and Understood By

Signed — Date 6-2-16

Signed — Date 6/2/16

2000-HWTL-21
0-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-2-16 Page 1 of 1

Sample Location: **HWTL 2000-21**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160602 0830	3	S	X						16EEHWTL
— 0831	1			X					16EEHWTL
— 0832	1				X				16EEHWTL
— 0833	1					X			16EEHWTL
— 0834	1						X		16EEHWTL
— 0835	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8021)	~~Bromacil (8321)~~					Charge Number
160602 0836	1	S	X							16EEHWTL
— 0837	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-2-16 (1010)		Pamela Egan	6-2-16 / 1030

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

2000-HWTL-21 0-0.5' (DUP)

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-2-16 Page 1 of 1

Sample Location: **HWTL 2000-2**

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160602 0840	3	S	X						16EEHWTL
— 0841	1	|		X					16EEHWTL
— 0842	1	|			X				16EEHWTL
— 0843	1	|				X			16EEHWTL
— 0844	1	|					X		16EEHWTL
— 0845	1	|						X	16EEHWTL
									16EEHWTL

Pertinent Notes (if any)
Soil Samples

Sample Location: **HWTL**

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321) ~~Bromacil (8321)~~					Charge Number
160602 0846	1	S	X						16EEHWTL
— 0847	1	|		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-2-16 (1010)		Pamela Egan	6.2.16 / 1030

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-21 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-2-16 Page 1 of 1

Sample Location: **HWTL 200-21**

Pertinent Notes (if any) Soil Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
1600602 0850	3	S	X						16EEHWTL
— 0851	1			X					16EEHWTL
— 0852	1				X				16EEHWTL
— 0853	1					X			16EEHWTL
— 0854	1						X		16EEHWTL
— 0855	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)				Charge Number
1600602 0856	1	S	X						16EEHWTL
— 0857	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	6-2-16 (1010)	Pamela Egan	6.2.16 / 1030

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-22 0-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-2-16 Page 1 of 1

Sample Location: **HWTL 200-22**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160602 0915	3	S	X						16EEHWTL
— 0916	1	|		X					16EEHWTL
— 0917	1	|			X				16EEHWTL
— 0918	1	|				X			16EEHWTL
— 0919	1	|					X		16EEHWTL
— 0920	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Diuron (8321)	Bromacil (8321)				Charge Number
160602 0921	1	S	X						16EEHWTL
— 0922	1	|		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	6-2-16 (1010)	Pamela Egan	6.2.16 / 1030

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

2000-HWTL-22 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-2-16 Page 1 of 1

Sample Location: **HWTL 2000-22**

Sample Number	Pertinent Notes (if any) Soil Samples	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160602 0930		3	S	X						16EEHWTL
— 0931		1			X					16EEHWTL
— 0932		1				X				16EEHWTL
— 0933		1					X			16EEHWTL
— 0934		1						X		16EEHWTL
— 0935		1							X	16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Sample Number	Pertinent Notes (if any)	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)					Charge Number
160602 0936		1	S	X							16EEHWTL
— 0937		1	1		X						16EEHWTL
											16EEHWTL
											16EEHWTL
											16EEHWTL
											16EEHWTL
											16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	6-2-16(1010)	Pamela Egan	6.2.16 /1030

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

TRIP BLNKS

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-2-16 Page 1 of 1

Sample Location: **HWTL 200-21**

Pertinent Notes (if any)
Aqueous Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
1606072000	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-2-16 1010		Pamela Egan	6.2.16/1030

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-21 dinsdale

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-2-16 Page 1 of 1

Sample Location: **HWTL 200-21**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
1606020740	3	A	X							16EEHWTL
—— 0741	2	|		X						16EEHWTL
—— 0742	1	|			X					16EEHWTL
—— 0743	1	|				X				16EEHWTL
—— 0744	1	|					X			16EEHWTL
—— 0745	1	|						X		16EEHWTL
—— 0746	1	|							X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
1606020747	1	A	X							16EEHWTL
—— 0748	1	|		X						16EEHWTL
—— 0749	1	|			X					16EEHWTL
—— 0750	2	|				X				16EEHWTL
—— 0751	1	|					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-2-16 (0800)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

F. Collegos & T. Kondy present. WEATHER IS CLEAR AND HOT.

2000-HWTL-24 RINSATE carboy "G-4"

Sample #	Analysis	Pres	LOT #	LAB	CONT
0606080800	VOC by 8260C	ICE & HCl	606004	ALS	(3) 40mL Vial
0801	SVOC by 8270D	ICE	040416-1BLK	"	(2) 1 L Liter Amber
0802	DIOXINS/Furans by 8290	"	"	"	(1) Liter Amber
0803	TOTAL Metals	ICE/HNO3	0413015-2AAW	"	(1) 500mL poly
0804	Perchlorate by 6850	ICE	041116-2AA0	"	(1) 250mL poly
0805	NO2/NO3 by 300	ICE/H2SO4	"	"	"
0806	Chloride (Anions) 9056	ICE	"	"	"
0807	TOTAL Cyanide by 9012	ICE/NaOH	"	"	"
0808	Hexchrome by 218.6	ICE/Buffer	"	"	"
0809	NDMA by 607	ICE	040416-1BLK	Southwest	(1) Liter Amber
0810	Hydrazines by 8315	ICE/H2SO4	505070-3	week	(2) 250mL amber
0811	Bromacil by 8321B	ICE	N/A	"	(1) 40mL Vial

2000-HWTL-24 TRIP BLNK from BLDG 637 NANAlure

Sample #	Analysis	Pres	LOT #	LAB	CONT
0606080700	VOC by 8260C	ICE & HCl	5317002	ALS	(3) 40mL Vial

2000-HWTL-24 0-0.5'

Sample #	Analysis	Pres	LOT #	LAB	CONT
0606080840	VOC by 8260C	DI WATER Methanol	6-027-001	ALS	(3) 40mL Vial
0841	SVOC by 8270D Perchlorate by 6850	ICE	02156-1BNK	"	(1) 80z Jar
0842	TOTAL metals	"	022216-1BNK	"	(1) 40z Jar
0843	DIOXINS/Furans	"	"	"	(1) 40z Jar
0844	Cyanide/NO2/NO3/ Hexchrome/Chloride/Ph	"	02156-1BNK	"	(1) 80z Jar
0845	TCL Metals	"	022216-1BNK	"	(1) 40z Jar
0846	~~Hydrazine by 8315~~ Bromacil by 8321B NDMA by 607	"	02156-1BNK	Southwest	(1) 80z Jar
0847	Hydrazine by 8315 Bromacil by 8321B		N/A	week	(1) 40z Jar

Continued on Page 28

Read and Understood By

[illegible] 6-6-16 Thomas A McCoy 6/8/16

Signed Date Signed Date

PROJECT HWTL SOIL & RINSATE SAMPLES

Notebook No. HWTL-2

Continued from Page 27

2000-HWTL-24 1-2'

Sample #	Analysis	Req	COC #	LAB	Cont
1606060200	VOC by 8260C	DI WTR/ methanol	6-027-001	ALS	(3) 40mL vial
0901	SVOC by 8270D perchlorate by 6850	ICE	02156-1BNA	"	(1) 8oz Jar
0902	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
0903	DIOXINS/Furans	"	"	"	(1) 4oz Jar
0904	cyanide/NO2/NO3/ hexachrome/chloride/alk	"	02156-1BNA	"	(1) 8oz Jar
0905	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
0906	NDMA by 607	"	02156-1BNA	southwest	(1) 8oz Jar
0907	Hydrazine by 535 Bromacil by 8321B	"	N/A	weck	(1) 4oz Jar

2000

Continued on Page

Read and Understood By

Signed

6-6-16
Date

Thomas A McCrory
Signed

6/8/16
Date

2000-HWTL-24 TRIP BLNKS

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: Page 1 of 1

Sample Location: **HWTL 2000-24**

Pertinent Notes (if any)
Aqueous Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
1606060700	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-6-16 0935		[signature]	6/7/16 1000

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-24 Rinsates

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-6-16 Page 1 of 1

Sample Location: **HWTL 200-24**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
160606 0800	3	A	X							16EEHWTL
—— 0801	2	A		X						16EEHWTL
—— 0802	1	A			X					16EEHWTL
—— 0803	1	A				X				16EEHWTL
—— 0804	1	A					X			16EEHWTL
—— 0805	1	A						X		16EEHWTL
—— 0806	1	A							X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
160606 0807	1	A	X							16EEHWTL
—— 0808	1	|		X						16EEHWTL
—— 0809	1	|			X					16EEHWTL
—— 0810	2	|				X				16EEHWTL
—— 0811	1	|					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-6-16 (0830)		[signature]	6/7/16 1000

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-24 0'-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-6-16 Page 1 of 1

Sample Location: **HWTL 200-24**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160606 0840	3	S	X						16EEHWTL
—— 0841	1			X					16EEHWTL
—— 0842	1				X				16EEHWTL
—— 0843	1					X			16EEHWTL
—— 0844	1						X		16EEHWTL
—— 0845	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)					Charge Number
160606 0846	1	S	X							16EEHWTL
—— 0847	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-6-16 (0935)		[signature]	6/7/16 10:00

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-24 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-6-16 Page 1 of 6

Sample Location: **HWTL 200-24**

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160606 0900	3	S	X						16EEHWTL
—— 0901	1			X					16EEHWTL
—— 0902	1				X				16EEHWTL
—— 0903	1					X			16EEHWTL
—— 0904	1						X		16EEHWTL
—— 0905	1							X	16EEHWTL
									16EEHWTL

Pertinent Notes (if any): Soil Samples

Sample Location: **HWTL**

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	~~Bromacil (8321)~~					Charge Number
160606 0906	1	S	X							16EEHWTL
—— 0907	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Pertinent Notes (if any):

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-6-16 (0935)		[signature]	6/7/16/ 1000

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF 381C (05/2016)

PROJECT HWTL SOIL & RINSATE Samples

Notebook No. HWTL-2

Continued from Page ~~28~~ N/A

F. Gallegos & T. Kordy present. Weather is cloudy & HOT.

2000-HWTL-25 RINSATE CARBOY "0-5"

Sample #	Analysis	Pres	LOT #	LAB	CONT
1606070800	VOC by 8260C	ICE/HCl	606004	ALS	(3) 40mL vial
——— 0801	SVOC by 8270D	ICE	640416-1BCT	"	(2) 1 Liter Amber
——— 0802	Dioxins/Furans by 8290	"	"	"	(1) Liter Amber
——— 0803	TOTAL metals	ICE/HNO3	1130152AA1	"	(1) 500mL poly
——— 0804	Perchlorate by 6850	ICE	641116-2A40	"	(1) 250mL poly
——— 0805	NO2/NO3 by 300	ICE/H2SO4	"	"	"
——— 0806	Chloride/Anions 9056	ICE	"	"	"
——— 0807	TOTAL Cyanide by 9012	ICE/NaOH	"	"	"
——— 0808	Hexchrome by 218.6	ICE/Buffer	"	"	"
——— 0809	NOMA by 607	ICE	640416-1BCT Southwest		(1) Liter Amber
——— 0810	Hydrazines by 8315	ICE/H2SO4	505@703	Weck	(2) 250mL amber
——— 0811	bromacil by 8321B	ICE	N/A	"	(1) 40mL vial

TRIP BLNKS 2000-HWTL-25 BCD6-637 NANAKuna

Sample #	Analysis	Pres	LOT #	LAB	CONT
1606070700	VOC by 8260C	ICE/HCl	5317002	ALS	(2) 40mL vial

2000-HWTL-25 0-0.5'

Sample #	Analysis	Pres	LOT #	LAB	CONT
1606070900	VOC by 8260C	DF with Methanol	6-027-001	ALS	(3) 40mL vial
——— 0901	SVOC by 8270D Perchlorate by 6850	ICE	02156-1BNW	"	(1) 8oz Jar
——— 0902	TOTAL Metals	"	022216-1BNS	"	(1) 4oz Jar
——— 0903	Dioxins/Furans	"	"	"	"
——— 0904	Cyanide/NO2/NO3/ Hexchrome/Chloride/pH	"	02156-1BNW	"	(1) 8oz Jar
——— 0905	TCL Metals	"	022216-1BNS	"	(1) 4oz Jar
——— 0906	NOMA by 607	"	02156-1BNW	Southwest	(1) 8oz Jar
——— 0907	Hydrazine by 8315 Bromacil by 8321B	"	N/A	Weck	(1) 4oz Jar

Continued on Page 30

Read and Understood By

Signed 6-7-16 Date

Thomas A McCrory 6/8/16

~~Sheet~~

200-HWTL-25 1-2'

Sample #	Analysis	Preservative	LOT #	LAB	CONT
1606070930	VOC by 8260C	DI WTR/ methanol	G-027-001	ALS	(3) 40mL vial
—— 0931	SVOC by 8270D Perchlorate by 6850	ICE	02156-1BNU	"	(1) 8oz Jar
—— 0932	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
—— 0933	DIOXINS/Furans	"	"	"	"
—— 0934	Cyanide, Nitrate/Nitrite, Hexchrome, Chloride, ph	"	02156-1BNU	"	(1) 8oz Jar
—— 0935	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
—— 0936	NDMA by 607	"	02156-1BNU	Southwest	(1) 8oz Jar
—— 0937	Hydrazine by 8315 Bromacil by 8321B	"	N/A	WECK	(1) 4oz Jar

200-HWTL-23 0-0.5'

Sample #	Analysis	Preservative	LOT #	LAB	CONT
1606071300	VOC by 8260C	DI WTR methanol	G-027-001	ALS	(3) 40mL vial
—— 1301	SVOC by 8270D Perchlorate by 6850	ICE	02156-1BNU	"	(1) 8oz Jar
—— 1302	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
—— 1303	DIOXINS/Furans	"	"	"	"
—— 1304	Cyanide, Nitrate/Nitrite, Hexchrome, Chloride, ph	"	02156-1BNU	"	(1) 8oz Jar
—— 1305	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
—— 1306	NDMA by 607	"	02156-1BNU	Southwest	(1) 8oz Jar
—— 1307	Hydrazine by 8315 Bromacil by 8321B	"	N/A	WECK	(1) 4oz Jar

200-HWTL-23 1-2'

Sample #	Analysis	Preservative	LOT #	LAB	CONT
1606071315	VOC by 8260C	DI WTR methanol	G-027-001	ALS	(3) 40mL vial
—— 1316	SVOC by 8270D Perchlorate by 6850	ICE	02156-1BNU	"	(1) 8oz Jar
—— 1317	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
—— 1318	DIOXINS/Furans NDMA by 607	"	"	"	"
—— 1319	Cyanide, Nitrate/Nitrite, Hexchrome, Chloride, ph	"	02156-1BNU	"	(1) 8oz Jar
—— 1320	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
—— 1321	NDMA by 607	"	02156-1BNU	Southwest	(1) 8oz Jar
—— 1322	Hydrazine by 8315 Bromacil by 8321B	"	N/A	WECK	(1) 4oz Jar

Continued on Page 31A

Read and Understood By

6-7-16 Thomas A McGraw 6/8/16

200-HWTL-25 TRIP BLNKS

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-7-16 Page 1 of 1

Sample Location: **HWTL 200-25**

Analytical Requirement

Pertinent Notes (if any) Aqueous Samples — Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
1606070700	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Analytical Requirement

Pertinent Notes (if any) — Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-7-16 (0945)		[signature]	6/7/16 1000

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

2000-HWTL-25 Rinsate

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-7-16 Page 1 of 1

Sample Location: **HWTL 2000-25**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
160607 0800	3	A	X							16EEHWTL
—— 0801	2	|		X						16EEHWTL
—— 0802	1	|			X					16EEHWTL
—— 0803	1	|				X				16EEHWTL
—— 0804	1	|					X			16EEHWTL
—— 0805	1	|						X		16EEHWTL
—— 0806	1	|							X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
160607 0807	1	A	X							16EEHWTL
—— 0808	1	|		X						16EEHWTL
—— 0809	1	|			X					16EEHWTL
—— 0810	2	|				X				16EEHWTL
—— 0811	1	|					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-7-16(0845)		[signature]	6/7/16 1600

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

2000-14WTL-25 0'-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-7-16 Page 1 of 1

Sample Location: **HWTL 200-25**

Analytical Requirement

Pertinent Notes (if any) Soil Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160607 0900	3	S	X						16EEHWTL
— 0901	1			X					16EEHWTL
— 0902	1				X				16EEHWTL
— 0903	1					X			16EEHWTL
— 0904	1						X		16EEHWTL
— 0905	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Analytical Requirement

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321) ~~Bromacil (8321)~~					Charge Number
160607 0906	1	S	X						16EEHWTL
— 0907	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-7-16 (0945)		[signature]	6/7/16 1000

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-25 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-7-16 Page 1 of 1

Sample Location: **HWTL 200-25**

Analytical Requirement

Pertinent Notes (if any) Soil Samples — Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160607 0930	3	S	X						16EEHWTL
— 0931	1	|		X					16EEHWTL
— 0932	1	|			X				16EEHWTL
— 0933	1	|				X			16EEHWTL
— 0934	1	|					X		16EEHWTL
— 0935	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Analytical Requirement

Pertinent Notes (if any) — Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321) ~~Bromacil (8321)~~					Charge Number
160607 0936	1	S	X						16EEHWTL
— 0937	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-7-16 (0945)		[signature]	6/7/16 1000

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-23 0-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-7-16 Page 1 of 1

Sample Location: **HWTL 200-23**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
1606071300	3	S	X						16EEHWTL
— 1301	1			X					16EEHWTL
— 1302	1				X				16EEHWTL
— 1303	1					X			16EEHWTL
— 1304	1						X		16EEHWTL
— 1305	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)				Charge Number
1606071306	1	S	X						16EEHWTL
— 1307	1			X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-7-16 (1400)		[signature]	6/8/16 10:00

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-23 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-7-16 Page 1 of 1

Sample Location: **HWTL 200-23**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160607 1315	3	S	X						16EEHWTL
— 1316	1	|		X					16EEHWTL
— 1317	1	|			X				16EEHWTL
— 1318	1	|				X			16EEHWTL
— 1319	1	|					X		16EEHWTL
— 1320	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)					Charge Number
160607 1321	1	S	X							16EEHWTL
— 1322	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-7-16 (1400)		[signature]	6/8/16 10:00

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

PROJECT HWTL SOIL & RINSate Samples

Notebook No. HWTL

Continued from Page N/A

F. Gallegos & T. Kondy present. WEATHER IS clear & HOT.

2000-HWTL-26 RINSates DI CARBOY G-

Sample #	Analysis	Pres	LOT #	LAB CONT
16 0608 0830	VOC by 8260C	ICE & HCl	60600041	ACS (3) 40mL vial
0831	SVOC by 8270D	ICE	0404116-1BLT	(2)(1) Liter Amber
0832	Dioxins/Furans by 8290A	"	"	(1) Liter Amber
0833	TOTAL metals	ICE/HNO3	41305-2AAW	(1) 500 mL poly
0834	Perchlorate by 6850	ICE	0411G-2AA0	(1) 250mL poly
0835	NO2/NO3 by 300.0	ICE/H2SO4	"	"
0836	Chloride/Anions by 9056	ICE	"	"
0837	TOTAL cyanide by 9012	ICE/NaOH	"	"
0838	Hexchrom by 218.6	ICE/Buffer	"	"
0839	NDMA by 607	ICE	0404116-1BLT Southwest	(1) Liter Amber
0840	Hydrazines by 8315	ICE/H2SO4	50507003 Weck	(2) 250mL amber
0841	Bromacil by 8321B	ICE	N/A	(1) 40mL vial

2000-HWTL-26 TRIP BLNKS from BLDG 637 NANA Pond

Sample #	Analysis	Pres	LOT #	LAB	CONT
16006080700	VOC by 8260C	ICE & HCl	53170002	ACS	(3) 40mL vial

2000-HWTL-26 0-0.5'

Sample #	Analysis	Pres	LOT #	LAB CONT
16006080940	DI water VOC by 8260C Methanol	DI water Methanol	6-027-001	ACS (3) 40mL vial
0941	SVOC by 8270D Perchlorate by 6850	ICE	02156-1BNW	" (1) 8oz Jar
0942	TOTAL metals	"	02216-1BNS	" (1) 4oz Jar
0943	Dioxins/Furans	"	"	"
0944	Cyanide/NO2/NO3/ Hexchrom/Chloride/ph	"	02156-1BNW	(1) 8oz Jar
0945	TCL metals	"	02216-1BNS	(1) 4oz Jar
0946	NDMA by 607	"	02516-1BNW	(1) 8oz Jar
0947	Hydrazine by 8315 Bromacil by 8321B	"	N/A	(1) 4oz Jar

Continued on Page 32

Signed — 6-8-16 Date

Read and Understood By

Thomas A McCrory — Signed — 6/8/16 Date

200-HWTL-26 (0-0.5' Dup)

Sample #	Analysis	Preserve	LOT #	LAB	CONT
160606081500	VOC by 8260C	DI WTR/ Methanol	G-027-001	ALS	(3) 40mL Vial
0951	SVOC by 8270D Perchlorate by 6850	ICE	02156-1BNu	"	(1) 8oz Jar
0952	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
0953	Dioxins/Furans	"	"	"	"
0954	Cyanide/ NO2/NO3/ Hexchrome, Chloride/Ph	"	02156-1BNu	"	(1) 8oz Jar
0955	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
0956	NDMA by 607	"	02156-1BNu	"	(1) 8oz Jar
0957	Hydrazine by 8315 Bromacil by 8321B	"	N/A		(1) 4oz Jar

200-HWTL-26 (1-2')

Sample #	Analysis	Preserve	LOT #	LAB	cont
160606081000	VOC by 8260C	DI WTR/ Methanol	G-027-001	ALS	(3) 40mL Vial
1001	SVOC by 8270D Perchlorate by 6850	ICE	02156-1BNu	"	(1) 8oz Jar
1002	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
1003	Dioxins/Furans	"	"	"	"
1004	Cyanide/NO2/NO3/ Hexchrome/Chloride/Ph	"	02156-1BNu	"	(1) 8oz Jar
1005	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
1006	NDMA by 607	"	02156-1BNu	Southwest	(1) 8oz Jar
1007	Hydrazine by 8315 Bromacil by 8321B	"	N/A	Week	(1) 4oz Jar

Resamples 200-HWTL-21 (0-0.5')

Sample #	Analysis	Preserve	LOT #	LAB	CONT
160606081315	NDMA by 607	ICE	02156	BNu Southwest	(1) 8oz Jar

200-HWTL-21 (0-0.5') Dup

Sample #	Analysis	Preserve	LOT #	LAB	CONT
160606081316	NDMA by 607	ICE	02156-1BNu	Southwest	(1) 8oz Jar

200-HWTL-21 (1-2')

Sample #	Analysis	Preserve	LOT #	LAB	CONT
160606081320	NDMA by 607	ICE	02156-1BNu	Southwest	(1) 8oz Jar

200-HWTL-22 (0-0.5')

Sample #	Analysis	Preserve	LOT #	LAB	CONT
160606081330	NDMA by 607	ICE	02156-1BNu	Southwest	(1) 8oz Jar

200-HWTL-22 (1-2')

Sample #	Analysis	Preserve	LOT #	LAB	CONT
160606081335	NDMA by 607	ICE	02156-1BNu	Southwest	(1) 8oz Jar

Continued on Page N/A

Read and Understood By

6-8-16

Thomas A McCrum 6/8/16

2000-HWTC-26 Rinsate

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-8-16 Page 1 of 1

Sample Location: **HWTL 200-26**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
160608 0830	3	A	X							16EEHWTL
— 0831	2			X						16EEHWTL
— 0832	1				X					16EEHWTL
— 0833	1					X				16EEHWTL
— 0834	1						X			16EEHWTL
— 0835	1							X		16EEHWTL
— 0836	1								X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
160608 0837	1	A	X							16EEHWTL
— 0838	1			X						16EEHWTL
— 0839	1				X					16EEHWTL
— 0840	2					X				16EEHWTL
— 0841	1						X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	6-8-16 (0900)	Pamela Egan	6-8-16 / 1000

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-26 TRIP BLNKS

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-8-16 Page 1 of 1

Sample Location: **HWTL 200-26**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
1606080700	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	6-8-16 (1030)	Pamela Egan	6.8.16 (10 30)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-26 0'-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-8-16 Page 1 of 1

Sample Location: **HWTL** 200-26

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
Pertinent Notes (if any) Soil Samples			Analytical Requirement						
160608 0940	3	S	X						16EEHWTL
— 0941	1	|		X					16EEHWTL
— 0942	1	|			X				16EEHWTL
— 0943	1	|				X			16EEHWTL
— 0944	1	|					X		16EEHWTL
— 0945	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	~~Bromacil (8321)~~				Charge Number
Pertinent Notes (if any)			Analytical Requirement						
160608 0946	1	S	X						16EEHWTL
— 0947	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[illegible]	6-8-16 (1030)	Pamela Egan	6.8.16 (1030)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-26 0-0.5' Dup

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-8-16 Page 1 of 1

Sample Location: **HWTL 200-26**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
1606080950	3	S	X						16EEHWTL
— 0951	1			X					16EEHWTL
— 0952	1				X				16EEHWTL
— 0953	1					X			16EEHWTL
— 0954	1						X		16EEHWTL
— 0955	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	~~Bromacil (8321)~~				Charge Number
1606080956	1	S	X						16EEHWTL
— 0957	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[illegible]	6-8-16 (1030)	Pamela Egan	6.8.16 (1030)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-26 1'-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-8-16 Page 1 of 1

Sample Location: **HWTL 200-26**

Analytical Requirement

Pertinent Notes (if any) Soil Samples — Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160608 1000	3	S	X						16EEHWTL
— 1001	1	|		X					16EEHWTL
— 1002	1	|			X				16EEHWTL
— 1003	1	|				X			16EEHWTL
— 1004	1	|					X		16EEHWTL
— 1005	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Analytical Requirement

Pertinent Notes (if any) — Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321) Bromacil (8321)					Charge Number
160608 1006	1	S	X						16EEHWTL
— 1007	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	6-8-16 (1030)	Pamela Egan	6.8.16 (1030)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

200-HWTL-21,22

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-8-2016 Page 1 of 1

Sample Location: **HWTL 200-21,22**

Pertinent Notes (if any)
Soil Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315)	Bromacil (8321)					Charge Number
200-HWTL-21 (0-0.5) 1606081315	1	S	X							16EEHWTL
200-HWTL-21 (0-0.5) DUP 1606081316	1	|	X							16EEHWTL
200-HWTL-21 (1-2) 1606081320	1	|	X							16EEHWTL
200-HWTL-22 (0.0.5) 1606081330	1	|	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	6-8-16 (1420)	Pamela Egan	6.9.16 (0900)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

F. Gallegos & T. Kondy present. WEATHER IS clear & HOT.

600-HWTL-01 RINSATE CARBOY "G-H"

Sample #	Analysis	Prep	LOT #	LAB	CONT
1606079 0815	VOC by 8260C	ICE & HCl	606004	ALS	(3) 40mL Vial
0816	SVOC by 8270D	ICE	042516-1BLT	"	(2) 1 L. Liter Amber
0817	Dioxins/Furans by 8290	"	"	"	(1) L. Liter Amber
0818	TOTAL Metals	ICE/HNO3	113015-2AAW	"	(1) 500mL Poly
0819	Perchlorate by 6850	ICE	041116-2AAO	"	(1) 250mL Poly
0820	NO2/NO3 by 300.0	ICE/H2SO4	"	"	"
0821	Chloride (Anions) 9056	ICE	"	"	"
0822	TOTAL Cyanide by 9012	ICE/NaOH	"	"	"
0823	Hex Chrome by 7196	ICE/Buffer	"	"	"
0824	NDMA by 607	ICE	042516-1BLT	"	(1) L. Liter Amber
0825	Hydrazines by 8315	ICE/H2SO4	50307 09 week	"	(2) 250mL Amber
0826	Bromacil by 8321B	ICE	N/A	"	(1) 40mL Vial

600-HWTL-01 TRIP BLNKS

Sample #	Analysis	Prep	LOT #	LAB	CONT
1606079 0700	VOC by 8260	ICE & HCl	531700Z	ALS	(3) 40mL Vial

600-HWTL-01 0'-0.5'

Sample #	Analysis	Prep	LOT #	LAB	CONT
1606079 0730	VOC by 8260C	DI WATER Method	6-027-001	ALS	(3) 40mL Vial
0931	SVOC by 8270D Perchlorate by 6850	ICE	1156-1BNU	"	(1) 8oz Jar
0932	TOTAL Metals	"	042216-1BNS	"	(1) 4oz Jar
0933	DIOXINS/Furans	"	~~1156-1BNU~~	"	"
0934	Cyanide/NO2/NO3 Hexavalent Chrome/ Chloride	"	1156-1BNW	"	(1) 8oz Jar
0935	TCL Metals	"	042216-1BNS	"	(1) 4oz Jar
0936	NDMA by 607	"	1156-1BNW SOUTH WALL	"	(1) 8oz Jar
0937	Hydrazine by 8315 Bromacil by 8321B	"	N/A	week	(1) 4oz Jar

Continued on Page 34

Read and Understood By

Signed — Date — Signed — 6/9/16

PROJECT HWTL soil & Rinsate Samples

Notebook No. HWTL-2

Continued from Page ~~N/A~~ 33 (2)

6000-HWTL-01 1-2

Sample #	Analysis	Ref	LOT #	LAB CONT
1608090940	VOC by 8260C	DTSC TRI method	6-027-001	ALS (3) 40mL Vial
0941	SVOC by 8270D PCB by 8082A	ICE	022156-1BNU	" (1) 8oz Jar
0942	TOTAL metals	"	022216-1BNS	" (1) 4oz Jar
0943	Dioxins/Furans	"	"	" "
0944	Cyanide/Nitrate/NO3/ Hexavalent chromium/Chloride/ph	"	022156-1BNU	" (1) 8oz Jar
0945	TCLP metals	"	022216-1BNS	" (1) 4oz Jar
0946	NORM by 6020	"	022156-1BNU	~~NORM~~ WEST (1) 8oz Jar
0947	Hydrazine by 8315 Phenacil by 8321B	"	N/A	WEST (1) 40z Jar

Continued on Page N/A

Read and Understood By

6-9-16 Date

6/9/16 Date

6000-HWTL-01 TRIP BLNKS

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: Page 1 of 1

Sample Location: **HWTL 6000-01**

Pertinent Notes (if any)
Aqueous Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
1606090700	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-9-16 (1020)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

6000-HWTL-01 RINSate

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-9-16 Page 1 of 1

Sample Location: **HWTL 6000-01**

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
1606090815	3	A	X							16EEHWTL
— 0816	2	|		X						16EEHWTL
— 0817	1	|			X					16EEHWTL
— 0818	1	|				X				16EEHWTL
— 0819	1	|					X			16EEHWTL
— 0820	1	|						X		16EEHWTL
— 0821	1	|							X	16EEHWTL

Pertinent Notes (if any)
Aqueous Samples

Analytical Requirement

Sample Location: **HWTL**

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
1606090822	1	A	X							16EEHWTL
— 0823	1	|		X						16EEHWTL
— 0824	1	|			X					16EEHWTL
— 0825	2	|				X				16EEHWTL
— 0826	1	|					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Pertinent Notes (if any)

Analytical Requirement

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-9-16(0900)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

600-HWTL-01 0-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-9-16 Page 1 of 1

Sample Location: **HWTL 600-01**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160609 0930	3	S	X						16EEHWTL
— 0931	1			X					16EEHWTL
— 0932	1				X				16EEHWTL
— 0933	1					X			16EEHWTL
— 0934	1						X		16EEHWTL
— 0935	1							X	16EEHWTL
									16EEHWTL

Analytical Requirement

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) ~~Bromacil (8321)~~	~~Bromacil (8321)~~					Charge Number
160609 0936	1	S	X							16EEHWTL
— 0937	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Analytical Requirement

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-9-16 (1020)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

6000-HWTL-01 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-9-16 Page 1 of 1

Sample Location: **HWTL** 6000-01

Pertinent Notes (if any)
Soil Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160609 0940	3	S	X						16EEHWTL
— 0941	1	|		X					16EEHWTL
— 0942	1	|			X				16EEHWTL
— 0943	1	|				X			16EEHWTL
— 0944	1	|					X		16EEHWTL
— 0945	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Acrolein (8316)	Bromacil (8321)				Charge Number
160909 0946	1	S	X						16EEHWTL
— 0947	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-9-16 (1020)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

PROJECT HWTL soil & Rinsate samples

Notebook No. HWTL-2

Continued from Page N/A

F. Gallegos & T. Klondy present. Weather is clear & hot.

6000-HWTL-02 Rinsates From carboy (G-5)

Sample #	Analysis	Pres	Lot #	Lab	Cont
160627 0815	Voc by 8260C	ICE & HCl	600000W	ALS	(3) 40 mL vial
— 0816	SVOC by 8270D	ICE	042516-1BLT	"	(2)(1) 1 liter Amber
— 0817	Dioxins/Furans by 8290	"	"	"	(1) 1 liter Amber
— 0818	TOTAL Metals by 6010C/7470C/ICE/HNO3	"	"	"	(1) 250 mL poly
— 0819	Perchlorate	ICE	04116-2AAO	"	"
— 0820	NO2/NO3	ICE/H2SO4	"	"	"
— 0821	Chlorides/Anions	ICE	"	"	"
— 0822	TOTAL Cyanide	ICE/NaOH	"	"	"
— 0823	Hexchrome	ICE/Buffer	"	"	"
— 0824	NDMA by 6070	ICE	042516-1BLT	Southwest	(1) 1 Liter Amber
— 0825	Hydrazines by 8315	ICE/H2SO4	5050703	Week	(2) 250 mL Amber
— 0826	Bromacil by 8321B	ICE	N/A	"	(1) 40 mL Amber vial

6000-HWTL-02 TRIP BLNKS FROM NANIPure G37.

Sample #	Analysis	Pres	Lot #	Lab	Cont
160627 0700	Voc by 8260C	ICE & HCl		ALS	(3) 40 mL vial

6000-HWTL-02 0-0.5

Sample #	Analysis	Pres	Lot #	Lab	Cont
160627 0900	Voc by 8260C	DI WTR/ Methanol	6-027-001	ALS	(3) 40 mL vial
— 0901	SVOC by 8270 Perchlorate by 6850	ICE	042516-1BNN 02136-1BNN	"	(1) 8 oz Jar
— 0902	TOTAL metals	"	022216-1BNS	"	(1) 4 oz Jar
— 0903	Dioxins/Furans	"	"	"	"
— 0904	cyanide/NO2/NO3/ Hexchrome/Chloride/ph	"	02136-1BNN	"	(1) 8 oz Jar
— 0905	TCLP metals	"	022216-1BNS	"	(1) 4 oz Jar
— 0906	NDMA by 6070	"	02136-1BNN	Southwest	(1) 8 oz Jar
— 0906	Hydrazines by 8315 Bromacil by 8321B	"	N/A	Week	(1) 4 oz Jar

*NOTE: Decon between bore holes.

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Read and Understood By

6-27-16

6/27/16

600-HWTL-02 0-0.5' Dup

Sample #	Analysis	Pres	LOT #	LAB	CONT
0627 0915	VOC by 8260C	DI WTR/ methanol	6-027-001	ALS	(2) 40ml vial
0916	SVOC by 8270 Perchlorate by 6850	ICE	02136-1BNV	..	(1) 8oz Jar
0917	TOTAL metals	..	022216-1BNS	..	(1) 4oz Jar
0918	DIOXINS/Furans	..	02136	..	..
0919	Cyanide/Nitrites/ Hexchrome/chloride/pH	..	02136-1BNV	..	(1) 8oz Jar
0920	TCLP metals	..	022216-1BNS	..	(1) 4oz Jar
0921	NDMA by 607	..	02136-1BNV southwest		(1) 8oz Jar
0922	Hydrazines by 8315 Bromacil by 8321B	..	N/A	WECK	(1) 4oz Jar

600-HWTL-02 1-2'

Sample #	Analysis	Pres	LOT #	LAB	CONT
0627 0930	VOC by 8260C	DI WTR/ methanol	6-027-001	ALS	(2) 40ml vial
0931	SVOC by 8270 Perchlorate by 6850	ICE	02136-1BNV	..	(1) 8oz Jar
0932	TOTAL metals	..	022216-1BNS	..	(1) 4oz Jar
0933	DIOXINS/Furans	..	..	..	..
0934	Cyanide/Nitrites/ Hexchrome/chloride/pH	..	02136-1BNV	..	(1) 8oz Jar
0935	TCLP metals	..	022216-1BNS	..	(1) 4oz Jar
0936	NDMA by 607	..	02136-1BNV southwest		(1) 8oz Jar
0937	Hydrazines by 8315 Bromacil by 8321B	..	N/A	WECK	(1) 4oz Jar

600-HWTL-03 0-0.5'

Sample #	Analysis	Pres	LOT #	LAB	CONT
0627 1315	VOC by 8260C	DI WTR/ methanol	6-027-001	ALS	(2) 40ml vial
1316	SVOC by 8270 Perchlorate by 6850	ICE	02136-1BNV	..	(1) 8oz Jar
1317	TOTAL metals	..	022216-1BNS	..	(1) 4oz Jar
1318	DIOXINS/Furans	..	..	..	..
1319	Cyanide/Nitrites/ Hexchrome/chloride/pH	..	02136-1BNV	..	(1) 8oz Jar
1320	TCLP metals	..	022216-1BNS	..	(1) 4oz Jar
1321	NDMA by 607	..	02136-1BNV southwest		(1) 8oz Jar
1322	Hydrazines by 8315 Bromacil by 8321B	..	N/A	WECK	(1) 4oz Jar

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PROJECT HWTL SOIL & RINSATE Samples

Notebook No. HWTL-2

Continued from Page 55

Geoco - HWTL - 03 1-2'

Sample #	Analysis	Pres	Lot #	LAB	Cont
160627/1330	VOC by 8260C	DI water Methanol	6-027-001	ALS	(3) 40mL VOA
1331	SVOC by 8270 Perchlorate by 6850	ICE	027136-1BNA	"	(1) 8oz J-1
1332	TOTAL metals	"	022216-1BNS	"	(1) 4oz J-1
1333	Dioxins/furans	"	"	"	"
1334	Cyanide/nitrate/nitrite hex chrome/chloride/ph	"	027136-1BNA	"	(1) 8oz J-1
1335	TCLP metals	"	022216-1BNS	"	(1) 4oz J-1
1336	NORM by 607 Hydrazine by 8315 Bromacil by 8321B	"	027136-1BNA	Southwest	(1) 8oz J-1
1337		"	N/A	Weck	(1) 4oz J-1

6-27-16

Continued on Page N/A

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6-27-16
Date

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6/27/16
Date

600-HWTL02 Rinsate

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-27-16

Sample Location: **HWTL 600-02**

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
160627 0815	3	A	X							16EEHWTL
— 0816	2	|		X						16EEHWTL
— 0817	1	|			X					16EEHWTL
— 0818	1	|				X				16EEHWTL
— 0819	1	|					X			16EEHWTL
— 0820	1	|						X		16EEHWTL
— 0821		|							X	16EEHWTL

Pertinent Notes (if any)
Aqueous Samples

Sample Location: **HWTL**

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
160627 0822	1	A	X							16EEHWTL
— 0823	1	|		X						16EEHWTL
— 0824	1	|			X					16EEHWTL
— 0825	2	|				X				16EEHWTL
— 0826	1	|					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-27-16 (0830)		[signature]	6/27/16 10:00

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

600-HWTL-02 TRIP BLNKS

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-27-16

Sample Location: **HWTL 600-02**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
160627 0700	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-27-16 (1015)		[signature]	6/27/16 1000

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

571-8500

6000-HWTL-02 0-0.5

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-27-16

Page _____ of _____

Sample Location: **HWTL** 6000-02

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160627 0900	3	S	X						16EEHWTL
—— 0901	1	|		X					16EEHWTL
—— 0902	1	|			X				16EEHWTL
—— 0903	1	|				X			16EEHWTL
—— 0904	1	|					X		16EEHWTL
—— 0905	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)						Charge Number
160627 0906	1	S	X							16EEHWTL
—— 0907	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	6-27-16 (1015)			6/27/16 10:06

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

600-HWTL-02 0-0.5 Dup

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-27-16

Sample Location: **HWTL 600-02**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160627 0915	3	S	X						16EEHWTL
—— 0916	1	|		X					16EEHWTL
—— 0917	1	|			X				16EEHWTL
—— 0918	1	|				X			16EEHWTL
—— 0919	1	|					X		16EEHWTL
—— 0920	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)					Charge Number
160627 0921	1	S	X							16EEHWTL
—— 0922	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-27-16 (1015)		[signature]	6/27/16 1000

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

600-HWTL-02 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-27-16

Sample Location: **HWTL 0600-02**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160627 0930	3	S	X						16EEHWTL
— 0931	1			X					16EEHWTL
— 0932	1				X				16EEHWTL
— 0933	1					X			16EEHWTL
— 0934	1						X		16EEHWTL
— 0935	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)					Charge Number
160627 0936	1	S	X							16EEHWTL
— 0937	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-27-16(1015)		[signature]	6/27/16 1600

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

600-HWTL-03 0-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-27-16

Sample Location: **HWTL 600-03**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
1600271315	3	S	X						16EEHWTL
1316	1			X					16EEHWTL
1317	1				X				16EEHWTL
1318	1					X			16EEHWTL
1319	1						X		16EEHWTL
1320	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321) 6-27-16 Bromacil (8321)					Charge Number
1600271321	1	S	X						16EEHWTL
1322	1			X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
	6-27-16 (1400)		6-28-16 / 0915

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

600-HWTL-03 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-27-16

Sample Location: **HWTL 600-03**

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
Pertinent Notes (if any) Soil Samples			Analytical Requirement						
160627 1330	3	S	X						16EEHWTL
— 1331	1	|		X					16EEHWTL
— 1332	1	|			X				16EEHWTL
— 1333	1	|				X			16EEHWTL
— 1334	1	|					X		16EEHWTL
— 1335	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321) ~~Bromacil (8321)~~ 6-27-16	~~Bromacil (8321)~~					Charge Number
Pertinent Notes (if any)			Analytical Requirement							
160627 1336	1	S	X							16EEHWTL
— 1337	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-27-16 (1400)		[signature]	6-28-16 / 0915

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

JECT HWTL SOIL & Rinsate Samples

600-HWTL-04 Rinsates from Carboy (6-5)

Sample #	Analysis	Pres	LOT #	LAB	CONT
0628 0750	VOC by 8260C	ICE/HCl	606004	ALS	(3) 40mL vial
— 0751	SVOC by 8270D	ICE	042516-1BLT	..	(2) (1) Liter Amber
— 0752	Dioxins/Furans by 8290	..	..	..	(1) Liter Amber
— 0753	TOTAL metals by 6010C/7470C	ICE/HNO3	041162AA0	..	(1) 250mL poly
— 0754	Perchlorate	ICE	041162AA0	..	..
— 0755	NO2/NO3	ICE/H2SO4	..	..	..
— 0756	Chlorides/Anions	ICE	..	..	..
— 0757	TOTAL cyanide	ICE/NaOH	..	..	..
— 0758	Hexachrome	ICE/Buffer	..	..	..
— 0759	NDMA by 6007	ICE	042516-1BLT	Southwest	(1) Lt amber
— 0800	Hydrazines by 8315	ICE/H2SO4	50507003	week	(2) 250mL Amber
— 0801	Bromacil by 8321B	ICE	N/A	..	(1) 40mL amber

~~600-HWTL-04 TRIP BLNKS from MANIpure~~ BLDG 857.

Sample #	Analysis	Pres	LOT #	LAB	CONT
0628 0700	VOC by 8260C	ICE/HCl	5317002	ALS	(3) 40mL vial

600-HWTL-04 0'-0.5'

Sample #	Analysis	Pres	LOT #	LAB	CONT
0628 0845	VOC by 8260C	DI WTR/methanol	6-027-001	ALS	(3) 40mL vial
— 0846	SVOC by 8270 Perchlorate by 6850	ICE	071136-1BNU	..	(1) 8oz Jar
— 0847	TOTAL metals	..	022216-1BNS	..	(1) 402 Jar
— 0848	Dioxins/Furans	..	..	..	..
— 0849	cyanide/NO2/NO3/ Hexachrome/chloride/pH	..	071136-1BNU	..	(1) 8oz Jar
— 0850	TCLP metals	..	022216-1BNS	..	(1) 402 Jar
— 0851	NDMA by 6007	..	071136-1BNU	Southwest	(1) 8oz Jar
— 0852	Hydrazines by 8315 Bromacil by 8321B	..	N/A	week	(1) 402 Jar

Decon Sampling Equipment in between bore holes.

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Continued on Page N/A2

Read and Understood By

6-28-16 Date

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6/28/16 Date

JECT HWTL Soil & Rinsate Samples

Notebook No. HWTL-2

Continued from Page 57

600-HWTL-04 1-2'

mple #	Analysis	Prep	LOT #	LAB	CONT
06280900	VOC by 8260C	DI WTR/ methanol	6-027-001	ALS	(3) 40mL vial
0901	SVOC by 8270 Perchlorate by 6850	ICE	02136-1BNA		(1) 8oz Jar
0902	TOTAL metals		022216-1BNS		(1) 4oz Jar
0903	DIOXINS/Furans				
0904	Cyanide/Nitrites/ Hexchrome/Chloride/Ph		02136-1BNA		(1) 8oz Jar
0905	TCLP metals		022216-1BNS		(1) 4oz Jar
0906	NDMA by 607		02136-1BNA	Southwest	(1) 8oz Jar
0907	Hydrazines by 8315 Bromacil by 8321B		N/A	week	(1) 4oz Jar

600-HWTL-05 0-0.5'

mple #	Analysis	Prep	LOT #	LAB	CONT
06280915	VOC by 8260C	DI WTR/ Methanol	6-027-001	ALS	(3) 40mL vial
0916	SVOC by 8270 Perchlorate by 6850	ICE	02136-1BNA		(1) 8oz Jar
0917	TOTAL metals		022216-1BNS		(1) 4oz Jar
0918	DIOXINS/Furans				
0919	Cyanide/Nitrites/ Hexchrome/Chloride/Ph		02136-1BNA		(1) 8oz Jar
0920	TCLP metals		022216-1BNS		(1) 4oz Jar
0921	NDMA by 607		02136-1BNA	Southwest	(1) 8oz Jar
0922	Hydrazines by 8315 Bromacil by 8321B		N/A	week	(1) 4oz Jar

600-HWTL-05 (1-2')

mple #	Analysis	Prep	LOT #	LAB	CONT
06280930	VOC by 8260C	DI WTR/ methanol	6-027-001	ALS	(3) 40mL vial
0931	SVOC by 8270 Perchlorate by 6850	ICE	02136-1BNA		(1) 8oz Jar
0932	TOTAL metals		022216-1BNS		(1) 4oz Jar
0933	DIOXINS/Furans				
0934	Cyanide/Nitrites/ Hexchrome/Chloride/Ph		02136-1BNA		(1) 8oz Jar
0935	TCLP metals		022216-1BNS		(1) 4oz Jar
0936	NDMA by 607		02136-1BNA	Southwest	(1) 8oz Jar
0937	Hydrazines by 8315 Bromacil by 8321B		N/A	week	(1) 4oz Jar

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Read and Understood By

Signed — 6-28-16 Date — Signed — 6/28/16 Date

600-HWTL-06 0-0.5

Sample #	Analysis	Prep	LOT #	LAB	CONT
606281320	VOC by 8260C	DI/WTR/Methanol	6-027-001	ALS	(3) 40mL VOA
— 1321	SVOC by 8270 Perchlorate by 6850	ICE	02136-1BNA	"	(1) 8oz Jar
— 1322	TOTAL metals	"	02216-1BNS	"	(1) 4oz Jar
— 1323	Dioxins/furans	"	"	"	"
— 1324	Cyanide/Nox/Nox/ Hexchrome/chloride/ph	"	02136-1BNA	"	(1) 8oz Jar
— 1325	TCLP metals	"	02216-1BNS	"	(1) 4oz Jar
— 1326	NDMA by 607	"	02136-1BNA	Southern	(1) 8oz Jar
— 1327	Hydrazines by 8315 Biomarkers by 8321B	"	N/A	Week	(1) 4oz Jar

600-HWTL-06 1-2'

Sample #	Analysis	Prep	LOT #	LAB	CONT
606281330	VOC by 8260C	DI/WTR/Methanol	6-027-001	ALS	(3) 40mL VOA
— 1331	SVOC by 8270 Perchlorate by 6850	ICE	02136-1BNA	"	(1) 8oz Jar
— 1332	TOTAL metals	"	02216-1BNS	"	(1) 4oz Jar
— 1333	Dioxins/furans	"	"	"	(1) 4oz Jar
— 1334	Cyanide/Nox/Nox/ Hexchrome/chloride/ph	"	02136-1BNA	"	(1) 8oz Jar
— 1335	TCLP metals	"	02216-1BNS	"	(1) 4oz Jar
— 1336	NDMA by 607	"	02136-1BNA	Southern	(1) 8oz Jar
— 1337	Hydrazines by 8315 Biomarkers by 8321B	"	N/A	Week	(1) 4oz Jar

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Continued on Page N/A

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6-28-16 — 6/28/16

6000-HWTL-04 Rinsate

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-28-16 Page 1 of 1

Sample Location: **HWTL 600-04**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
160628 0750	3	A	X							16EEHWTL
— 0751	2	|		X						16EEHWTL
— 0752	1	|			X					16EEHWTL
— 0753	1	|				X				16EEHWTL
— 0754	1	|					X			16EEHWTL
— 0755	1	|						X		16EEHWTL
— 0756	1	|							X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
160628 0757	1	A	X							16EEHWTL
— 0758	1	|		X						16EEHWTL
— 0759	1	|			X					16EEHWTL
— 0800	2	|				X				16EEHWTL
— 0801	1	|					X			16EEHWTL
								X		16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
	6-28-16 (0830)		6-28-16 /0915

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

6000-HWTL-04 TRIP BLNKS

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-28-16 Page 1 of 1

Sample Location: **HWTL** 6000-04

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
1606280700	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-28-16(1030)		[signature]	6/28/16 1100

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

600-HWTL-04 0'-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-28-16 Page 1 of 1

Sample Location: **HWTL 600-04**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
1606280845	3	S	X						16EEHWTL
— 0846	1	|		X					16EEHWTL
— 0847	1	|			X				16EEHWTL
— 0848	1	|				X			16EEHWTL
— 0849	1	|					X		16EEHWTL
— 0850	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321) Tebuthiuron (8321)						Charge Number
1606780851	1	S	X							16EEHWTL
— 0852	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-28-16 (1030)		[signature]	6/28/16 1100

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

6000-HWTL-04 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-28-16 Page 1 of 1

Sample Location: **HWTL 6000-04**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160628 0900	3	S	X						16EEHWTL
— 0901	1	1		X					16EEHWTL
— 0902	1				X				16EEHWTL
— 0903	1					X			16EEHWTL
— 0904	1						X		16EEHWTL
— 0905	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321) Bromoil (8321)					Charge Number
160628 0906	1	S	X						16EEHWTL
— 0907	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-28-16 (1030)		[signature]	6/28/16 1100

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

6000-HWTL-05 0'-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-28-16 Page 1 of 1

Sample Location: **HWTL 6000-05**

Pertinent Notes (if any) Soil Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160628 0915	3	S	X						16EEHWTL
— 0916	1	|		X					16EEHWTL
— 0917	1	|			X				16EEHWTL
— 0918	1	|				X			16EEHWTL
— 0919	1	|					X		16EEHWTL
— 0920	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)				Charge Number
160628 0921	1	S	X						16EEHWTL
— 0922	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-28-16 (1030)		[signature]	6/28/16 1100

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

600-HWTL-05 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-28-16 Page 1 of 1

Sample Location: **HWTL 600-05**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
1600628 0930	3	S	X						16EEHWTL
—— 0931	1	|		X					16EEHWTL
—— 0932	1	|			X				16EEHWTL
—— 0933	1	|				X			16EEHWTL
—— 0934	1	|					X		16EEHWTL
—— 0935	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321) ~~Bromacil (8321)~~					Charge Number
1600628 0936	1	S							16EEHWTL
—— 0937	1	1							16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	6-28-16 (1030)			6/28/1100

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

6000 - HWTL-06 0-0.5

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-28-16 Page 1 of 1

Sample Location: **HWTL 6000-06**

Pertinent Notes (if any) Soil Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
1606281320	3	S	X						16EEHWTL
—— 1321	1	|		X					16EEHWTL
—— 1322	1	|			X				16EEHWTL
—— 1323	1	|				X			16EEHWTL
—— 1324	1	|					X		16EEHWTL
—— 1325	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromate (8321)					Charge Number
1606281326	1	S	X						16EEHWTL
—— 1327	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	6-28-16 (1350)			6-29-16 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

6000-HWTL-06 1-2

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-28-16 Page 1 of 1

Sample Location: **HWTL 600-06**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160628 1330	3	S	X						16EEHWTL
— 1331	1			X					16EEHWTL
— 1332	1				X				16EEHWTL
— 1333	1					X			16EEHWTL
— 1334	1						X		16EEHWTL
— 1335	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	~~Bromacil (8321)~~					Charge Number
160628 1336	1	S	X							16EEHWTL
— 1337	1			X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-28-16 (1350)		[signature]	6-29-16 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

PROJECT HWTL Soil & RINSate Samples

NOTEBOOK NO. HWTL-C

Continued from Page N/A

F. Gallegos & Tikondy present. Weather is clear & Hot

6000-HWTL-07 RINSate From cardboy G-9

Sample #	Analysis	Req	LOT #	LAB	CONT
160629 0740	VOC by 8260C	ICE & HCl	606004	ALS	(3) 40mL Vial
0741	SVOC by 8270D	ICE	04516-1BLT	"	(2)(1) Liter Amber
0742	Dioxins/furans by 8290	"	"	"	(1) Liter Amber
0743	TOTAL metals by 6010C/7470C	ICE/HNO3	04116-2AA0	"	(1) 250mL poly
0744	Perchlorate	ICE	"	"	"
0745	NO2/NO3	ICE/H2SO4	"	"	"
0746	Chloride/Anions	ICE	"	"	"
0747	TOTAL Cyanide	ICE/NaOH	"	"	"
0748	Hex Chrome	ICE/Buffer	"	"	"
0749	NDMA by 6007	ICE	04516-1BLT	Southwest	1 Liter Amber
0750	Hydrazines by 8315	ICE/H2SO4	5050703	Week	(2) 125 250mL amber
0751	Bromacil by 8321B	ICE	N/A	"	(1) 40mL Vial Amber

6000-HWTL-07 TRIP BLNKS from NANAPure BLD

Sample #	Analysis	Req	LOT #	LAB	CONT
160629 0700	VOC by 8260C	ICE & HCl		ALS	(3) 40mL Vial

6000-HWTL-07 0-0.5'

Sample #	Analysis	Req	LOT #	LAB	CONT
160629 0845	VOC by 8260C	DI WTR/Methanol	6-027-001	ALS	(3) 40mL Vial
0846	SVOC by 8270 Perchlorate by 6850	ICE	02136-1BNW	"	(1) 8oz Jar
0847	TOTAL Metals	"	02216-1BNS	"	(1) 4oz Jar
0848	Dioxins/furans	"	"	"	"
0849	Cyanide/NO2/NO3/ Hexchrome/Chloride/ph	"	02136-1BNW	"	(1) 8oz Jar
0850	TCLP metals	"	02216-1BNS	"	(1) 4oz Jar
0851	NDMA by 6007	"	02136-1BNW	Southwest	(1) 8oz Jar
0852	Hydrazines by 8315 Bromacil by 8321B	"	N/A	Week	(1) 4oz Jar

Continued on Page 61

Read and Understood By

Signed — 6-29-16 Date

Signed — 6-29-16 Date

600-HWTL-07 (0'-0.5') (Comp)

Sample #	Analysis	Pres	LOT #	LAB	CONT
1606290900	VOC by 8260C	DI WTR/ Methanol	6-027-001	ALS	(3) 40mL Vial
— 0901	SVOC by 8270 Perchlorate by 6850	ICE	02136-1BNU	"	(1) 8oz Jar
— 0902	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
— 0903	DIOXINS/Furans	"	"	"	"
— 0904	Cyanide/Nitrate/Nitrite/Hexavalent Chromium/Chloride/pH	"	02136-1BNU	"	(1) 8oz Jar
— 0905	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
— 0906	NDMA by 607	"	02136-1BNU	Southwest	(1) 8oz Jar
— 0907	Hydrazines by 8315 Bromacil by 8321B	"	N/A	Week	(1) 4oz Jar

600-HWTL-07 1'-2'

Sample #	Analysis	Pres	LOT #	LAB	CONT
1606290915	VOC by 8260C	DI WTR/ Methanol	6-027-001	ALS	(3) 40mL Vial
~~0916~~ — 0917	SVOC by 8270 Perchlorate by 6850	ICE	02136-1BNU	"	(1) 8oz Jar
~~0922~~ — 0918	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
~~0923~~ — 0919	DIOXINS/Furans	"	"	"	(1) 4oz Jar
~~0924~~ — 0920	Cyanide/Nitrate/Nitrite/Hexavalent Chromium/Chloride/pH	"	02136-1BNU	"	(1) 8oz Jar
~~0925~~ — 0921	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
~~0926~~ — 0922	NDMA by 607	"	02136-1BNU	Southwest	(1) 8oz Jar
— 0923	Hydrazines by 8315 Bromacil by 8321B	"	N/A	Week	(1) 4oz Jar

Continued on Page N/A

Signed — Date — Read and Understood By — Signed — Date

6-29-16 6 29 16

600-HWTL-07 RINSate

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-29-16 Page 1 of 1

Sample Location: **HWTL 600-07**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
160629 0740	3	A	X							16EEHWTL
— 0741	2	|		X						16EEHWTL
— 0742	1	|			X					16EEHWTL
— 0743	1	|				X				16EEHWTL
— 0744	1	|					X			16EEHWTL
— 0745	1	|						X		16EEHWTL
— 0746	1	|							X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
160629 0747	1	A	X							16EEHWTL
— 0748	1	|		X						16EEHWTL
— 0749	1	|			X					16EEHWTL
— 0750	2	|				X				16EEHWTL
— 0751	1	|					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-29-16 (0800)		[signature]	6-29-16 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

6000-HWTL-07 TRIP BLNKS

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-29-16 Page 1 of 1

Sample Location: **HWTL** 600-07

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
1600629 07000	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[illegible]	6-29-16 (1020)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

600-HWTL-07 0-0.5

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-29-16 Page 1 of 1

Sample Location: **HWTL 600-07**

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
Pertinent Notes (if any) Soil Samples									
160629 0845	3	S	X						16EEHWTL
" 0846	1	"		X					16EEHWTL
" 0847	1	"			X				16EEHWTL
" 0848	1	"				X			16EEHWTL
" 0849	1	"					X		16EEHWTL
" 0850	1	"						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	~~Bromacil (8321)~~					Charge Number
Pertinent Notes (if any)										
160629 0851	1	S	X							16EEHWTL
" 0852	1	"		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-29-16 (1020)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

6000-HWTL-07 0'-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-29-16 Page 1 of 1

Sample Location: **HWTL** 6000-07

Pertinent Notes (if any) Soil Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
1600629 0900	3	S	X						16EEHWTL
— 0901	1	|		X					16EEHWTL
— 0902	1	|			X				16EEHWTL
— 0903	1	|				X			16EEHWTL
— 0904	1	|					X		16EEHWTL
— 0905	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	~~Bromacil (8321)~~					Charge Number
1600629 0906	1	S	X							16EEHWTL
— 0907	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-29-16 (1020)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

6000-HWTL-07 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 6-29-16 Page 1 of 1

Sample Location: **HWTL 6000-07**

Analytical Requirement

Pertinent Notes (if any) Soil Samples — Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160629 0920 915	3	S	X						16EEHWTL
— 0921 916	1	|		X					16EEHWTL
— 0922 917	1	|			X				16EEHWTL
— 0918	1	|				X			16EEHWTL
— 0919	1	|					X		16EEHWTL
— 0920	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Analytical Requirement

Pertinent Notes (if any) — Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	~~Bromacil (8321)~~				Charge Number
160629 0921	1	S	X						16EEHWTL
— 0922	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	6-29-16 (1020)			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

ECT HWTL SOIL & RINSate Samples

Notebook No. HWTL-2

Continued from Page N/A

Gallegos & T. Kordy present. WEATHER is clear & HOT

6000-HWTL-08 RINSate From carboy (6-2)

Sample #	Analysis	Pres	LOT #	LAB	CONT
1607050830	VOC by 8260C	ICE/HCL	6060004	ALS	(3) 40ml Vial
0831	VOC by 8270D	ICE	04516-1BLT	"	(2)(1) L. Her Amber
0832	Diox. WS/Fur by 8290D	"	"	"	(1) L. Her Amber
0833	TOTAL metals by 6010C/7470A	ICE/HNO3	04116-2AA0	"	(1) 250mL Poly
0834	Perchlorate by 6850	ICE	"	"	"
0835	NO2/NO3 by TKN by 300	ICE/H2SO4	"	"	"
0836	Chloride/Anions by 9056	ICE	"	"	"
0837	TOTAL cyanide by 9012	ICE/NaOH	"	"	"
0838	Hex chrome by 218.6	ICE/Buffer	"	"	"
0839	NDMA by 607	ICE	04516-1BLT	Southwest	(1) L. Her Amber
0840	Hydrazines by 8315	ICE/H2SO4	5050702	Week	(2) 125mL Amber
0841	Bromacil by 8321B	ICE	N/A	"	(1) 40ml amber V.O.C.

6000-HWTL-08 TRIP BLNKS From WANI Pure BLDG 637.

Sample #	Analysis	Pres	LOT #	LAB	CONT
1607050700	VOC by 8260C	ICE/HCL	5J17007	ALS	(3) 40ml Vial

6000-HWTL-08 0'-05'

Sample #	Analysis	Pres	LOT #	LAB	CONT
0705 0915	VOC by 8260C	DI WTR/ Methanol	6027-001	ALS	(3) 40ml Vial
0916	VOC by 8270D Perchlorate by 6850	ICE	02136-1BNA	"	(1) 8oz Jar
0917	TOTAL Metals	"	02216-1BNS	"	(1) 4oz Jar
0918	Diox. WS/furans	"	"	"	"
0919	cyanide/NO2/NO3/ Hexchrome/chloride/ph	"	02136-1BNA	"	(1) 8oz Jar
0920	TCLP metals	"	02216-1BNS	"	(1) 4oz Jar
0921	NDMA by 607	"	02136-1BNA	Southwest	(1) 8oz Jar
0922	Hydrazines by 8315 Bromacil by 8321B	"	N/A	Week	(1) 4oz Jar

Continued on Page 63

Read and Understood By

Signed 7-5-2016 Date

7/5/16 Date

600-HWTL-08 0-0.5 MS

Sample #	Analysis	Prep	LOT #	LAB	Cont
160705 0930	VOC by 8260C	DI WATER Methanol	6-027-001	ALS	(3) 40mL VOA
0931	SVOC by 8270D PeroxideFree by 6850	ICE	02136-IBNW	"	(1) 8oz Jar
0932	TOTAL metals	"	022210-IBNS	"	(1) 4oz Jar
0933	DIOXINS/Furans	"	"	"	"
0934	cyanide/NO2/NO3/ Hexchrome/chloride/ph	"	02136-IBNW	"	(1) 8oz Jar
0935	TCLP metals	"	022216-IBNS	"	(1) 4oz Jar
0936	NDMA by 6007	"	02136-IBNW	Southwest	(1) 8oz Jar
0937	Hydrazines by 8315 Bromacil by 8321B	"	N/A	Week	(1) 4oz Jar

600-HWTL-08 1-2

Sample #	Analysis	Prep	LOT #	LAB	Cont
160705 0945	VOC by 8260C	DI WATER Methanol	6-027-001	ALS	(3) 40mL VOA
0946	SVOC by 8270D PeroxideFree by 6850	ICE	02136-IBNW	"	(1) 8oz Jar
0947	TOTAL metals	"	022216-IBNS	"	(1) 4oz Jar
0948	DIOXINS/Furans	"	"	"	"
0949	cyanide/NO2/NO3/ Hexchrome/chloride/ph	"	02136-IBNW	"	(1) 8oz Jar
0950	TCLP metals	"	022216-IBNS	"	(1) 4oz Jar
0951	NDMA by 6007	"	02136-IBNW	Southwest	(1) 8oz Jar
0952	Hydrazines by 8315 Bromacil by 8321B	"	N/A	Week	(1) 4oz Jar

Continued on Page N/A

Read and Understood By

Signed — Date 7-5-2016

Signed — Date 7/5/2016

6000-HWTL-08 Rinsate

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-5-2016 Page 1 of 1

Sample Location: **HWTL 600-08**

Pertinent Notes (if any) Aqueous Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
160705 0830	3	A	X							16EEHWTL
— 0831	2	|		X						16EEHWTL
— 0832	1	|			X					16EEHWTL
— 0833	1	|				X				16EEHWTL
— 0834	1	|					X			16EEHWTL
— 0835	1	|						X		16EEHWTL
— 0836	1	|							X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
160705 0837	1	A	X							16EEHWTL
— 0838	1	|		X						16EEHWTL
— 0839	1	|			X					16EEHWTL
— 0840	2	|				X				16EEHWTL
— 0841	1	|					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	7-5-16 (0900)	Pamela Egan	7.5.16 (1030)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

600-HWTL-08 TRIP BLNKS

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-5-2016 Page 1 of 1

Sample Location: **HWTL** 600-08

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
1607050700	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	7-5-2016 (1030)	Pamela Egan	7.5.16 (1030)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

600-HWTL-08 0-0.5

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-5-2016 Page 1 of 1

Sample Location: **HWTL** 600-08

Analytical Requirement

Pertinent Notes (if any) Soil Samples — Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
1600705 0915	3	S	X						16EEHWTL
— 0916	1			X					16EEHWTL
— 0917	1				X				16EEHWTL
— 0918	1					X			16EEHWTL
— 0919	1						X		16EEHWTL
— 0920	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Analytical Requirement

Pertinent Notes (if any) — Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)				Charge Number
1600705 0921	1	S	X						16EEHWTL
— 0922	1			X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	7-5-2016(1030)	Pamela Egan	7.5.16 (1030)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

6000-HWTL-08 0-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-5-2016 Page 1 of 1

Sample Location: **HWTL 6000-08**

Analytical Requirement

Pertinent Notes (if any) Soil Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
1607050930	3	S	X						16EEHWTL
—— 0931	1	|		X					16EEHWTL
—— 0932	1	|			X				16EEHWTL
—— 0933	1	|				X			16EEHWTL
—— 0934	1	|					X		16EEHWTL
—— 0935	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Analytical Requirement

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (832) ~~Bromacil (8321)~~					Charge Number
1607050936	1	S	X						16EEHWTL
—— 0937	1	1		X					16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL
									16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	7-5-2016 (1030)	Pamela Egan	7.5.16 (1030)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

600-HWTL-08 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-6-2016 Page 1 of 1

Sample Location: **HWTL** 600-08

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
1607050945	3	S	X						16EEHWTL
— 0946	1			X					16EEHWTL
— 0947	1				X				16EEHWTL
— 0948	1					X			16EEHWTL
— 0949	1						X		16EEHWTL
— 0950	1							X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)						Charge Number
1607050951	1	S	X							16EEHWTL
— 0952	1			X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	7-5-16 (1030)		Pamela Egan	7.5.16 (1030)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

ECT HWTL SOIL & RINSATE SAMPLES

Notebook No. HWTL-2

Continued from Page N/A

G-Illegos & T. Kordy present, WEATHER IS CLEAR & HOT.

6000-HWTL-09 RINSATES from Cubby "G-2"

Sample #	Analysis	Pres	LOT #	LAB	Cont
160705 0500	VOC by 8260C	ICE/HCl	606004	ALS	(3) 40ml Vial
0801	SVOC by 8270D	ICE	04516-1BLT	"	(2)(1) Lt amber
0802	Dioxins/furans by 8290	"	"	"	(1) Lt amber
0803	TOTAL metals 6010C 7470A	ICE/HNO3	04116-2AA0	"	(1) 250ml poly
0804	Perchlorate by 6850	ICE	"	"	"
0805	NO2/NO3 by TKN300	ICE/H2SO4	"	"	"
0806	Chloride (Anions) by 9056	ICE	"	"	"
0807	TOTAL cyanide by 9012	ICE/NaOH	"	"	"
0808	Hexchrome by 218.6	ICE/Buffer	"	"	"
0809	NDMA by 607	ICE	042516-1BLT	Southwest	(1) Lt amber
0810	Hydrazines by 8315	ICE/H2SO4	50507003	week	(2) 250ml amber
0811	Bromacil by 8321B	ICE	N/A	"	(1) 40ml amber

6000-HWTL-09 TRIP BLNKS From MANIPare IN BLDG 637.

Sample #	Analysis	Pres	LOT #	LAB	Cont
160706 0700	VOC by 8260C	ICE/HCl	537002	ALS	(3) 40ml Vial

6000-HWTL-09 0'-0.5'

Sample #	Analysis	Pres	LOT #	LAB	Cont
160706 0900	VOC by 8260	DI WTR/Methanol	6-027-001	ALS	(3) 40ml Vial
0901	SVOC by 8270D Perchlorate by 6850	ICE	02136-1BNA 0209001ya	"	(1) 8oz Jar
0902	TOTAL Metals	"	022216-1BNS	"	(1) 4oz Jar
0903	Dioxins/Furans Cyanide/NO2/NO3 Hexchrome/Chloride/pH	"	"	"	"
0904		"	02136-1BNA	"	(1) 8oz Jar
0905	TCLP Metals	"	022216-1BNS	"	(1) 4oz Jar
0906	NDMA by 607	"	02136-1BNA	Southwest	(1) 8oz Jar
0907	Hydrazines by 8315 Bromacil by 8321B	"	N/A	week	(1) 4oz Jar

Continued on Page 65

Read and Understood By

7-6-16

Signed

7/6/16

Date

600-HWTL-09 1-2'

Sample #	Analysis	Prep	LOT #	LAB	CONT
1607060915	VOC by 8260C	DI WTR/ Methanol	6-027-001	ALS	(3) 40ml Vial
— 0916	SVOC by 8270D Perchlorate by 6850	ICE	02136-1BNN	"	(1) 8oz Jar
— 0917	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
— 0918	Dioxins/furans	"	"	"	"
— 0919	Cyanide/Nitrite/ Hexchrome/chloride/pH	"	02136-1BNN	"	(1) 8oz Jar
— 0920	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
— 0921	NDMA by 607	"	02136-1BNN	Southwest	(2) 8oz Jar
— 0922	Hydrazines by 8315 Bromacil by 8321B	"	N/A	Week	(1) 4oz Jar

600-HWTL-10 0-0.5'

Sample #	Analysis	Prep	LOT #	LAB	CONT
1607060930	VOC by 8260C	DI WTR/ Methanol	6-027-001	ALS	(3) 40ml Vial
— 0931	SVOC by 8270D Perchlorate by 6850	ICE	02136-1BNN	"	(1) 8oz Jars
— 0932	TOTAL Metals	"	022216-1BNS	"	(1) 4oz Jars
— 0933	Dioxins/furans	"	~~02136-1BNN~~	"	"
— 0934	Cyanide/Nitrite/ Hexchrome/Chloride/ph	"	02136-1BNN	"	(1) 8oz Jar
— 0935	TC LP metals	"	022216-1BNS	"	(1) 4oz Jar
— 0936	NDMA by 607	"	02136-1BNN	Southwest	(1) 8oz Jar
— 0937	Hydrazines by 8315 Bromacil by 8321B	"	N/A	Week	(1) 4oz Jar

600-HWTL-10 1-2'

Sample #	Analysis	Prep	LOT #	LAB	CONT
1607060945	VOC by 8260C	DI WTR/ Methanol	6-027-001	ALS	(3) 40ml Vial
— 0946	SVOC by 8270D Perchlorate by 6850	ICE	02136-1BNN	"	(1) 8oz Jar
— 0947	TOTAL metals	"	022216-1BNS	"	(1) 4oz Jar
— 0948	Dioxins/furans	"	"	"	"
— 0949	Cyanide/Nitrite/ Hexchrome/chloride/ph	"	02136-1BNN	"	(1) 8oz Jar
— 0950	TCLP metals	"	022216-1BNS	"	(1) 4oz Jar
— 0951	NDMA by 607	"	02136-1BNN	Southwest	(2) 8oz Jar
— 0952	Hydrazines by 8315 Bromacil by 8321B	"	N/A	Week	(1) 4oz Jar

Continued on Page N/A

Read and Understood By

7-6-16

Signed

Date

7/6/16

600-HWTL-09 TRIP BLNKS

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-6-2016 Page 1 of 1

Sample Location: **HWTL 600-09**

Pertinent Notes (if any) Aqueous Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
1607060700	3	A	X							16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	7-6-16 (1015)		Pamela Egan	7.6.16 (1030)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

600-HWTL-09 Rinsate

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-6-2016 Page 1 of 1

Sample Location: **HWTL 600-09**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270)	Dioxins/Furans (8290)	Total Metals (6010, 7470)	Perchlorate (6850)	Nitrate/Nitrite (300)	Chloride (9056)	Charge Number
160706 0800	3	A	X							16EEHWTL
— 0801	2	|		X						16EEHWTL
— 0802	1	|			X					16EEHWTL
— 0803	1	|				X				16EEHWTL
— 0804	1	|					X			16EEHWTL
— 0805	1	|						X		16EEHWTL
— 0806	1	|							X	16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Cyanide (9012)	Hex Cr (218.6)	NDMA (607)	Hydrazine (8315)	Bromacil (8321)			Charge Number
160706 0807	1	A	X							16EEHWTL
— 0808	1	|		X						16EEHWTL
— 0809	1	|			X					16EEHWTL
— 0810	2	|				X				16EEHWTL
— 0811	1	|					X			16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	7-6-16 (0830)		Pamela Egan	7/6/16 (0900)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

6000 - HWTL-09 0'-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-6-16 Page 1 of 3

Sample Location: **HWTL** 600-09

Pertinent Notes (if any)
Soil Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160706 0900	3	S	X						16EEHWTL
— 0901	1	|		X					16EEHWTL
— 0902	1	|			X				16EEHWTL
— 0903	1	|				X			16EEHWTL
— 0904	1	|					X		16EEHWTL
— 0905	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	~~Bromacil (8321)~~					Charge Number
160706 0906	1	S	X							16EEHWTL
— 0907	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	7-6-16 (1015)		Pamela Egan	7.6.16 (1030)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

6000-HWTL-09 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-6-16 Page 1 of 1

Sample Location: **HWTL** 6000-09

Analytical Requirement

Pertinent Notes (if any) Soil Samples — Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
1607060915	3	S	X						16EEHWTL
— 0916	1	|		X					16EEHWTL
— 0917	1	|			X				16EEHWTL
— 0918	1	|				X			16EEHWTL
— 0919	1	|					X		16EEHWTL
— 0920	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Analytical Requirement

Pertinent Notes (if any) — Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)					Charge Number
1607060921	1	S	X							16EEHWTL
— 0922	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	7-6-16 (1015)	Pamela Egan	7.6.16 (1030)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

6000-HWTL-10 0-0.5'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-6-16 Page 1 of 1

Sample Location: **HWTL 6000-10**

Pertinent Notes (if any)
Soil Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
1607060930	3	S	X						16EEHWTL
—— 0931	1	|		X					16EEHWTL
—— 0932	1	|			X				16EEHWTL
—— 0933	1	|				X			16EEHWTL
—— 0934	1	|					X		16EEHWTL
—— 0935	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)					Charge Number
1607060936	1	S	X							16EEHWTL
—— 0937	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
			/							16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	7-6-16 (1015)		Pamela Egan	7.6.16 (1030)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

600-HWTL-10 1-2'

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-6-16 Page _____ of _____

Sample Location: **HWTL 600-10**

Pertinent Notes (if any) Soil Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)	SVOC (8270) Perchlorate (6850)	Metals (6010, 7470)	Dioxins/Furans (8290)	Cyanide (8012), Nitrate/Nitrite (300), Hex Cr (7199), Chloride (9056), pH	TCLP Metals	Charge Number
160706 0945	3	S	X						16EEHWTL
— 0946	1	|		X					16EEHWTL
— 0947	1	|			X				16EEHWTL
— 0948	1	|				X			16EEHWTL
— 0949	1	|					X		16EEHWTL
— 0950	1	|						X	16EEHWTL
									16EEHWTL

Sample Location: **HWTL**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	NDMA (607)	Hydrazine (8315) Bromacil (8321)	Bromacil (8321)					Charge Number
160706 0951	1	S	X							16EEHWTL
— 0952	1	1		X						16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL
										16EEHWTL

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	7-6-16 (1015)		Pamela Egan	7.6.16 (1030)

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

PROJECT HWTL SOIL & RINSATE SAMPLES

Notebook No. HWTL-2

Continued from Page NA

AL MONTES & MARCUS AVALOS PRESENT. WEATHER IS HOT & HUMID. SOIL SAMPLES WILL BE TAKEN FROM THE DESIGNATED LOCATIONS. SAMPLES WILL BE GRABBED WITH THE AUGER IN THE TERRACORE PAC AND POURED FROM GROUND W/ TRIPLE RINSED STAINLESS HAND AUGER. RINSATE WILL BE TAKEN FROM Auger @ 637 W/ DI WATER RINSE.

SAMPLE #	ANALYSIS	PRESERV	CONTAINER	LOT #	LAB
		RINSATE			
210721 0830	VOC by 8260C	ICE-HCL	3-40 mL VIAL)	2583	ALS
		600 HWTL-10 (2.5)			
210721 0939	VOC by 8260C	MeOH/ICE	3.40mL VIALS	101920-3yJ	ALS
		600 HWTL-10 (3.5)			
10721 1040	VOC by 8260C	MeOH/ICE	3.40mL VIALS	101920-3yJ	ALS
		600 HWTL-09 (2.5)			
10721 1838	VOC by 8260C	MeOH/ICE	3-40mL VIALS	101920-3yJ	ALS
		600 HWTL-09 (3.5)			
10721 1915	VOC by 8260C	MeOH/ICE	3-40mL VIALS	101920-3yJ	ALS
		600 HWTL-08 (2.5)			
07211515	VOC by 8260C	MeOH/ICE	3-40mL VIALS	101920-3yJ	ALS
		600 HWTL-08 (3.5)			
07211535	VOC 8260C	MeOH/ICE	3-40mL VIALS	101920-3yS	ALS

Continued on Page NA

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I MONTES & MARCUS AVALOS TECHNICIANS PRESENT. WEATHER IS HOT HUMID.

RINSATE

SAMPLE #	ANALYSIS	PRESERV	CONTAINER	LOT #	LAB
07220815	VOC by 8260	ICE. HCL	3-40mL VIALS	2583	ALS
		600 HWTL-07 (2)			
07220905	VOC by 8260	ICE-HCL	3-40mL VIALS	101820-3yJ	ALS
		600 HWTL-07 (3)			
07220914	VOC by 8260	ICE. MeOH	3-40mL VIALS	101920-3yJ	ALS
		600 HWTL-07 (3) (DUP)			
07220917	VOC by 8260	ICE. MeOH	3-40mL VIALS	101920-3yJ	ALS
		600 HWTL-06 (1.5)			
07220945	VOC by 8260	ICE. MeOH	3-40mL VIALS	101920.3yJ	ALS
		600 HWTL-06 (2.5)			
07220959	VOC by 8260	ICE. MeOH	3-40mL VIALS	101920-3yJ	ALS
		600 HWTL-06 (FIELD BLANK)			
07221004	VOC by 8260	ICE. MeOH	3-40mL VIALS	101920-3yJ	ALS
		600 HWTL-05 (1.5)			
07221050	VOC by 8260	ICE. MeOH	3-40mL VIALS	101920-3yJ	ALS
		600 HWTL-05 (2.5)			
07221056	VOC by 8260	ICE. MeOH	3-40mL VIALS	101920-3yJ	ALS
		600 HWTL-04 (1.5)			
07221305	VOC by 8260	ICE. MeOH	3-40mL VIALS	101920-3yJ	ALS

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CONT. —

600-HWTL-04 (2.5)

SAMPLE #	ANALYSIS	PRESERV	CONTAINER	COC #	LAB
07221316	VOC 8260	ICE-MEOH	3-40mL VIALS	10192031J	ALS
07221320	VOC 1-(DUP)	"	3-40mL VIALS	10192031J	ALS

600-HWTL-03 (1.5)

07221345	VOC 8260	ICE-MEOH	3-40mL VIALS	10192031J	ALS

600 HWTL-03 (2.5)

07221354	VOC 8260	ICE-MEOH	3-40mL VIALS	10192031J	ALS

Continued on Page NA

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PROJECT HWTL - Soil & Rinsate Samples

Notebook No. HWTL · 2

Continued from Page _____

Marcus Avalos & Frank Gallegos present. Weather is clear & warm.

Rinsate

Sample #	Analysis	Preserve	Container	lot	Lab
107230710	VOC by 8260	HCl/Ice	(3) 40 ml vials	2583	ALS
107230805	VOC by 8260	600·HWTL·02 (1.5) MeOH/Ice	(3) 40 ml vials	10192034S	ALS
07230810	VOC by 8260	600·HWTL·02 (2.5) MeOH/Ice	(3) 40 ml vials	10192034S	ALS
07230845	VOC by 8260	600·HWTL·01 (3.5) MeOH/Ice	(3) 40 ml vials	10192034S	ALS
07230853	VOC by 8260	~~600·HWTL·01~~ 600·HWTL·01 (4.5) MeOH/Ice	(3) 40 ml vials	10192034S	ALS
7231022	VOC by 8260	200·HWTL·26 (4.5) MeOH/Ice	(3) 40 ml vials	10192034S	ALS
7231027	VOC by 8260	200·HWTL·26 (5.5) MeOH/Ice	(3) 40 ml vials	10192034S	ALS
7231028	VOC by 8260	200·HWTL·26 (5.5) FB MeOH/Ice	(3) 40 ml vials	10192034S	ALS
7231137	VOC by 8260	200·HWTL·25 (2) MeOH/Ice	(3) 40 ml vials	10192034S	ALS
— 1138	= (MS)	=	=	=	=
— 1139	= (MSD)	=	=	=	=
7231145	VOC by 8260	200·HWTL·25 (3) MeOH/Ice	(3) 40 ml vials	10192034S	ALS

Continued on Page

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PROJECT HWTL- Soil + Rinsate Samples

Notebook No. HWTL-2

Continued from Page

Cont-

Sample #	Analysis	200.HWTL.24(2) Preserve	Container	lot	
210723 1301	VOC by 8260	MeOH / Ice	(3) 40 ml vials	101920345	A
210723 1308	VOC by 8260	200.HWTL.24(3) MeOH / Ice	(3) 40ml vials	101920345	A

Continued on Page

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PROJECT HWTL Soil & Rinsate SAMPLES

Notebook No. HWTL 2

Continued from Page ____

Matt Garcia, Dan Halvorsen & Shannon Rees present. Weather is partly cloudy and warm.

SAMPLE #	Analysis	Rinsate Preserv	Container	LOT	LAB
210724 0730	VOC by 8260	Ice/HCl	(3) 40 ml Vial	2583	ALS
200-HWTL-23 (2.5)					
2107240821	VOC by 8260	Ice/HCl/MeOH	(3) 40 ml Vial	061421-3YD	ALS
~~2107241~~	~~VOC by 8260~~	~~Ice/HCl~~	~~(3) 40 ml Vial~~	~~061421-3YD~~	~~ALS~~
200-HWTL-23 (~~2.5~~ 3.5)					
2107240833	VOC by 8260	Ice/HCl/MeOH	(3) 40 ml Vial	061421-3YD	ALS
200-HWTL-22 (~~2.5~~ 2.0)					
2107~~24~~ 26 0845	VOC by 8260	Ice/MeOH	(3) 40 ml Vial	061421-3YD	ALS
200-HWTL-22 (~~2.5~~ 3.0)					
2107~~24~~ 26 0900	VOC by 8260	Ice/MeOH	(3) 40 ml Vial	061421-3YD	ALS
0901	" " (Dup)	"	"	"	"

NOTE: Sampling stopped as per Kyle Due to Depths possibly being wrong. Time 0929 HS

Continued on Page

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WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7.21.21 Page 1 of 1

Sample Location: **600-HWTL- 10**

Pertinent Notes (if any) Aqueous Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)						Turn Time	Charge Number
			Analytical Requirement							
210721 0830 (RINSATE)	3	A	X					KW	11:00	20EECASI
210721 0939	3	S	X						11:00	20EECASI
210721 1040	3	S	X						11:00	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **600-HWTL-**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOC (8260)							Charge Number
			Analytical Requirement							
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	7.21.21 11:50			7-21-21 1600

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7·21·21 Page 1 of 1

Sample Location: **600-HWTL-** 09

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)						Frozen	Charge Number
210721 1338	3	A	X						1545	20EECASI
210721 1415	3	A	X						1545	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **600-HWTL-**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOC (8260)							Charge Number
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	7-21-21 400pm			7-21-21 1600

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-21-21 Page 1 of 1

Sample Location: **600-HWTL-08**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)						Filtered	Charge Number
210721515	3	S	X						1545	20EECASI
1535	3	S	X						1545	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **600-HWTL-**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOC (8260)							Charge Number
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	7.21.21 400			7-21-21 1600

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7.22.21 Page 1 of 1

Sample Location: **600-HWTL- 07**

Pertinent Notes (if any) Aqueous Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)						Frozen	Charge Number
210722 0815	3	A	X						1115	20EECASI
0905	3	S	X						1115	20EECASI
0914	3	S	X						1115	20EECASI
0917	3	S	X						1115	20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **600-HWTL-**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOC (8260)							Charge Number
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	7.22.21 1420		[signature]	7/22/21 1427

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7.22.21 Page 1 of 1

Sample Location: **600-HWTL-06**

Pertinent Notes (if any) Aqueous Samples / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						Frozen	Charge Number
210722094S	3	S	X						1115	20EECASI
210722095S	3	S	X						1115	20EECASI
10DI	3	S	X						1115	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **600-HWTL-**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)							Charge Number
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	7.22.21 1420			7/22/21 1427

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 210722 Page 1 of 1

Sample Location: **600-HWTL- 05**

Analytical Requirement

Pertinent Notes (if any) Aqueous Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)						Frozen	Charge Number
2107221050	3	S	X						1115	20EECASI
1056	3	S	X						1115	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **600-HWTL-**

Analytical Requirement

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOC (8260)							Charge Number
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	7.22.21 1420			7/22/21 1427

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7.22.21 Page 1 of 1

Sample Location: **600-HWTL-** 04

Pertinent Notes (if any)
Aqueous Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)						Fluoride	Charge Number
210722 1305	3	S	X						1420	20EECASI
—— 1316	3	S	X						1420	20EECASI
—— 1320 DUP	3	S	X						1420	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **600-HWTL-**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)						Charge Number
									20EECASI
									20EECASI
									20EECASI
									20EECASI
									20EECASI
									20EECASI
									20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	7.22.21 1420		[signature]	7/22/21 1428

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7.22.21 Page 1 of 1

Sample Location: **600-HWTL- 03**

Pertinent Notes (if any)
Aqueous Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)						Frozen	Charge Number
210722 1345	3	S	X						1420	20EECASI
—— 1354	3	S	X						1420	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **600-HWTL-**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)							Charge Number
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	7.22.21 1420			7/22/21 1428

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7/23/21 Page _____ of _____

Sample Location: **600-HWTL- 02**

Pertinent Notes (if any)
Aqueous Samples
Rinsates

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						Freeze	Charge Number
2107230710	3	A	X							20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **600-HWTL- 02**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						Freeze	Charge Number
2107230805	3	S	X						1215 hrs	20EECASI
0810	3	S	X						1	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
MS GD	7/23/21 @ 1215			7/26/21 909

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7/23/21 Page _____ of _____

Sample Location: **600-HWTL- 61**

Pertinent Notes (if any)
Aqueous Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)						Freon 21	Charge Number
✓ 2107230845	3	S	X						1215 MS	20EECASI
✓ 0853	3	S	X						1	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **600-HWTL-**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)							Charge Number
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	7/23/21 @ 1215		[signature]	7/26/21 909

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7/23/21 Page _____ of _____

Sample Location: **200-HWTL- 24**

Pertinent Notes (if any)
Aqueous Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)						Freeze	Charge Number
210723|022	3	S	X						1215 hrs	20EECASI
— 1027	3	S	X						—	20EECASI
— 1028 (FB)	3	S	X						—	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL- 25**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)						Freeze	Charge Number
210723|137	3	S	X						1215 hrs	20EECASI
— 1138 (MS)	3	S	X						—	20EECASI
— 1139 (MSD)	3	S	X						—	20EECASI
— 1145	3	S	X						—	20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	7/23/21 @ 1715		[signature]	7/26/21 909

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7/23/21 Page _____ of _____

Sample Location: **200-HWTL- 24**

Pertinent Notes (if any)
Aqueous Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)						Freeze	Charge Number
210723 1301	3	A	X						1325 hrs	20EECASI
—— 1308	3	A	X						1	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL-**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)							Charge Number
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	7/23/21 @ 1323		[signature]	7/26/21 909

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-24-2021 Page 1 of 1

Sample Location: **200-HWTL-**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						Analytical Requirement: Freezer	Charge Number
210724 0730 Rinsate	3	A	X						0945	20EECASI
0821	3	S	X						0945	20EECASI
0833	3	S	X						0945	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL-**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)							Charge Number
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
	7-24-2021 0945		7/24/21

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

Jim Kenoy + AK Monkos present. Weather is cloudy and warm.

Rinsate 200 HWTL-22

Sample #	Analysis	Preserv	Cont.	Lot #	CoC
210726 0700	VOC by 8260	Ice, HCl	(3) 40 ml Vial	2583	ACS
210726 0930	VOC by 8260	200-HWTC-21 Ice, MEOH	(3) 40 ml Vial	2583	ACS
210726 0931	VOC by 8260	200-HWTC-21 Ice, MEOH	(3) 40 ml Vial	2583	ACS
210726 0955	VOC by 8260	200-HWTC-20 Ice, MEOH	(3) 40 ml Vial	2583	ACS
210726 0956	VOC by 8260	200-HWTC-20 Ice, MEOH	(3) 40 ml Vial	2583	ACS
210726 1240	VOC by 8260	200-HWTC-19 Ice, MEOH	(3) 40 ml Vial	2583	ACS
210726 1241	VOC by 8260	200-HWTC-19 Ice, MEOH	(3) 40 ml Vial	2583	ACS
210726 1255	VOC by 8260	200-HWTC-18 Ice, MEOH	(3) 40 ml Vial	2583	ACS
210726 1256	VOC by 8260	200-HWTC-18 Ice, MEOH	(3) 40 ml Vial	2583	ACS

Continued on Page

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Tim Kowal + All Monitors present. Weather is cloudy and warm

Sample #	Analysis	Preserv	Cont.	Lot #	Lab
210727 0700	VOC by 8260	Rinsate Ice, HCl	(3) 40 ml Vial	2583	ALS
210727 0812	VOC by 8260	200-HWTL-17 Ice, MEOH	(3) 40 ml Vial (1.5)	061421-3/0	ALS
210727 0820	VOC by 8260	200-HWTL-17 Ice, MEOH	(3) 40 ml Vial (2.5)	061421-3/0	ALS
210727 0853	"	200-HWTL-16 "	(2 FT) "	"	"
210727 0859		200-HWTL-16	(3 FT)		
210727 0917	"	200-HWTL-15	(2 FT) "	"	"
0918	" (Dup)	"	"	"	"
210727 0923	"	200-HWTL-15	(3 FT) "	"	"
210727 0938	"	200-HWTL-14 "	(2.5 FT) "	"	"
210727 0942	"	200-HWTL-14 "	(3.5 FT) "	"	"

Continued on Page

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Signed — Date 7.27.21 — Signed — Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-26-21 Page 2 of 6

Sample Location: **200-HWTL- 22**

Pertinent Notes (if any)
Aqueous Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)							Charge Number
210726 0700	3	A	X							20EECASI
— 0845 (2FT)	3	S	X						FROZ 10 08	20EECASI
— 0900 (3FT)	3	"	X						"	20EECASI
— 0901 (3FT Dup)	3	"	X						"	20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL- 21**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)							Charge Number
210726 0930	3	S	X						FROZ 10 08	20EECASI
— 0931	3	S	X						"	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	7-26-21		[signature]	7.26-21 1600

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: Page 5 of 6

Sample Location: **200-HWTL- 20**

Pertinent Notes (if any) Aqueous Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)							Charge Number
									TK	
210726 0955	3	S	X						1008	20EECASI
— 0956	3	S	X						1	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL-**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOC (8260)							Charge Number
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	7-26-21			7-26-21 1600

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-26-21 Page 1 of 6

Sample Location: **200-HWTL-** 7

Pertinent Notes (if any)
Aqueous Samples

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)							Charge Number
210726 1240	3	S	X						Froze 1310	20EECASI
— 1241	3	S	X						↓	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL-** 18

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)							Charge Number
210726 1255	3	S	X						Froze 1310	20EECASI
— 1256	3	S	X						↓	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	7.26-21		[signature]	7.26-21 1600

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-27-21 Page 3 of 6

Sample Location: **200-HWTL-17**

Pertinent Notes (if any) Aqueous Samples — Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)							Charge Number
210727 0812	3	S	X							20EECASI
— 0820	3	S	X							20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL-17**

Pertinent Notes (if any) — Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)							Charge Number
210727 0700	3	A	X							20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	7-27-21			7/27/21 953

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-27-21 Page 4 of 6

Sample Location: **200-HWTL-16**

Pertinent Notes (if any) Aqueous Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)							Charge Number
210727 0853	3	S	X						FROZE 0853	20EECASI
— 0859	3	S	X							20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL-15**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOC (8260)							Charge Number
210727 0917	3	S	X						FROZE 0917	20EECASI
— 0918 dup	3	S	X							20EECASI
— 0923	3	S	X							20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	7-27-21			7/27/21 954

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 7-27-21 Page 6 of 6

Sample Location: **200-HWTL-14**

Pertinent Notes (if any) Aqueous Samples — Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)							Charge Number
210727 0978	3	S	X						Rx2	20EECASI
— 0942	3	S	X							20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL-**

Pertinent Notes (if any) — Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)							Charge Number
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	7-27-21			7/27/21 954

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

Tim Kemp + AC, Mattes. Weather as clear and warm.

200-HWTL-01.2 Rinsate

Sample #	Analysis	Preserv	Cont	Lot #	Lab
0805 0700	VOC by 8260	ice, HCl	(3) 40 ml vial	2583	ACS

200-HWTL-01.2 (2.5)

0805 0810
0814 " (Dupl)
0812 " (MS)
0813 " (Dupl MS)

200-HWTL-01.2 (3.5)

0805 0825

200-HWTL-02.0 (2.5)

0805 0850
0851 " (FB)

200-HWTL-02.0 (3.5)

0805 0855

200-HWTL-01.3 (2.5)

0805 0925

200-HWTL-01.3 (3.5)

0805 0930

200-HWTL-01.4 (3.0)

0805 0955
0956 " (Dupl)

200-HWTL-01.4 (4.0)

0805 1000

Continued on Page

Read and Understood By

Signed — 4-5-2021 Date

Signed — 8-5-21 Date

Tim Kovar & AC Montes present. Weather is clear and Hot.

200-HWTL-01.5 (3 FT)

Sample #	Analysis	Preserv	Cont	Lot #	Lab
210805 1230	VOC by 8260	Ice, MeOH	(3) 40 ml Vial	660421-340	ACS
— 1231	" (MS)	"	"	"	"
— 1232	" (Dup/MS)	"	"	"	"

200-HWTL-01.5 (4 FT)

210805 1238	"	"	"	"	"

200-HWTL-01.6 (3.5 FT)

210805 1315	"	"	"	"	"
— 1316	" (FB)	"	"	"	"

200-HWTL-01.6 (3.5 FT)

210805 1320	"	"	"	"	"

Continued on Page

Read and Understood By

Signed — Date: 8-5-2021

Signed — Date: 8-5-21

OJECT HWTL - Soil + Rinsate Sample

Tim Kenny + Frank Cabrera present. Weather is clear and warm.

Sample #	Analysis	Rinsate 200-HWTL-3.1 Preserv	Cont.	Lat*	Lab
08060700	VOC by 8260	Ice, HCl	(3) 40 ml Vials	2583	AXS
10806~~0750~~ 0810	"	200-HWTL-3.1 (2 FT) Ice, Heat	"	061426.340	"
08060815	"	200-HWTL-3.0 (3 FT)	"	"	"
0816	(" Dupl)	"	"	"	"
10806 0750	"	200-HWTL-3.0 (1.5 FT)	"	"	"
10806 0800	"	200-HWTL-3.0 (2.5 FT)	"	"	"
0801	(" MS)	"	"	"	"
0802	(" Dupl MS)	"	"	"	"
10806 0850	"	200-HWTL-1.7 (1.5 FT)	"	"	"
0851	"(Dupl)	"	"	"	"
0852	"(FB)	"	"	"	"
210806 0900	"	200-HWTL-1.7 (2.5 FT)	"	"	"
210806 0930	"	200-HWTL-1.8 (1.5 FT)	"	"	"
210806 0940	"	200-HWTL-1.8 (2.5 FT)	"	"	"

Continued on Page

Read and Understood By

Signed 8-6-2021 Date

Signed 8-10-21 Date

PROJECT HWTL - Soil + Rinsate Sample

Notebook No. HWTL #2

Continued from Page 83

Tasog Sample #		Analysis	Preserv	Cont	Lot #	
210806 1015	200-HWTL-1.9 (2.0 FT)	VOC by 8260	Ice, MEOH	(3) 40ml Vial	0606/21-3/0	A
210806 1020	200-HWTL-1.9 (3.FT)	"	"	"	"	"

Continued on Page N/A

Read and Understood By

Signed — Date 8-6-2021

Signed — Date 8-10-21

RINSate-200-HWTL-4

Sample#	Analysis	Preserv	Cont.	Lot#	LAB
2108070700	VOC by 8260	ICE/HCl	(3) 40mlVial	2583	ALS

200-HWTL-4

Sample#	Analysis	Prep	Cont.	Lot#	LAB	
2108070737	VOC by 8260C	ICE/MeOH	(3) 40mlVial	061421-340	ALS	(3.5')
—— 0740	"	"	"	"	"	~~(4.0')~~ (4.5')

200-HWTL-4.1

Sample#	Analysis	Prep	Cont.	Lot#	LAB	
2108070753	VOC by 8260C	ICE/MeOH	(3) 40mlVial	061421-340	ALS	(3.5')
—— 0754	" (FB)	"	"	"	"	(3.5')
—— 0801	"	"	"	"	"	(4.5')

200-HWTL-4.2

Sample#	Analysis	Prep	Cont.	Lot#	LAB	
2108070828	VOC by 8260C	ICE/MeOH	(3) 40mlVial	061421-340	ALS	(3.5')
—— 0829	" (MS)	"	"	"	"	(3.5')
—— 0830	" (Dup)(MS)	"	"	"	"	(3.5')
—— 0832	"	"	"	"	"	(4.5')

200-HWTL-5.0

Sample#	Analysis	Prep	Cont.	Lot#	LAB	
2108070906	VOC by 8260	ICE/MeOH	(3) 40mlVial	061421-340	ALS	~~(3.5')~~ (4.0')
—— 0907	" (FB)	"	"	"	"	~~(3.5')~~ (4.0')
—— 0910	"	"	"	"	"	~~(4.5')~~ (5.0')

Continued on Page N/A

Read and Understood By

Signed 8-7-21 Date

Signed 8-10-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8-5-2021 Page _____ of _____

Sample Location: **200-HWTL- 01.2**

Pertinent Notes (if any)
Aqueous Samples
2.5 FT

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)							Charge Number
210805 0700	3	A	X							20EECASI
0810	3	S	X						FROZ	20EECASI
0811 (dupl)	3	S	X							20EECASI
0812 (MS)	3	S	X							20EECASI
0813 (dupl MS)	3	S	X						1015	20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL- 01.2**

Pertinent Notes (if any)
3.5 FT

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)							Charge Number
210805 0825	3	S	X						FROZ	20EECASI
									1015	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
T Kade	8-5-2021		[signature]	8.5.21 1400

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8-5-2021 Page _____ of _____

Sample Location: **200-HWTL-02.0**

Pertinent Notes (if any)
Aqueous Samples
2.5 FT

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)							Charge Number
1 210805 0850	3	S	X						8260	20EECASI
• — 0851 (FB)	3	S	X						8015	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL- 02.0**

Pertinent Notes (if any)
3.5 FT

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)							Charge Number
1 210805 0855	3	S	X						8260	20EECASI
									8015	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
T Hoy	8-5-2021		[signature]	8-5-21 / 1400

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8-5-2021 Page _____ of _____

Sample Location: **200-HWTL- 01.3**

Pertinent Notes (if any)
Aqueous Samples
2.5

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)							Charge Number
210805 0825	3	S	X						Froze 1015	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL-**

Pertinent Notes (if any)
3.5

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)							Charge Number
210805 0930	3	S	X						Froze 1015	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	8-5-2021		[signature]	8-5-21 / 1400

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8-5-2021 Page _____ of _____

Sample Location: **200-HWTL-** 1.4

Pertinent Notes (if any)
Aqueous Samples
3.0 FT

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)							Charge Number
210805 0955	3	S	X						FROM 1015	20EECASI
— 0956	3	S	X							20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL-** 1.4

Pertinent Notes (if any)
4.0 FT

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)							Charge Number
210805 1000	3	X							FROM 1015	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	8-5-21			8/5/21 1400

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8-5-2021 Page _____ of _____

Sample Location: **200-HWTL- 01.5**

Pertinent Notes (if any)
Aqueous Samples
3 FT

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210805 1230	3	S	X						1330	20EECASI
— 1231 (MS)	3	S	X							20EECASI
— 1232 (Dup MS)	3	S	X							20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL- 01.5**

Pertinent Notes (if any)
4 FT

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210805 1238	3	S	X						1330	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	8-5-2021		[signature]	8-5-21 / 1330

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8-5-2021 Page _____ of _____

Sample Location: **200-HWTL-01.6**

Pertinent Notes (if any)
Aqueous Samples
2.5 FT

Sample Number	# of Containers	Sample Matrix*	VOC (8260)						TIME PLACED IN FREEZER	Charge Number
			Analytical Requirement							
210805 1315	3	S	X						1330	20EECASI
— 1316 FB	3	S	X						1	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL-**

Pertinent Notes (if any)
3.5 FT

Sample Number	# of Containers	Sample Matrix*	VOC (8260)						TIME PLACED IN FREEZER	Charge Number
			Analytical Requirement							
210805 1320	3	S	X						1330	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	8-5-2021			8/5/21 1330

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8-6-21 Page _____ of _____

Sample Location: **200-HWTL-3.1**

Pertinent Notes (if any)
Aqueous Samples
2 FT

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210806 0700	3	A	X						1230	20EECASI
— 0800	3	S	X						1230	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL-3.1**

Pertinent Notes (if any)
3 FT

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210806 0815	3	S	X					1030		20EECASI
— 0816 (dup)	3	S	X					1		20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	8-6-2021		[signature]	8-6-21 1040

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8-6-21 Page _____ of _____

Sample Location: **200-HWTL- 3.0**

Pertinent Notes (if any)
Aqueous Samples
1.5 FT

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210806 0750	3	S	X						1630	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL- 3.0**

Pertinent Notes (if any)
2.5 FT

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210806 0800	3	S	X						1630	20EECASI
— 0801 (MS)	3	S	X							20EECASI
— 0802 (Duplicate)	3	S	X							20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	8-6-2021		[signature]	8-6-21 1040

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8-6-2021 Page _____ of _____

Sample Location: **200-HWTL- 1.7**

Pertinent Notes (if any)
Aqueous Samples
1.5 FT

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210806 0850	3	S							1030	20EECASI
0851	3	S								20EECASI
0852	3	S								20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL- 1.7**

Pertinent Notes (if any)
2.5 FT

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210806 0900	3	S	X						1030	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Tim Kearney	8-6-2021		[signature]	8-6-21 1040

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8-6-2021 Page _____ of _____

Sample Location: **200-HWTL- 1.8**

Pertinent Notes (if any)
Aqueous Samples
1.5

Sample Number	# of Containers	Sample Matrix*	VOC (8260)						TIME PLACED IN FREEZER	Charge Number
2108060930	3	S	X						1030	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL- 1.8**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOC (8260)						TIME PLACED IN FREEZER	Charge Number
2108060940	3	S	X						1030	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	8-6-2021		[signature]	8-6-21 1040

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8-6-2021 Page _____ of _____

Sample Location: **200-HWTL- 1,9**

Pertinent Notes (if any)
Aqueous Samples
2 FT

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210806 1015	3	S	X						1030	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL- 1,9**

Pertinent Notes (if any)
3 FT

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210806 1020	3	S	X						1030	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	8-6-2021		[signature]	8-6-21 1040

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8-7-21 Page 1 of 1

Sample Location: 200-HWTL-4

Analytical Requirement: 8260 VOC

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Charge Number
210807070700 (Rinsate)	3	A	X

Sample Location:

Analytical Requirement

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	8-7-21 (0930)		[signature]	8-7-21 939

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8-7-21 Page 1 of 1

Sample Location: **200-HWTL-** 4

Pertinent Notes (if any)
Aqueous Samples

3.5

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210807 0737 (3.5')	3	S	X							20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL-**

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210807 0740 (4.0')	3	S	X							20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	8-7-21 (0930)			8-7-21 939

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8-7-21 Page 1 of 1

Sample Location: **200-HWTL- 4.1**

Pertinent Notes (if any) Aqueous Samples — Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210807 0753 (3.5')	3	S	X							20EECASI
0754 (3.5') (FB)	3	S	X							20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL- 4.1**

Pertinent Notes (if any) — Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210807 0801 (4.5')	3	S	X							20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	8-7-21 (0930)		[signature]	8-7-21 939

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8-7-21 Page 1 of 1

Sample Location: **200-HWTL-** 4.2

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210807 0828 (3.5)	3	S	X							20EECASI
— 0829 (3.5) (MS)	3	S	X							20EECASI
— 0830 (3.5) (MS Dup)	3	S	X							20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL-**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210807 0832 (4.5)	3	S	X							20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	8-7-21 (0930)		[signature]	8-7-21 934

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8-7-21 Page _____ of _____

Sample Location: **200-HWTL- 5.0**

Pertinent Notes (if any) Aqueous Samples — Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210807 0906 (4.0)	3	S	X							20EECASI
0907 (4.0) (FB)	3	S	X							20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL- 5.0**

Pertinent Notes (if any) — Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210807 0910 (5.0)	3	S	X							20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	8-7-21 (0930)		[signature]	8-7-21 939

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

ECT HWTL - Soil + Rinsate Sample

Tim Kelly + Frank Gallegos present. Weather is clear + warm.

Lab #	Analysis			Lab #	Lab
30600700	VOC by 8260	Rinsate Pressure	200-HWTL-3.1 (3) 40 ml Vials	2583	Las AKS
80600810	"	Ice AC2	200-HWTL-3.1 (2 FT) Ice each month	0614263-40	"
80600815	"		200-HWTL-3.0 (3 FT)	"	"
0816	(" Dupl)		"	"	"
80600750	"		200-HWTL-3.0 (1.5 FT)	"	"
80600800	"		200-HWTL-3.0 (2.5 FT)	"	"
0801	(" MS)		"	"	"
0802	(" Dupl MS)		"	"	"
80600850	"		200-HWTL-1.7 (1.5 FT)	"	"
0851	" (Dupl)		"	"	"
0852	" (FB)		"	"	"
08060900	"		200-HWTL-1.7 (2.5 FT)	"	"
10806 0930	"		200-HWTL-1.8 (1.5 FT)	"	"
10806 0940	"		200-HWTL-1.8 (2.5 FT)	"	"

Continued on Page

Read and Understood By

Tim Kelly Signed 8-6-2021 Date

Signed Date

PROJECT HWTL - Soil + RINSate Sample

Notebook No. HWTL #2

Continued from Page 83

~~Tissue Sample #~~
210806 1015

200-HWTL-1 Q (2.0 FT)

Analysis: VOC by 8260

Preserv: Ice, MEOH

Cont: (3) 40 ml Vial

Lot #: 06K/21-340

210806 1020

200-HWTL-1 Q (3. FT)

" " " "

Continued on Page N/A

Read and Understood By

Signed

8-6-2021
Date

Signed

Date

RINSate-200-HWTL-4

Sample #	Analysis	Preserv	Cont.	Lot #	LAB
2108078700	VOC by 8260	ICE/HCl	(3) 40mL Vial	2583	ALS

200-HWTL-4

Sample #	Analysis	Preserv	Cont	Lot #	LAB	
2108070737	VOC by 8260C	ICE/MeOH	(3) 40mL Vial	061421-340	ALS	(3.5')
—— 0740	"	"	"	"	"	(4.0')

200-HWTL-4.1

Sample #	Analysis	Preserv	Cont	Lot #	LAB	
2108070753	VOC by 8260C	ICE/MeOH	(3) 40mL Vial	061421-340	ALS	(3.5')
—— 0754	" (FB)	"	"	"	"	(3.5')
—— 0801	"	"	"	"	"	(4.5')

200-HWTL-4.2

Sample #	Analysis	Preserv	Cont	Lot #	LAB	
2108070828	VOC by 8260C	ICE/MeOH	(3) 40mL Vial	061421-340	ALS	(3.5')
—— 0829	" (MS)	"	"	"	"	(3.5')
—— 0830	" (Dup)(MS)	"	"	"	"	(3.5')
—— 0832	"	"	"	"	"	(4.5')

200-HWTL-5.0

Sample #	Analysis	Preserv	Cont	Lot #	LAB		
2108070906	VOC by 8260	ICE/MeOH	(3) 40mL Vial	061421-340	ALS	~~(3.5')~~	(4.0')
—— 0907	" (FB)	"	"	"	"	~~(3.5')~~	(4.0')
—— 0910	"	"	"	"	"	~~(4.5')~~	(5.0')

Continued on Page N/A

Read and Understood By

Signed 8-7-21 Date

Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8-3-2021 Page _____ of _____

Sample Location: **200-HWTL- 13**

Pertinent Notes (if any) Aqueous Samples — Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)							Charge Number
2108030700	3	A	X							20EECASI
— 0735 (2.5)	3	S	X						Raza 0850	20EECASI
— 0740 (3.5)	3	S	X						↓	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL- 12**

Pertinent Notes (if any) — Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)							Charge Number
210803 0750 (2.5)	3	S	X						Raza	20EECASI
— 0755 (3.5)	3	S	X						↓ 0850	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	8-3-21		[signature]	8-3-21

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8-3-2021 Page _____ of _____

Sample Location: **200-HWTL- 11**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)							Charge Number
210803 0805 (2.5)	3	S	X						R20 0850	20EECASI
— 0810 (3.5)	3	S	X						✓	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL- 10**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)							Charge Number
210803 0835 (2.5)	3	S	X						R20 0850	20EECASI
— 0840 (3.5)	3	S	X						✓	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	8-3-2021		[signature]	8-3-21

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8-3-2021 Page _____ of _____

Sample Location: **200-HWTL-02.2**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)							Charge Number
210803 0930 (2.5)	3	S	X						Rush 1010	20EECASI
— 0935 (3.5)	3	S	X							20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL-02.1**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)							Charge Number
210803 0945 (2.5)	3	S	X						Rush 1010	20EECASI
— 0950 (3.5)	3	S	X							20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	8-3-2021		[signature]	8-3-21

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

PROJECT HWTC - Sampling / Soil + Rinsate

Notebook No. HWTC # 2

Continued from Page ____

Tim Kondy + AL Montes present. Weather is cloudy and warm.

Sample #	Analysis	Preserv.	cont.	Lot #	Lab
210803 0700	VOC by 8260	Ice/HCL	(3) 40 ml Vial	2583	ACS
210803 0735	200-HWTC-13 (2.5) FT	Ice, MEOH	"	661421-340	"
210803 0740	200-HWTC-13 (3.5) FT	"	"	"	"
210803 0750	200-HWTC-12 (2.5 FT)	"	"	"	"
210803 0755	200-HWTC-12 (3 FT)	"	"	"	"
210803 0805	200-HWTC-11 (2.5)	"	"	"	"
210803 0810	200-HWTC-11 (3.5)	"	"	"	"
210803 0835	200-HWTC-10 (2.5)	"	"	"	"
210803 0840	200-HWTC-10 (3.5)	"	"	"	"

Continued on Page 80

Read and Understood By

Tim Kondy — Signed — 8-3-2021 — Date

T Montes — Signed — 8/3/21 — Date

PROJECT #WTC - Soil + Sampling

Notebook No. #WTC - 2

Continued from Page

Sample #	Analyses	Preserv	Cont.	Lot #	Lo
200-HWTC-02.2 (3.5 FT)					
210803 0930	VOC 8/8260	Ice, MEOH	(3) 40 ml Vials	061421-340	
210803 0935	"	"	"	"	"
210803 0945	"	"	"	"	"
210803 0950	"	"	"	"	"
2108	"	"	"	"	"

200-HWTC-02.1 (2.5)

200-HWTC-02.1 (3.5 FT)

200-HWTC-02.0

200-TB-HWTC-

Continued on Page

Read and Understood By

Signed — Date: 8-3-2021

Signed — Date: 8/3/21

Tim Kelly + All parties present. Weather is Hot and Clear. Samples will be taken from a Decon'd Spl. spoon from the Drillers.

(13-15 ft)

200-HWTL-8 Rinsate

Sample #	Analyses	Preserv	Cont.	Lot #	Lab
210831 0820	8260 X	Ice, HCl	(3) 40 ml Vials		ALS

200-HWTL-8

210831 0940	"	Ice, MeOH	"		"
— 0941	" (FB)	"	"		"
— 0942	" (Dup)	"	"		"
— 0943	" (MS)	"	"		"
— 0944	" (MS Dup)	"	"		"

(15-17)

200-HWTL-8

210831 0950	"	"	"	"	"

200-HWTL-7 (13-15)

210831 1050	"	"	"	"	"
→ 1051	" (FB)	"	"	"	"

200-HWTL-7 (15-17)

210831 1058	"	"	"	"	"

200-HWTL-9 (13-15)

210831 1230	"	"	"	"	"

200-HWTL-9 (15-17)

210831 1240	"	"	"	"	"

200-HWTL-6 (13-15)

210831 1330	"	"	"	"	"

200-HWTL-6 (15-16)

210831 1335	"	"	"	"	"

Continued on Page

Read and Understood By

T Kelly — Signed — 8-31-21 Date

[signature] — Signed — 9/1/21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8-31-21 Page _____ of _____

Sample Location: **200-HWTL- 6**

Pertinent Notes (if any) Aqueous Samples / Sample Number	# of Containers	Sample Matrix*	VOC (8260)						TIME PLACED IN FREEZER	Charge Number
2108311330 (13-15)	3	S	X						1400	20EECASI
— 1335 (15-16)	3	S	X						1	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL-**

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOC (8260)						TIME PLACED IN FREEZER	Charge Number
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[illegible]	[illegible] - 8-31-21		[illegible]	900 / 9-1-21

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8.31.21 Page 1 of 1

Sample Location: **200-HWTL- 7**

Pertinent Notes (if any)
Aqueous Samples

Sample Number	# of Containers	Sample Matrix*	VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210831 1050 (13-15)		S	X						1105	20EECASI
1051 FB (2-5)		S	X							20EECASI
1054 (15-17)		S	X							20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL-**

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOC (8260)						TIME PLACED IN FREEZER	Charge Number
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	8.31.21			0900 / 9-1-21

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8.31.21 Page 1 of 1

Sample Location: **200-HWTL- 8**

Pertinent Notes (if any) Aqueous Samples / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210831 0820 Rinsate	3	A	X						1005	20EECASI
0940	3	S	X							20EECASI
0941 (FB)	3		X							20EECASI
0942 (dupl)	3		X							20EECASI
0943 (MS)	3		X							20EECASI
0944 (dupl MS)	3		X							20EECASI
										20EECASI

Sample Location: **200-HWTL- 9**

Pertinent Notes (if any) 15-17 / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210831 0950	3	S	X						1005	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	8.31.21			0900 / 9/1/21

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 8.31.21 Page 1 of 1

Sample Location: **200-HWTL-** 9

Pertinent Notes (if any) Aqueous Samples — Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						TIME PLACED IN FREEZER	Charge Number
210831 1230 (13-18)	3	S	X						1400	20EECASI
—— 1240 (15-17)	3	S	X						1	20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Sample Location: **200-HWTL-**

Pertinent Notes (if any) — Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: VOC (8260)						TIME PLACED IN FREEZER	Charge Number
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI
										20EECASI

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	8.31.21			0900 / 9/1/21

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: _____

Tim KONDY + AL MONTES present. Weather is cool and partly cloudy. Soil vapor sample will be taken with the GA 5000 Load Tech Analyzer.

Initial Vacume Reading

cont.#	15501285	24.0 psi
	15501349	25.0
	15500889	24.0
	15500140	16
	15500855	24
	15501276	25
	15501229	24
	15501253	24
	15501156	24
	15501306	25
	15501202	24
	15500101	23
	15501355	24
	15501218	24
	15500704	25

Sample

Location	CH_4	CO_2	O_2	CO	Sample #
200-HWTL-05-SV	0.5	0.8	19.5	0	210923 0757
	0.4	0.7	19.5	0	
cont.# 15501285	0.4	0.7	19.5	0	
	0.4	0.7	19.5	0	
	0.4	0.7	19.5	0	
200-HWTL-04.2-SV	0.4	0.4	20.0	0	210923 0814
	0.4	0.4	20.0	0	
cont.# 15501349	0.4	0.4	20.0	0	
	0.4	0.4	20.0	0	
	0.4	0.4	20.0	0	

Continued on Page

Read and Understood By

Tim Kondy — Signed — 9-23-21 Date

Signed — 9/23/21 Date

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PROJECT 200 Soil Vapor

Notebook No. HWTL #2
Continued from Page _____

Samples

Location	CH_4	CO_2	O_2	CO	Sample #
200-HWTL-4.1-SV	0.3	0.6	19.3	1	210923 0827
	0.3	0.6	19.4	0	— 0828 (Dpl)
Cont# 15500889	0.3	0.6	19.5	0	
(Dpl) 15500140	0.3	0.6	19.5	0	
	0.3	0.6	19.5	0	
200-HWTL-4-5V					
Cont# - 15500855	0.3	0.2	19.9	0	210923 0840
	0.2	0.2	19.8	0	
	0.3	0.2	19.8	0	
	0.2	0.2	19.8	0	
	0.2	0.2	19.8	0	
200-HWTL-1.9-SV					210923 0852
					— 0853 (Dpl)
Cont# 15501276	0.2	0.2	19.3	1	
(Dpl) 15501229	0.2	0.2	19.3	1	
	0.2	0.2	19.3	0	
	0.2	0.2	19.3	0	
	0.2	0.2	19.3	0	
200-HWTL-1.8-SV	0.1	0.0	19.5	1	210923 0902
	0.1	0.0	19.5	1	
	0.1	0.0	19.5	1	
Cont# 15501253	0.1	0.0	19.5	1	
	0.1	0.0	19.5	1	

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Read and Understood By

Signed _____ Date 9-23-21

Signed _____ Date 9/23/21

Samples

Location	CH_4	CO_2	O_2	CO	Sample #
200-HWTL-1.7-SV	0.0	0.0	19.3	0	210923 0912
	0.0	0.0	19.3	0	
cont# 1550156	0.0	0.0	19.3	0	
	0.0	0.0	19.3	0	
200-HWTL-1.6-SV	0.0	0.0	19.3	0	210923 0923
	0.0	0.0	19.3	0	
	0.0	0.0	19.3	0	
cont# 1550 1306	0.0	0.0	19.4	0	
	0.0	0.0	19.4	0	
200-HWTL-1.3-SV	0.0	0.0	19.5	0	210923 0931
	0.0	0.0	19.5	0	
	0.0	0.0	19.6	0	
	0.0	0.0	19.6	0	
cont# 1550 1202	0.0	0.0	19.6	0	
200-HWTL-1.4-SV	0.0	0.0	19.6	0	210923 0940
	0.0	0.0	19.6	0	
	0.0	0.0	19.6	0	
cont# 1550 0101	0.0	0.0	19.6	0	
	0.0	0.0	19.6	0	
200-HWTL-1.5-SV	0.0	0.0	19.6	0	210923 0947
	0.0	0.0	19.7	0	
	0.0	0.0	19.7	0	
cont# 1550 1355	0.0	0.0	19.7	0	
	0.0	0.0	19.8	0	

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Read and Understood By

Tim Kong — Signed — 9-23-21 — Date

Signed — 9/23/21 — Date

Samples

Location	CH_4	CO_2	O_2	CO	Sample #
200-HWTL-1.2-SV	0.0	0.1	19.9	1	210923 0956
	0.0	0.1	19.9	1	
Cont# 15501218	0.0	0.1	20.0	1	
	0.0	0.1	20.0	1	
	0.0	0.1	20.0	1	

Trip Blank — 210923 1000

Cont# 15500704

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Read and Understood By

Signed — Date — Signed — Date

9-23-21 — 9/23/21

Air - Chain of Custody Record & Analytical Service Request

P2105126

ALS
2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

ALS Project No.

Company Name & Address (Reporting Information)
Navarro Research + Engineering
12600 NASA Rd,
Las Cruces, NM 88011

Project Name: HWTL Soil Vapor

Project Number: 21EECAST

ALS Contact: S. Anderson

Project Manager: Kyle Williams

P.O. # / Billing Information: 21EC013B

Phone: 575-649-1210

Fax:

Email Address for Result Reporting: jerry.k.williams@nasa.gov

Sampler (Print & Sign): Tim Landy / Tim Landy

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method		Comments e.g. Actual Preservative or specific instructions
210923 0757		9-23-21	0757	1550128524 KW		24	0	1L	TO-15		
210923 0814			0814	15501349		25	0				
210923 0827			0827	15500889		24	0				
210923 0828			0828	15500140		16	0				
210923 0840			0840	15500855		24	0				
210923 0852			0852	15501276		25	0				
210923 0853			0853	15501229		24	0				
210923 0902			0902	15501253		24	0				
210923 0912			0912	15501156		24	0				
210923 0923			0923	15501306		25	0				
210923 0931			0931	15501202		24	0				
210923 0940			0940	15500101		23	0				
210923 0947			0947	15501355		24	0				
210923 0956			0956	15501218		24	0				

Report Tier Levels - please select

Tier I - Results (Default if not specified) _____
Tier II (Results + QC Summaries) _____
Tier III (Results + QC & Calibration Summaries) _____
Tier IV (Data Validation Package) 10% Surcharge _____

EDD required Yes / No
Type: _____ Units: _____

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	9/23/21	1025		9/24/21	1000
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Cooler / Blank Temperature ____ °C

Air - Chain of Custody Record & Analytical Service Request

P2105126

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

ALS Project No.

Company Name & Address (Reporting Information)
Navarro Research + Engineering
12600 NASA Rd.
Las Cruces, NM 88011

Project Name: HWTL Soil Vapor

Project Number: 21EECAS1

ALS Contact: S. Anderson

Project Manager: Kyle Williams

P.O. # / Billing Information: 21EC013B

Phone: 575-649-1210

Fax:

Email Address for Result Reporting: jerry.k.williams@nasa.gov

Sampler (Print & Sign): Tim Kaudy / Tim Kaudy

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method		Comments e.g. Actual Preservative or specific instructions
210923100G		9/23/21	1000	155 00204		25	25	1 L			Trip Blank

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Report Tier Levels - please select

Tier I - Results (Default if not specified) ____ Tier III (Results + QC & Calibration Summaries) ____
Tier II (Results + QC Summaries) ____ Tier IV (Data Validation Package) 10% Surcharge ____

EDD required Yes / No
Type: _____ Units: _____

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	9/23/21	1025		9/24/21	1000
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Cooler / Blank Temperature ____ °C