National Aeronautics and
Space Administration
Lyndon B. Johnson Space Center
White Sands Test Facility
P.O. Box 20
Las Cruces, NM 88004-0020

April 18, 2023

Reply to Attn of: RE-23-070

Mr. Dave Cobrain, Acting Bureau Chief
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

Subject: NASA WSTF Periodic Monitoring Report – First Quarter 2023

Enclosed is the NASA WSTF Periodic Monitoring Report (PMR) for the first quarter of 2023. This report provides detailed information about routine groundwater, Plume Front Treatment System (PFTS), and Mid-plume Interception and Treatment System (MPITS) monitoring performed between November 1, 2022 and January 31, 2023. Analytical data processed through the WSTF data management system, operational and performance data for both treatment systems, and site-wide potentiometric surface data are also provided for the same reporting period. Activity updates not associated with or reliant upon analytical data are reported for the previous calendar quarter.

This submittal includes an Executive Summary of the PMR that provides important events and observations as Enclosure 1, suggestions for installing and using WSTF PMR Databases as Enclosure 2, a bound paper copy of the main body of the report (pages i-81) as Enclosure 3, a DVD-ROM containing the entire report, the accompanying historical analytical databases, an Excel spreadsheet comprising groundwater data for the last four calendar quarters (October 2021 to November 2022) as Enclosure 4, a CD-ROM containing analytical lab reports for the reporting period as Enclosure 5, and three updated D-size paper maps of WSTF depicting pertinent features and conceptualized NDMA, TCE, and PCE groundwater plumes as Enclosure 6.

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.

TIMOTHY DAVIS
Digitally signed by TIMOTHY DAVIS
Date: 2023.04.18 09:41:43 -06'00'

Timothy J. Davis
Chief, Environmental Office

5 Enclosures

cc:
Mr. Gabriel Acevedo
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

Ms. Melanie Sandoval
Ground Water Quality Bureau
New Mexico Environment Department

Executive Summary

Groundwater monitoring is performed at the National Aeronautics and Space Administration (NASA) White Sands Test Facility (WSTF) to meet regulatory requirements, monitor the effectiveness of corrective actions, develop additional corrective actions, and provide environmental data for a variety of investigations. This Periodic Monitoring Report (PMR) includes the following:

- Purpose, scope, and discussion of the groundwater monitoring data contained in this report.
- Discussion of applicable cleanup levels and comparisons of those cleanup levels to current groundwater contaminant concentrations.
- Detailed information related to the operation, maintenance, and status of the Plume Front Treatment System (PFTS) and the Mid-plume Interception and Treatment System (MPITS), NASA's presumptive remedy interim measures corrective actions for groundwater.
- Information related to the development and implementation of source area investigations and, where applicable, related corrective actions.
- Evaluations of groundwater and treatment system monitoring results and chemical analytical data as it relates to the effectiveness of groundwater remediation.
- Conclusions and recommendations based upon groundwater and remediation system monitoring analytical data and the subsequent evaluations and interpretations of those data presented in this report.

Analytical data included in this report correspond to samples collected from groundwater monitoring wells, as well as PFTS and MPITS sampling locations between November 1, 2022 and January 31, 2023. The data were processed through the WSTF data management system during the first calendar quarter of 2023.

A variety of data elements including PFTS and MPITS operational and performance data, potentiometric surface maps, and plume isoconcentration maps are used to evaluate the effects of the PFTS and MPITS on the WSTF groundwater contaminant plume. An evaluation of the PFTS data elements indicates that the PFTS is currently achieving plume capture and contaminant extraction in the Plume Front area. Data elements related to MPITS operation are presented and contaminant mass removal for both systems is included in this report.

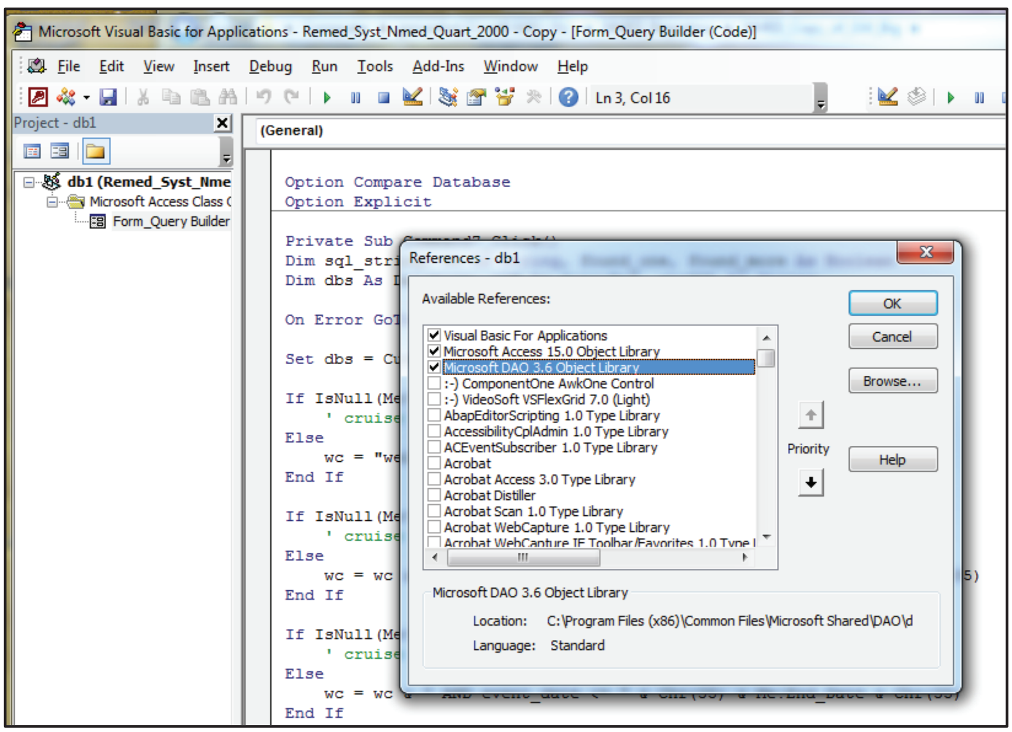
NASA's groundwater monitoring objectives are discussed in more detail in the applicable sections of this report. It is recommended that groundwater monitoring continue in accordance with the Groundwater Monitoring Plan (NASA, 2022e). NASA also recommends that groundwater corrective action operations at the PFTS and MPITS continue as scheduled. Further, NASA recommends that source area investigations continue in accordance with NMED-approved schedules.

Suggestions for Installing and Using WSTF PMR Databases

1. Ensure Microsoft Access 2013 is installed.
2. Ensure the following Microsoft libraries are installed:

   - Visual Basic for Applications
   - Microsoft Access 15.0 Object Library
   - Microsoft DAO 3.6 Object Library

   To verify the presence of these libraries, choose any table, click “Database Tools” on the menu bar, then click the “Visual Basic” button. A new window will open (see example below). Click “Tools” on the menu bar, then click “References”. Another window will open (see example below), showing the libraries available. Ensure the boxes are checked for the three required libraries.



3. Copy the database files from the DVD to your hard drive. This will improve the performance of databases.
4. After running a query, you can export the data to Excel by selecting *External Data* on the menu bar, then click the *Export to Excel* button.

National Aeronautics and Space Administration

NASA WSTF Periodic Monitoring Report for First Quarter 2023

NM8800019434

NASA WSTF Periodic Monitoring Report for First Quarter 2023

Reporting Period: November 1, 2022 through January 31, 2023

Report Deadline: April 30, 2023

NM8800019434

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.

TIMOTHY DAVIS Digitally signed by TIMOTHY DAVIS
Date: 2023.04.18 09:42:10 -06'00'

See Electronic Signature

Timothy J. Davis
Chief, NASA Environmental Office

Date

National Aeronautics and Space Administration

Johnson Space Center
White Sands Test Facility
12600 NASA Road
Las Cruces, NM 88012
www.nasa.gov/centers/wstf

www.nasa.gov

Executive Summary

Groundwater monitoring is performed at the National Aeronautics and Space Administration (NASA) White Sands Test Facility (WSTF) to meet regulatory requirements, monitor the effectiveness of corrective actions, develop additional corrective actions, and provide environmental data for a variety of investigations. This Periodic Monitoring Report (PMR) includes the following:

- Purpose, scope, and discussion of the groundwater monitoring data contained in this report.
- Discussion of applicable cleanup levels and comparisons of those cleanup levels to current groundwater contaminant concentrations.
- Detailed information related to the operation, maintenance, and status of the Plume Front Treatment System (PFTS) and the Mid-plume Interception and Treatment System (MPITS), NASA's presumptive remedy interim measures corrective actions for groundwater.
- Information related to the development and implementation of source area investigations and, where applicable, related corrective actions.
- Evaluations of groundwater and treatment system monitoring results and chemical analytical data as it relates to the effectiveness of groundwater remediation.
- Conclusions and recommendations based upon groundwater and remediation system monitoring analytical data and the subsequent evaluations and interpretations of those data presented in this report.

Analytical data included in this report correspond to samples collected from groundwater monitoring wells, as well as PFTS and MPITS sampling locations between November 1, 2022 and January 31, 2023. The data were processed through the WSTF data management system during the first calendar quarter of 2023.

A variety of data elements including PFTS and MPITS operational and performance data, potentiometric surface maps, and plume iso-concentration maps are used to evaluate the effects of the PFTS and MPITS on the WSTF groundwater contaminant plume. An evaluation of the PFTS data elements indicates that the PFTS is currently achieving plume capture and contaminant extraction in the Plume Front area. Data elements related to MPITS operation are presented and contaminant mass removal for both systems is included in this report.

NASA's groundwater monitoring objectives are discussed in more detail in the applicable sections of this report. It is recommended that groundwater monitoring continue in accordance with the Groundwater Monitoring Plan (NASA, 2022e). NASA also recommends that groundwater corrective action operations at the PFTS and MPITS continue as scheduled. Further, NASA recommends that source area investigations continue in accordance with NMED-approved schedules.

Table of Contents

Executive Summary ..... **iii**
Table of Contents ..... **iv**
List of Figures ..... **vi**
List of Tables ..... **vii**
List of Acronyms and Abbreviations ..... **viii**
1.0 Introduction **1**
2.0 Scope of Activities **2**
3.0 Cleanup Levels **2**
3.1 Discharge Standards for PFTS and MPITS Effluent 2
3.2 New Detections 3
4.0 Routine Groundwater Monitoring **3**
4.1 Current Status and Monitoring Performed 3
4.2 Groundwater Monitoring Results 4
4.2.1 Groundwater Elevations 4
4.2.2 Groundwater Quality Measurements (Indicator Parameters) 4
4.3 Groundwater Chemical Analytical Results 5
5.0 Treatment System Monitoring **5**
5.1 Plume Front Treatment System 5
5.1.1 PFTS Operational Status 6
5.1.2 PFTS Performance 6
5.1.3 Extraction and Injection Well Performance 7
5.1.4 PFTS Monitoring Results 8
5.1.5 PFTS Chemical Analytical Results 9
5.1.6 PFTS Mass Removal 9
5.2 Mid-plume Interception and Treatment System 9
5.2.1 MPITS Monitoring Results 9
5.2.2 MPITS Operational Status 10
5.2.3 MPITS Performance 10
5.2.4 MPITS Extraction Well and Infiltration Basin Performance 11
5.2.5 MPITS Chemical Analytical Results 12
5.2.6 MPITS Mass Removal 12
5.3 Remediation Systems Operation Costs 12
6.0 Discussion and Conclusions **12**
6.1 Summary of Groundwater Monitoring Projects 12
6.1.1 Monitoring Well Performance or Sampling Equipment Issues 13
6.1.2 Monitoring Well Installation and Well Plugging and Abandonment 13
6.1.3 Westbay Well Reconfiguration 14
6.1.4 Groundwater Monitoring Data Representativeness 14
6.2 Comparison of Analytical Data to Cleanup Levels 14
6.2.1 Groundwater Monitoring Wells 15
6.2.2 Plume Front Treatment System 15
6.2.3 Mid-plume Interception and Treatment System 15
6.3 Contaminant Plume Evaluation 15
6.3.1 Groundwater Elevations and Iso-concentration Maps 15
6.3.2 Combined Plume Isoconcentration Maps and Potentiometric Surface Map 16
6.3.3 Time-concentration Plots and Groundwater Data Analytical Trends 16
6.4 Summary of Source Area Investigations 19
6.4.1 200 Area 19
6.4.2 300 Area 19

6.4.3 400 Area 20
6.4.4 600 Area Perched Groundwater Extraction and Investigations 20
6.4.5 SWMUs 2, 8, and 34 and Area of Concern (AOC) 51 (Wastewater Lagoons) 20
6.4.6 SWMU 10 (200 Area Hazardous Waste Transmission Lines [HWTL]) 22
6.4.7 Dye Tracer Test Investigation 22
6.4.8 SWMU 16 (600 Area Bureau of Land Management [BLM] Off-Site Soil Pile) 22
6.4.9 SWMUs 21–27 (Septic Tanks) 22
6.4.10 SWMUs 29–31 (Small Arms Firing Ranges) 22
6.4.11 SWMU 33 (300 Area Test Stand 302 Cooling Water Pond) 23
6.4.12 SWMU 47 (500 Fuel Storage Area) 23
6.4.13 SWMU 49 (700 Area Landfill) 23
6.4.14 SWMU 50 (First TDRS Diesel Release) 23
6.4.15 SWMU 52 (Second TDRS UST) 23
6.4.16 Newly Identified SWMU 23
7.0 Planned Activities 24
7.1 Groundwater Monitoring and Related Projects 24
7.1.2 Groundwater Monitoring 24
7.1.3 Westbay Well Reconfiguration. 24
7.1.4 Monitoring Well Installation 24
7.2 Groundwater Remediation System Monitoring 25
8.0 References 25
Figures 30
Tables 41
Appendix A Indicator Parameters and Analytical Data A-1
Appendix A.1 Monitor Well Indicator Parameters A-2
Appendix A.2 Monitor Well Analytical Data A-56
Appendix A.3 PFTS Indicator Parameters A-162
Appendix A.4 PFTS Analytical Data A-165
Appendix A.5 MPITS Indicator Parameters A-171
Appendix A.6 MPITS Analytical Data A-174
Appendix B Sampling Event Logbook Entries and Internal CoC Forms B-1
Appendix C Chemical Analytical Program (Internal QA reports) C-1
Appendix D Comparison to Cleanup Levels D-1
Appendix D.1 Groundwater Monitoring Wells D-2
Appendix D.2 PFTS D-7
Appendix D.3 MPITS D-10
Appendix E Time Concentration Plots E-1
Appendix F Summary of Source Area Investigations F-1

List of Figures

Figure 1.1 WSTF Location Map 31

Figure 1.2 WSTF Well Location Map 32

Figure 4.1 Groundwater Elevations and Generalized Flow Directions for the Reporting Period 33

Figure 4.2 Site-Wide N-Nitrosodimethylamine (NDMA) Concentrations for the Reporting Period 34

Figure 4.3 Site-Wide Trichloroethene (TCE) Concentrations for the Reporting Period 35

Figure 6.1 Plume Front Groundwater Elevations for the Reporting Period 36

Figure 6.2 Mid-plume Groundwater Elevations for the Reporting Period 37

Figure 6.3 NDMA Concentrations at the Plume Front for the Reporting Period 38

Figure 6.4 TCE Concentrations at the Plume Front for the Reporting Period 39

Figure 6.5 Plume Front Groundwater Elevations and Trichloroethene Concentrations for the Reporting Period 40

List of Tables

Table 3.1 DP-1255 Discharge Standards and Groundwater Cleanup Levels for WSTF COC 42

Table 3.2 Accepted New Detections for This Reporting Period 43

Table 3.3 Unconfirmed New Detections – Resolution Pending 44

Table 3.4 Unconfirmed Detections Resolved This Reporting Period 45

Table 4.1 Groundwater Monitoring Wells/Zones Analyzed for the Reporting Period 46

Table 4.2 Groundwater Elevation Data 48

Table 5.1 PFTS and MPITS Operational Status for the Reporting Period 51

Table 5.2 PFTS and MPITS System Shutdowns for the Reporting Period 52

Table 5.3 PFTS Air Stripper and UV Reactor Performance for the Reporting Period 54

Table 5.4 PFTS Extraction and Injection Well Flow Rates for the Reporting Period 55

Table 5.5 Comparison of Specific Capacities for the Plume Front Wells 56

Table 5.6 Plume Front Mass Removal[1] 57

Table 5.7 MPITS Air Stripper and UV Reactor Performance for the Reporting Period 58

Table 5.8 Mid-plume Mass Removal[1] 59

Table 5.9 Groundwater Treatment System Operation Costs ($ / 1,000 gals) 60

Table 7.1 Status of Wells with Sampling Issues 61

List of Acronyms and Abbreviations

µg/L	Micrograms per liter
AOC	Area of concern
bgs	Below ground surface
BLM	Bureau of Land Management
COC	Contaminant of concern
CoC	Chain-of-Custody
DP	Discharge Plan
DTW	Depth to water
EPA	Environmental Protection Agency
FLUTe	Flexible Liner Underground Technologies, LLC
Freon 11	Trichlorofluoromethane
Freon 113	1,1,2-Trichloro-1,2,2-trifluoroethane
ft	Foot/feet
g	Gram
GMP	Groundwater Monitoring Plan
gpm	Gallons per minute
gpm/ft	Gallons per minute per foot
HIS	Historical Information Summary
HWTL	Hazardous Waste Transmission Lines
IDW	Investigation-Derived Waste
IWP	Investigation Work Plan
JDMB	Jornada del Muerto Basin
JER	Jornada Experimental Range
kg	Kilogram
L	Liter
MDL	Method detection limit
mg/L	Milligrams per liter
MPCA	Mid-plume Constriction Area
MPE	Mid-plume Extraction
MPITS	Mid-plume Interception and Treatment System
NASA	National Aeronautics and Space Administration
ND	Not detected
NDMA	N-nitrosodimethylamine
ng/L	Nanograms per liter
NMED	New Mexico Environment Department
PCE	Tetrachloroethene
Permit	NMED Hazardous Waste Permit
PA	Preliminary Assessment
PFAS	Per- and polyfluoroalkyl substances
PFE	Plume Front Extraction
PFI	Plume Front Injection
PFTS	Plume Front Treatment System
PMR	Periodic Monitoring Report
QA	Quality Assurance
RSMP	Remediation System Monitoring Plan
scfm	Standard cubic feet per minute
STGT	Second TDRS Ground Terminal
SVOC	Semi-volatile Organic Compound
SWMU	Solid Waste Management Unit

T-C	Time-concentration
TCE	Trichloroethene
TDRS	Tracking and Data Relay Satellite
TDRSS	Tracking and Data Relay Satellite System
USGS	United States Geological Survey
UV	Ultraviolet
VOC	Volatile Organic Compound
WBFZ	Western Boundary Fault Zone
WSTF	NASA Johnson Space Center White Sands Test Facility

1.0 Introduction

National Aeronautics and Space Administration (NASA) White Sands Test Facility (WSTF) is located at 12600 NASA Road near Las Cruces, New Mexico. WSTF (U.S. Environmental Protection Agency [EPA] and New Mexico Environment Department [NMED] Facility Identification Number NM8800019434) currently operates as a field test facility under the NASA Lyndon B. Johnson Space Center in Houston, Texas. Figure 1.1 is a map showing the location of WSTF in southern Doña Ana County.

The facility provides testing services to NASA for United States space programs and support for the Department of Defense, Department of Energy, private industry, and foreign government agencies. The primary WSTF mission is to develop, qualify, and test the limits of spacecraft propulsion systems and subsystems. The installation also operates several laboratory facilities that conduct simulated use tests for space station materials, as well as compatibility testing.

WSTF historical operations resulted in a groundwater contaminant plume that requires extensive investigation activities and associated corrective actions. NASA developed and implemented a strategy for remediating contaminated WSTF groundwater in 1996, based on an analysis of potential risk to human health and the environmental and hydrogeological characteristics of the site. This strategy involves a sequential three-phase approach: 1) to stabilize the leading edge of the plume in the alluvial aquifer at the Plume Front area through operation of the Plume Front Treatment System (PFTS); 2) to intercept a high-concentration portion of the plume within fractured bedrock in the Mid-plume area through operation of the Mid-plume Interception and Treatment System (MPITS); and 3) to investigate contaminant source areas and remediate, as appropriate, any remaining sources of contamination identified during ongoing investigations.

There are currently 215 active groundwater monitoring locations (treatment system sample ports, extraction wells, conventional wells, and multiport well zones) in use at WSTF. Figure 1.2 provides a map of the facility and shows the locations of groundwater monitoring wells and components of the PFTS and the MPITS. Routine groundwater monitoring is performed in accordance with the NMED Hazardous Waste Permit (Permit; NMED, 2009, p68), the Groundwater Monitoring Plan (GMP; NASA, 2022e), and the Remediation System Monitoring Plan (RSMP; NASA, 2022h).

This report provides details of groundwater (routine and related to corrective actions), PFTS, and MPITS samples processed through the WSTF data management system during the first quarter of 2023. Between November 1, 2022 and January 31, 2023, groundwater samples were collected at 111 groundwater monitoring wells or zones (111 sample events), five PFTS sampling locations (nine sample events), and six MPITS sampling locations (10 sample events). Specific monitoring activities for routine groundwater sampling are discussed in Section 4.0. The individual sampling activity at each monitoring well, well zone, or other sampling point is identified as a discrete sampling event (by location and sampling date). This report includes and discusses these sampling events.

The PFTS was operational on 82 of 90 days during the reporting period at an average flow rate of 327 gallons per minute (gpm) while running. Approximately 110.5 acre-feet (ft) of groundwater were treated at the PFTS during this timeframe. Specific information related to operation, maintenance, and monitoring of the PFTS is included in Section 5.1 of this report. The MPITS was operational on 59 of 90 days during the reporting period, treating approximately 1.07 acre-ft of groundwater including investigation-derived waste (IDW). Specific information on MPITS operation, maintenance, monitoring, and related activities is provided in Section 5.2.

2.0 Scope of Activities

Groundwater and remediation systems sampling event analytical results and remediation systems operational data are provided for the reporting period. Updates for activities that are not associated with or reliant upon groundwater analytical data are provided for the calendar quarter.

NASA routinely collects groundwater and treatment system samples for the analysis of volatile organic compounds (VOC), N-nitrosodimethylamine (NDMA), and several inorganic compounds. On a less frequent basis, semi-volatile organic compounds (SVOCs) are sampled, and in certain wells, 1,4-dioxane, total petroleum hydrocarbons, and 40 CFR Part 264 Appendix IX compounds. The GMP (NASA, 2022e) identifies the specific samples that are to be collected at each groundwater monitoring well. The RSMP (NASA, 2022h) provides sampling requirements for the PFTS and the MPITS.

Groundwater quality data, collectively referred to as indicator parameters, are collected during each sampling event. Indicator parameters may include temperature, pH, conductivity, turbidity, and (at wells sampled using low-flow procedures) oxidation-reduction potential and dissolved oxygen. Depth to groundwater (DTW) is also measured at each conventional monitoring well during the sampling event. Indicator parameters associated with sampling events during the reporting period are included in Appendix A as follows: groundwater monitoring wells (Section 4.2.2) – Appendix A.1; PFTS (Section 5.1.4.2) – Appendix A.3; and MPITS (Section 5.2.1.2) – Appendix A.5.

Chemical analytical data (detections only) for sampling events during the reporting period are discussed in the following sections: groundwater monitoring wells (Section 4.3) – Appendix A.2; PFTS (Section 5.1.5) – Appendix A.4; and MPITS (Section 5.2.5) – Appendix A.6.

Field data and the recording of other specific sampling-related details for each sampling event are discussed in Sections 4.0, 5.1, and 5.2 of this report. Logbook entries and internal chain-of-custody (CoC) forms from sampling events included in the report are provided in Appendix B. The external CoC forms associated with the sampling events can be found in the Lab Reports included on the enclosed DVD. Appendix C provides internal monthly WSTF Quality Assurance (QA) Reports for the reporting period. Appendix D includes the comparison of analytical results from the groundwater monitoring wells (Appendix D.1), PFTS (Appendix D.2), and MPITS (Appendix D.3) with cleanup levels. Only results that exceed cleanup levels are included in these appendices.

During the course of groundwater, PFTS, MPITS, and other related sampling, IDW such as decontamination water and purged groundwater is produced. This IDW is treated by the MPITS as specified in the GMP (NASA, 2022e).

3.0 Cleanup Levels

Cleanup levels for all hazardous constituents detected in WSTF groundwater are summarized in the GMP update (NASA, 2022e) for 2022, submitted to NMED on April 29, 2022 and revised on November 15, 2022 to address NMED comments provided in the approval with modifications (NASA, 2022k; NMED, 2022h). That document outlines the process for developing cleanup levels as specified in Attachment 15 of the Permit (NMED, 2009, p24).

3.1 Discharge Standards for PFTS and MPITS Effluent

The Ground Water Discharge Permit Renewal and Modification, DP-1255 (NMED, 2017) specifies that "Remediated groundwater discharged from the two remediation systems shall not exceed the concentrations in the most recent version of NMED's *Risk Assessment Guidance for Investigation and Remediation Table A-1 Soil Screening Levels for Tap Water…*" for NDMA, trichloroethene (TCE), tetrachloroethene (PCE), and chloroform. Table 3.1 includes the updated DP-1255 discharge standards for the four constituents.

3.2 New Detections

The GMP requires that NASA report new detections of hazardous constituents in groundwater (NASA, 2022e). Each quarter, NASA adds several new constituents to the list of analytes detected at certain WSTF groundwater wells. As a result, a number of new detections have been reported in sampling results at those wells. Most of the new detections are consistent with regional groundwater chemistry and require no action beyond continued monitoring and reporting. No new detections, including non-hazardous constituents, were reported in sampling events during the reporting period (Table 3.2).

The GMP also requires detection monitoring at specific compliance points downgradient of the closures and operational areas of the facility. The wells specified are BLM-3-182 (for the 100 and 600 Areas), 200-B-240 and 200-SG-1 (for the 200 Area), 300-A-120 (for the 300 Area), and 400-C-118 (for the 400 Area). No detection monitoring was performed during the reporting period.

In addition to the inorganic constituents that are characteristic of regional groundwater, NASA observed several new detections that require further evaluation. The hazardous constituents in Table 3.3 have not been previously detected at the wells listed in the table. As specified in Section 3.3 of the GMP, NASA has scheduled resampling of these wells to confirm these detections (NASA, 2022e). Table 3.4 lists the resampling date and the resolution of some of the unconfirmed detections reported in previous PMRs. The wells were resampled as required and the new detections were resolved as indicated in the table.

4.0 Routine Groundwater Monitoring

A variety of groundwater monitoring data are collected from monitoring wells and the groundwater treatment systems during routine WSTF operations. These data consist of measured groundwater elevations, calculated groundwater piezometric elevations, the graphical representations of groundwater elevation generated from these data, and groundwater indicator parameters (field water quality measurements).

Data presented in this section, including groundwater elevations and indicator parameters, were collected from various groundwater monitoring locations during the reporting period. Groundwater chemical analytical data also from this timeframe, while not considered monitoring data in some contexts, are also presented in this section.

4.1 Current Status and Monitoring Performed

NASA continues to monitor groundwater to maintain a complete understanding of plume characteristics, contaminant migration, and the overall impact of ongoing corrective action efforts. This section discusses the results of routine groundwater samples collected from groundwater monitoring wells or zones during the reporting period and processed using the WSTF data management system during the first quarter of 2023. Table 4.1 provides a list of the monitoring wells, drinking water wells, PFTS and MPITS sampling locations, and their associated sampling events for which analytical data are presented in this report.

4.2 Groundwater Monitoring Results

This section provides the results of groundwater monitoring, including groundwater elevations and groundwater quality measurements.

4.2.1 Groundwater Elevations

Groundwater elevations at WSTF's conventional monitoring wells, piezometers, and exploration wells are determined by manually measuring the water level. Piezometric elevations at Westbay®[1] multiport wells are calculated based on the groundwater formation pressures measured at target monitoring zones. Piezometric elevations for Flexible Liner Underground Technologies, LLC (FLUTe™) multiport monitoring wells are calculated from dedicated pressure transducer measurements at specified monitoring zones. DTW or formation pressures are measured quarterly and during each sampling event.

Formation pressures at multiport wells in the Plume Front and Mid-plume areas are typically measured during the same week as quarterly DTW measurements at conventional wells. Groundwater elevations from Westbay zones are calculated from pressure data typically collected at the uppermost sampling ports (proximal to the water table) using Westbay pressure measurement equipment. Potentiometric data from multiport wells in other areas of the site are also available. Groundwater elevations are subject to quality review prior to their use in data presentations. Anomalous or erroneous values are flagged as unusable and excluded from the dataset used to generate graphical presentations of groundwater elevation.

The groundwater surface depicted in Figure 4.1 was developed by hand-contouring the most recent water level dataset that corresponds to the analytical reporting period. These data were collected from December 19 to December 21, 2022 and are provided in Table 4.2. Groundwater elevation data measured for the previous PMR were collected during the current monitoring period due to PFTS downtime in the previous monitoring period. Therefore, groundwater elevation data are identical to the preceding PMR. In Figure 4.1 Groundwater elevation contours depict a general westward groundwater flow across the facility. Subtle variations in groundwater elevation may occur within discrete transmissive flow paths at varying depths below ground surface (bgs) in the fractured bedrock aquifer located east of the Western Boundary Fault Zone (WBFZ). Due to the scale, these local elevation variations may not be reflected in the figure. The prominent transition in the hydraulic gradient from the WSTF pediment area east of the WBFZ (0.05 ft/ft) to the relatively flat southern Jornada del Muerto Basin of the WSTF Plume Front area (0.0002 ft/ft) is also evident in the figure. No contours are depicted in the Plume Front area because the range of observed water elevations in that area is less than the contour interval (40 ft). Further discussion of Plume Front and Mid-plume groundwater elevations is provided in Section 7.3.3 of this report.

4.2.2 Groundwater Quality Measurements (Indicator Parameters)

Groundwater indicator parameters are obtained from field quality measurements performed during each sampling event. The groundwater indicator parameters associated with the groundwater monitoring well sampling events included in this report (see Table 4.1) are provided in Appendix A.1.

Indicator parameters and other specific sampling-related details associated with each monitoring well sampling event are recorded by technicians in the field sampling record. Appendix B provides the field sampling records and field/internal CoC forms for each sampling event performed during the reporting

[1] Westbay is a registered trademark of Nova Metrix Ground Monitoring (Canada) Ltd.

period. The WSTF external CoC forms for groundwater samples collected during these sampling events are provided in the Lab Reports on the enclosed DVD.

4.3 Groundwater Chemical Analytical Results

Table 4.1 lists groundwater monitoring wells sampled during the reporting period. Groundwater chemical analytical data from these wells were processed through the WSTF data management system during the fourth calendar quarter of 2022 and detections are included in Appendix A.2.

NASA has also included a copy of the historical analytical database with this report. The database is provided to facilitate NMED's review of groundwater analytical data provided in this report and to allow for the historical comparisons required by the Permit (NMED, 2009; p85). NASA's historical database is an operational tool developed, maintained, and used by NASA environmental staff to manage and archive environmental data. It is not intended to serve specifically as a regulatory reporting mechanism. NASA reserves the right to implement changes to the database that are deemed appropriate to meet the WSTF internal environmental data management requirements. Any changes will not affect the integrity of historical analytical data. The amount of historical data has exceeded the capacity of a Microsoft Access®[2] database, and as a result, all the historical data cannot be contained in the database included with this report for use by NMED. Historical data prior to 2000 was removed from the reporting database to facilitate database operation and ease of use by NMED. Pre-2000 historical data of significance in decision-making is appropriately reflected in the time-concentration (T-C) plots presented in Appendix E.

A summary of internal QA methods applied to groundwater chemical analytical data is provided in Appendix C. The QA reports included in Appendix C apply to analytical results from sampling events performed during the reporting period. As requested by NMED (NMED, 2013a), all laboratory analytical reports corresponding to the analytical data presented in this report are also provided electronically (.pdf format) with this submittal.

The most recent chemical analytical data, including data processed in the first quarter of 2023, were used to develop manually contoured plume iso-concentration maps for NDMA (Figure 4.2) and TCE (Figure 4.3). The lowest iso-concentration contour on each map corresponds to the required cleanup level for that analyte.

5.0 Treatment System Monitoring

This section provides information related to NASA's environmental remediation systems at WSTF. It provides the current operational status of the treatment systems and includes a discussion of the capabilities and performance of the treatment systems, pertinent monitoring data from the systems, and applicable chemical analytical data associated with remediation system monitoring.

5.1 Plume Front Treatment System

The PFTS is a pump and treat groundwater remediation system that utilizes air stripping and ultraviolet (UV) photolysis to remove VOC and nitrosamines from contaminated groundwater. The system is an interim measures presumptive remedy located at the leading edge of the WSTF contaminant plume. It was implemented during the first phase of NASA's remediation strategy to stabilize plume migration. This section provides information related to PFTS operation, performance, and monitoring during the reporting

[2] Microsoft Access is a registered trademark of the Microsoft Corporation.

period. Chemical analytical data from PFTS sampling events completed during the reporting period are also provided.

5.1.1 PFTS Operational Status

The operational status of the PFTS is summarized in Table 5.1 and Table 5.2.

5.1.2 PFTS Performance

This section summarizes the performance of the air strippers and UV reactor for the reporting period. Additional operational status and other details may also be presented or discussed. A variety of parameters are monitored regularly to ensure that the PFTS is properly functioning and is adequately treating the WSTF contaminants of concern (COC).

Operational records indicate that the PFTS performed favorably during the reporting period. The PFTS operated a total of 82 days out of 90 days, treated 110.5 acre-ft of groundwater, and operated at an average rate of 327 gpm for the reporting period. System availability statistics, which exclude scheduled shutdowns for planned maintenance, indicate that the system was operational for approximately 75.7% of January, 94.9% of February, and 99.6% of March 2023. Notable events during the reporting period included the following:

- Extraction wells PFE-1, PFE-2, and PFE-3 remained offline during the quarter while NASA completed groundwater modeling and engineering design studies to determine optimum pumping rates needed to maintain contaminant capture.
- NASA finalized a Statement of Work for repair and rehabilitation plans for PFTS wells PFE-1, PFE-2, PFE-3, PFE-7, PFI-2, and PFI-4 and submitted Request for Quotations to drilling contractors to conduct the work. NASA selected Alpha Southwest to procure new pumps and motors for the wells and conduct the work. NASA mobilized Alpha Southwest to WSTF on March 27, 2023 and initiated work at PFE-1 and PFI-4. Repairs to the wells are anticipated to be completed in the second quarter or 2023.
- NASA replaced a defective air compressor component that affected the operation of the PFTS during January 2023.
- NASA initiated work to repaint the injection well and extraction well motor control cabinets for the purpose of minimizing overheating caused by incident sunlight.

5.1.2.1 Air Stripper Capabilities and Performance

The PFTS consists, in part, of two multi-sieve tray air strippers that operate in a parallel configuration to treat the WSTF VOC of concern. A single air stripper can be used when the system is operating at 650 gpm or less. Both air strippers are used when the system flow rate is greater than 650 gpm. The air strippers must maintain an air flow rate between 3,600 standard cubic feet per minute (scfm) and 4,680 scfm to ensure treatment of VOC. Table 5.3 provides the VOC performance data for the air strippers during the reporting period. Chemical analytical data provided in this report demonstrate that DP-1255 discharge limits and Permit-required cleanup levels were achieved throughout the reporting period.

5.1.2.2 UV Reactor Capabilities and Performance

The PFTS includes a 12-lamp Rayox UV reactor that uses UV photolysis to break down nitrosamines (specifically NDMA) in groundwater. The UV reactor is designed to operate at a minimum hydraulic flow rate of 200 gpm and a maximum flow rate of 3,000 gpm. Table 5.3 provides the NDMA treatment performance data for the UV reactor during the reporting period. As indicated by these data, system design parameters and cleanup levels for NDMA were achieved during the reporting period.

5.1.3 Extraction and Injection Well Performance

Extraction and injection well performance for the reporting period, as based on volumetric flow rates, extraction well drawdown, and water levels and injection well specific capacities, is summarized below. Average Plume Front injection (PFI) well flow rates and average Plume Front extraction (PFE) well flow rates for the reporting period are provided in Table 5.4. Additional events relevant to the performance of individual extraction or injection wells during the reporting period are summarized below.

Well PFI-1 started producing excessive gravel during backflushing in March 2019 and was taken offline in December 2019. In April, August, and September 2021 NASA attempted to remove the downhole equipment from PFI-1 using a pump hoist truck so that the well casing and screen could be inspected with a downhole video camera and potentially repaired. All efforts to remove the equipment from PFI-1 were unsuccessful due to the presence of a large volume of gravel pack within the well screen, along with a suspected breach in the well casing and/or screen that is acting as a subsurface obstruction to prevent the removal of the equipment. Based on this finding, NASA concluded that well PFI-1 is permanently out of service and initiated a groundwater modeling study that was designed in part to determine if the redistribution of treated groundwater to the remaining injection wells would continue to create hydraulic conditions needed to prevent further downgradient migration of the Plume Front. Findings of the modeling study, along with water-level observations following the redistribution of treated groundwater to and from PFI-1 to the remaining injection wells has thus far indicated that a replacement for PFI-1 is not needed.

Wells PFE-1 and PFE-3 went out of service on January 1, 2022 and December 6, 2021, respectively, due to submersible motor failures believed to have been caused by overheating. Well PFE-2 went out of service on July 19, 2022 due to a submersible motor failure. NASA performed groundwater flow modeling studies to evaluate various extraction well flow rate scenarios with respect to maintaining Plume Front capture zones, as well as to evaluate the potential use of intermittent (pulse) pumping to increase contaminant mass removal. The findings of these evaluations were used to select smaller replacement pumps and motors that may be less susceptible to overheating for installation in wells PFE-1, PFE-2, and PFE-3. The results of pipe flow and pressure distribution analyses of the extraction well network completed by NASA during the quarter were used to determine motor sizing requirements under dynamic head conditions. NASA initiated work to repair PFE-1, PFE-2, and PFE-3 on March 27, 2023. Repairs to these wells are anticipated to be completed in the second quarter of 2023.

The submersible motor used to backwash PFI-4 on a periodic basis failed in April 2022. As a precaution, NASA took well PFI-4 out of service to prevent potential plugging of the gravel pack. While PFI-4 is out of service, treated groundwater is being redistributed between wells PFI-2 and PFI-3 for injection. NASA initiated repairs to PFI-4 on March 27, 2023. Repairs to this well are anticipated to be completed in the second quarter of 2023.

5.1.3.1 Extraction and Injection Well Flow Rates and Specific Capacities

Flow rates for extraction and injection wells were measured and monitored throughout the reporting period. While in operation during the reporting period, flow rates for extraction wells PFE-4A, PFE-5, and PFE-7 were stable and approximately unchanged from the previous reporting period. Injection well PFI-3 operated below the design flow rates during the reporting period due to the reduction in total system flow resulting from extraction wells PFE-1, PFE-2, and PFE-3 being out of service. As previously noted, well PFI-4 went out of service in April 2022 and as a result, treated groundwater was redistributed between wells PFI-2 and PFI-3 for injection during the reporting period.

The operational average flow rates for extraction wells PFE-4A and PFE-5 were below their respective design flow rates during the reporting period, whereas PFE-7 operated above its design flow rate. Because wells PFE-1, PFE-2, and PFE-3 were not operational during the entire reporting period, the overall production of the PFTS was reduced during this period.

Specific capacities for the PFE and PFI wells are provided in Table 5.5 and are expressed in gallons per minute per foot (gpm/ft). Generally, PFE well specific capacities are higher than PFI well specific capacities. This is due to the differences between extraction and injection well hydraulics.

5.1.3.2 Injection Well Water Level Variations, Well Monitoring, and Maintenance

Water levels at operational PFI wells are monitored on a continual basis using dedicated pressure transducers that record water levels at 1-second intervals. Specific well capacities are tracked daily while the system is in operation. Periodic backflushing of the injection wells is performed when the wells exhibit rising water levels associated with decreased well capacities and during start-ups and shutdowns. Operations personnel have been using static water table levels as a guide for setting the injection flow rates to each well to maintain a stable injection operation.

In February 2023, the pressure transducer used to monitor water levels in well PFI-4 became lodged in the well, resulting in the well being taken out of service. NASA initiated repairs to PFI-4 on March 27, 2023 and expects to install a new pressure transducer in the well during April 2023.

5.1.4 PFTS Monitoring Results

System monitoring involves the evaluation of a variety of data collected during routine PFTS sampling-related operations. Groundwater monitoring data consist of measured groundwater elevations, calculated groundwater piezometric elevations, graphical representations of groundwater elevation generated from the data (Section 7.3.3), and groundwater indicator parameters (water quality field measurements). The data presented in this section were collected from PFTS monitoring locations during the reporting period. Groundwater chemical analytical data from PFTS sampling events, while not considered monitoring data in some contexts, are also presented in this section.

5.1.4.1 PFTS Monitoring Events

This section and associated appendices discuss the results of routine PFTS samples processed through the WSTF data management system during the reporting period. Groundwater samples processed and included in this report were collected at two PFTS monitoring locations during the reporting period. Table 4.1 provides a list of the PFTS monitoring locations and sampling event dates for which analytical data are presented in this report.

5.1.4.2 PFTS Groundwater Quality Measurements (Indicator Parameters)

Groundwater indicator parameters and other specific sampling-related details associated with each sampling event are recorded by field technicians in the field sampling record. The groundwater indicator parameters measured at each PFTS sampling event in Table 4.1 are provided in Appendix A.3. Appendix B provides the field sampling records and internal CoC forms and the lab reports include laboratory CoC forms for each of the PFTS sampling events discussed in this section.

5.1.5 PFTS Chemical Analytical Results

This section and associated appendices provide the groundwater chemical analytical data processed through the WSTF data management system during the first calendar quarter of 2023. Appendix A.4 provides the analytical results (detections only) from PFTS sampling events performed during the reporting period. A summary of internal QA methods applied to groundwater chemical analytical data is provided in Appendix C.

5.1.6 PFTS Mass Removal

Table 5.6 uses available analytical data to calculate the mass of the various WSTF COC removed by the PFTS between February 1, 2022 and January 31, 2023. During this 12-month period, the PFTS removed approximately 11 kilograms (kg) of TCE, 7 kg of trichlorofluoromethane (Freon®[3] 11), 288 grams (g) of PCE, and 63 g of NDMA.

The contaminant mass removal was calculated as follows:

Mass Removal =
Total Volume Treated x (Influent Concentration – Effluent Concentration)

5.2 Mid-plume Interception and Treatment System

The MPITS is the major component of the second phase of NASA's overall groundwater plume remediation strategy. This interim measure presumptive remedy was designed to intercept high COC concentrations within the fractured bedrock aquifer of the Mid-plume Constriction Area (MPCA).

The operational status of the MPITS is summarized below. Component/system failures, repair, and scheduled maintenance activities accounted for the majority of the short duration shutdowns during the reporting period.

5.2.1 MPITS Monitoring Results

System monitoring involves the collection and evaluation of a variety of data during routine MPITS sampling-related operations. Groundwater monitoring data consist of measured groundwater elevations, calculated groundwater piezometric elevations, graphical representations of groundwater elevation generated from these data (refer to Section 7.3.3), and groundwater indicator parameters (water quality field measurements).

[3] Freon is a registered trademark of The Chemours Company CF, LLC.

The data presented in this section were collected from seven MPITS monitoring locations during the reporting period. Groundwater chemical analytical data from MPITS sampling events, while not considered monitoring data in some contexts, are also presented in this section.

5.2.1.1 MPITS Monitoring Events

This section and associated appendices discuss the results of routine MPITS samples collected during the reporting period and processed by the WSTF data management system during the reporting period. Table 4.1 includes the MPITS monitoring locations and sampling event dates for which analytical data are presented in this report.

5.2.1.2 MPITS Groundwater Quality Measurements (Indicator Parameters)

Groundwater indicator parameters and other specific sampling-related details associated with each sampling event are recorded by the field technicians in the field sampling record. The groundwater indicator parameters measured at each MPITS sampling event listed in Table 4.1 are provided in Appendix A.5. Appendix B provides the field sampling records and internal CoC for each of the MPITS sampling events discussed in this section. The laboratory CoC for each of the MPITS sampling events discussed in this section are provided in the Lab Reports enclosed on the DVD.

5.2.2 MPITS Operational Status

The operational status of the MPITS is included in Table 5.1 and Table 5.2.

5.2.3 MPITS Performance

This section summarizes the MPITS air stripper and UV reactor performance during the reporting period. Operational status and other details may also be presented or discussed. A variety of parameters are monitored regularly to ensure that the MPITS is functioning properly and effectively treating the WSTF groundwater for COC reduction.

Operational records indicate that the MPITS performed favorably during the reporting period. The MPITS operated a total of 59 days out of 90 days, treated 1.07 acre-ft of groundwater at an average rate of 5.5 gpm. System availability statistics, which exclude scheduled shutdowns and planned maintenance, indicate that the system was operational for 99% of January, 100% of February, and 100% of March 2023. Notable events during the reporting period included the following:

- Extraction well MPE-8 was taken out of service on October 25, 2022 after it was determined that the well was producing fine rust particles which were blinding the UV transmissivity sensor. Subsequent camera logging of the well found that the carbon steel well casing and well screen were heavily encrusted with iron tubercles. NASA kept the well offline for the reporting period while work to evaluate potential repair options is being conducted.

- Extraction well MPE-11 experienced a failure of its submersible motor on January 12, 2023. NASA installed a new submersible motor in MPE-11 and place it back into operation on March 14, 2023.

- Due to a decline in water-levels in the MPCA, and a reduction of total available flow while MPE-8 has been out of service, NASA operated the MPITS on an intermittent, pulse pumping basis over the entire reporting period. This change in operational status accounts for the reduction in the total number of days that NASA operated the system in comparison to the preceding reporting period.

5.2.3.1 Air Stripper Capabilities and Performance

The MPITS consists of a single sieve tray air stripper designed to treat WSTF groundwater VOCs of concern at flow rates up to 125 gpm. Table 5.7 provides the VOC performance data for the air stripper based on MPITS analytical data for the reporting period. As indicated by these data, system design parameters and discharge limits for the VOCs were achieved during the reporting period. The MPITS influent is composed of groundwater from operational Mid-plume extraction (MPE) wells and IDW generated during groundwater sampling, well maintenance, well evaluation activities, and other groundwater-related operations at WSTF. Effluent sample results are closely monitored to ensure the air stripper continues to function properly.

5.2.3.2 UV Reactor Capabilities and Performance

The MPITS uses a 72-lamp UV photolysis reactor to break down nitrosamines in groundwater. The UV reactor is designed to operate at flow rates between 20 and 125 gpm. The reactor is capable of automatically adjusting power to the lamps to meet a target of 4.1 orders of magnitude reduction in contaminant concentrations. However, electrical power to the lamps is currently set manually at 100 percent to comply with current internal NASA operational requirements. The UV reactor achieved approximately four orders of magnitude reduction during the reporting period. Table 5.7 shows the UV reactor's performance for the reporting period. As indicated by these data, system design parameters and discharge limits for NDMA were achieved during the reporting period. Effluent sample results are closely monitored to ensure the UV Reactor continues to function properly.

5.2.4 MPITS Extraction Well and Infiltration Basin Performance

Wells MPE-1, MPE-8, MPE-9, MPE-10, and MPE-11 operated at various flow rates during the reporting period. There were no MPITS infiltration basin performance anomalies during the reporting period.

Well MPE-8 started producing excessive sediment and fine iron oxide particles in the previous reporting period and as a result, NASA took the well offline on October 25, 2022. A subsequent camera log of well MPE-8 showed that the carbon steel casing and well screen is encrusted with iron tubercles and will require rehabilitation before the well can be reactivated. Work to rehabilitate the well and further assess the condition of the casing and well screen is planned for the second quarter of 2023.

The submersible motor in well MPE-11 failed on January 12, 2023. NASA installed a new submersible motor in MPE-11 on March 14, 2023 and placed the well back into operation at that time.

5.2.4.1 Extraction Well Flow Rates and Production Capacities

The MPE wells are completed in a fractured bedrock aquifer. Reduced well production capacity has resulted in cyclic operation of the extraction wells throughout the reporting period. Extraction well performance is characterized by evaluating well pumping rates and drawdown of water levels during pumping at each extraction well. Except for wells MPE-8 and MPE-11 as noted above, no extraction well performance anomalies with respect to pumping rates and water-level drawdowns were observed during the reporting period.

5.2.4.2 Infiltration Basin Performance, Monitoring, and Maintenance

The MPITS infiltration basin was designed to accept up to 200 gpmNo operational or performance issues were identified during the reporting period.

5.2.5 MPITS Chemical Analytical Results

Appendix A.6 provides the MPITS chemical analytical data for the analytical reporting period (detections only). A summary of internal QA methods applied to groundwater chemical analytical data is provided in Appendix C.

5.2.6 MPITS Mass Removal

Table 5.8 summarizes the mass of the various WSTF COC removed by the MPITS between February 1, 2022 and January 31, 2023. Approximately 1.9 kg of COC mass was removed by the MPITS during this 12-month period. In addition to groundwater extracted in the MPCA, the MPITS accepts and treats IDW generated during other groundwater investigations. The contaminant mass removal was calculated as follows:

Mass Removal =
Volume of Water Extracted at Each Well x (Contaminant Concentration at Each Well – MPITS Effluent Concentration)

5.3 Remediation Systems Operation Costs

Table 5.9 presents the costs for operating the PFTS and MPITS for the 12 months from February 1, 2022 to January 31, 2023. The table summarizes the cost of the labor and materials for operation and maintenance of both systems, and includes the electrical costs associated with system operations.

6.0 Discussion and Conclusions

Routine groundwater monitoring is conducted at WSTF to support a variety of projects. The primary objectives of routine groundwater monitoring at WSTF are to delineate the extensive contaminant plume resulting from historical contaminant releases at the facility, support the development and implementation of corrective actions, and monitor the impact of these corrective actions during implementation and operation. Groundwater sampling at WSTF is currently focused on the Plume Front and Mid-plume areas, both of which are critical to NASA's overall groundwater remediation efforts.

This section provides discussion and conclusions based on the results of groundwater monitoring conducted at WSTF. Also included is a summary discussion of the remediation systems' performance, monitoring results, system modifications, and compliance with discharge requirements and/or applicable cleanup levels. Chemical analytical results from the PFTS, MPITS, and routine groundwater monitoring are compared to cleanup levels (refer to Appendix D). This section also provides NASA's anticipated future groundwater monitoring and related activities at WSTF.

6.1 Summary of Groundwater Monitoring Projects

Routine groundwater monitoring was performed during this quarter in accordance with currently approved permits, plans, and other regulatory requirements. In general, the WSTF contaminant plume is relatively stable in nature and extent. The potential for continued migration of the plume resulted in the development of the phased approach to groundwater remediation discussed in Section 1.0. NASA continues to collect a variety of groundwater data from the comprehensive WSTF groundwater monitoring network. Monitoring results are presented in detail in the relevant sections of this report and in later sections of this summary. Several noteworthy projects related to routine groundwater monitoring are discussed below.

6.1.1 Monitoring Well Performance or Sampling Equipment Issues

NASA was unable to sample one well during the previous reporting period (August 1, 2022 – October 31, 2022) and two wells during the current reporting period (November 1, 2022 – January 31, 2023) because of mechanical or well performance issues. This section does not address wells that were not sampled due to resource limitations.

- NASA could not sample well PL-7-480 in August 2022 because the Westbay zone did not produce water. NASA believes the water level at this location has dropped below this sample port and will monitor the water level during future planned sampling events.

- Wells 600A-001-GW and 600A-002-GW (scheduled for sampling in November 2022) were not sampled because of equipment failure. NASA obtained replacement sampling equipment in December 2022 for use in January 2023. Upon further evaluation, NASA determined that previous development of these wells using on-site equipment after colloidal borescope tests may have been inadequate. NASA is working to acquire the services of an off-site subcontractor to perform additional development at these wells prior to sampling. NASA will provide an update on well development progress in future reports.

Recent occurrences of sampling issues, backlog of prior unresolved issues, and issues resolved this quarter are summarized in Table 7.1.

6.1.2 Monitoring Well Installation and Well Plugging and Abandonment

There was no well installation fieldwork this quarter, though NASA plugged and abandoned several monitoring wells as described below with other first quarter 2023 activity.

- On October 31, 2022, NMED approved the *Work Plan for Drilling and Installation of Monitoring Well 600C-002-GW and Abandonment of PL-6*, submitted on February 1, 2022 (NMED, 2022i). NMED directed NASA to complete well installation and provide a well completion report no later than September 29, 2023. NASA continued project planning.
- NASA continued project planning for the installation of replacement well BLM-43 (*Drilling Work Plan for Abandonment of Well BLM-30 and Drilling of New Groundwater Monitoring Well BLM-43* [NASA, 2019c]), replacement well 600B-001-GW (*Work Plan for Drilling and Installation of Monitoring Well 600B-001-GW* [NASA, 2021h]), and new well 600C-001-GW (*Work Plan for Drilling and Installation of Monitoring Well 600C-001-GW at the NASA White Sands Test Facility (WSTF)* [NASA, 2021i]).
- On January 7, 2023, NASA completed abandonment of well NASA 9 in accordance with NMED's October 31, 2022 approval of the *NASA WSTF Work Plan for Abandonment of NASA WSTF NASA 9 and Replacement with Monitoring Well 400-001-GW* (NASA, 2022f). NASA continued planning the installation of the replacement well and related abandonment and replacement report, which is due to NMED no later than September 29, 2023.

- On January 10, 2023, NASA completed abandonment of the borehole at well BLM-30 in accordance with the NMED-approved *NASA WSTF Drilling Work Plan for Abandonment of Well BLM-30 and Drilling of New Groundwater Monitoring Well BLM-43* (NASA, 2021a). NASA continued planning the installation of the replacement well and related abandonment and replacement report, which is currently due to NMED no later than April 28, 2023.
- On January 30, 2023, NASA completed abandonment of the groundwater monitoring components of wells 200-SG-2 and 200-SG-3 in accordance with NMED's January 10, 2022 approval of the *Well Plugging Plan of Operations for Multiport Soil Vapor Groundwater Monitoring Wells 200-SG-2 and 200-SG-3* (NASA, 2021m). NASA submitted the *Reconfiguration Report for NASA Wells 200-SG-2 and 200-SG-3* on March 21, 2023 (NASA, 2023i).
- NASA completed abandonment of wells 400-C-118 (January 8, 2023), 400-LV-125 (January 7, 2023), 400-KV-142 (January 7, 2023), BLM-2-482 (January 20, 2023), and NASA 8 (January 30, 2023) as described in the NMED-approved *NASA WSTF Groundwater Monitoring Plan Update for 2022* (NASA, 2022k). NASA submitted the *Abandonment Report for NASA Wells 400-C-118, 400-KV-142, 400-LV-125, BLM-2-482, and NASA 8* on March 30, 2023 (NASA, 2023j).

6.1.3 Westbay Well Reconfiguration

Westbay well reconfiguration fieldwork in the first quarter of 2023 is summarized below. Historical information and full submittal history for well reconfiguration projects are provided in Appendix F.

- NASA abandoned the borehole remaining from former Westbay well BLM-28 in the first quarter of 2023 and continued planning the installation of replacement well 600C-001-GW. NASA submitted the *Abandonment Report for NASA Well BLM-28* on March 14, 2023 (NASA, 2023g).
- On January 6, 2023, NASA completed abandonment of the lower portion of the borehole at well BW-4 as described in the *Response to Approval with Modifications of NASA WSTF Well Reconfiguration Work Plan for Well BW-4* (NASA, 2022b). NASA continued planning the remainder of reconfiguration activities (sampling system installation). NASA submitted the *Reconfiguration Report for NASA Well BW-4* on March 21, 2023 (NASA, 2023h).
- NMED is reviewing the *Westbay Well Reconfiguration Work Plan for Wells PL-7, PL-8, PL-10, ST-5, and WW-3*, submitted on April 29, 2021 (NASA, 2021b).

6.1.4 Groundwater Monitoring Data Representativeness

Activities in the first quarter 2023 included the following:

- On August 8, 2022, NMED approved the *Abbreviated Investigation Work Plan for Groundwater Data Representativeness, Phase 2: FLUTe Well Evaluation*, submitted to NMED on November 2, 2021 (NASA, 2021l). NASA continued development of the investigation report, which is due to NMED no later than April 28, 2023.

6.2 Comparison of Analytical Data to Cleanup Levels

This section and the associated appendix compare the chemical analytical data obtained from groundwater remediation system sampling points and groundwater monitoring wells to the approved cleanup levels provided in the GMP (NASA, 2022e). Appendix D provides a comparison of groundwater data to cleanup levels for the current analytical reporting period.

6.2.1 Groundwater Monitoring Wells

Appendix D.1 includes a comparison of groundwater monitoring well data to applicable cleanup levels for the analytical reporting period. Only analytical results that exceed cleanup levels are included in the tables.

6.2.2 Plume Front Treatment System

Groundwater samples were collected from the PFTS influent and effluent as required by the RSMP (NASA, 2022h) and DP-1255 (NMED, 2017). Chemical analytical data from these sampling events were presented in Section 5.1.5 and Appendix A.4. Appendix D.2 includes any PFTS influent results that exceeded cleanup levels during the current analytical reporting period. The PFTS effluent met all DP-1255 discharge limits and Permit cleanup levels.

6.2.3 Mid-plume Interception and Treatment System

Groundwater samples were collected from the MPITS influent and effluent as required by the RSMP (NASA, 2022h) and DP-1255 (NMED, 2017). Chemical analytical data from these sampling events were presented in Section 5.2.5 and Appendix A.6. Appendix D.3 includes any MPITS influent data that exceeded cleanup levels during the current analytical reporting period. There were no DP-1255 discharge limit or cleanup level exceedances from the MPITS during the reporting period.

6.3 Contaminant Plume Evaluation

The plume evaluation for the first quarter of 2023 includes potentiometric surface maps and a variety of chemical analytical data.

6.3.1 Groundwater Elevations and Iso-concentration Maps

A manually contoured potentiometric surface map (Figure 6.1) is provided for the WSTF Plume Front area that correlates with the end of the current reporting period. Data used to generate contours for this map are identical to the data used to generate the site-wide contours (Figure 4.1). The 40-ft contour used in the site-wide piezometric map is supplemented by 2-ft contours in the Plume Front potentiometric surface map. Arrows indicate the direction of groundwater flow. The influence of PFTS operation is evident by the depression in the potentiometric surface that is caused by pumping at the PFE wells. The hydraulic mound produced by injecting treated water at the PFI wells is apparent at the southern edge of the figure.

Groundwater elevations measured in the MPCA during this analytical reporting period are presented in the manually contoured Mid-plume potentiometric surface map (Figure 6.2). The data used to generate contours for this map are the same values used to generate the site-wide potentiometric map (Figure 4.1). The general west-trending groundwater flow direction through the Mid-plume area is apparent in Figure 6.2, though local variations may exist within discrete fractures or higher conductivity flow zones within the fractured bedrock aquifer in this area. Groundwater elevation is generally depressed downgradient of well MPE-11 near well MPE-6.

6.3.2 Plume iso-concentration maps

Figure 6.3 and Figure 6.4 present manually contoured iso-concentration maps of the Plume Front for NDMA and TCE using data processed during this reporting period. The manual contouring method allows a geologist to evaluate plume contaminants against interpreted hydrogeological features to create a realistic representation of the contaminant plume. Hydrogeological conditions considered during the manual contouring of contaminant concentrations are primarily hydrostratigraphic units or significant structural features that cause the juxtaposition of variable hydraulic conductivities. The lowest value solid iso-concentration line on each map corresponds to the required cleanup level for the analyte presented. The iso-concentration maps are consistent with the maps presented in previous reports (i.e., a like-to-like comparison in the case of NDMA), the monthly evaluation of contaminant concentrations, and site-wide plume maps that have been provided to NMED over the last several years.

6.3.3 Combined Plume Iso-concentration Maps and Potentiometric Surface Map

Figure 6.5 shows the interrelationship of the Plume Front potentiometric surface and manually contoured TCE plume for the current analytical reporting period. TCE was selected because it is the most widely distributed health-risk-driving contaminant in the conceptualized contaminant plume.

6.3.4 Time-concentration Plots and Groundwater Data Analytical Trends

T-C plots are used to evaluate and summarize contaminant concentration trends in WSTF wells over time on a quarterly basis as presented in this report. An interpretation of the concentration trends shown in T-C plots is provided in this section.

To facilitate the evaluation of T-C plots, WSTF monitoring wells are grouped as listed in Table 5 of the GMP (NASA, 2022e). T-C plots are generated using analytical data from each monitoring and remediation well where available. The concentration trends for four of the primary COCs (Freon 11, TCE, PCE, and NDMA) in groundwater are reviewed by technical personnel to develop the summary table presented in Appendix E. This table includes the historical maximum contaminant concentrations, the latest concentrations, and an interpretation of the current concentration trend for each well. For NDMA, results are presented for both EPA Method 607 and low-level laboratory analysis where available. T-C trend evaluation places greater emphasis on the recent analytical results reported over the last several years if a change in trend is observed over time since initial well installation. As a result, the current T-C interpretation may therefore not reflect the full historical variability in T-C behavior through the life of the well, particularly for the older wells at WSTF installed in the mid-1980s through the 1990s. Where individual wells have been out of service for several years and/or have been plugged and abandoned, the datapoint has been removed from the suite of wells evaluated. T-C plots constantly evolve over time, and the historical plots associated with wells no longer in service are not considered representative of current conditions.

The determination of a trend for COC concentrations within a specific well is based on the evaluation of analytical data collected over at least several quarters (typically a minimum of three to four sampling events). Concentrations are evaluated in conjunction with other potentially influencing factors (including hydrogeology, aquifer recharge conditions, well development activities, and any changes in the operational status of proximal remediation wells) before any modification to the T-C plot interpretation is made. This approach is necessary to avoid the premature determination of a trend that represents a short-term fluctuation that subsequently reverts back to previous conditions.

A summary site-wide well map and analytical table depicting the most recent interpreted T-C trend for each individual well is included in Appendix E. The majority of wells in the WSTF monitoring network reflect a decline in COC concentrations over time, or fluctuating levels that have remained relatively consistent. Only one monitoring well within the network (BLM-5-527 of the MPCA Well Group) is characterized by increasing concentrations for this quarter. A summary evaluation of each of the GMP well groups is provided in the following paragraphs, along with a discussion of the T-C plots for specific wells identified within the group. T-C plots (for specific wells where identified in the text) are also provided in Appendix E.

Upgradient (Background) Well Group: The four wells designated as upgradient groundwater monitoring wells are located east of the WSTF industrialized areas. There have been no confirmed VOC or NDMA detections in groundwater for these wells, and all four wells are classified as not detected (ND).

100/600 Area Well Group: Monitoring wells within this group are located within the 100 Area and the adjacent easternmost part of the 600 Area. The wells are located in the vicinity of the southeastern boundary of the groundwater plume, with COCs sourced by the former 600 Area Closure HWMU and/or the 200 Area. Where located within the footprint of the groundwater plume, wells reflect a decreasing COC concentration trend for Freon 11, TCE, and PCE. This trend is characteristic of both wells within the primary fractured bedrock aquifer and for well 600-G-138 (T-C plot provided) that is screened across a localized perched groundwater horizon located on top of andesite bedrock in the vicinity of the 600 Area Closure. NDMA in groundwater is sourced from the 300 and 400 Areas and is not identified within the 100 and 600 Areas.

200 Area Well Group: The 200 Area represents the primary source of TCE and Freon 11 groundwater contamination at WSTF. Historical maximum concentrations for these contaminants in monitoring wells were reported in the late 1980s through mid-1990s. Over the last 30 years, the majority of 200 Area T-C plots reflect a decreasing trend in contaminant concentrations for these COCs. As an example, TCE in well 200-D-240 (T-C plot provided) has decreased from 110 µg/L in 1990 to 15 µg/L in 2022. The decreases reflect natural plume migration and degradation under the influence of a steep horizontal hydraulic gradient of 0.05 ft/ft within a relatively porous fractured limestone aquifer in conjunction with the implementation of effective waste management practices in the 1980's that eliminated waste discharges. Wells that display a more consistent trend are typically characterized by lower groundwater COC concentrations, an screened intervals in less fractured (lower hydraulic conductivity) andesite bedrock further west and southwest.

300/400 Area Well Group: The T-C plots for monitoring wells in this group show COC concentration trends that are either fluctuating (most notably the group of wells installed in January 2017 within poorly fractured andesite bedrock in the vicinity of the 400 Area Closure HWMU) or have declined since initial well installation. Declining trends primarily correlate to wells characterized by higher COC concentrations and hydraulic conductivity, that are typically screened across the top of bedrock at the andesite-alluvium interface. These wells are located adjacent to the 300/400 Area primary arroyo that experiences enhanced natural recharge. Wells that do not display declines are typically located off the main axis of primary drainages or are protected from precipitation infiltration by low permeability surfaces such as the 300 and 400 Area Closure impoundment caps. Declining trends in the 300 and 400 Areas reflect the influence of contaminant migration related to a strong hydraulic gradient of 0.05 ft/ft in conjunction with the implementation of effective waste management practices in the 1980's. Relatively consistent trends reported for some monitoring wells (particularly for NDMA) are interpreted to result from the limited connectivity of fractures for wells screened in andesite bedrock.

Northern Boundary Well Group: Monitoring wells are frequently characterized by relatively low contaminant concentrations with consistent T-C trends or are ND. A well trend classified as “fluctuating low-level NDMA” without other contaminant detections (otherwise considered to be ND) is reported this quarter from three wells: BLM-32 (1.6 ng/L); JER-1 (1.7 ng/L); and JER-2 (4.2 ng/L). These wells are located adjacent to the boundary of the northwest-trending plume arm that coincides with northwest-trending structural controls in the bedrock that extend northwest from the Mid-plume constriction area.

Southern Boundary Well Group: Monitoring wells are located south of the NDMA and TCE plumes, do not exceed the low-level NDMA cleanup level of 1.1 ng/L, and are classified as ND. A single well (BLM-6-488, T-C plot provided) continues to show a consistently low concentration of TCE (2.20 µg/L) below the NMED cleanup level and is characterized as exhibiting “natural migration - no overall T-C trend.”

MPCA Well Group: T-C plots for monitoring wells in this group that characterize the MPCA predominantly show declining contaminant trends associated with either natural plume migration and degradation or related to MPITS pumping following startup in 2011. T-C plots for wells BLM-21-400, BLM-36-350, BLM-18-430, and BLM-5-527 are included in Appendix E.

Well BLM-21-400 is located approximately 500 ft south of the nearest MPE well (MPE-11) and immediately downgradient of the interpreted first primary confluence of the TCE and NDMA contaminants from their respective source areas (Freon 11 and TCE originate from the 200 Area [upgradient well BLM-14-327] and NDMA originates from the 300 and 400 Areas [upgradient well BLM-15-305]). Contaminant concentrations in BLM-21-400 reflect a natural decreasing trend for Freon 11 (320 to 34 µg/L), TCE (220 to 18 µg/L), PCE (12 to 0.85 µg/L), and NDMA (5.6 to 0.85 µg/L) since well installation in 1991.

Multiport well BLM-36 is located downgradient and to the south-southwest of the MPITS. The T-C plots for the shallow zone in well BLM-36 (BLM-36-350) identify groundwater COCs. These have not been detected in deeper zones of this well, providing a significant location for vertical delineation in the Mid-plume. BLM-36-350 has previously shown consistent and more recently declining concentrations for groundwater COCs since activation of the MPITS and is currently classified as “pumping-related migration – decreasing.”

Wells BLM-18-430 and BLM-5-527 are located in the northwest-trending arm of the WSTF groundwater contaminant plume that extends from the MPCA. These wells are monitored to determine the effect of operation of the MPITS on the migration of groundwater contaminants into this area. The T-C plot for well BLM-18-430 shows a decline in contaminant concentrations since startup of the MPITS, inferred to be related to the arrest of contaminant migration to the northwest arm through continuous operation of the MPE wells. Well BLM-5-527 is currently the only monitoring well on-site interpreted to display a “natural migration – increasing” trend. Increases in this well are inferred to reflect the migration of contaminants into low conductivity rhyolite bedrock of the extreme northwest section of the northwest-trending arm. Although the flow of contaminant mass to the arm may have been arrested following MPITS startup, the COC mass already present within the arm may still be migrating into this remote northwest location.

Main Plume Well Group: Wells in this group are located within the western section of the groundwater plume at the Plume Front and show widespread declining trends related to natural migration or pumping depending on proximity to the PFTS remediation wells. Contaminant concentrations within this group decline during intervals of system operation and rebound during quiescent non-operational periods.

Plume Front Well Group: Monitoring wells within this group are generally located outside the boundary of the contaminant plume and groundwater analytical results are typically ND. Occasional detections of Freon 11 and TCE in well ST-7 may be a result of continued pumping at well PFE-7 and the related irregular migration of contaminants at irregular intervals due to heterogeneity in the alluvial aquifer. Fluctuating low-level NDMA detections without other detectable COCs were identified in one well within this group (PL-6 [44.03 ng/L]).

Sentinel Well Group: Monitoring wells within this group form a more distal tier located outside the groundwater contaminant plume and have all historically shown analytical results that are ND. For this quarter, fluctuating low-level NDMA detections without other detectable COCs have been identified in five of the sentinel wells (BLM-42-709 [1.1 ng/L], PL-10 [1.8 ng/L], PL-11 [1.4 ng/L], WW-3 [1.1 ng/L], and WW-5 [4.4 ng/L]).

Other Well Group – Mid-plume Extraction Wells: The T-C plots for the five MPITS wells are included in Appendix E. The COC concentrations for Freon 11 and TCE in wells MPE-8, MPE-9, MPE-10, and MPE-11 have displayed a generally consistent concentration trend since 2013 under the influence of pumping-related plume migration. Well MPE-1 is historically the well with the highest COC and NDMA concentrations and currently shows a decreasing concentration trend associated with continued operation of the MPITS.

Other Well Group – Plume Front Extraction Wells: The T-C Plots for five PFTS wells; PFE-1, PFE-2, PFE-3, PFE-4A, and PFE-7 are included in Appendix E. The high-volume extraction wells exhibit declining trends when operational due to pumping-related plume dilution within the alluvial aquifer at the Plume Front.

6.4 Summary of Source Area Investigations

The following subsections summarize the status of each solid waste management unit (SWMU) or hazardous waste management unit (HWMU) at WSTF and provide specific information on work performed during the first calendar quarter of 2023; January 1, 202 – March 31, 2023. Relevant historical information including investigation status, and full submittal history for each potential source area is provided in Appendix F.

6.4.1 200 Area

NASA continues work associated with the investigation of two HWMUs and SWMUs in the 200 Area. NASA performed a wide-area soil vapor survey in the 200 and 600 Areas to assess the potential risk to workers posed by soil vapor intrusion into the buildings adjacent to areas with the greatest soil vapor concentrations. NMED disapproved NASA's report on the assessment, stating that the vapor intrusion pathway is complete from the standpoint of risk assessment. During the third quarter of 2022, activities related to this SWMU included:

- On September 20, 2022, NMED disapproved NASA's January 30, 2020 *NMED Disapproval Response for 200 Area and 600 Area Vapor Intrusion Assessment Report* (NASA, 2020a). NMED directed NASA to address three multipart comments and submit a revised report no later than April 28, 2023 (NMED, 2022k). NASA continued developing the revised report.

6.4.2 300 Area

There were no document submittals for the 300 Area in the first quarter of 2023.

6.4.3 400 Area

There were no document submittals for the 400 Area in the first quarter of 2023. Recent and ongoing activity includes:

- NMED is reviewing the *Response to Disapproval of 400 Area Supplemental Groundwater and Soil Vapor Monitoring Plan* (July 14, 2021; NASA, 2021f).

- NMED is reviewing the *NASA WSTF 400 Area Closure Investigation Report – NMED Third Disapproval Response* (July 27, 2021; NASA, 2021g).

- NMED is reviewing the *Response to Disapproval of 300 Area Supplemental Abbreviated Drilling Work Plan* (July 14, 2021; NASA, 2021e).

6.4.4 600 Area Perched Groundwater Extraction and Investigations

NASA is currently conducting a perched groundwater extraction pilot test in the 600 Area and completed an investigation into the presence of additional perched groundwater beneath and adjacent to the 600 Area Closure. During the first quarter of 2023, activities related to this SWMU included:

- NASA extracted approximately 318 gallons of perched groundwater from monitoring well 600-G-138 in accordance with NMED's March 1, 2013 *Approval Time Extension for Implementation of the Perched Groundwater Extraction Pilot Test at the 600 Area* (NMED, 2013). Groundwater elevation measurements indicate there is approximately 3.18 ft of perched groundwater within this well. This perched groundwater thickness has been relatively consistent since the inception of extraction activities in 2013. Extracted groundwater was containerized for treatment at the MPITS and discharged in accordance with DP-1255.
- NMED approved NASA's April 26, 2022 *600 Area Perched Groundwater Extraction Pilot Test Interim Status Report – Project Year 9* (NASA, 2022c). NASA began development of the status report for Project Year 10.
- NMED is reviewing NASA's June 29, 2022 *600 Area Perched Groundwater Investigation Report* (NASA, 2022g).

6.4.5 SWMUs 2, 8, and 34 and Area of Concern (AOC) 51 (Wastewater Lagoons)

NASA continued work required to investigate and close the WSTF Wastewater Lagoons in the 100, 200, and 600 Areas and at the Second Tracking and Data Relay Satellite (TDRS) Ground Terminal (STGT). Activities during the first quarter of 2023 included:

- NMED disapproved the *NASA WSTF 100 Area Wastewater Lagoons Closure (SWMU 2) Investigation Report* (NASA, 2020a) on July 5, 2022. NASA continued addressing 20 NMED comments and developing a revised report for submittal no later than January 31, 2023 (NMED, 2022d). After completing investigation fieldwork at the 200 Area lagoons in February 2023, NASA and the subcontracted drilling company moved drilling equipment to the 100 Area lagoons. In late February and March 2023, NASA completed the installation of all required soil borings at the 100 Area lagoons. The required soil samples were collected at each boring and submitted to the off-site laboratories for analysis. During the first quarter of 2023, NASA began reviewing chemical analytical data in preparation for revising the disapproved investigation reports. To provide sufficient time to complete data review and preparation of the revised investigation report, NASA submitted the *Request for Extension of Time for NASA White Sands Test Facility (WSTF) 100 Area Wastewater Lagoons Closure (SWMU 2) Investigation Report Response to Disapproval* on January 18, 2023 (NASA, 2023a).

- NMED disapproved the *NASA WSTF 200 Area Wastewater Lagoons Closure (SWMU 8) Investigation Report* (NASA, 2019d) on June 6, 2022. NASA continued addressing 14 NMED comments and developing a revised report for submittal no later than December 30, 2022 (NMED, 2022b). NASA also requested an extension of time for submittal of the revised report (NASA, 2022l), which NMED approved. In February 2023, NASA and the subcontracted drilling company completed the nine soil borings at the 200 Area lagoons then decontaminated tooling and moved drilling equipment to the 100 Area lagoons. All samples were submitted to the off-site laboratories for analysis. During the first quarter of 2023, NASA began reviewing chemical analytical data in preparation for revising the disapproved investigation report. To provide sufficient time to complete data review and preparation of the revised investigation report, NASA submitted the *Request for Second Extension of Time for NASA White Sands Test Facility (WSTF) 200 Area Wastewater Lagoons Closure (SWMU 8) Investigation Report (IR) Response to Disapproval* on March 8, 2023 (NASA, 2023e).
- NMED disapproved the *NASA WSTF 600 Area Wastewater Lagoons Closure (SWMU 34) Investigation Report* (NASA, 2019e) on June 16, 2022. NASA continued addressing 15 NMED comments and developing a revised report for submittal no later than December 30, 2022 (NMED, 2022c). NASA also requested an extension of time for submittal of the revised report (NASA, 2022m), which NMED approved. In January 2023, NASA mobilized the subcontracted drilling company to WSTF and initiated the installation of soil borings and monitoring wells in accordance with the plan. NASA completed soil boring 600L-SB-28 at a location topographically and hydrogeologically downgradient from the 600 Area wastewater lagoons. NASA collected the required soil samples from the boring, which intercepted perched groundwater at approximately 151 feet below ground surface. NASA installed a groundwater monitoring well in the borehole and monitored groundwater as it recovered to approximately 145 feet below ground surface. In January and February 2023, NASA completed the installation and sampling of all required soil borings within the 600 Area wastewater lagoon. All samples were submitted to the off-site laboratories for analysis. During the first quarter of 2023, NASA began reviewing chemical analytical data in preparation for revising the disapproved investigation reports. To provide sufficient time to complete data review and preparation of the revised investigation report, NASA submitted the *Request for Second Extension of Time for NASA White Sands Test Facility (WSTF) 600 Area Wastewater Lagoons Closure (SWMU 34) Investigation Report Response to Disapproval* on March 8, 2023 (NASA, 2023f).
- NMED disapproved the *NASA White Sands Test Facility WSTF STGT Wastewater Lagoons Closure (AOC 51) Investigation Report* (NASA, 2020c) on July 25, 2022. NASA continued addressing 16 NMED comments and developing a revised report for submittal no later than February 28, 2023 (NMED, 2022e). After completing the drilling and soil sampling at the 100 Area lagoons in early March 2022, NASA and the subcontracted drilling company decontaminated all downhole drilling tools, moved operations to the STGT Area lagoons, and completed the seven soil borings for these lagoons. All drilling equipment and tooling were decontaminated, and the subcontracted drilling company demobilized from WSTF on March 23, 2023. The required soil samples were collected at each boring and submitted to the off-site laboratories for analysis. During the first quarter of 2023, NASA began reviewing chemical analytical data in preparation for revising the disapproved investigation reports. To provide sufficient time to complete data review and preparation of the revised investigation report, NASA submitted the *Request for Extension of Time for NASA White Sands Test Facility (WSTF) Second*

Tracking and Data Relay Satellite Ground Terminal (STGT) Wastewater Lagoons Closure (Area of Concern [AOC] 51) Investigation Report Response to Disapproval on January 18, 2023 (NASA, 2023b).

6.4.6 SWMU 10 (200 Area Hazardous Waste Transmission Lines [HWTL])

NASA performed an investigation of the abandoned HWTL that consisted of HWTL excavation, pipeline removal, soil sampling, and the submittal of an investigation report. Minimal activities during the first quarter of 2023 consisted of the following:

- NMED is reviewing NASA's March 4, 2022 *Response to Second Disapproval of NASA WSTF 200 Area HWTL (SWMU 10) Investigation Report and Risk Assessment Report* (NASA, 2022a).

6.4.7 Dye Tracer Test Investigation

Activities during the first quarter of 2023 included the following:

- NMED is reviewing NASA's December 20, 2022 *Abbreviated Drilling Work Plan in Response to the NMED Approval with Modification of the Report on Tracer Testing in the WSTF 200/600 Areas and Mid-plume Constriction Area* (NASA, 2022n).

6.4.8 SWMU 16 (600 Area Bureau of Land Management [BLM] Off-Site Soil Pile)

NASA completed a multi-part investigation of the 600 Area BLM Off-Site Soil Pile and has addressed NMED comments on multiple iterations of the investigation report. Activities in the first quarter of 2023 were:

- NMED approved NASA's September 28, 2021 *Accelerated Corrective Measures Work Plan for the NASA WSTF SWMU 16 (600 Area BLM Off-Site Soil Pile)* (NASA, 2021j) with modifications on February 10, 2023. NASA is addressing NMED's two comments and revising the work plan for submittal to NMED no later than May 31, 2023.

6.4.9 SWMUs 21–27 (Septic Tanks)

Activities during the first quarter of 2023 included the following:

- NMED approved NASA's May 18, 2021 revised *NASA White Sands Test Facility (WSTF) Septic Tanks (SWMUs 21-27) Investigation Report* (NASA, 2021c) on March 16, 2023. NASA is addressing two comments and revising the report for submittal to NMED no later than June 16, 2023.

6.4.10 SWMUs 29–31 (Small Arms Firing Ranges)

During the first quarter of 2023, activities related to these SWMUs included:

- NMED approved the *Response to Second Disapproval Small Arms Firing Ranges (SWMUs 29-31) Remedy Completion Report and Risk Assessment Report* (August 3, 2020; NASA, 2020b) on November 16, 2022 with modifications (NMED, 2022k) and directed NASA to address six comments and submit revised reports no later than January 31, 2023. NASA addressed NMED's six comments and prepared the revised reports for submittal to NMED. NASA submitted the *Response to Approval w/Mods – Revised Small Arms Firing Range (SWMUs 29-31) RCR* on January 27, 2023 (NASA, 2023d).

6.4.11 SWMU 33 (300 Area Test Stand 302 Cooling Water Pond)

During the first quarter of 2023, activities related to this SWMU included:

- NMED is reviewing the *Response to Disapproval of NASA WSTF 300 Area Test Stand 302 Cooling Water Pond (SWMU 33) Investigation Work Plan (IWP) and Historical Information Summary (HIS)* (September 14, 2022; NASA, 2022j).

6.4.12 SWMU 47 (500 Fuel Storage Area)

NASA plans to perform an investigation of the 500 Area Fuel Storage Area (SWMU 47). During the first quarter of 2023, activities related to this SWMU included the following:

- NMED is reviewing NASA's *Response to Second Disapproval of 500 Area Fuel Storage (SWMU 47) Investigation Work Plan* (June 29, 2021; revised IWP; NASA, 2021d).

6.4.13 SWMU 49 (700 Area Landfill)

NASA completed NMED-approved investigation work at the closed landfill as described in the *Response to NMED Approval with Modifications SWMU 49 (700 Area Landfill) Phase I Investigation Work Plan and Historical Information Summary* (NASA, 2019b). Activities during the first quarter of 2023 include the following:

- NMED approved NASA's April 29, 2022, *700 Area Landfill Closure (SWMU 49) Phase I Investigation Report* (NASA, 2022d) on February 10, 2023 and directed NASA to provide a Phase II work plan no later than October 31, 2023 (NMED, 2023).

6.4.14 SWMU 50 (First TDRS Diesel Release)

NASA performed NMED-approved investigation fieldwork at SWMU 50 and provided the results to NMED in the *First Tracking Data Relay Satellite System (TDRSS) Diesel Release (SWMU 50) Investigation Report* (NASA, 2019a). Activities during the first quarter of 2023 include the following:

- NMED approved NASA's *Response to Disapproval of First Tracking Data Relay Satellite System (TDRSS) Diesel Release (SWMU 50) Investigation Report and Risk Screen Evaluation Report* (November 9, 2020; NASA, 2020d) on November 16, 2022 with modifications (NMED, 2022j) and directed NASA to address seven comments and submit revised reports no later than January 31, 2023. NASA addressed NMED's seven comments and submitted the *Response to Approval with Modification of First Tracking Data Relay Satellite System (TDRSS) Diesel Release (SWMU 50) Investigation Report* on January 26, 2023 (NASA, 2023c).

6.4.15 SWMU 52 (Second TDRS UST)

No additional activity is planned at this SWMU for the foreseeable future following NMED's approval with a modification on August 8, 2022 (NMED, 2022f).

6.4.16 SWMU 54 (500 Area Former Oxidizer Burner)

While researching documentation related to the Fuel Treatment Unit, NASA identified the location of a former 500 Area oxidizer burner as a potential new SWMU. In the December 20, 2021, *Approval 500*

Area Newly Identified SWMU Release Assessment Report (NMED, 2021b), NMED directed NASA to list the former oxidizer burner as a SWMU requiring corrective action in the WSTF Hazardous Waste Permit (during a Permit renewal or modification, as applicable) and to submit an investigation work plan for the unit no later than August 31, 2022. Activities during the first quarter of 2023 include the following:

- NMED is reviewing the *500 Area Former Oxidizer Burner (FOB) Investigation Work Plan (IWP) and Historical Information Summary (HIS)* on August 25, 2022 (NASA, 2022i).

7.0 Planned Activities

This section discusses NASA's planned activities related to groundwater monitoring at WSTF.

7.1 Groundwater Monitoring and Related Projects

7.1.1 Monitoring Well Performance or Sampling Equipment Issues

This section presents plans to address wells that could not be sampled in the data reporting period (November 1 through January 31, 2023) due to mechanical or well performance issues and were not resolved by the end of the period. The backlog of prior unresolved issues is shown on Table 7.1. The section also presents issues that have been resolved.

- Wells 600A-001-GW and 600A-002-GW (scheduled for sampling in November 2022) were not sampled because of equipment failure. NASA obtained replacement sampling equipment in December 2022 for use in January 2023. Upon further evaluation, NASA determined that previous development of these wells using on-site equipment after colloidal borescope tests may have been inadequate. NASA is working to acquire the services of an off-site subcontractor to perform additional development at these wells prior to sampling.

7.1.2 Per- and polyfluoroalkyl substances

NASA is continuing the efforts of developing the Per- and polyfluoroalkyl substances (PFAS) Preliminary Assessment (PA) report. Additionally, NASA plans to install two conventional groundwater monitoring wells for the collection of additional PFAS groundwater data. An Abbreviated Drilling Work Plan for the two monitoring wells will be submitted to NMED for review. Upon completion of the finalized PA report NASA will submit a copy to NMED.

7.1.3 Westbay Well Reconfiguration.

NASA abandoned the borehole at former Westbay well BLM-28 in January 2023. NASA also abandoned the borehole at former monitoring well BLM-30 in January 2023 and continued plans to install replacement well BLM-43 (NASA, 2021k) at a later date.

7.1.4 Monitoring Well Installation

In addition to replacement well BLM-43 mentioned in the preceding section, NASA plans to replace well BLM-28 and to install a deeper monitoring well adjacent to existing well BLM-10-517. NASA also plans to replace Westbay monitoring well PL-6.

7.2 Groundwater Remediation System Monitoring

The RSMP (NASA, 2022h) and DP-1255 (NMED, 2017) include provisions for monitoring the effectiveness of the PFTS and MPITS. Sampling at designated locations, including extraction wells and remediation system sampling points, will continue as required during remediation system operational periods in accordance with the RSMP and/or DP-1255. Monitoring well sampling to assess remediation system effectiveness will continue in accordance with the GMP (NASA, 2022d).

8.0 References

EPA. Office of Research and Development. (2008, January). *A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems*. Cincinnati, OH.

NASA Johnson Space Center White Sands Test Facility. (2019a, March 14). *First Tracking Data Relay Satellite System (TDRSS) Diesel Release (SWMU 50) Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2019b, August 8). *Response to NMED Approval with Modifications SWMU 49 (700 Area Landfill) Phase I Investigation Work Plan and Historical Information Summary*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2019c, August 29). *NASA WSTF Drilling Work Plan for Abandonment of Well BLM-30 and Drilling of New Groundwater Monitoring Well BLM-43*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2019d, November 25). *NASA White Sands Test Facility (WSTF) 200 Area Wastewater Lagoons Closure (SWMU 8) Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2019e, November 26). *NASA White Sands Test Facility (WSTF) 600 Area Wastewater Lagoons Closure (SWMU 34) Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2020a, August 3). *NASA White Sands Test Facility (WSTF) 100 Area Wastewater Lagoons Closure (SWMU 2) Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2020b, August 3). *Response to Second Disapproval Small Arms Firing Ranges (SWMUs 29-31) Remedy Completion Report and Risk Assessment Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2020c, October 13). *NASA White Sands Test Facility (WSTF) STGT Wastewater Lagoons Closure (AOC 51) Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2020d, November 9). *Response to Disapproval of First Tracking Data Relay Satellite System (TDRSS) Diesel Release (SWMU 50) Investigation Report and Risk Screen Evaluation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021a, February 3). *Response to Approval with Modifications Work Plan for Abandonment of NASA WSTF Well BLM-30 and Replacement with Monitoring Well BLM-43*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021b, April 29). *NASA WSTF Westbay Well Reconfiguration Work Plan for Wells PL-7, PL-8, PL-10, ST-5, and WW-3*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021c, May 18). *Response to Second Disapproval of NASA White Sands Test Facility (WSTF) Septic Tanks (SWMUs 21–27) Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021d, June 29). *Response to Second Disapproval of 500 Area Fuel Storage (SWMU 47) Investigation Work Plan*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021e, July 14). R*esponse to Disapproval of 300 Area Supplemental Abbreviated Drilling Work Plan.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021f, July 14). *Response to Disapproval of 400 Area Supplemental Groundwater and Soil Vapor Monitoring Plan.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021g, July 27). *NASA WSTF 400 Area Closure Investigation Report – NMED Third Disapproval Response.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021h, August 31). *NASA WSTF Work Plan for Drilling and Installation of Monitoring Well 600B-001-GW.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021i, August 31). *Work Plan for Drilling and Installation of Monitoring Well 600C-001-GW at the NASA White Sands Test Facility (WSTF).* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021j, September 28). *Accelerated Corrective Measures Work Plan for the NASA WSTF SWMU 16 (600 Area BLM Off-Site Soil Pile).* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021k, September 28). *Request for Extension of Time for Submittal of the Completion Report for Monitoring Well BLM-30 Abandonment and Installation of Replacement Monitoring Well BLM-43.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021l, November 2). *Abbreviated Investigation Work Plan for Groundwater Data Representativeness, Phase 2: FLUTe Well Evaluation*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021m, November 30). *Well Plugging Plan of Operations for Multiport Soil Vapor Groundwater Monitoring Wells 200-SG-2 and 200-SG-3*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022a, March 4). *Response to Second Disapproval of NASA WSTF 200 Area HWTL (SWMU 10) Investigation Report and Risk Assessment Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022b, March 8). *Response to Approval with Modifications of NASA WSTF Well Reconfiguration Work Plan for Well BW-4*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022c, April 26). *600 Area Perched Groundwater Extraction Pilot Test Interim Status Report – Project Year 9*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022d, April 29). *NASA White Sands Test Facility (WSTF) 700 Area Landfill Closure (SWMU 49) Phase I Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022e, April 29). *NASA WSTF Groundwater Monitoring Plan Update for 2022*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022f, April 29). *NASA WSTF Work Plan for Abandonment of NASA WSTF NASA 9 and Replacement with Monitoring Well 400-001-GW*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022g, June 29). *600 Area Perched Groundwater Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022h, July 29). *NASA WSTF Remediation System Monitoring Plan Annual Update for 2022*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022i, August 25). *NASA White Sands Test Facility (WSTF) 500 Area Former Oxidizer Burner (FOB) Investigation Work Plan (IWP) and Historical Information Summary (HIS)*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022j, September 14). *Response to Disapproval of NASA WSTF 300 Area Test Stand 302 Cooling Water Pond (SWMU 33) Investigation Work Plan (IWP) and Historical Information Summary (HIS)*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022k, November 15). *Response to Approval with Modifications of NASA WSTF Groundwater Monitoring Plan Update for 2022*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022l, December 8). *Request for Extension of Time for NASA White Sands Test Facility (WSTF) 200 Area Wastewater Lagoons Closure (SWMU 8) Investigation Report (IR) Response to Disapproval*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022m, December 8). *Request for Extension of Time for NASA White Sands Test Facility (WSTF) 600 Area Wastewater Lagoons Closure (SWMU 34) Investigation Report Response to Disapproval*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022n, December 20). *Abbreviated Drilling Work Plan in Response to the NMED Approval with Modification of the Report on Tracer Testing in the WSTF 200/600 Areas and Mid-plume Constriction Area*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023a, January 18). *Request for Extension of Time for NASA White Sands Test Facility (WSTF) 100 Area Wastewater Lagoons Closure (SWMU 2) Investigation Report Response to Disapproval*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023b, January 18). *Request for Extension of Time for NASA White Sands Test Facility (WSTF) Second Tracking and Data Relay Satellite Ground Terminal (STGT) Wastewater Lagoons Closure (Area of Concern [AOC] 51) Investigation Report Response to Disapproval*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023c, January 26). *Response to Approval with Modification of First Tracking Data Relay Satellite System (TDRSS) Diesel Release (SWMU 50) Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023d, January 27). *Approval with Modifications Revised Small Arms Firing Ranges (SWMUs 29-31) Remedy Completion Report and Risk Assessment Report; NMED Comment 1.b*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023e, March 8). *Request for Second Extension of Time for NASA White Sands Test Facility (WSTF) 200 Area Wastewater Lagoons Closure (SWMU 8) Investigation Report (IR) Response to Disapproval*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023f, March 8). *Request for Second Extension of Time for NASA White Sands Test Facility (WSTF) 600 Area Wastewater Lagoons Closure (SWMU 34) Investigation Report Response to Disapproval*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023g, March 14). *Abandonment Report for NASA Well BLM-28*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023h, March 21). *Reconfiguration Report for NASA Well BW-4*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023i, March 21). *Reconfiguration Report for NASA Wells 200-SG-2 and 200-SG-3*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023j, March 30). *Abandonment Report for NASA Wells 400-C-118, 400-KV-142, 400-LV-125, BLM-2-482, and NASA 8*. Las Cruces, NM.

NMED Hazardous Waste Bureau. (2009, November 3). *Hazardous Waste Permit No. NM8800019434* (modified December 2019). Santa Fe, NM.

NMED Hazardous Waste Bureau. (2013, March 1). *Approval Time Extension for Implementation of the Perched Groundwater Extraction Pilot Test at the 600 Area*. Santa Fe, NM.

NMED Ground Water Quality Bureau. (2017, July 14). *Discharge Permit Renewal and Modification, DP-1255, NASA White Sands Testing Facility*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2021a, November 15). *Approval with Modifications White Sands Test Facility Groundwater Monitoring Plan*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2021b, December 20). *Approval 500 Area Newly Identified SWMU Release Assessment Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022a, April 5). *Approval With Modification Report on Tracer Testing in the 200/600 Areas and Mid-Plume Constriction Area*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022b, June 6). *Disapproval 200 Area Wastewater Lagoons Closure (SWMU 8) Investigation Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022c, June 16). *Disapproval 600 Area Wastewater Lagoons Closure (SWMU 34) Investigation Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022d, July 5). *Disapproval 100 Area Wastewater Lagoons Closure (SWMU 2) Investigation Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022e, July 25). *Disapproval STGT Wastewater Lagoons Closure (AOC 51) Investigation Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022f, August 8). *Approval with Modification Second TDRSS Underground Storage Tank (SWMU 52) Release Assessment Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022g, September 20). *Disapproval 200 and 600 Area Vapor Intrusion Assessment Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022h, October 31). *Approval with Modifications White Sands Test Facility Groundwater Monitoring Plan*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022i, October 31). *Approval Work Plan for Abandonment of NASA WSTF Well PL-6 and Replacement with Monitoring Well 600C-002-GW*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022j, November 16). *Approval with Modifications Revised First TDRSS (Tracking and Data Relay Satellite System) Diesel Release (SWMU 50) Investigation Report and Risk Screen Evaluation Report*. Santa Fe, NM.

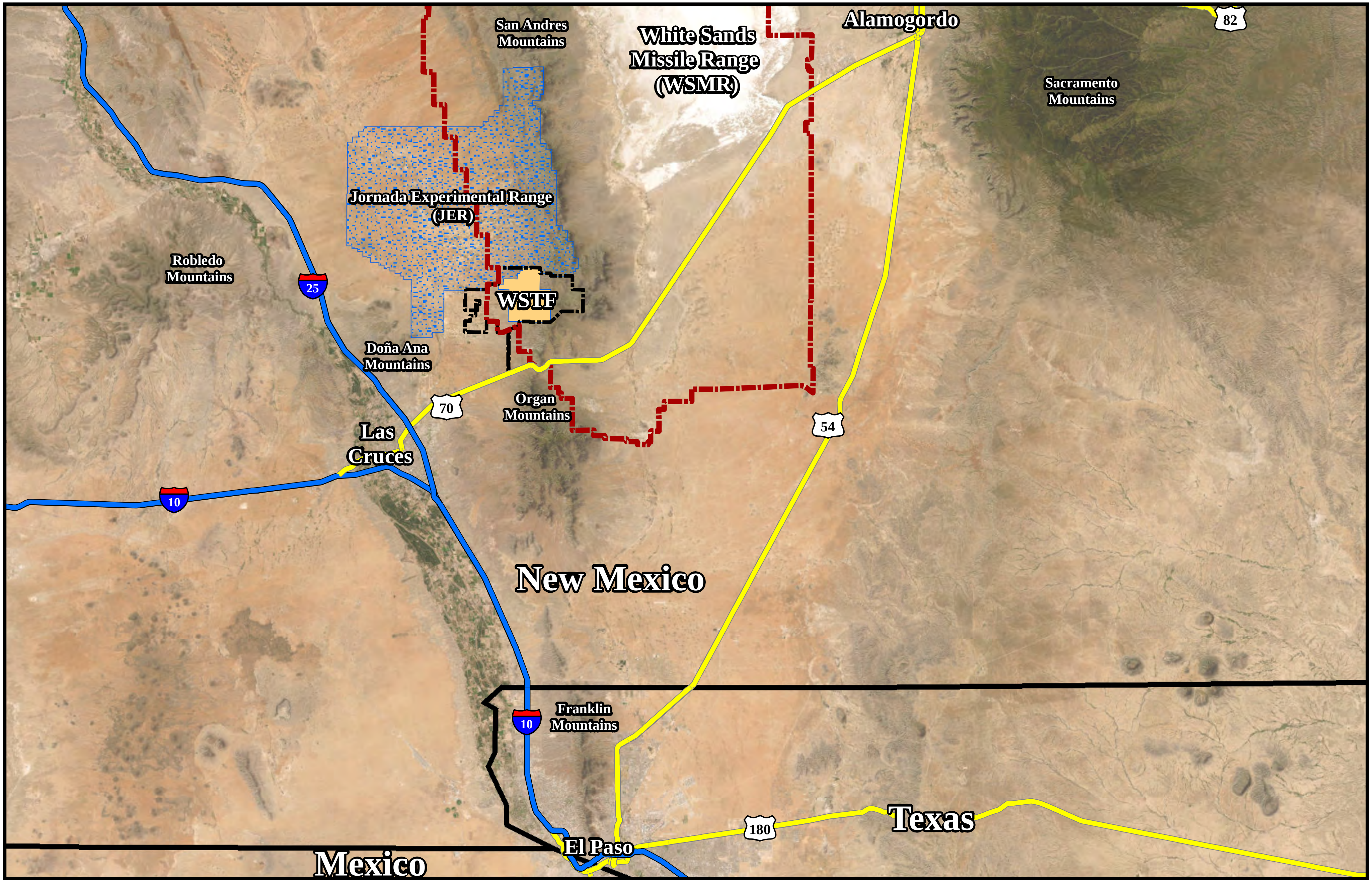
NMED Hazardous Waste Bureau. (2022k, November 16). *Approval with Modifications Revised Small Arms Firing Ranges (SWMU 29-31) Remedy Completion Report and Risk Assessment Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2023, February 10). *Approval 700 Area Closure (SWMU 49) Phase I Investigation Report*. Santa Fe, NM.USGS. (1994, September). *Users Guide for MODPATH/MODPATH-PLOT, Version 3: A particle tracking post-processing package for MODFLOW, the U.S. Geological Survey finite-difference ground-water flow model*. U.S. Geological Survey Open File Report 94-464. Reston, VA.

Figures

Figure 1.1 **WSTF Location Map**

(SEE NEXT PAGE)



WSTF Location Map

NASA Johnson Space Center
White Sands Test Facility
Las Cruces, New Mexico

Coordinate System:
NAD 1983 StatePlane New Mexico Central FIPS 3002 Feet

G:\Projects\environmental\PMR\2023\1stQuarter

WSMR Boundary
WSTF Boundary
WSTF Industrial Area
Jornada Experimental Range (JER)

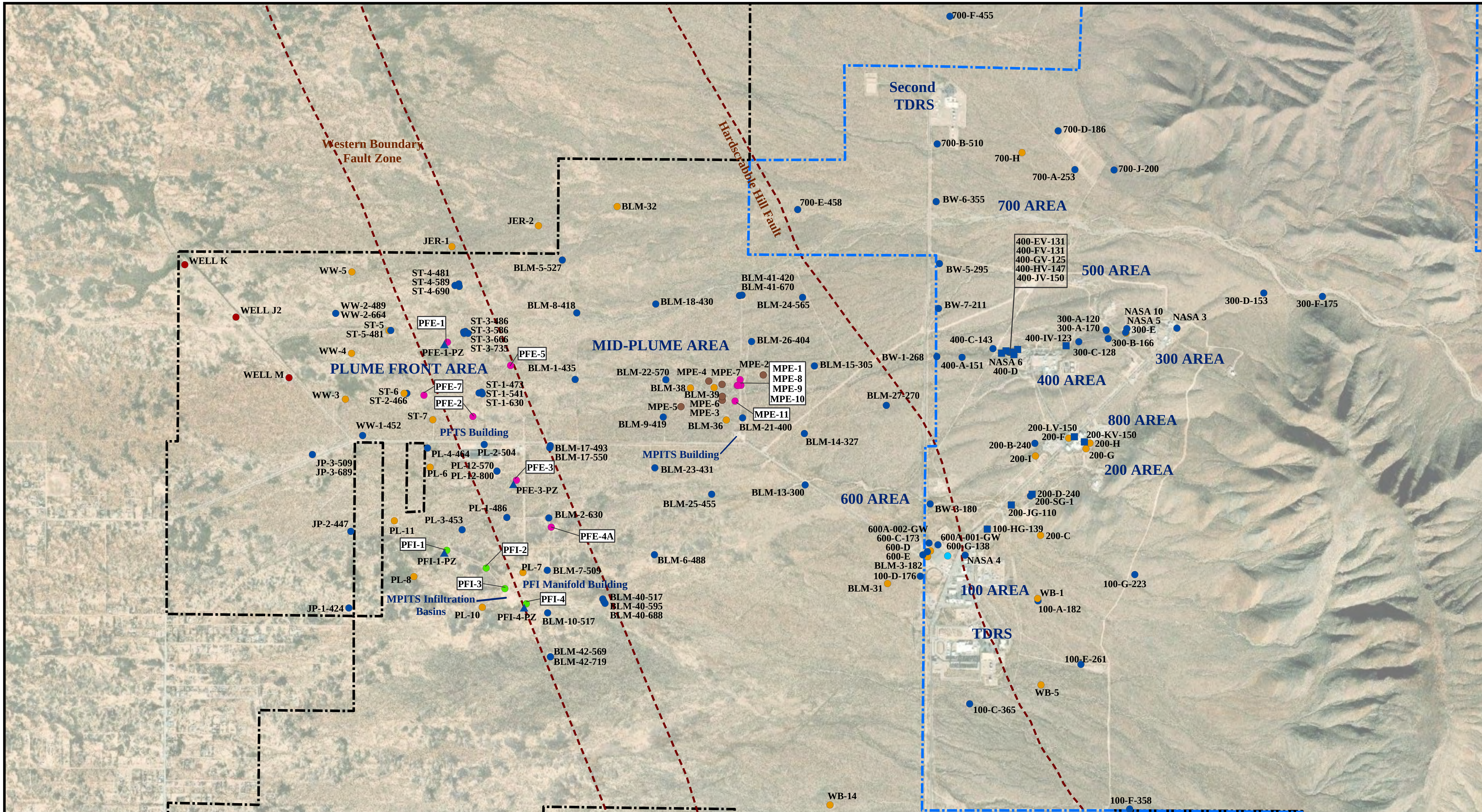
1 in = 12 miles

0 6 12 24 Miles

N W E S

April 2023

(SEE NEXT PAGE)



WSTF Well Location Map

NASA Johnson Space Center
White Sands Test Facility Las Cruces, New Mexico

Coordinate System:
NAD 1983 HARN StatePlane New Mexico Central FIPS 3002

G:\Projects\environmental\PMR\2023\1stQuarter

- Multiport Well
- Conventional Well
- Perched Well
- MSVGM Well
- Extraction Well
- Injection Well
- Piezometer
- Exploration Well
- Production Well
- Fault
- WSTF Boundary
- WSTF Industrial Area

NASA

1 inch = 2,500 feet

0 1,250 2,500 5,000 Feet

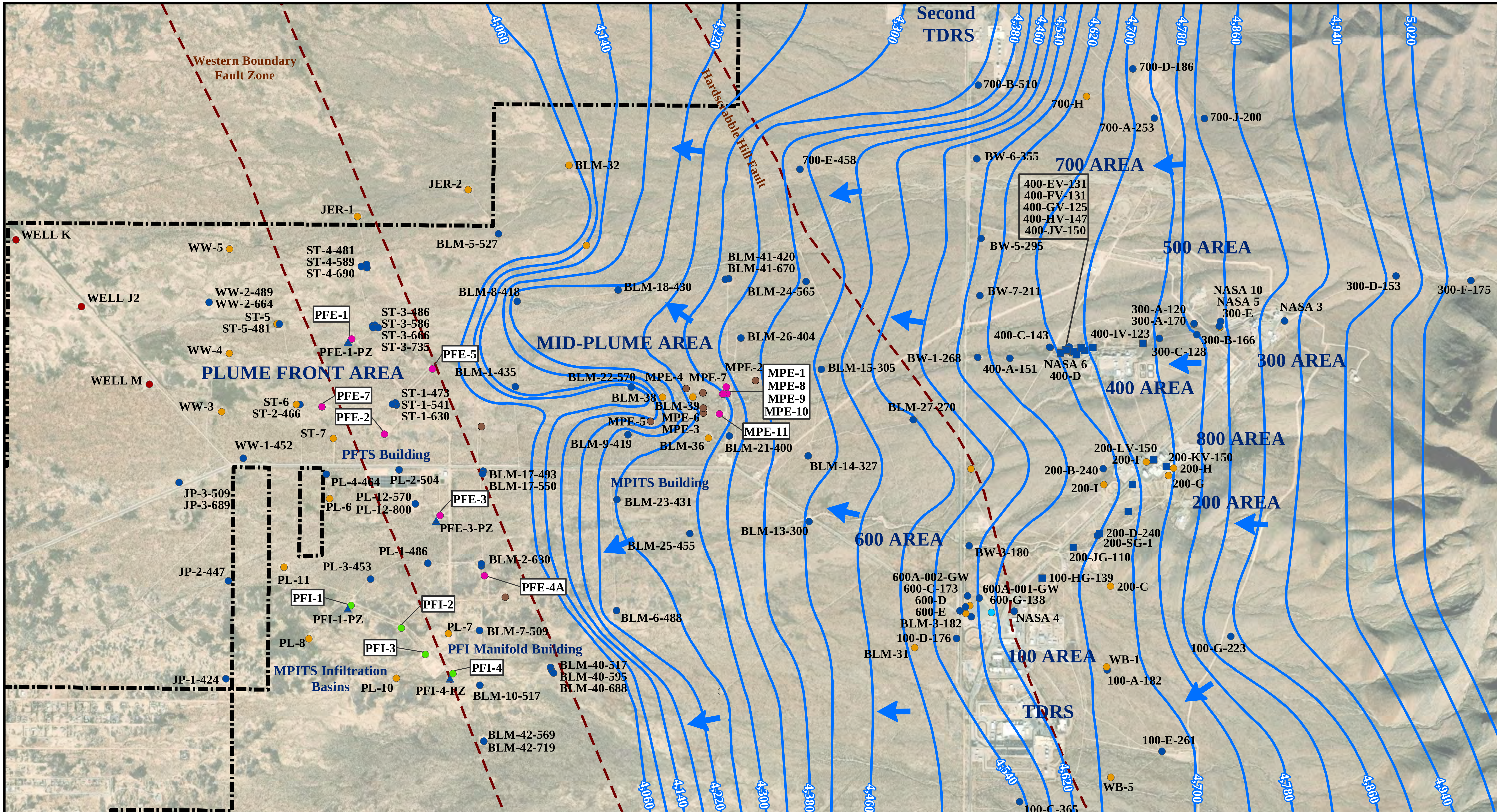
0 0.25 0.5 1 Miles

N W E S

April 2023

Figure 4.1 Groundwater Elevations and Generalized Flow Directions for the Reporting Period

(SEE NEXT PAGE)



Site-Wide Groundwater Elevations for First Quarter 2023

NASA Johnson Space Center
White Sands Test Facility Las Cruces, New Mexico

Coordinate System:
NAD 1983 HARN StatePlane New Mexico Central FIPS 3002 Feet

G:\Projects\environmental\PMR\2023\1stQuarter\

- Multiport
- Conventional Well
- Perched Well
- MSVGM Well
- Extraction Well
- Injection Well
- Piezometer
- Exploration Well
- Production Well
- Groundwater Flow Direction
- Groundwater Elevation 40 Foot Contour
- Fault
- WSTF Boundary

N W E S

1 inch = 2,000 feet

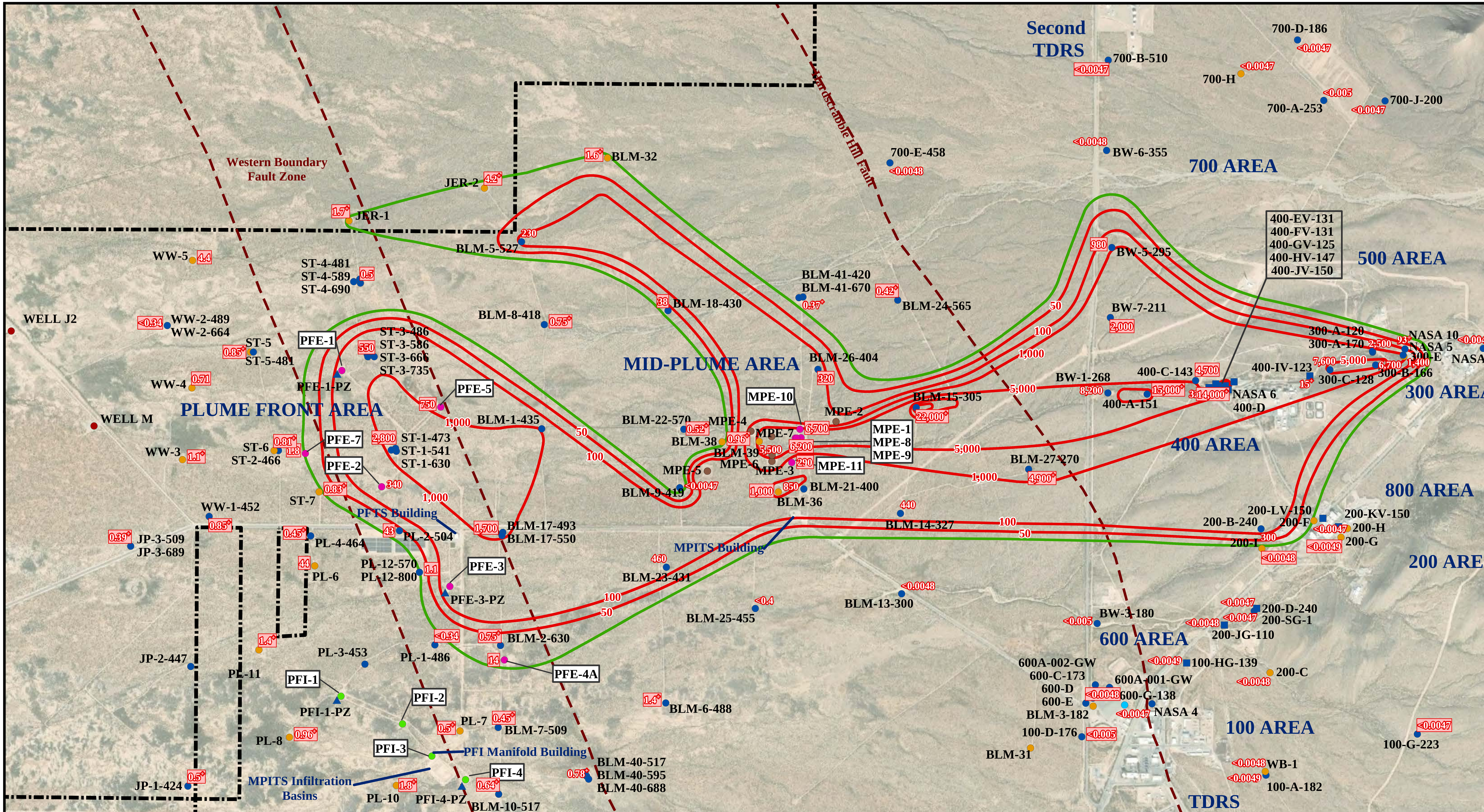
0 1,250 2,500 5,000 Feet

0 0.25 0.5 1 Miles

April 2023

Figure 4.2 Site-Wide N-Nitrosodimethylamine (NDMA) Concentrations for the Reporting Period

(SEE NEXT PAGE)



NDMA Maximum Concentrations in Groundwater for First Quarter 2023

NASA Johnson Space Center
White Sands Test Facility Las Cruces, New Mexico

Coordinate System:
NAD 1983 HARN StatePlane New Mexico Central FIPS 3002 Feet
C:\Users\smportil\Desktop\CurrentWFH_Files\PMR-NetworkSaved\

Multiport Well
Conventional Well
Perched Well
MSVGM Well
Extraction Well
Injection Well
Piezometer
Exploration Well
Production Well
50 Equiconcentration Line (ng/L)
NDMA Cleanup Level (1.1 ng/L)
Fault
WSTF Boundary

Note:
Method 607 NDMA results corrected for extraction efficiency.
\+ - Data value has a QA flag. See Appendix A.2 for specific flags.
50 - Sample event result was within the quarterly date range. No outline indicates an earlier sample event.
- Non-detect values displayed "<Detection Limit" in ng/L.
- No value indicates the well has not been sampled in the last year.

NASA

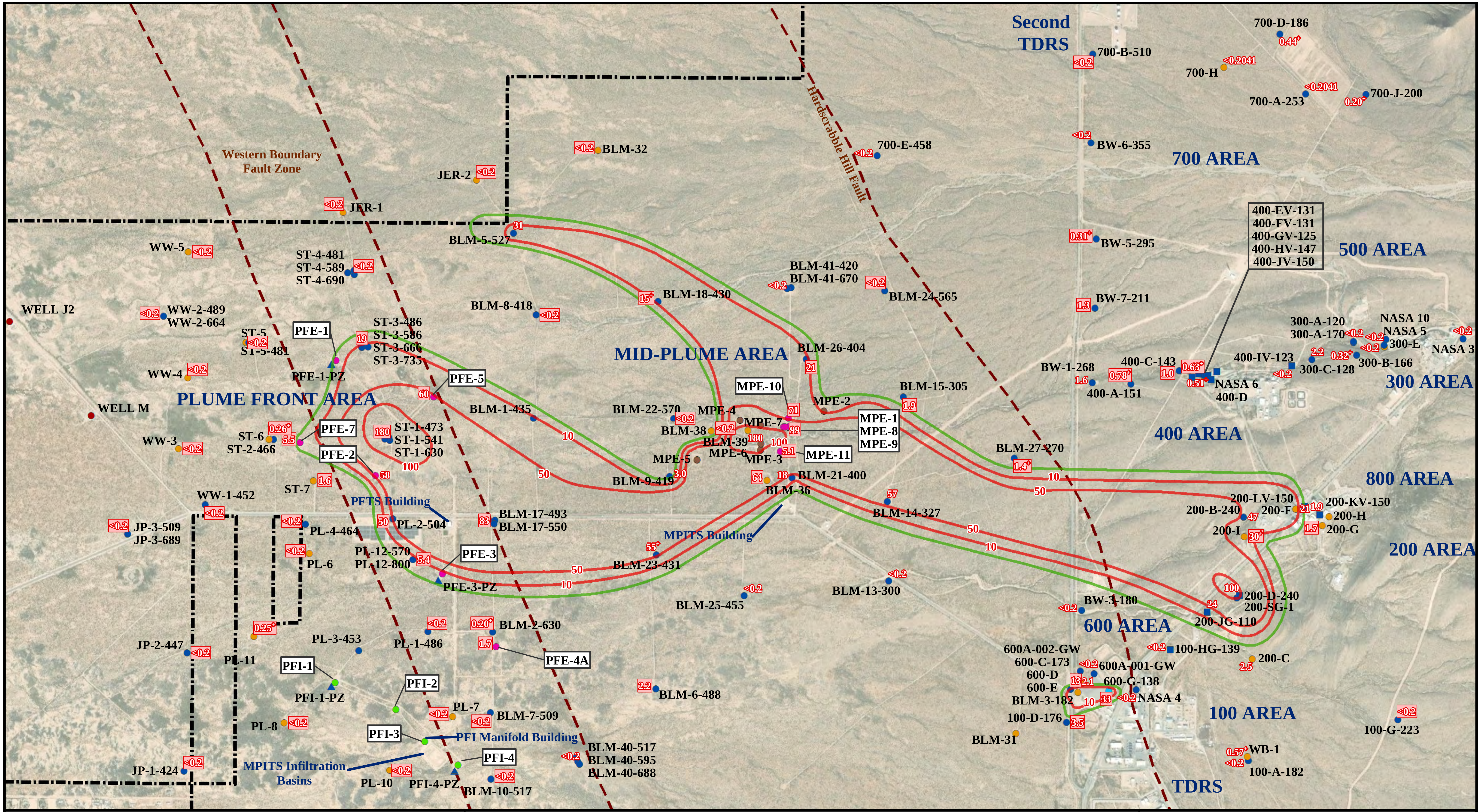
N W E S

1 inch = 1,600 feet
0 1,600 3,200 Feet

April 2023

Figure 4.3 Site-Wide Trichloroethene (TCE) Concentrations for the Reporting Period

(SEE NEXT PAGE)



TCE Maximum Concentrations in Groundwater for First Quarter 2023

NASA Johnson Space Center
White Sands Test Facility Las Cruces, New Mexico

Coordinate System:
NAD 1983 HARN StatePlane New Mexico Central FIPS 3002 Feet

C:\Users\smportil\Desktop\CurrentWFH_Files\PMR-NetworkSaved\

- Multiport
- Conventional Well
- Perched Well
- MSVGM Well
- Extraction Well
- Injection Well
- Piezometer
- Exploration Well
- Production Well
- 10 Equiconcentration Line (ug/L)
- TCE Cleanup Level (4.9 ug/L)
- Fault
- WSTF Boundary

Note:
+ - Data value has a QA flag. See Appendix A.2 for specific flags.
50 - Sample event result was within the quarterly date range. No outline indicates an earlier sample event.
- Non-detect values displayed "<Detection Limit" in µg/L.
- No value indicates the well has not been sampled in the last year.

1 inch = 1,600 feet

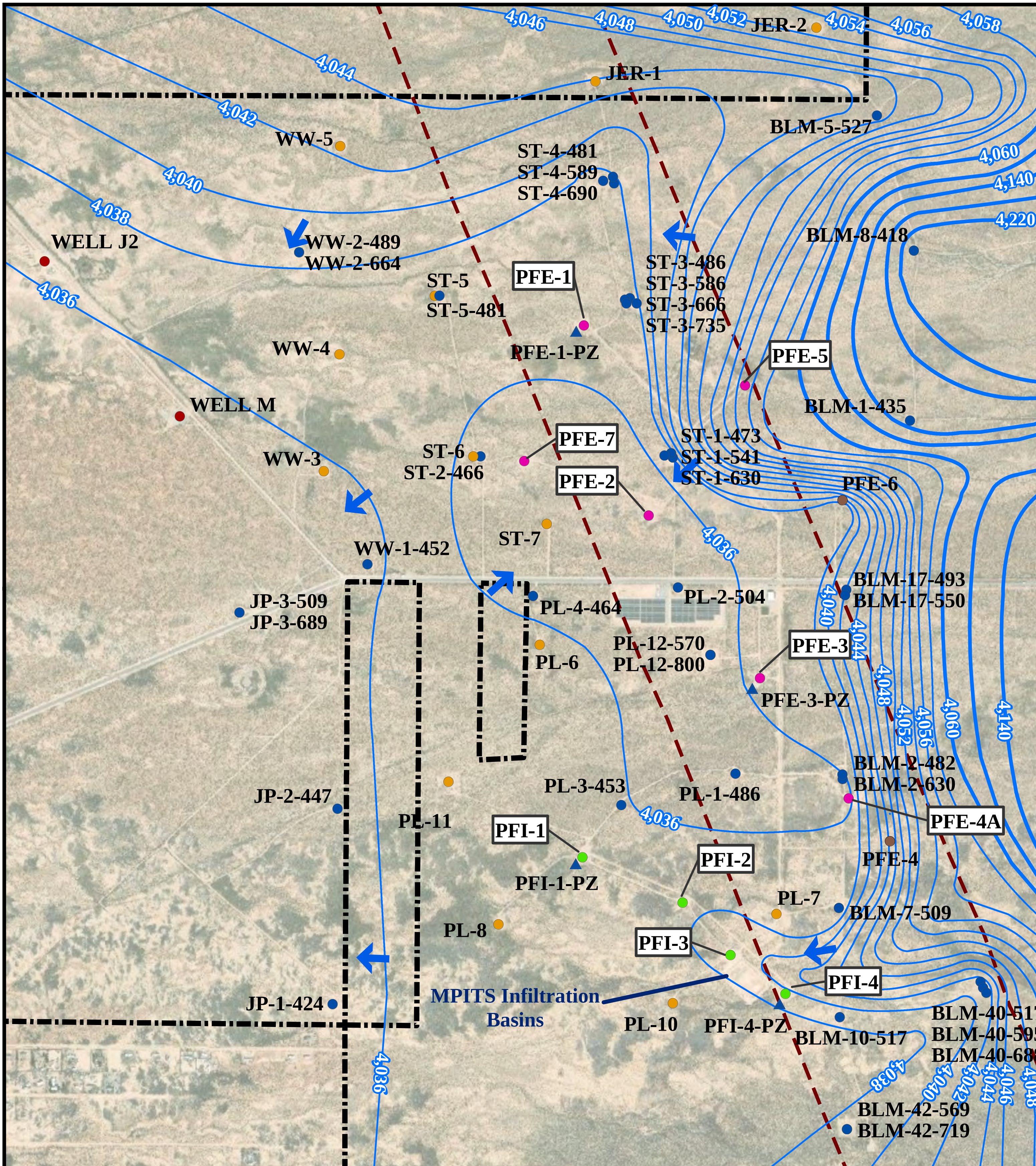
0 1,600 3,200 Feet

N E S W

April 2023

Figure 6.1 Plume Front Groundwater Elevations for the Reporting Period

(SEE NEXT PAGE)



Plume Front Groundwater Elevations for First Quarter 2023

NASA Johnson Space Center
White Sands Test Facility Las Cruces, New Mexico

Coordinate System:
NAD 1983 HARN StatePlane New Mexico Central FIPS 3002

G:\Projects\environmental\PMR\2023\1stQuarter

Multiport Well
Conventional Well
Extraction Well
Injection Well
Piezometer
Exploration Well
Production Well

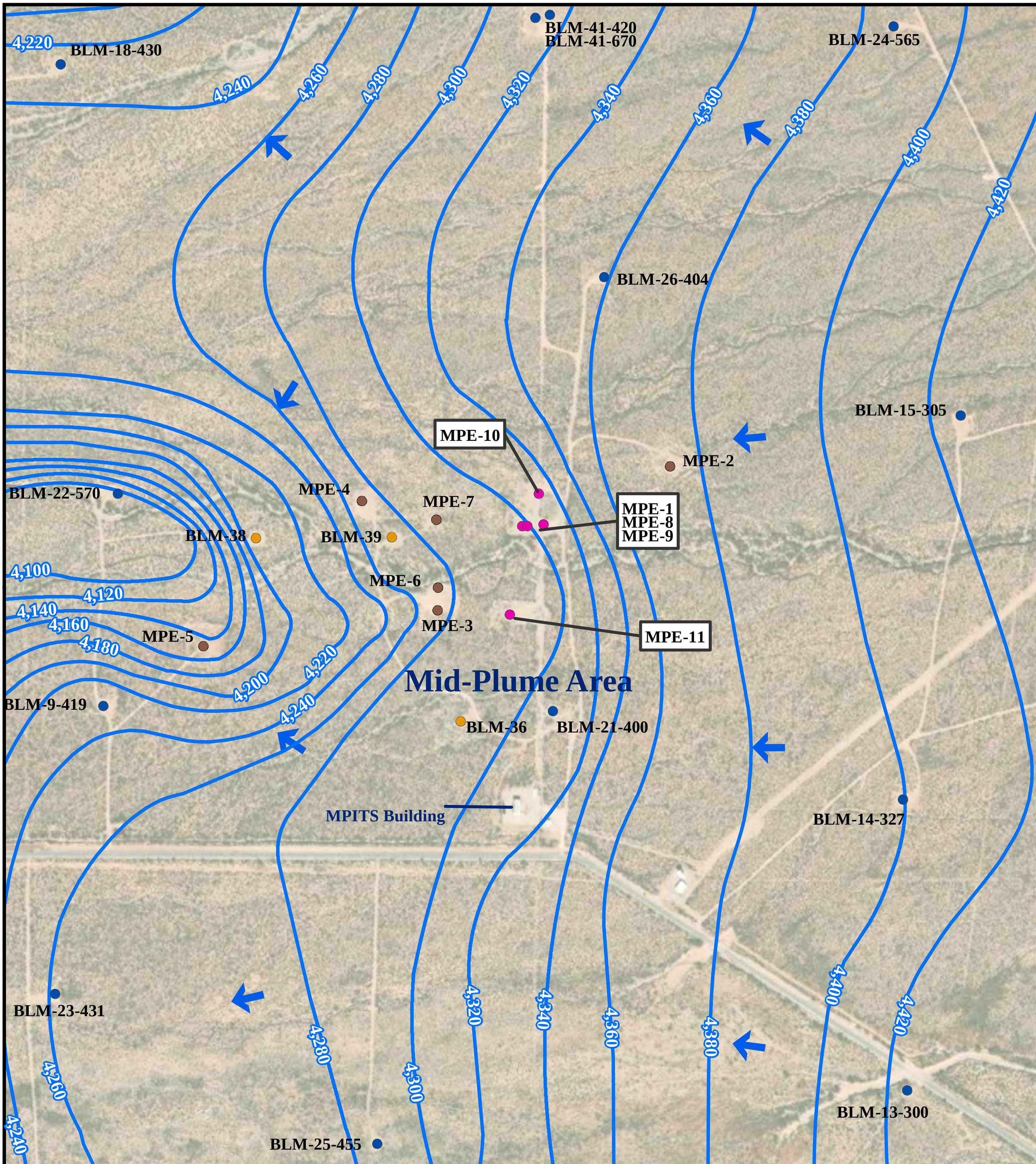
Groundwater Flow Direction
4036 Groundwater Elevation 2 Foot Contour
4060 Groundwater Elevation 40 Foot Contour
Western Boundary Fault Zone
WSTF Boundary

N
W E
S

April 2023
1 inch = 1,400 feet
0 700 1,400 Feet

Figure 6.2 Mid-plume Groundwater Elevations for the Reporting Period

(SEE NEXT PAGE)



Mid-plume Groundwater Elevations for First Quarter 2023

NASA Johnson Space Center White Sands Test Facility Las Cruces, New Mexico

Coordinate System:
NAD 1983 HARN StatePlane New Mexico Central FIPS 3002

G:\Projects\environmental\PMR\2023\1stQuarter\

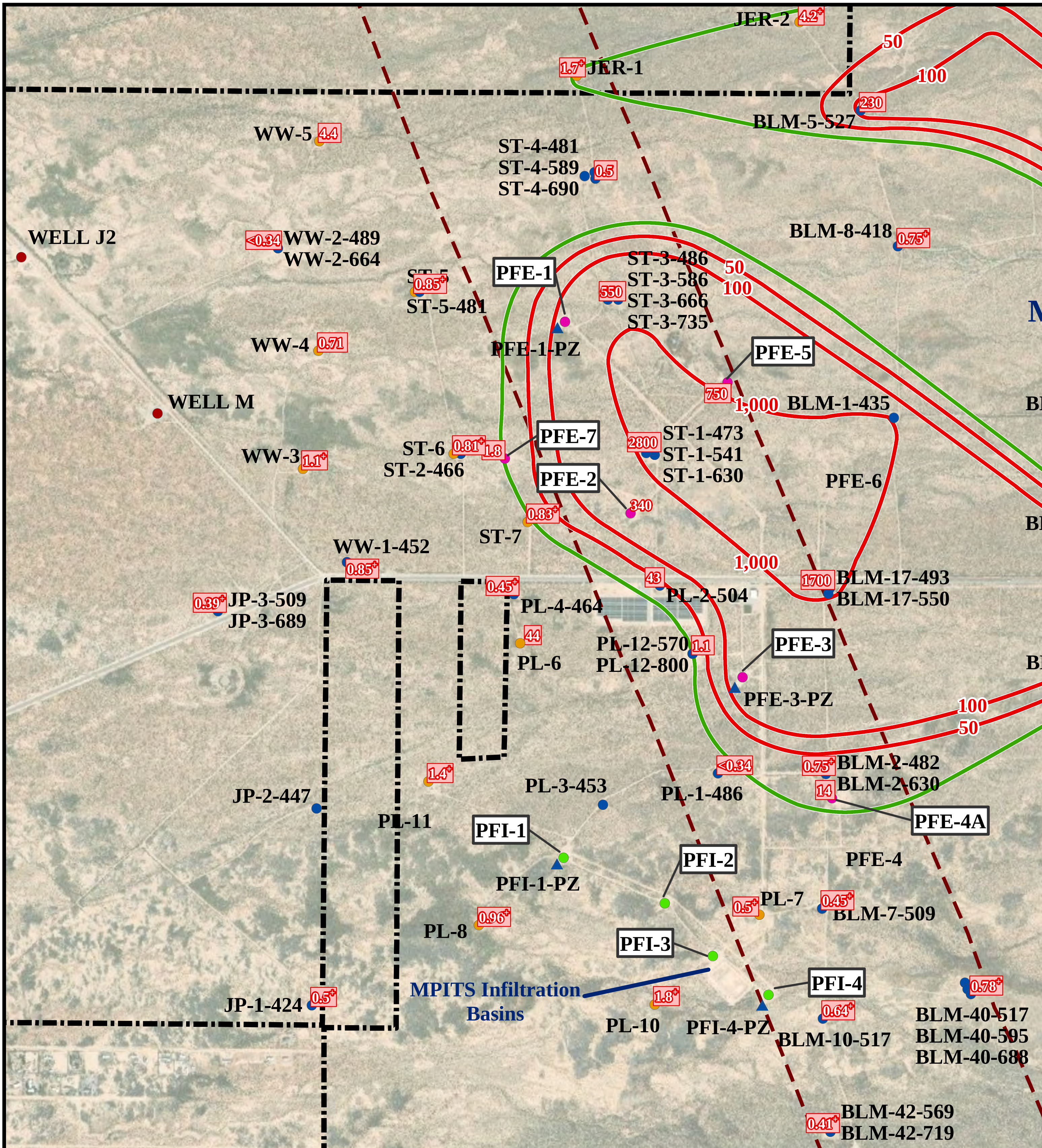
- Conventional Well
- Multiport Well
- Extraction Well
- Exploration Well
- Groundwater Flow Direction
- Groundwater Elevation 20 Foot Contour

N
W E
S

April 2023
1 inch = 630 feet
Feet
0 315 630

Figure 6.3 NDMA Concentrations at the Plume Front for the Reporting Period

(SEE NEXT PAGE)



Plume Front NDMA Maximum Concentrations in Groundwater for First Quarter 2023

NASA Johnson Space Center
White Sands Test Facility Las Cruces, New Mexico

Coordinate System:
NAD 1983 HARN StatePlane New Mexico Central FIPS 3002 Feet

G:\Projects\environmental\PMR\2023\1stQuarter

- Multiport Well
- Conventional Well
- Extraction Well
- Injection Well
- Piezometer
- Exploration Well
- Production Well
- 50 Equiconcentration Line (ng/L)

- NDMA Cleanup Level (1.1 ng/L)
- Western Boundary Fault Zone
- WSTF Boundary

Note:
Method 607 NDMA results corrected for extraction efficiency.
+ - Data value has a QA flag. See Appendix A.2 for specific flags.
50 - Sample event result was within the quarterly date range. No outline indicates an earlier sample event.
- Non-detect values displayed "<Detection Limit" in ug/L.
- No value indicates the well has not been sampled in the last year.

NASA

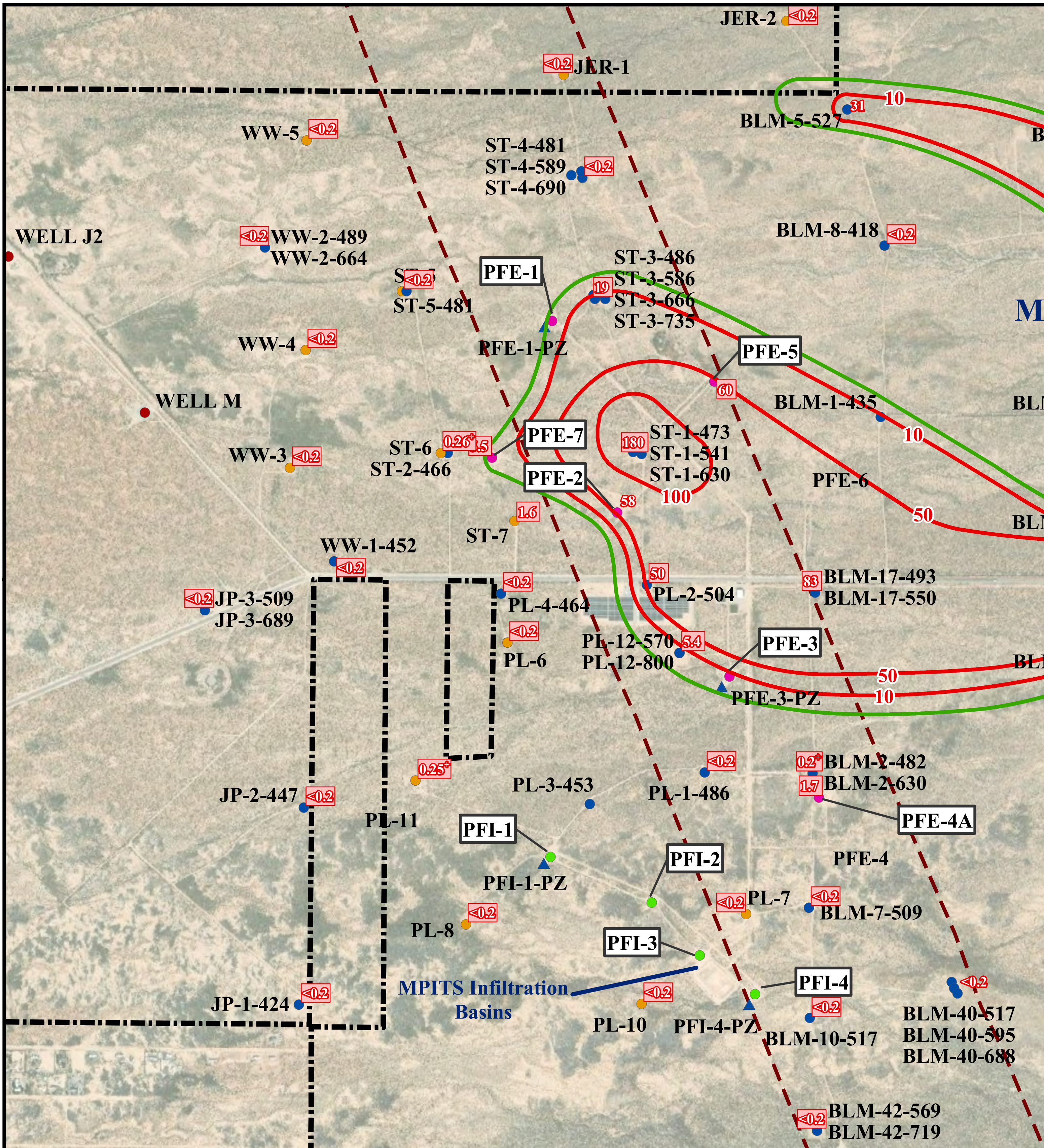
N
W E
S

1 inch = 1,400 feet
April 2023

0 350 700 1,400 Ft

Figure 6.4 TCE Concentrations at the Plume Front for the Reporting Period

(SEE NEXT PAGE)



Plume Front TCE Maximum Concentrations in Groundwater for First Quarter 2023

NASA Johnson Space Center
White Sands Test Facility Las Cruces, New Mexico

Coordinate System:
NAD 1983 HARN StatePlane New Mexico Central FIPS 3002 Feet

G:\Projects\environmental\PMR\2023\1stQuarter

- Multiport Well
- Conventional Well
- Extraction Well
- Injection Well
- Piezometer
- Exploration Well
- Production Well
- 10 Equiconcentration Line (ug/L)
- TCE Cleanup Level (4.9 ug/L)
- Western Boundary Fault Zone
- WSTF Boundary

Note:
+ - Data value has a QA flag. See Appendix A.2 for specific flags.
50 - Sample event result was within the quarterly date range. No outline indicates an earlier sample event.
- Non-detect values displayed "<Detection Limit" in ug/L.
- No value indicates the well has not been sampled in the last year.

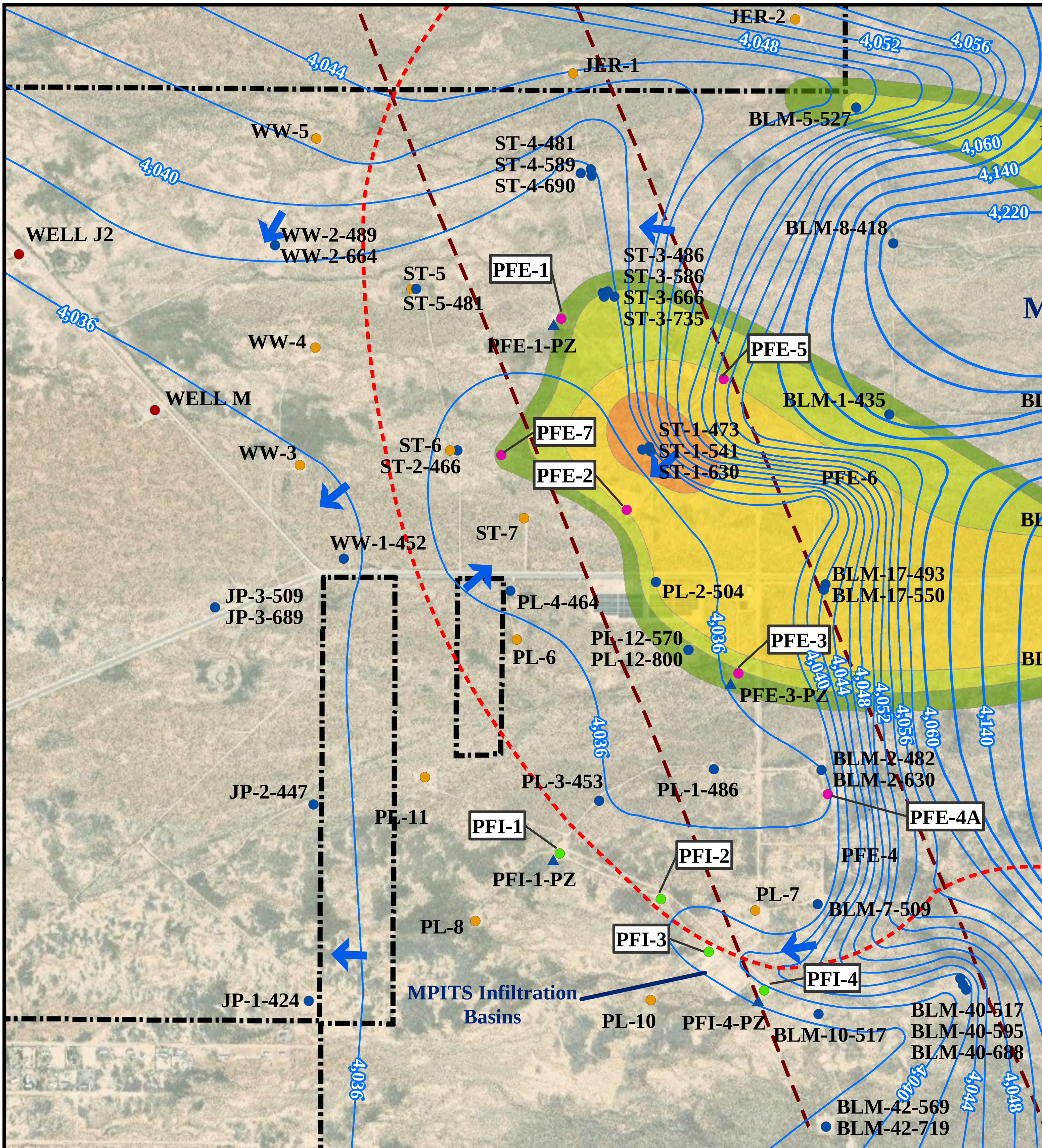
N
W E
S

1 inch = 1,400 feet
April 2023

0 350 700 1,400 Feet

Figure 6.5 Plume Front Groundwater Elevations and Trichloroethene Concentrations for the Reporting Period

(SEE NEXT PAGE)



Plume Front Groundwater Elevations and TCE Concentration for First Quarter 2023

NASA Johnson Space Center
White Sands Test Facility Las Cruces, New Mexico

Coordinate System:
NAD 1983 HARN StatePlane New Mexico Central FIPS 3002

G:\Projects\environmental\PMR\2023\1stQuarter

- Multiport Well
- Conventional Well
- Extraction Well
- Injection Well
- Piezometer
- Exploration Well
- Production Well
- Groundwater Flow Direction

TCE Concentration (ug/L)
4.9 10 50 100 200

4048 Groundwater Elevation 2 Feet Contour
4060 Groundwater Elevation 40 Feet Contour
Groundwater Divide
Western Boundary Fault Zone
WSTF Boundary

NASA

N
W E
S

1 inch = 1,400 feet
April 2023
0 350 700 1,400 Feet

Tables

Table 3.1 DP-1255 Discharge Standards and Groundwater Cleanup Levels for WSTF COC

Contaminant	Chemical Abstract Number	DP-1255 Standard (µg/L)	Cleanup Level (µg/L)
Carcinogens			
NDMA	62-75-9	0.0049	0.0011[1]
TCE	79-01-6	2.59	4.9[1]
PCE	127-18-4	40.3	5.0[2]
Chloroform	67-66-3	2.29	2.2[1]

Notes:

1 Cleanup Level based on EPA RSL equivalent to the most conservative value equivalent to 1E-05 risk for carcinogens or H=1 for non-carcinogens as updated in the 2022 GMP update (NASA, 2022e).

2 Cleanup Level based on Maximum Contaminant Levels found in 40 Code of Federal Regulations Part 141: https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=a4752225928ed82c597f05b633d21806&mc=true&n=pt40.25.141&r=PART&ty=HTML

Table 3.2 Accepted New Detections for This Reporting Period

No accepted new detections this reporting period.

Table 3.3 Unconfirmed New Detections – Resolution Pending

Well ID	CAS Number	Analyte	Scheduled Resample Date
100-HG-139	67-64-1	Acetone	03/14/23
ST-6-678	67-64-1	Acetone	03/14/23
700-H-535	14797-73-0	Perchlorate	03/20/23
PL-10-484	123-91-1	1,4-Dioxane	04/04/23
PL-10-484	7440-02-0	Nickel, Total	04/05/23
BLM-40-595	14797-73-0	Perchlorate	04/12/23
200-B-240	7429-90-5	Aluminum, Total	04/19/23
200-B-240	7439-89-6	Iron, Total	04/19/23
WW-4-419	7440-36-0	Antimony, Total	05/23/23
WW-4-419	7440-42-8	Boron, Total	05/23/23
WW-4-419	7439-89-6	Iron, Total	05/23/23
WW-4-419	7439-96-5	Manganese, Total	05/23/23
WW-4-589	7440-36-0	Antimony, Total	05/23/23
WW-4-589	7440-42-8	Boron, Total	05/23/23
WW-4-948	7440-36-0	Antimony, Total	05/24/23
100-E-261	7429-90-5	Aluminum, Total	06/13/23
100-E-261	7439-89-6	Iron, Total	06/13/23
ST-3-735	7440-02-0	Nickel, Total	06/21/23
700-E-458	314-40-9	Bromacil	07/11/23
BLM-32-571	314-40-9	Bromacil	08/01/23
BLM-32-632	314-40-9	Bromacil	08/02/23
ST-5-815	314-40-9	Bromacil	08/02/23
WB-5-345	314-40-9	Bromacil	08/16/23
PL-11-470	314-40-9	Bromacil	09/06/23
ST-6-824	7440-50-8	Copper, Total	09/13/23
300-D-153	7439-96-5	Manganese, Total	09/15/23
300-D-153	7440-02-0	Nickel, Total	09/15/23
ST-7-453	7440-66-6	Zinc, Total	10/03/23
ST-7-544	7440-47-3	Chromium, Total	10/03/23
ST-7-970	7440-02-0	Nickel, Total	10/04/23
BLM-40-688	7440-02-0	Nickel, Total	10/05/23
PL-10-484	314-40-9	Bromacil	10/06/23
400-D-355	14797-73-0	Perchlorate	08/11/25

Table 3.4 Unconfirmed Detections Resolved This Reporting Period

Well ID	CAS Number	Analyte	Scheduled Resample Date	Resolution
400-C-143	7429-90-5	Aluminum, Total	11/17/22	Unconfirmed
700-B-510	314-40-9	Bromacil	12/9/22	Unconfirmed
BLM-42-709	4164-28-7	N-Nitrodimethylamine	12/13/22	Unconfirmed
PL-8-455	123-91-1	1,4-Dioxane	12/14/22	Unconfirmed
BLM-3-182	1746-01-6	2,3,7,8-TCDD	1/24/23	Unconfirmed

Table 4.1 Groundwater Monitoring Wells/Zones Analyzed for the Reporting Period

Well Name	Event Date	Well Group	Well Name	Event Date	Well Group	Well Name	Event Date	Well Group
100-D-176	11/14/22	100/600	BLM-26-404	11/07/22	Mid-plume	JP-3-509	01/23/23	Sentinel
100-F-358	01/24/23	Upgradient	BLM-27-270	12/12/22	Mid-plume	JP-3-689	01/23/23	Sentinel
100-G-223	01/24/23	Upgradient	BLM-3-182	11/01/22	100/600	NASA 6	11/16/22	300/400
200-G-175	12/07/22	200	BLM-32-543	11/07/22	N. Boundary	PL-10-484	01/03/23	Sentinel
200-G-220	12/05/22	200	BLM-32-571	11/07/22	N. Boundary	PL-10-592	01/04/23	Sentinel
200-G-340	12/05/22	200	BLM-32-632	11/07/22	N. Boundary	PL-11-470	12/05/22	Sentinel
200-G-420	12/01/22	200	BLM-36-350	11/04/22	Mid-plume	PL-11-530	12/05/22	Sentinel
200-G-495	12/01/22	200	BLM-36-610	11/03/22	Mid-plume	PL-11-710	12/06/22	Sentinel
200-I-185	11/10/22	200	BLM-36-800	11/04/22	Mid-plume	PL-11-820	12/06/22	Sentinel
200-I-300	11/10/22	200	BLM-36-860	11/03/22	Mid-plume	PL-11-980	12/06/22	Sentinel
200-I-375	11/10/22	200	BLM-38-480	11/07/22	Mid-plume	PL-12-570	11/10/22	In Plume
200-I-490	11/09/22	200	BLM-38-620	11/07/22	Mid-plume	PL-12-800	11/10/22	In Plume
200-I-675	11/09/22	200	BLM-42-569	12/13/22	Sentinel	PL-1-486	01/24/23	In Plume
200-I-795	11/08/22	200	BLM-42-709	12/13/22	Sentinel	PL-2-504	12/12/22	In Plume
300-F-175	01/25/23	Upgradient	BLM-6-488	01/05/23	S. Boundary	PL-4-464	12/12/22	Plume Front
400-A-151	01/17/23	300/400	BLM-7-509	12/05/22	Plume Front	PL-6-1195	01/05/23	Plume Front
400-C-143	11/17/22	300/400	BLM-8-418	11/01/22	Mid-plume	PL-6-1335	01/10/23	Plume Front
600-G-138	01/25/23	100/600	BW-5-295	11/07/22	300/400	PL-6-545	01/23/23	Plume Front
700-B-510	12/13/22	N. Boundary	BW-7-211	12/13/22	300/400	PL-6-725	01/17/23	Plume Front
BLM-10-517	01/03/23	Plume Front	JER-1-483	01/11/23	N. Boundary	PL-6-915	01/11/23	Plume Front
BLM-15-305	01/09/23	Mid-plume	JER-1-563	01/11/23	N. Boundary	PL-7-560	11/08/22	Plume Front
BLM-17-493	11/03/22	In Plume	JER-1-683	01/12/23	N. Boundary	PL-8-455	12/14/22	Sentinel
BLM-17-550	01/09/23	In Plume	JER-2-504	01/23/23	N. Boundary	PL-8-605	12/14/22	Sentinel
BLM-18-430	01/17/23	Mid-plume	JER-2-584	01/23/23	N. Boundary	ST-1-473	11/09/22	In Plume
BLM-22-570	11/15/22	Mid-plume	JER-2-684	01/24/23	N. Boundary	ST-1-541	11/16/22	In Plume
BLM-24-565	11/02/22	N. Boundary	JP-1-424	01/18/23	Sentinel	ST-1-630	11/16/22	In Plume
BLM-2-630	11/15/22	In Plume	JP-2-447	01/18/23	Sentinel	ST-3-486	12/07/22	In Plume

Well Name	Event Date	Well Group
ST-3-586	12/15/22	In Plume
ST-3-666	12/08/22	In Plume
ST-3-735	12/08/22	In Plume
ST-4-481	12/01/22	Plume Front
ST-4-589	11/16/22	Plume Front
ST-4-690	12/01/22	Plume Front
ST-5-485	11/01/22	Plume Front
ST-5-655	11/01/22	Plume Front
ST-6-528	12/07/22	Plume Front
ST-6-568	12/07/22	Plume Front

Well Name	Event Date	Well Group
ST-6-678	12/08/22	Plume Front
ST-6-824	12/08/22	Plume Front
ST-6-970	12/08/22	Plume Front
ST-7-453	01/09/23	Plume Front
ST-7-544	01/09/23	Plume Front
ST-7-779	01/10/23	Plume Front
ST-7-970	01/10/23	Plume Front
WW-1-452	12/05/22	Plume Front
WW-2-489	12/06/22	Sentinel
WW-2-664	12/06/22	Sentinel

Well Name	Event Date	Well Group
WW-3-469	12/13/22	Sentinel
WW-3-569	12/12/22	Sentinel
WW-4-419	11/08/22	Sentinel
WW-4-589	11/08/22	Sentinel
WW-4-848	11/09/22	Sentinel
WW-4-948	11/09/22	Sentinel
WW-5-459	01/18/23	Sentinel
WW-5-579	01/18/23	Sentinel
WW-5-809	01/19/23	Sentinel
WW-5-909	01/19/23	Sentinel

Plume Front	
Well Name	Event Date
B650-EFF-1	11/10/22
B650-EFF-1	12/09/22
B650-EFF-1	01/19/23
B650-INF-1	11/10/22
B650-INF-1	12/09/22

Plume Front	
Well Name	Event Date
B650-INF-1	01/19/23
PFE-4A	01/26/23
PFE-5	01/19/23
PFE-7	01/26/23

Mid-plume	
Well Name	Event Date
B655-EFF-2	11/10/22
B655-EFF-2	12/08/22
B655-EFF-2	01/19/23
B655-INF-2	11/10/22
B655-INF-2	12/08/22

Mid-plume	
Well Name	Event Date
B655-INF-2	01/19/23
MPE-1	11/14/22
MPE-10	11/15/22
MPE-11	11/15/22
MPE-9	11/14/22

Table 4.2 Groundwater Elevation Data

Well Name	Total Depth (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Groundwater Elevation (ft amsl)	Measurement Date
100-A-182	198	182	192	4668.68	12/19/22
100-C-365	391	365	386	4536.75	12/19/22
100-D-176	201	176	196	4568.06	12/19/22
100-E-261	277	261	271	4682.41	12/19/22
100-F-358	378	358	368	4713.14	12/19/22
100-G-223	238	223	233	4851.9	12/19/22
200-B-240	255	240	250	4651.93	12/19/22
200-C(170)[i]	290	N/A	N/A	4681.731	12/19/22
200-D-240	280	240	250	4664.62	12/19/22
200-F(370)[i]	590	N/A	N/A	4729.832	12/19/22
200-G(220)[i]	515	N/A	N/A	4727.799	12/19/22
200-I(300)[i]	815	N/A	N/A	4657.395	12/19/22
200-JG-110	150	110	130	4656.96	12/19/22
200-KV-150	175	150	170	4728.71	12/19/22
200-LV-150	175	150	170	4729.93	12/19/22
200-SG-1	138	123	138	4658.28	12/19/22
300-A-120	151	120	146	4788.88	12/19/22
300-B-166	181	165	176	4773.1	12/19/22
300-C-128	160	128	154	4743.16	12/19/22
300-D-153	179	153	174	4949.19	12/19/22
300-E(138)[i]	395	N/A	N/A	4812.711	12/19/22
300-F-175	195	175	185	5045.02	12/19/22
400-A-151	187	151	176	4637.96	12/19/22
400-D(275)[i]	380	N/A	N/A	4660.533	12/19/22
600-C-173	199	173	193	4568.65	12/19/22
600-E(280)[i]	690	N/A	N/A	4557.233	12/19/22
700-A-253	269	253	263	4730.68	12/19/22
700-B-510	550	510	531	4344.67	12/19/22
700-D-186	202	186	196	4712.87	12/19/22
700-E-458	484	458	479	4411.11	12/19/22
700-H(350)[i]	695	N/A	N/A	4630.665	12/19/22
700-J-200	230	200	220	4836.58	12/19/22
BLM-10-517	532	517	527	4038.35	12/19/22
BLM-13-300	316	300	310	4422.41	12/19/22
BLM-1-435	451	435	446	4146.24	12/19/22
BLM-14-327	343	327	337	4402.3	12/19/22
BLM-15-305	321	305	315	4423.77	12/19/22
BLM-17-493	519	493	513	4042.66	12/19/22

Well Name	Total Depth (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Groundwater Elevation (ft amsl)	Measurement Date
BLM-18-430	456	430	451	4224.93	12/19/22
BLM-21-400	413	400	410	4312.26	12/19/22
BLM-22-570	597	570	592	4095.78	12/19/22
BLM-23-431	447	431	441	4263.93	12/19/22
BLM-24-565	590	565	585	4385.46	12/19/22
BLM-25-455	470	455	465	4283.6	12/19/22
BLM-26-404	420	404	414	4358.71	12/19/22
BLM-27-270	286	270	280	4498.12	12/19/22
BLM-28 (Borehole)[i]	555	N/A	N/A	4257.41	12/19/22
BLM-36(XX)[ii]	905	604	614	4114.352	12/19/22
BLM-38(480)[ii]	641	475	485	4202.287	12/19/22
BLM-39(385)[ii]	595	379	389	4276.39	12/19/22
BLM-40-517	532	517	527	4041.67	12/19/22
BLM-41-420	435	420	430	4318.31	12/19/22
BLM-5-527	560	527	538	4044.81	12/19/22
BLM-6-488	503	488	498	4231.74	12/19/22
BLM-7-509	525	509	520	4036.73	12/19/22
BLM-8-418	434	418	428	4225.07	12/19/22
BLM-9-419	445	419	440	4228.26	12/19/22
BW-1-268	294	268	289	4610.59	12/19/22
BW-3-180	205	180	200	4567.47	12/19/22
BW-5-295	311	295	305	4582.2	12/19/22
BW-6-355	381	355	376	4573.86	12/19/22
BW-7-211	225	211	222	4609.95	12/19/22
JP-1-424	440	424	434	4034.34	12/19/22
JP-2-447	462	446	457	4035.38	12/19/22
MPE-2	600	400	580	4373.096	12/19/22
MPE-3	639	479	619	4274.05	12/19/22
MPE-4	639	499	619	4276.59	12/19/22
MPE-5	590	450	570	4143.14	12/19/22
MPE-6	603	383	602	4278.21	12/19/22
MPE-7	600	401	600	4236.01	12/19/22
NASA 10	135	110	130	4829.1	12/19/22
NASA 3	144	119	139	4889.2	12/19/22
NASA 4	171	146	166	4638	12/19/22
NASA 5	135	110	130	4816.3	12/19/22
NASA 6	153	128	148	4696.2	12/19/22
NASA 8	197	172	192	4569.58	12/19/22

Well Name	Total Depth (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Groundwater Elevation (ft amsl)	Measurement Date
PFE-1-PZ	609	588	598	4037.19	12/19/22
PFE-3-PZ	620	590	600	4036.71	12/19/22
PFE-4	877	397	876	4031.246	12/19/22
PFI-1-PZ	619	589	599	4036.17	12/19/22
PFI-4-PZ	600	398	600	4038.22	12/19/22
PL-10(484)[ii]	1000	479	489	4037.156	12/21/22
PL-1-486	502	486	496	4035.16	12/19/22
PL-3-453	469	453	464	4036.04	12/19/22
PL-4-464	480	464	474	4035.92	12/19/22
PL-6(545)[ii]	1860	540	550	4038.924	12/19/22
PL-7(480)[ii]	655	475	485	4036.999	12/19/22
ST-2-466	481	466	476	4035.76	12/19/22
ST-4-481	497	481	491	4037.93	12/19/22
ST-5-481	497	481	491	4037.17	12/21/22
WB-5(250)[i]	400	N/A	N/A	4666.967	12/19/22
WW-1-452	468	452	462	4035.72	12/19/22
WW-3(469)[ii]	1014	464	474	4035.349	12/19/22

Notes:

i Depth to top and bottom of screen are indicated as not applicable (N/A) for multiport Westbay wells that are completed in an open borehole. The depth of the Westbay monitoring port used to calculate the piezometric surface is provided in parenthesis with the well name. Depth to water and groundwater elevation were calculated from the formation pressure at the indicated port depth.

ii The screen depths listed for retrofit multiport wells indicate the top and bottom of the screen in the outer casing of the well that corresponds to the measurement port used at that location. The depth of the monitoring port used to calculate the piezometric surface is provided in parenthesis with the well name. Depth to water and groundwater elevation for Westbay multiport monitoring wells were calculated from the formation pressure at the indicated port depth. Depth to water and groundwater elevation for FLUTe multiport monitoring wells were calculated from pressure transducer readings collected on the measurement date.

Table 5.1 PFTS and MPITS Operational Status for the Reporting Period

Month	Plume Front Treatment System			Mid-plume Treatment System		
	Days Operated	Average Flow Rate (gpm)	Groundwater Treated (acre-ft)	Days Operated	Average Flow Rate (gpm)	Groundwater Treated (acre-ft)
Nov-22	27 of 30	327	33.8	30 of 30	5.5	0.70
Dec-22	21 of 31	289	25.5	22 of 31	6.3	0.66
Jan-23	27 of 31	326	34.1	27 of 31	4.3	0.45

Table 5.2 PFTS and MPITS System Shutdowns for the Reporting Period

Shutdown Date	Restart Date	Type of Shutdown	Description
Plume Front Treatment System Shutdowns			
10/17/22	11/2/22	Planned	NASA shut the system down to obtain updated static water level measurements needed for pending well repairs.
11/4/22	11/4/22	Unplanned	The system shut down automatically because of a high air flow alarm in air stripper #2.
11/4/22	11/7/22	Planned	NASA shut the system down to troubleshoot and repair a stuck valve at well PFI-2.
12/1/22	12/7/22	Planned	NASA shut the system down to accommodate a planned outage of the off-site electrical power supply, perform scheduled maintenance of the UV reactor, and install a new air compressor.
12/12/22	12/14/22	Planned	NASA shut the system down to repair a faulty lamp wiper in the UV reactor.
12/18/22	12/19/22	Unplanned	The system shut down automatically because of a power surge that tripped a breaker in the UV reactor.
12/24/22	12/27/22	Unplanned	The system shut down automatically because of a fault in the air compressor resulting in low air pressure.
12/31/22	1/4/23	Unplanned	The system shut down automatically because of a fault in the air compressor resulting in low air pressure.
1/1/23	1/4/23	Unplanned	The system automatically shut down due to a component fault within the air compressor.
1/22/23	1/23/23	Unplanned	The system automatically shut down due to a false leak detection alarm.
1/27/23	1/30/23	Unplanned	The system shut down automatically due to low influent flow.
Mid-plume Interception and Treatment System Shutdowns			
12/1/22	12/5/22	Planned	NASA shut the system down to accommodate a planned outage of the off-site electrical power supply.
12/12/22	12/19/22	Planned	NASA shut the system down to install and test automated communications and reporting equipment.
12/21/22	12/21/22	Planned	NASA shut the system down to perform additional testing and tuning of the automated communications and reporting equipment.
1/11/23	1/12/23	Planned	The system was shut down because well MPE-1 was not operational, and the overall system flow rate was inadequate to maintain continuous operation.
1/12/23	1/17/23	Planned	The system was shut down because well MPE-11 was not operational, and the overall system flow

Shutdown Date	Restart Date	Type of Shutdown	Description
			rate was inadequate to maintain continuous operation.
1/22/232	1/23/23	Planned	The system was shut down because wells MPE-8 and MPE-11 were not operational, and the overall system flow rate was inadequate to maintain continuous operation
1/29/23	1/30/23	Planned	The system was shut down because well MPE-1 was not operational, and the overall system flow rate was inadequate to maintain continuous operation.

Table 5.3 PFTS Air Stripper and UV Reactor Performance for the Reporting Period

	Analyte	Unit	Design	Nov-22	Dec-22	Jan-23
Air Stripper Influent Concentrations	TCE	µg/L	130	3.4	3.5	3.2
	PCE	µg/L	0.66	< 0.21[2]	< 0.21[2]	< 0.21[2]
	Freon 11	µg/L	860	2.0	2.2	1.8
	Chloroform	µg/L	NA[1]	< 0.24[2]	< 0.51[2]	< 0.51[2]
Air Stripper Effluent Concentrations	TCE	µg/L	5.0	<0.20[2]	< 0.20[2]	< 0.20[2]
	PCE	µg/L	5.0	< 0.21[2]	< 0.21[2]	< 0.21[2]
	Freon 11	µg/L	100	< 0.24[2]	< 0.24[2]	< 0.24[2]
	Chloroform	µg/L	NA[1]	< 0.24[2]	< 0.51[2]	< 0.51[2]
UV Reactor Influent Concentrations	NDMA[3]	ng/L	2,000	16[a]	17[b] J	17[c] J
UV Reactor Effluent Concentrations	NDMA[4]	ng/L	< 2.0	<0.35[2]	0.4[2] J RB FB	0.44[2] J FB

FB - The analyte was detected in the field blank.
J - The result is an estimated value less than the quantitation limit, but greater than or equal to the detection limit.
NS – Not sampled during the reporting period.
RB - The analyte was detected in the method blank.
TB - The analyte was detected in the trip blank.
[1] Chloroform was not included as an analyte in the system design criteria; not applicable (NA).
[2] Analytical result for the constituent was below the method detection limit (MDL; provided).
[3] Reported NDMA concentration is corrected for extraction efficiency. Modified EPA Method 607 batch-specific laboratory control sample recovery of NDMA: 45%[a], 47%[b], 52%[c]
[4] Analytical results from the low-level NDMA analytical method. NDMA was not detected by modified Method 607.

Table 5.4 PFTS Extraction and Injection Well Flow Rates for the Reporting Period

	Well Name	Design Flow Rate (gpm)	Operational Average Flow Rate[1] (gpm)	Overall Average Flow Rate[2] (gpm)	Operational Percent of Well Design	Overall Percent of Well Design
Extraction Wells (gpm)	PFE-1	288	N/O	N/O	N/O	N/O
	PFE-2	224	N/O	N/O	N/O	N/O
	PFE-3	213	N/O	N/O	N/O	N/O
	PFE-4A	200	176	1493	88%	75%
	PFE-5	5.5	3.8	3.2	69%	58%
	PFE-7	125	156	133	125%	106%
Injection Wells (gpm)	PFI-1	269	N/O	N/O	N/O	N/O
	PFI-2	269	90	77	34%	29%
	PFI-3	344	211	179	61%	52%
	PFI-4	194	23	20	12%	10%

[1] Operational averages are averages based on when a well was in operating status. Backwashing and downtime events are not included.

[2] Overall averages are averages based on the overall status of the well and include backwashing and downtime events.

N/O - Not operating during reporting period.

Table 5.5 Comparison of Specific Capacities for the Plume Front Wells

Well Name	Specific Capacity at Installation	Specific Capacity Apr-22	Specific Capacity Jul-22[2]	Specific Capacity Oct-22	Specific Capacity Jan-23
PFE-1	8.3	NA[1]	NA[1]	NA[1]	NA[1]
PFE-2	5.7	6.0	5.8	NA[1]	NA[1]
PFE-3	19.4	NA[1]	NA[1]	NA[1]	NA[1]
PFE-4A	3.1	3.9	2.1	2.2	1.7
PFE-5	0.14	<0.1	<0.1	<0.1	<0.1
PFE-7	6	5.9	5.7	5.5	5.4
Well Name	**Specific Capacity at Installation (Ideal Range)**	**Specific Capacity Apr-22**	**Specific Capacity Jul-22[2]**	**Specific Capacity Oct-22**	**Specific Capacity Jan-23**
PFI-1	2.8–5	NA[1]	NA[1]	NA[1]	NA[1]
PFI-2	2.8–7	1.7	2.1	1.9	1.8
PFI-3	2–4	1.9	2.2	2.0	1.9
PFI-4	2.3–3.5	1.4	1.7	NA[3]	NA[3]

Notes: Specific capacities are used to measure well performances and have units of gallons per minute per foot of drawdown.
NA[1] – Not Applicable due to well being inoperative during reporting period.
[2] – Measurements from June 2022 were used because not all wells experienced a drawdown and recovery cycle in July 2022.
NA[3] – Not Applicable due to pressure transducer being inoperative during reporting period.

Table 5.6 Plume Front Mass Removal[1]

Date	TCE (kg)	Freon 11 (kg)	Chloroform(g)	PCE (g)	NDMA (g)
Feb-22	1.8	1.4	ND	59	10
Mar-22	2.3	1.5	ND	63	14
Apr-22	1.2	1.2	ND	33	8
May-22	1.6	1.1	ND	47	8
Jun-22	1.3	0.74	ND	41	8
Jul-22	1.8	1.4	ND	45	12
Aug-22	0.2	<0.1	ND	ND	0.22
Sep-22	0.1	<0.1	ND	ND	0.83
Oct-22	<0.1	<0.1	ND	ND	0.37
Nov-22	0.1	<0.1	ND	ND	0.45
Dec-22	0.1	<0.1	ND	ND	0.38
Jan-23	0.1	<0.1	ND	ND	0.53
Total[2]	**11**	**7**	**ND**	**288**	**63**

Notes:

1) Mass removed calculated as:
   (*Influent concentration - Effluent concentration) * volume of water extracted*
2) Total mass removed during the period covered by this table.

Table 5.7 MPITS Air Stripper and UV Reactor Performance for the Reporting Period

	Analyte	Unit	Design Parameter	Nov-22	Dec-22	Jan-23
Air Stripper Influent Concentrations (MPE Wells)	TCE	µg/L	140	51	61	79
	PCE	µg/L	6.4	2.4	3.0	4
	Freon 11	µg/L	240	79	120	160
	Chloroform	µg/L	NA[1]	<0.24[2]	<0.51[2]	<0.51[2]
Air Stripper Influent Concentrations (Well 600-G-138)	TCE	µg/L	140	NS	NS	33
	PCE	µg/L	6.4	NS	NS	<0.21[2]
	Freon 11	µg/L	240	NS	NS	0.48 J
	Chloroform	µg/L	NA[1]	NS	NS	<0.51[2]
Air Stripper Effluent Concentrations	TCE	µg/L	1.0	<0.20[2]	<0.20[2]	<0.20[2]
	PCE	µg/L	1.0	<0.21[2]	<0.21[2]	<0.21[2]
	Freon 11	µg/L	50	<0.24[2]	<0.24[2]	<0.24[2]
	Chloroform	µg/L	NA[1]	<0.24[2]	<0.51[2]	<0.51[2]
UV Reactor Influent Concentrations (MPE Wells)	NDMA[3]	ng/L	25,500	4,800[a]	4,100[b]	5,800[c]
UV Reactor Influent Concentrations (Well 600-G-138)	NDMA	ng/L	25,500	NS	NS	NS
UV Reactor Effluent Concentrations[4]	NDMA[4]	ng/L	< 2.0	<0.35[2]	0.56 RB	<0.36[2]

Notes:

* = For Low Level Nitrosamine Method, the recovery of N-nitrosodimethylamine (179%) in the laboratory fortified blank (LFB21A28CM1) was outside laboratory control limits (70-130%). Affected data are appropriately qualified.

FB = The analyte was detected in the field blank.

J = The result is an estimated value less than the quantitation limit, but greater than or equal to the detection limit.

NS = Not sampled during the reporting period. Well 600-G-138 is sampled annually for NDMA in accordance with the GMP (NASA, 2022e). Analytical data are provided in this table when available.

RB = The analyte was detected in the method blank.

1 Chloroform was not included in the design analyte list; not applicable (NA).

2 Analytical result for the constituent was below the MDL (provided).

3 Reported NDMA concentration is corrected for extraction efficiency. Modified EPA Method 607 batch-specific laboratory control sample recovery of NDMA: 45%[a], 47%[b], 52%[c].

4 Analytical results from low-level analytical method and was below the MDL (provided). Results for Method 607 were ND.

Table 5.8 Mid-plume Mass Removal[1]

Date	TCE (g)	F11 (g)	Chloroform (g)	PCE (g)	NDMA (g)
Feb-22	54	114	ND	2.4	4.5
Mar-22	69	137	ND	3.0	5.9
Apr-22	52	112	ND	2.3	4.3
May-22	53	122	ND	2.1	4.0
Jun-22	65	147	ND	2.6	5.0
Jul-22	52	117	ND	2.1	4.0
Aug-22	62	94	ND	2.5	5.8
Sep-22	49	75	ND	2.0	4.6
Oct-22	43	67	ND	1.7	4.1
Nov-22	42	69	ND	2.0	3.4
Dec-22	42	70	ND	1.9	3.4
Jan-23	35	59	ND	1.6	2.9
Total[2]	**618**	**1,183**	**ND**	**26**	**52**

Notes: .

1) Mass calculation: volume of water extracted at each well * (*contaminant concentration at each well – MPITS effluent concentration*)

2) Total mass removed during the period covered by this table.

Table 5.9 Groundwater Treatment System Operation Costs ($ / 1,000 gals)

Date	Gallons[1] Treated	ECO Labor + Materials	TEST Labor + Materials	L+M cost per 1,000 gal	Energy Cost	Energy Cost per 1,000 gal	Total Cost	Total Cost per 1,000 gal treated
Feb-22	20,708,676	$61,075	$52,677	$5.49	$16,983	$0.82	$130,735	$6.31
Mar-22	22,879,625	$73,291	$53,157	$5.53	$20,776	$0.91	$147,224	$6.43
Apr-22	19,075,871	$61,075	$80,426	$7.42	$16,400	$0.86	$157,901	$8.28
May-22	11,619,980	$101,792	$61,948	$14.09	$12,065	$1.04	$175,805	$15.13
Jun-22	24,221,372	$62,581	$47,477	$4.54	$27,954	$1.15	$138,012	$5.70
Jul-22	20,518,772	$104,302	$76,937	$8.83	$26,2732	$1.28	$207,512	$10.11
Aug-22	12,971,249	$104,302	$50,643	$11.95	$31,3042	$2.41	$186,249	$14.36
Sep-22	13,792,290	$104,302	$57,264	$11.71	$23,0332	$1.67	$184,599	$13.38
Oct-22	14,801,002	$104,302	$76,583	$12.22	$20,858	$1.41	$201,743	$13.63
Nov-22	5,545,400	$83,442	$39,425	$22.16	$8,386	$1.51	$131,253	$23.67
Dec-22	8,808,207	$62,581	$98,735	$18.31	$12,273	$1.39	$173,590	$19.71
Jan-23	11,243,725	$104,302	$68,165	$15.34	$9,539	$0.85	$182,006	$16.19
12-Month Total	**186,186,169**	**$1,027,348**	**$763,437**	**$9.62**	**$229,880**	**$1.23**	**$2,016,629**	**$10.83**

Notes:

1 Gallons treated reflects amount of water extracted during power reporting period.

2 Includes Peak Demand Rates.

Table 7.1 Status of Wells with Sampling Issues

Well	Date of Discovery	Description	Scheduled for Sampling this Qtr? / Next Sampling Date per GMP	Description of Future Plan or Resolution
New Occurrences this Quarter				
600A-001-GW	Nov-22	Sampling equipment failed and was replaced. NASA subsequently determined that additional development is required.	No / TBD	NASA is currently working to secure the services of an off-site contractor to perform additional well development.
600A-002-GW	Nov-22	Sampling equipment failed and was replaced. NASA subsequently determined that additional development is required.	No / TBD	NASA is currently working to secure the services of an off-site contractor to perform additional well development.
Unresolved Issues				
PL-7-480	Aug-22	There was insufficient water in the Westbay zone for sample collection.	Yes / Feb-23	Monitor water level annually to determine if it recovers adequately for sampling.
BLM-1-435	Apr-20	Sampling failed, as there was not enough water in the screen to fill the sample bottles. Failed again, in April 2021 and October 2021.	NA	The well does not provide sufficient water for representative sampling. NASA continued planning to abandon the well as described in the NMED-approved 2022 GMP update (NASA, 2022e).
PL-3-453	Dec-20	Unable to collect groundwater sample because the water level in the well was insufficient for sampling. Insufficient recharge.	NA	The well does not provide sufficient water for representative sampling. NASA continued planning to abandon the well as described in the NMED-approved 2022 GMP update (NASA, 2022e).

Well	Date of Discovery	Description	Scheduled for Sampling this Qtr? / Next Sampling Date per GMP	Description of Future Plan or Resolution
Issues Resolved this Quarter (will not appear in future Periodic Monitoring Reports)				
400-C-118	Nov-20	Unable to collect groundwater sample because the water level in the well was insufficient for sampling. Insufficient recharge.	NA	The well did not provide sufficient water for representative sampling. NASA plugged and abandoned the well in January 2023 and now uses well 400-C-143 for required detection monitoring.
NASA 9	Oct-20	The well could not be sampled because of the intrusion of roots into the well casing and screen.	NA	NASA abandoned this well in January 2023 and plans to replace it with well 400A-001-GW as described in the work plan submitted to NMED on April 29, 2022 (NASA, 2022f) and subsequently approved by NMED.

Appendix A
Indicator Parameters and Analytical Data

Appendix A.1: Monitor Well Indicator Parameters
Appendix A.2: Monitor Well Analytical Data
Appendix A.3: PFTS Indicator Parameters
Appendix A.4: PFTS Analytical Data
Appendix A.5: MPITS Indicator Parameters
Appendix A.6: MPITS Analytical Data

Appendix A
Indicator Parameters and Analytical Data

Appendix A.1: Monitor Well Indicator Parameters
Appendix A.2: Monitor Well Analytical Data
Appendix A.3: PFTS Indicator Parameters
Appendix A.4: PFTS Analytical Data
Appendix A.5: MPITS Indicator Parameters
Appendix A.6: MPITS Analytical Data

Appendix A.1
Monitor Well Indicator Parameters

Summary of Water Quality Parameters for the Sampling Events in this Reporting Period

Well ID 100-D-176 Event Date 11/14/2022

Sample	Parameter	Result	Units
2211140915A	Conductivity	2571	µS/cm
2211140915A	DO	0.35	mg/L
2211140915A	DTW	184.50	ft
2211140915A	ORP	105	mV
2211140915A	pH	7.47	NA
2211140915A	Temperature	18.78	ºC
2211140915A	Turbidity	34.7	NTU
2211140920A	Conductivity	2570	µS/cm
2211140920A	DO	0.41	mg/L
2211140920A	DTW	185	ft
2211140920A	ORP	106	mV
2211140920A	pH	7.48	NA
2211140920A	Temperature	19.33	ºC
2211140920A	Turbidity	34.1	NTU
2211140925A	Conductivity	2571	µS/cm
2211140925A	DO	0.39	mg/L
2211140925A	DTW	185	ft
2211140925A	ORP	105	mV
2211140925A	pH	7.48	NA
2211140925A	Temperature	19.25	ºC
2211140925A	Turbidity	33.7	NTU

Well ID 100-F-358 Event Date 1/24/2023

Sample	Parameter	Result	Units
2301241000A	Conductivity	1323	µS/cm
2301241000A	DO	1.77	mg/L
2301241000A	DTW	317.15	ft
2301241000A	ORP	40	mV
2301241000A	pH	7.40	NA
2301241000A	Temperature	19.88	ºC
2301241000A	Turbidity	1.33	NTU
2301241005A	Conductivity	1326	µS/cm
2301241005A	DO	1.93	mg/L
2301241005A	DTW	317.15	ft
2301241005A	ORP	41	mV
2301241005A	pH	7.71	NA
2301241005A	Temperature	19.93	ºC
2301241005A	Turbidity	1.17	NTU
2301241010A	Conductivity	1328	µS/cm
2301241010A	DO	1.94	mg/L
2301241010A	DTW	317.15	ft
2301241010A	ORP	39	mV
2301241010A	pH	7.40	NA
2301241010A	Temperature	19.90	ºC
2301241010A	Turbidity	1.19	NTU

Well ID 100-G-223 Event Date 1/24/2023

Sample	Parameter	Result	Units
2301241400A	Conductivity	1174	µS/cm
2301241400A	DO	2.47	mg/L
2301241400A	DTW	78.80	ft
2301241400A	ORP	123	mV
2301241400A	pH	7.51	NA
2301241400A	Temperature	19.84	ºC
2301241400A	Turbidity	0.71	NTU
2301241405A	Conductivity	1105	µS/cm
2301241405A	DO	2.50	mg/L
2301241405A	DTW	78.80	ft
2301241405A	ORP	123	mV
2301241405A	pH	7.50	NA
2301241405A	Temperature	19.86	ºC
2301241405A	Turbidity	0.46	NTU
2301241410A	Conductivity	1171	µS/cm
2301241410A	DO	2.56	mg/L
2301241410A	DTW	78.80	ft
2301241410A	ORP	123	mV
2301241410A	pH	7.50	NA
2301241410A	Temperature	19.88	ºC
2301241410A	Turbidity	0.44	NTU

Well ID 200-G-175 Event Date 12/7/2022

Sample	Parameter	Result	Units
2212071324Y	Atmospheric Pressure	12.07	psia
2212071324Y	Conductivity	1354	µS/cm
2212071324Y	DTW	218.20	ft
2212071324Y	Formation Pressure	24.25	psia
2212071324Y	pH	9.16	NA
2212071324Y	Temperature	20.2	ºC
2212071324Y	Turbidity	1.03	NTU
2212071507Y	Atmospheric Pressure	12.08	psia
2212071507Y	Conductivity	1425	µS/cm
2212071507Y	DTW	218.25	ft
2212071507Y	pH	8.70	NA
2212071507Y	Temperature	18.7	ºC
2212071507Y	Turbidity	0.50	NTU

Well ID **200-G-220** **Event Date** **12/5/2022**

Sample	Parameter	Result	Units
2212051459Y	Atmospheric Pressure	11.96	psia
2212051459Y	Conductivity	1469	µS/cm
2212051459Y	DTW	218.10	ft
2212051459Y	Formation Pressure	43.67	psia
2212051459Y	pH	8.63	NA
2212051459Y	Temperature	20.5	ºC
2212051459Y	Turbidity	2.40	NTU
2212051553Y	Atmospheric Pressure	12.00	psia
2212051553Y	Conductivity	1659	µS/cm
2212051553Y	DTW	218.25	ft
2212051553Y	pH	8.34	NA
2212051553Y	Temperature	18.9	ºC
2212051553Y	Turbidity	1.20	NTU

Well ID **200-G-340** **Event Date** **12/5/2022**

Sample	Parameter	Result	Units
2212051040Y	Atmospheric Pressure	12.07	psia
2212051040Y	Conductivity	1875	µS/cm
2212051040Y	DTW	218.03	ft
2212051040Y	Formation Pressure	123.41	psia
2212051040Y	pH	7.87	NA
2212051040Y	Temperature	23.4	ºC
2212051040Y	Turbidity	1.63	NTU
2212051343Y	Atmospheric Pressure	12.05	psia
2212051343Y	Conductivity	1890	µS/cm
2212051343Y	DTW	218.10	ft
2212051343Y	pH	7.81	NA
2212051343Y	Temperature	20.3	ºC
2212051343Y	Turbidity	1.63	NTU

Well ID 200-G-420	Event Date 12/1/2022		
Sample	**Parameter**	**Result**	**Units**
2212011450Y	Atmospheric Pressure	12.02	psia
2212011450Y	Conductivity	2320	µS/cm
2212011450Y	DTW	217.78	ft
2212011450Y	Formation Pressure	186.69	psia
2212011450Y	pH	7.99	NA
2212011450Y	Temperature	22.0	ºC
2212011450Y	Turbidity	2.36	NTU
2212011549Y	Atmospheric Pressure	12.05	psia
2212011549Y	Conductivity	2360	µS/cm
2212011549Y	DTW	217.86	ft
2212011549Y	pH	8.06	NA
2212011549Y	Temperature	22.2	ºC
2212011549Y	Turbidity	1.79	NTU

Well ID 200-G-495	Event Date 12/1/2022		
Sample	**Parameter**	**Result**	**Units**
2212011015Y	Atmospheric Pressure	12.11	psia
2212011015Y	Conductivity	2630	µS/cm
2212011015Y	DTW	217.64	ft
2212011015Y	Formation Pressure	219.40	psia
2212011015Y	pH	8.81	NA
2212011015Y	Temperature	23.4	ºC
2212011015Y	Turbidity	4.19	NTU
2212011311Y	Atmospheric Pressure	12.07	psia
2212011311Y	Conductivity	2650	µS/cm
2212011311Y	DTW	217.78	ft
2212011311Y	pH	8.68	NA
2212011311Y	Temperature	23.0	ºC
2212011311Y	Turbidity	3.37	NTU

Well ID 200-I-185 Event Date 11/10/2022

Sample	Parameter	Result	Units
2211101450Y	Atmospheric Pressure	12.36	psia
2211101450Y	Conductivity	2070	µS/cm
2211101450Y	DTW	216.58	ft
2211101450Y	Formation Pressure	13.52	psia
2211101450Y	pH	8.21	NA
2211101450Y	Temperature	20.2	ºC
2211101450Y	Turbidity	0.72	NTU
2211151435Y	Atmospheric Pressure	12.49	psia
2211151435Y	Conductivity	2120	µS/cm
2211151435Y	DTW	216.62	ft
2211151435Y	pH	8.12	NA
2211151435Y	Temperature	19.8	ºC
2211151435Y	Turbidity	0.64	NTU

Well ID 200-I-300 Event Date 11/10/2022

Sample	Parameter	Result	Units
2211101015Y	Atmospheric Pressure	12.41	psia
2211101015Y	Conductivity	845	µS/cm
2211101015Y	DTW	216.50	ft
2211101015Y	Formation Pressure	64.75	psia
2211101015Y	pH	7.88	NA
2211101015Y	Temperature	20.5	ºC
2211101015Y	Turbidity	2.90	NTU
2211101305Y	Atmospheric Pressure	12.36	psia
2211101305Y	Conductivity	880	µS/cm
2211101305Y	DTW	216.58	ft
2211101305Y	pH	7.69	NA
2211101305Y	Temperature	20.8	ºC
2211101305Y	Turbidity	2.02	NTU

Well ID 200-I-375 Event Date 11/10/2022

Sample	Parameter	Result	Units
2211091540Y	Atmospheric Pressure	12.40	psia
2211091540Y	Conductivity	1024	µS/cm
2211091540Y	DTW	216.41	ft
2211091540Y	Formation Pressure	98.84	psia
2211091540Y	pH	7.30	NA
2211091540Y	Temperature	22.0	ºC
2211091540Y	Turbidity	2.02	NTU
2211100856Y	Atmospheric Pressure	12.46	psia
2211100856Y	Conductivity	1029	µS/cm
2211100856Y	DTW	216.50	ft
2211100856Y	pH	7.41	NA
2211100856Y	Temperature	22.1	ºC
2211100856Y	Turbidity	1.70	NTU

Well ID 200-I-490 Event Date 11/9/2022

Sample	Parameter	Result	Units
2211091330Y	Atmospheric Pressure	12.38	psia
2211091330Y	Conductivity	933	µS/cm
2211091330Y	DTW	216.31	ft
2211091330Y	Formation Pressure	176.30	psia
2211091330Y	pH	7.92	NA
2211091330Y	Temperature	22.3	ºC
2211091330Y	Turbidity	2.40	NTU
2211091425Y	Atmospheric Pressure	12.40	psia
2211091425Y	Conductivity	928	µS/cm
2211091425Y	DTW	216.41	ft
2211091425Y	pH	7.85	NA
2211091425Y	Temperature	22.5	ºC
2211091425Y	Turbidity	1.84	NTU

Well ID 200-I-675		Event Date 11/9/2022	
Sample	**Parameter**	**Result**	**Units**
2211090925Y	Atmospheric Pressure	12.41	psia
2211090925Y	Conductivity	1604	µS/cm
2211090925Y	DTW	216.23	ft
2211090925Y	Formation Pressure	255.40	psia
2211090925Y	pH	7.69	NA
2211090925Y	Temperature	20.8	ºC
2211090925Y	Turbidity	4.19	NTU
2211091030Y	Atmospheric Pressure	12.47	psia
2211091030Y	Conductivity	1615	µS/cm
2211091030Y	DTW	216.31	ft
2211091030Y	pH	7.77	NA
2211091030Y	Temperature	20.9	ºC
2211091030Y	Turbidity	2.80	NTU

Well ID 200-I-795		Event Date 11/8/2022	
Sample	**Parameter**	**Result**	**Units**
2211081450Y	Atmospheric Pressure	12.46	psia
2211081450Y	Conductivity	2120	µS/cm
2211081450Y	DTW	216.15	ft
2211081450Y	Formation Pressure	306.75	psia
2211081450Y	pH	7.56	NA
2211081450Y	Temperature	22.9	ºC
2211081450Y	Turbidity	1.68	NTU
2211081545Y	Atmospheric Pressure	12.50	psia
2211081545Y	Conductivity	2360	µS/cm
2211081545Y	DTW	216.23	ft
2211081545Y	pH	7.61	NA
2211081545Y	Temperature	22.6	ºC
2211081545Y	Turbidity	1.51	NTU

Well ID 300-F-175 Event Date 1/25/2023

Sample	Parameter	Result	Units
2301250935C	Conductivity	1154	µS/cm
2301250935C	DO	NA	mg/L
2301250935C	DTW	NA	ft
2301250935C	ORP	NA	mV
2301250935C	pH	8.82	NA
2301250935C	Temperature	18.3	ºC
2301250935C	Turbidity	1.90	NTU
2301250937C	Conductivity	1150	µS/cm
2301250937C	DO	NA	mg/L
2301250937C	DTW	NA	ft
2301250937C	ORP	NA	mV
2301250937C	pH	8.78	NA
2301250937C	Temperature	18.6	ºC
2301250937C	Turbidity	1.63	NTU
2301250939C	Conductivity	1146	µS/cm
2301250939C	DO	NA	mg/L
2301250939C	DTW	NA	ft
2301250939C	ORP	NA	mV
2301250939C	pH	8.73	NA
2301250939C	Temperature	18.3	ºC
2301250939C	Turbidity	1.53	NTU

Well ID 400-A-151 Event Date 1/17/2023

Sample	Parameter	Result	Units
2301171415A	Conductivity	1240.3	µS/cm
2301171415A	DO	4.40	mg/L
2301171415A	DTW	161.21	ft
2301171415A	ORP	110.4	mV
2301171415A	pH	7.51	NA
2301171415A	Temperature	20.10	ºC
2301171415A	Turbidity	NA	NTU
2301171420A	Conductivity	1210.2	µS/cm
2301171420A	DO	4.45	mg/L
2301171420A	DTW	161.21	ft
2301171420A	ORP	110.4	mV
2301171420A	pH	7.48	NA
2301171420A	Temperature	20.11	ºC
2301171420A	Turbidity	NA	NTU
2301171425A	Conductivity	1205.7	µS/cm
2301171425A	DO	4.49	mg/L
2301171425A	DTW	161.21	ft
2301171425A	ORP	110.4	mV
2301171425A	pH	7.36	NA
2301171425A	Temperature	20.03	ºC
2301171425A	Turbidity	NA	NTU

Well ID 400-C-143 Event Date 11/17/2022

Sample	Parameter	Result	Units
2211170910C	Conductivity	1295.6	µS/cm
2211170910C	DO	5.28	mg/L
2211170910C	ORP	197.2	mV
2211170910C	pH	7.40	NA
2211170910C	Temperature	20.45	ºC
2211170910C	Turbidity	1.73	NTU
2211170911C	Conductivity	1295	µS/cm
2211170911C	DO	5.27	mg/L
2211170911C	ORP	198.5	mV
2211170911C	pH	7.42	NA
2211170911C	Temperature	20.47	ºC
2211170911C	Turbidity	1.39	NTU
2211170912C	Conductivity	1294	µS/cm
2211170912C	DO	5.28	mg/L
2211170912C	ORP	196.9	mV
2211170912C	pH	7.40	NA
2211170912C	Temperature	20.44	ºC
2211170912C	Turbidity	1.48	NTU

Well ID	**600-G-138**	**Event Date**	**1/25/2023**
Sample	**Parameter**	**Result**	**Units**
2301251255A	Conductivity	1653	µS/cm
2301251255A	DTW	145	ft
2301251255A	pH	8.12	NA
2301251255A	Temperature	17.0	ºC
2301251255A	Turbidity	1.35	NTU
2301251310A	Conductivity	1633	µS/cm
2301251310A	DTW	144.90	ft
2301251310A	pH	8.33	NA
2301251310A	Temperature	16.8	ºC
2301251310A	Turbidity	5.86	NTU

Well ID	**700-B-510**	**Event Date**	**12/13/2022**
Sample	**Parameter**	**Result**	**Units**
2212131456C	Conductivity	560	µS/cm
2212131456C	DO	3.56	mg/L
2212131456C	DTW	265.70	ft
2212131456C	ORP	79	mV
2212131456C	pH	8.86	NA
2212131456C	Temperature	20.24	ºC
2212131456C	Turbidity	0.52	NTU
2212131458C	Conductivity	561	µS/cm
2212131458C	DO	3.53	mg/L
2212131458C	DTW	265.73	ft
2212131458C	ORP	78	mV
2212131458C	pH	8.81	NA
2212131458C	Temperature	20.23	ºC
2212131458C	Turbidity	0.55	NTU
2212131500C	Conductivity	561	µS/cm
2212131500C	DO	3.55	mg/L
2212131500C	DTW	265.73	ft
2212131500C	ORP	78	mV
2212131500C	pH	8.84	NA
2212131500C	Temperature	20.23	ºC
2212131500C	Turbidity	0.51	NTU

Well ID BLM-10-517 Event Date 1/3/2023

Sample	Parameter	Result	Units
2301031540C	Conductivity	1029.6	µS/cm
2301031540C	DO	4.78	mg/L
2301031540C	ORP	186.2	mV
2301031540C	pH	7.66	NA
2301031540C	Temperature	18.70	ºC
2301031540C	Turbidity	1.44	NTU
2301031541C	Conductivity	1022.3	µS/cm
2301031541C	DO	5.01	mg/L
2301031541C	ORP	186.2	mV
2301031541C	pH	7.66	NA
2301031541C	Temperature	18.70	ºC
2301031541C	Turbidity	1.37	NTU
2301031542C	Conductivity	1024.6	µS/cm
2301031542C	DO	4.70	mg/L
2301031542C	ORP	186.2	mV
2301031542C	pH	7.66	NA
2301031542C	Temperature	18.66	ºC
2301031542C	Turbidity	1.35	NTU

Well ID BLM-15-305 Event Date 1/9/2023

Sample	Parameter	Result	Units
2301091440A	Conductivity	1141.9	µS/cm
2301091440A	DO	1.26	mg/L
2301091440A	DTW	281.10	ft
2301091440A	ORP	35.3	mV
2301091440A	pH	7.88	NA
2301091440A	Temperature	20.57	ºC
2301091440A	Turbidity	1.66	NTU
2301091442A	Conductivity	1139.2	µS/cm
2301091442A	DO	1.13	mg/L
2301091442A	DTW	282.15	ft
2301091442A	ORP	37.2	mV
2301091442A	pH	7.88	NA
2301091442A	Temperature	20.52	ºC
2301091442A	Turbidity	1.51	NTU
2301091444A	Conductivity	1143.7	µS/cm
2301091444A	DO	0.96	mg/L
2301091444A	DTW	282.15	ft
2301091444A	ORP	40.3	mV
2301091444A	pH	7.88	NA
2301091444A	Temperature	20.55	ºC
2301091444A	Turbidity	1.56	NTU

Well ID	**BLM-17-493**	**Event Date**	**11/3/2022**

Sample	Parameter	Result	Units
2211030920A	Conductivity	1138	µS/cm
2211030920A	DO	7.31	mg/L
2211030920A	DTW	498.90	ft
2211030920A	ORP	218	mV
2211030920A	pH	7.71	NA
2211030920A	Temperature	20.56	ºC
2211030920A	Turbidity	5.10	NTU
2211030922A	Conductivity	1141	µS/cm
2211030922A	DO	7.26	mg/L
2211030922A	DTW	498.96	ft
2211030922A	ORP	215	mV
2211030922A	pH	7.69	NA
2211030922A	Temperature	20.55	ºC
2211030922A	Turbidity	5.12	NTU
2211030924A	Conductivity	1138	µS/cm
2211030924A	DO	7.30	mg/L
2211030924A	DTW	498.98	ft
2211030924A	ORP	215	mV
2211030924A	pH	7.69	NA
2211030924A	Temperature	20.56	ºC
2211030924A	Turbidity	5.09	NTU

Well ID BLM-17-550 Event Date 1/9/2023

Sample	Parameter	Result	Units
2301091010A	Conductivity	1114.9	µS/cm
2301091010A	DO	6.82	mg/L
2301091010A	DTW	504.45	ft
2301091010A	ORP	124.4	mV
2301091010A	pH	7.49	NA
2301091010A	Temperature	19.63	ºC
2301091010A	Turbidity	4.96	NTU
2301091012A	Conductivity	1116.7	µS/cm
2301091012A	DO	6.77	mg/L
2301091012A	DTW	504.90	ft
2301091012A	ORP	132.9	mV
2301091012A	pH	7.50	NA
2301091012A	Temperature	19.69	ºC
2301091012A	Turbidity	5.10	NTU
2301091014A	Conductivity	1117.5	µS/cm
2301091014A	DO	6.79	mg/L
2301091014A	DTW	504.90	ft
2301091014A	ORP	131.7	mV
2301091014A	pH	7.50	NA
2301091014A	Temperature	19.65	ºC
2301091014A	Turbidity	6.26	NTU

Well ID BLM-18-430 Event Date 1/17/2023

Sample	Parameter	Result	Units
2301170935A	Conductivity	925.53	µS/cm
2301170935A	DO	6.88	mg/L
2301170935A	DTW	398.50	ft
2301170935A	ORP	76.8	mV
2301170935A	pH	7.67	NA
2301170935A	Temperature	17.30	ºC
2301170935A	Turbidity	1.09	NTU
2301170940A	Conductivity	901.60	µS/cm
2301170940A	DO	6.78	mg/L
2301170940A	DTW	398.84	ft
2301170940A	ORP	75.8	mV
2301170940A	pH	7.68	NA
2301170940A	Temperature	17.11	ºC
2301170940A	Turbidity	1.12	NTU
2301170945A	Conductivity	910.12	µS/cm
2301170945A	DO	6.67	mg/L
2301170945A	DTW	398.84	ft
2301170945A	ORP	75.9	mV
2301170945A	pH	7.68	NA
2301170945A	Temperature	16.95	ºC
2301170945A	Turbidity	1.03	NTU

Well ID BLM-22-570 Event Date 11/15/2022

Sample	Parameter	Result	Units
2211151500A	Conductivity	1018.6	µS/cm
2211151500A	DO	7.72	mg/L
2211151500A	DTW	514.95	ft
2211151500A	ORP	125.9	mV
2211151500A	pH	7.56	NA
2211151500A	Temperature	20.06	ºC
2211151500A	Turbidity	0.81	NTU
2211151502A	Conductivity	1049.1	µS/cm
2211151502A	DO	7.75	mg/L
2211151502A	DTW	515.10	ft
2211151502A	ORP	129.1	mV
2211151502A	pH	7.56	NA
2211151502A	Temperature	20.11	ºC
2211151502A	Turbidity	0.72	NTU
2211151504A	Conductivity	1062.3	µS/cm
2211151504A	DO	7.53	mg/L
2211151504A	DTW	515.10	ft
2211151504A	ORP	130.4	mV
2211151504A	pH	7.55	NA
2211151504A	Temperature	20.68	ºC
2211151504A	Turbidity	0.67	NTU

Well ID BLM-24-565 Event Date 11/2/2022

Sample	Parameter	Result	Units
2211021330A	Conductivity	1140	µS/cm
2211021330A	DO	4.87	mg/L
2211021330A	DTW	332.20	ft
2211021330A	ORP	77.7	mV
2211021330A	pH	10.22	NA
2211021330A	Temperature	22.96	ºC
2211021330A	Turbidity	1.51	NTU
2211021331A	Conductivity	1150	µS/cm
2211021331A	DO	4.68	mg/L
2211021331A	DTW	332.45	ft
2211021331A	ORP	75.0	mV
2211021331A	pH	10.31	NA
2211021331A	Temperature	22.80	ºC
2211021331A	Turbidity	1.45	NTU
2211021332A	Conductivity	1157	µS/cm
2211021332A	DO	4.57	mg/L
2211021332A	DTW	332.65	ft
2211021332A	ORP	74.2	mV
2211021332A	pH	10.39	NA
2211021332A	Temperature	22.74	ºC
2211021332A	Turbidity	1.33	NTU

Well ID BLM-2-630 Event Date 11/15/2022

Sample	Parameter	Result	Units
2211151020A	Conductivity	945.14	µS/cm
2211151020A	DO	7.21	mg/L
2211151020A	ORP	189.6	mV
2211151020A	pH	7.66	NA
2211151020A	Temperature	19.72	ºC
2211151020A	Transducer	20.61	ft
2211151020A	Turbidity	10.2	NTU
2211151022A	Conductivity	942.84	µS/cm
2211151022A	DO	7.14	mg/L
2211151022A	ORP	190.6	mV
2211151022A	pH	7.64	NA
2211151022A	Temperature	19.68	ºC
2211151022A	Turbidity	10.4	NTU
2211151024A	Conductivity	946.39	µS/cm
2211151024A	DO	7.14	mg/L
2211151024A	ORP	193.3	mV
2211151024A	pH	7.61	NA
2211151024A	Temperature	19.70	ºC
2211151024A	Turbidity	8.71	NTU

Well ID BLM-26-404 Event Date 11/7/2022

Sample	Parameter	Result	Units
2211071440C	Conductivity	1016.2	µS/cm
2211071440C	DO	7.02	mg/L
2211071440C	DTW	310.95	ft
2211071440C	ORP	110.3	mV
2211071440C	pH	7.50	NA
2211071440C	Temperature	21.46	ºC
2211071440C	Turbidity	0.73	NTU
2211071442C	Conductivity	1017.4	µS/cm
2211071442C	DO	7.01	mg/L
2211071442C	DTW	310.98	ft
2211071442C	ORP	120.2	mV
2211071442C	pH	7.50	NA
2211071442C	Temperature	21.44	ºC
2211071442C	Turbidity	0.54	NTU
2211071444C	Conductivity	1016.4	µS/cm
2211071444C	DO	6.99	mg/L
2211071444C	DTW	310.98	ft
2211071444C	ORP	133.7	mV
2211071444C	pH	7.49	NA
2211071444C	Temperature	21.41	ºC
2211071444C	Turbidity	0.69	NTU

Well ID BLM-27-270 Event Date 12/12/2022

Sample	Parameter	Result	Units
2212120925C	Conductivity	825	µS/cm
2212120925C	DO	5.74	mg/L
2212120925C	DTW	233.70	ft
2212120925C	ORP	82	mV
2212120925C	pH	7.95	NA
2212120925C	Temperature	20.61	ºC
2212120925C	Turbidity	1.02	NTU
2212120927C	Conductivity	827	µS/cm
2212120927C	DO	5.71	mg/L
2212120927C	ORP	81	mV
2212120927C	pH	7.92	NA
2212120927C	Temperature	20.62	ºC
2212120927C	Turbidity	99	NTU
2212120929C	Conductivity	825	µS/cm
2212120929C	DO	5.74	mg/L
2212120929C	DTW	234.41	ft
2212120929C	ORP	81	mV
2212120929C	pH	7.92	NA
2212120929C	Temperature	20.61	ºC
2212120929C	Turbidity	1.03	NTU

Well ID **BLM-3-182** **Event Date** **11/1/2022**

Sample	Parameter	Result	Units
2211010925A	Conductivity	4072	µS/cm
2211010925A	DO	0.63	mg/L
2211010925A	DTW	179.55	ft
2211010925A	ORP	142	mV
2211010925A	pH	7.86	NA
2211010925A	Temperature	21.41	ºC
2211010925A	Turbidity	7.26	NTU
2211010927A	Conductivity	4072	µS/cm
2211010927A	DO	0.64	mg/L
2211010927A	DTW	179.67	ft
2211010927A	ORP	140	mV
2211010927A	pH	7.79	NA
2211010927A	Temperature	21.40	ºC
2211010927A	Turbidity	7.23	NTU
2211010929A	Conductivity	4071	µS/cm
2211010929A	DO	0.62	mg/L
2211010929A	DTW	179.67	ft
2211010929A	ORP	142	mV
2211010929A	pH	7.83	NA
2211010929A	Temperature	21.41	ºC
2211010929A	Turbidity	7.20	NTU
2212151000A	Conductivity	4033.36	µS/cm
2212151000A	DO	1.51	mg/L
2212151000A	DTW	159.71	ft
2212151000A	ORP	135	mV
2212151000A	pH	7.33	NA
2212151000A	Temperature	18.79	ºC
2212151000A	Turbidity	7.59	NTU
2212151003A	Conductivity	4039.67	µS/cm
2212151003A	DO	1.36	mg/L
2212151003A	DTW	159.78	ft
2212151003A	ORP	138	mV
2212151003A	pH	7.36	NA
2212151003A	Temperature	18.92	ºC
2212151003A	Turbidity	7.24	NTU
2212151006A	Conductivity	4040.02	µS/cm
2212151006A	DO	1.12	mg/L
2212151006A	DTW	159.78	ft
2212151006A	ORP	139	mV
2212151006A	pH	7.37	NA
2212151006A	Temperature	19.03	ºC
2212151006A	Turbidity	6.90	NTU
2301241340C	Conductivity	3890.1	µS/cm
2301241340C	DO	4.51	mg/L
2301241340C	DTW	179.36	ft

2301241340C	ORP	97.7	mV
2301241340C	pH	8.14	NA
2301241340C	Temperature	20.10	ºC
2301241340C	Turbidity	1.47	NTU
2301241343C	Conductivity	3878.8	µS/cm
2301241343C	DO	4.27	mg/L
2301241343C	DTW	179.48	ft
2301241343C	ORP	98.9	mV
2301241343C	pH	8.14	NA
2301241343C	Temperature	20.14	ºC
2301241343C	Turbidity	1.24	NTU
2301241346C	Conductivity	3868.4	µS/cm
2301241346C	DO	4.13	mg/L
2301241346C	DTW	179.48	ft
2301241346C	ORP	99.5	mV
2301241346C	pH	8.13	NA
2301241346C	Temperature	20.16	ºC
2301241346C	Turbidity	1.19	NTU

Well ID BLM-32-543 Event Date 11/7/2022

Sample	Parameter	Result	Units
2211071345B	Conductivity	1125	µS/cm
2211071345B	pH	7.80	NA
2211071345B	Temperature	21.1	ºC
2211071345B	Turbidity	1.00	NTU

Well ID BLM-32-571 Event Date 11/7/2022

Sample	Parameter	Result	Units
2211071435B	Conductivity	1074	µS/cm
2211071435B	pH	7.22	NA
2211071435B	Temperature	21.5	ºC
2211071435B	Turbidity	2.18	NTU

Well ID BLM-32-632 Event Date 11/7/2022

Sample	Parameter	Result	Units
2211071522B	Conductivity	1072	µS/cm
2211071522B	pH	7.47	NA
2211071522B	Temperature	20.8	ºC
2211071522B	Turbidity	0.62	NTU

Well ID BLM-36-350 Event Date 11/4/2022

Sample	Parameter	Result	Units
2211041100Y	Atmospheric Pressure	12.56	psia
2211041100Y	Conductivity	1268	µS/cm
2211041100Y	DTW	573.25	ft
2211041100Y	Formation Pressure	32.84	psia
2211041100Y	pH	8.10	NA
2211041100Y	Temperature	18.5	ºC
2211041100Y	Turbidity	0.60	NTU
2211041220Y	Conductivity	18.7	µS/cm
2211041220Y	DO	1283	mg/L
2211041220Y	ORP	12.53	mV
2211041220Y	pH	0.72	NA
2211041220Y	Temperature	8.20	ºC
2211041220Y	Turbidity	573.32	NTU

Well ID BLM-36-610 Event Date 11/3/2022

Sample	Parameter	Result	Units
2211031345Y	Atmospheric Pressure	12.40	psia
2211031345Y	Conductivity	1155	µS/cm
2211031345Y	DTW	573.17	ft
2211031345Y	Formation Pressure	102.06	psia
2211031345Y	pH	7.92	NA
2211031345Y	Temperature	24.2	ºC
2211031345Y	Turbidity	1.28	NTU
2211031417Y	Atmospheric Pressure	12.42	psia
2211031417Y	Conductivity	1162	µS/cm
2211031417Y	DTW	573.23	ft
2211031417Y	pH	7.84	NA
2211031417Y	Temperature	24.8	ºC
2211031417Y	Turbidity	1.17	NTU

Well ID BLM-36-800 Event Date 11/4/2022

Sample	Parameter	Result	Units
2211040900Y	Atmospheric Pressure	12.48	psia
2211040900Y	Conductivity	930	µS/cm
2211040900Y	DTW	573.20	ft
2211040900Y	Formation Pressure	177.00	psia
2211040900Y	pH	8.26	NA
2211040900Y	Temperature	23.2	ºC
2211040900Y	Turbidity	1.50	NTU
2211040955Y	Atmospheric Pressure	12.53	psia
2211040955Y	Conductivity	1008	µS/cm
2211040955Y	DTW	573.25	ft
2211040955Y	pH	8.33	NA
2211040955Y	Temperature	23.4	ºC
2211040955Y	Turbidity	1.34	NTU

Well ID BLM-36-860 Event Date 11/3/2022

Sample	Parameter	Result	Units
2211031010Y	Atmospheric Pressure	12.41	psia
2211031010Y	Conductivity	1140	µS/cm
2211031010Y	DTW	573.10	ft
2211031010Y	Formation Pressure	137.48	psia
2211031010Y	pH	8.13	NA
2211031010Y	Temperature	23.3	ºC
2211031010Y	Turbidity	10.2	NTU
2211031047Y	Atmospheric Pressure	12.39	psia
2211031047Y	Conductivity	1135	µS/cm
2211031047Y	DTW	573.17	ft
2211031047Y	pH	8.00	NA
2211031047Y	Temperature	23.5	ºC
2211031047Y	Turbidity	10.8	NTU

Well ID BLM-38-480 Event Date 11/7/2022

Sample	Parameter	Result	Units
2211071055Y	Atmospheric Pressure	12.53	psia
2211071055Y	Conductivity	1068	µS/cm
2211071055Y	DTW	403.40	ft
2211071055Y	Formation Pressure	39.80	psia
2211071055Y	pH	8.33	NA
2211071055Y	Temperature	22.9	ºC
2211071055Y	Turbidity	0.79	NTU
2211071350Y	Atmospheric Pressure	12.57	psia
2211071350Y	Conductivity	1076	µS/cm
2211071350Y	DTW	403.54	ft
2211071350Y	pH	8.25	NA
2211071350Y	Temperature	22.7	ºC
2211071350Y	Turbidity	0.70	NTU

Well ID BLM-38-620 Event Date 11/7/2022

Sample	Parameter	Result	Units
2211071515Y	Atmospheric Pressure	12.49	psia
2211071515Y	Conductivity	1089	µS/cm
2211071515Y	DTW	403.54	ft
2211071515Y	Formation Pressure	87.00	psia
2211071515Y	pH	7.98	NA
2211071515Y	Temperature	22.8	ºC
2211071515Y	Turbidity	1.12	NTU
2211071547Y	Atmospheric Pressure	12.55	psia
2211071547Y	Conductivity	1097	µS/cm
2211071547Y	DTW	403.69	ft
2211071547Y	pH	7.88	NA
2211071547Y	Temperature	22.6	ºC
2211071547Y	Turbidity	1.02	NTU

Well ID **BLM-42-569** **Event Date** **12/13/2022**

Sample	Parameter	Result	Units
2212130955A	Conductivity	615.33	µS/cm
2212130955A	DO	4.26	mg/L
2212130955A	ORP	156.4	mV
2212130955A	pH	7.64	NA
2212130955A	Temperature	19.38	ºC
2212130955A	Transducer	44.36	ft
2212130955A	Turbidity	2.96	NTU
2212130958A	Conductivity	616.21	µS/cm
2212130958A	DO	4.17	mg/L
2212130958A	ORP	157.0	mV
2212130958A	pH	7.66	NA
2212130958A	Temperature	19.56	ºC
2212130958A	Transducer	44.38	ft
2212130958A	Turbidity	3.10	NTU
2212131001A	Conductivity	617.49	µS/cm
2212131001A	DO	4.08	mg/L
2212131001A	ORP	157.3	mV
2212131001A	pH	7.67	NA
2212131001A	Temperature	19.70	ºC
2212131001A	Transducer	44.41	ft
2212131001A	Turbidity	2.98	NTU

Well ID BLM-42-709 Event Date 12/13/2022

Sample	Parameter	Result	Units
2212131430A	Conductivity	561.40	µS/cm
2212131430A	DO	7.12	mg/L
2212131430A	ORP	160.2	mV
2212131430A	pH	7.93	NA
2212131430A	Temperature	18.83	ºC
2212131430A	Transducer	44.40	ft
2212131430A	Turbidity	2.00	NTU
2212131433A	Conductivity	568.78	µS/cm
2212131433A	DO	6.85	mg/L
2212131433A	ORP	159.8	mV
2212131433A	pH	7.86	NA
2212131433A	Temperature	18.97	ºC
2212131433A	Transducer	44.43	ft
2212131433A	Turbidity	1.79	NTU
2212131436A	Conductivity	573.20	µS/cm
2212131436A	DO	6.61	mg/L
2212131436A	ORP	159.0	mV
2212131436A	pH	7.84	NA
2212131436A	Temperature	19.06	ºC
2212131436A	Transducer	44.43	ft
2212131436A	Turbidity	1.51	NTU

Well ID BLM-6-488 Event Date 1/5/2023

Sample	Parameter	Result	Units
2301050955C	Conductivity	1470.1	µS/cm
2301050955C	DO	1.05	mg/L
2301050955C	ORP	78.5	mV
2301050955C	pH	7.54	NA
2301050955C	Temperature	20.47	ºC
2301050955C	Turbidity	2.09	NTU
2301050956C	Conductivity	1469.2	µS/cm
2301050956C	DO	1.03	mg/L
2301050956C	ORP	79.2	mV
2301050956C	pH	7.52	NA
2301050956C	Temperature	20.49	ºC
2301050956C	Turbidity	2.11	NTU
2301050957C	Conductivity	1470.3	µS/cm
2301050957C	DO	1.01	mg/L
2301050957C	ORP	79.6	mV
2301050957C	pH	7.52	NA
2301050957C	Temperature	20.45	ºC
2301050957C	Turbidity	2.04	NTU

Well ID	**BLM-7-509**	**Event Date**	**12/5/2022**
Sample	**Parameter**	**Result**	**Units**
2212050920C	Conductivity	1080.6	µS/cm
2212050920C	DO	5.39	mg/L
2212050920C	DTW	498.73	ft
2212050920C	ORP	205.4	mV
2212050920C	pH	7.54	NA
2212050920C	Temperature	20.50	ºC
2212050920C	Turbidity	4.81	NTU
2212050921C	Conductivity	1077.9	µS/cm
2212050921C	DO	5.34	mg/L
2212050921C	ORP	206.3	mV
2212050921C	pH	7.55	NA
2212050921C	Temperature	20.70	ºC
2212050921C	Turbidity	4.93	NTU
2212050922C	Conductivity	1080.5	µS/cm
2212050922C	DO	5.47	mg/L
2212050922C	ORP	206.3	mV
2212050922C	pH	7.54	NA
2212050922C	Temperature	20.69	ºC
2212050922C	Turbidity	4.78	NTU

Well ID	**BLM-8-418**	**Event Date**	**11/1/2022**
Sample	**Parameter**	**Result**	**Units**
2211011445A	Conductivity	1056	µS/cm
2211011445A	DO	6.70	mg/L
2211011445A	DTW	335.75	ft
2211011445A	ORP	185	mV
2211011445A	pH	7.43	NA
2211011445A	Temperature	21.82	ºC
2211011445A	Turbidity	1.55	NTU
2211011447A	Conductivity	1053	µS/cm
2211011447A	DO	6.68	mg/L
2211011447A	DTW	335.81	ft
2211011447A	ORP	186	mV
2211011447A	pH	7.41	NA
2211011447A	Temperature	21.81	ºC
2211011447A	Turbidity	1.62	NTU
2211011449A	Conductivity	1051	µS/cm
2211011449A	DO	6.69	mg/L
2211011449A	DTW	335.81	ft
2211011449A	ORP	186	mV
2211011449A	pH	7.44	NA
2211011449A	Temperature	21.81	ºC
2211011449A	Turbidity	1.59	NTU

Well ID	**BW-5-295**	**Event Date**	**11/7/2022**
Sample	**Parameter**	**Result**	**Units**
2211070940C	Conductivity	799.34	µS/cm
2211070940C	DO	6.22	mg/L
2211070940C	DTW	236.56	ft
2211070940C	ORP	161.7	mV
2211070940C	pH	8.10	NA
2211070940C	Temperature	21.83	ºC
2211070940C	Turbidity	0.38	NTU
2211070942C	Conductivity	809.46	µS/cm
2211070942C	DO	6.11	mg/L
2211070942C	DTW	236.90	ft
2211070942C	ORP	162.7	mV
2211070942C	pH	8.07	NA
2211070942C	Temperature	21.86	ºC
2211070942C	Turbidity	0.34	NTU
2211070944C	Conductivity	813.79	µS/cm
2211070944C	DO	6.09	mg/L
2211070944C	DTW	236.85	ft
2211070944C	ORP	162.9	mV
2211070944C	pH	8.06	NA
2211070944C	Temperature	21.88	ºC
2211070944C	Turbidity	0.27	NTU

Well ID BW-7-211		Event Date 12/13/2022	
Sample	**Parameter**	**Result**	**Units**
2212130819C	Conductivity	1008	µS/cm
2212130819C	DO	6.94	mg/L
2212130819C	DTW	192.30	ft
2212130819C	ORP	76	mV
2212130819C	pH	7.92	NA
2212130819C	Temperature	19.59	ºC
2212130819C	Turbidity	0.12	NTU
2212130820C	Conductivity	1024	µS/cm
2212130820C	DO	6.85	mg/L
2212130820C	DTW	192.30	ft
2212130820C	ORP	76	mV
2212130820C	pH	7.91	NA
2212130820C	Temperature	19.58	ºC
2212130820C	Turbidity	0.15	NTU
2212130821C	Conductivity	1013	µS/cm
2212130821C	DO	6.80	mg/L
2212130821C	DTW	192.30	ft
2212130821C	ORP	80	mV
2212130821C	pH	7.92	NA
2212130821C	Temperature	19.60	ºC
2212130821C	Turbidity	0.39	NTU

Well ID JER-1-483		Event Date 1/11/2023	
Sample	**Parameter**	**Result**	**Units**
2301111503B	Conductivity	1157	µS/cm
2301111503B	pH	7.56	NA
2301111503B	Temperature	19.9	ºC
2301111503B	Turbidity	1.73	NTU

Well ID JER-1-563		Event Date 1/11/2023	
Sample	**Parameter**	**Result**	**Units**
2301111510B	Conductivity	1191	µS/cm
2301111510B	pH	8.03	NA
2301111510B	Temperature	19.5	ºC
2301111510B	Turbidity	2.68	NTU

Well ID JER-1-683		Event Date 1/12/2023	
Sample	**Parameter**	**Result**	**Units**
2301121400B	Conductivity	1187	µS/cm
2301121400B	pH	7.54	NA
2301121400B	Temperature	21.0	ºC
2301121400B	Transducer	95.85	ft
2301121400B	Turbidity	0.85	NTU

Well ID	**JER-2-504**	**Event Date**	**1/23/2023**
Sample	**Parameter**	**Result**	**Units**
2301231415B	Conductivity	1024	µS/cm
2301231415B	pH	8.96	NA
2301231415B	Temperature	15.2	ºC
2301231415B	Turbidity	0.20	NTU

Well ID	**JER-2-584**	**Event Date**	**1/23/2023**
Sample	**Parameter**	**Result**	**Units**
2301231432B	Conductivity	1019	µS/cm
2301231432B	pH	8.17	NA
2301231432B	Temperature	16.2	ºC
2301231432B	Turbidity	1.40	NTU

Well ID	**JER-2-684**	**Event Date**	**1/24/2023**
Sample	**Parameter**	**Result**	**Units**
2301241435B	Conductivity	1037	µS/cm
2301241435B	pH	8.07	NA
2301241435B	Temperature	17.0	ºC
2301241435B	Turbidity	1.15	NTU

Well ID	**JP-1-424**	**Event Date**	**1/18/2023**
Sample	**Parameter**	**Result**	**Units**
2301181010A	Conductivity	986.76	µS/cm
2301181010A	DO	5.30	mg/L
2301181010A	ORP	122.7	mV
2301181010A	pH	7.79	NA
2301181010A	Temperature	18.64	ºC
2301181010A	Turbidity	0.59	NTU
2301181015A	Conductivity	985.60	µS/cm
2301181015A	DO	5.31	mg/L
2301181015A	ORP	122.8	mV
2301181015A	pH	7.80	NA
2301181015A	Temperature	18.73	ºC
2301181015A	Turbidity	0.63	NTU
2301181020A	Conductivity	985.80	µS/cm
2301181020A	DO	5.26	mg/L
2301181020A	ORP	122.8	mV
2301181020A	pH	7.81	NA
2301181020A	Temperature	18.78	ºC
2301181020A	Turbidity	0.71	NTU

Well ID JP-2-447 Event Date 1/18/2023

Sample	Parameter	Result	Units
2301181500A	Conductivity	1010.9	µS/cm
2301181500A	DO	6.23	mg/L
2301181500A	ORP	173.2	mV
2301181500A	pH	7.59	NA
2301181500A	Temperature	19.31	ºC
2301181500A	Turbidity	0.98	NTU
2301181505A	Conductivity	1009.1	µS/cm
2301181505A	DO	6.23	mg/L
2301181505A	ORP	173.6	mV
2301181505A	pH	7.59	NA
2301181505A	Temperature	19.33	ºC
2301181505A	Turbidity	0.79	NTU
2301181510A	Conductivity	1010.7	µS/cm
2301181510A	DO	6.18	mg/L
2301181510A	ORP	173.2	mV
2301181510A	pH	7.59	NA
2301181510A	Temperature	19.28	ºC
2301181510A	Turbidity	0.87	NTU

Well ID JP-3-509 Event Date 1/23/2023

Sample	Parameter	Result	Units
2301230955A	Conductivity	1114	µS/cm
2301230955A	DO	5.34	mg/L
2301230955A	DTW	20.20	ft
2301230955A	ORP	106	mV
2301230955A	pH	7.66	NA
2301230955A	Temperature	19.61	ºC
2301230955A	Turbidity	0.58	NTU
2301231000A	Conductivity	1108	µS/cm
2301231000A	DO	5.10	mg/L
2301231000A	DTW	20.20	ft
2301231000A	ORP	102	mV
2301231000A	pH	7.68	NA
2301231000A	Temperature	19.68	ºC
2301231000A	Turbidity	0.51	NTU
2301231005A	Conductivity	1110	µS/cm
2301231005A	DO	5.12	mg/L
2301231005A	DTW	20.20	ft
2301231005A	ORP	109	mV
2301231005A	pH	7.65	NA
2301231005A	Temperature	19.72	ºC
2301231005A	Turbidity	0.56	NTU

Well ID	JP-3-689	Event Date	1/23/2023
Sample	**Parameter**	**Result**	**Units**
2301231415A	Conductivity	1113	µS/cm
2301231415A	DO	4.99	mg/L
2301231415A	DTW	20.20	ft
2301231415A	ORP	110	mV
2301231415A	pH	7.72	NA
2301231415A	Temperature	20.13	ºC
2301231415A	Turbidity	1.15	NTU
2301231420A	Conductivity	1120	µS/cm
2301231420A	DO	5.05	mg/L
2301231420A	DTW	20.20	ft
2301231420A	ORP	111	mV
2301231420A	pH	7.70	NA
2301231420A	Temperature	20.17	ºC
2301231420A	Turbidity	0.97	NTU
2301231425A	Conductivity	1115	µS/cm
2301231425A	DO	4.94	mg/L
2301231425A	DTW	20.20	ft
2301231425A	ORP	110	mV
2301231425A	pH	7.66	NA
2301231425A	Temperature	20.22	ºC
2301231425A	Turbidity	0.99	NTU

Well ID	NASA 6	Event Date	11/16/2022
Sample	**Parameter**	**Result**	**Units**
2211161005B	Conductivity	1723	µS/cm
2211161005B	DTW	128.62	ft
2211161005B	pH	7.37	NA
2211161005B	Temperature	12.7	ºC
2211161005B	Turbidity	4.33	NTU
2211161020B	Conductivity	1751	µS/cm
2211161020B	DTW	137.85	ft
2211161020B	pH	7.40	NA
2211161020B	Temperature	12.5	ºC
2211161020B	Turbidity	5.20	NTU

Well ID PL-10-484 Event Date 1/3/2023

Sample	Parameter	Result	Units
2301031440Y	Atmospheric Pressure	12.06	psia
2301031440Y	Conductivity	1239	µS/cm
2301031440Y	DTW	465.60	ft
2301031440Y	Formation Pressure	19.90	psia
2301031440Y	pH	8.65	NA
2301031440Y	Temperature	19.0	ºC
2301031440Y	Turbidity	1.56	NTU
2301031541Y	Atmospheric Pressure	12.08	psia
2301031541Y	Conductivity	1230	µS/cm
2301031541Y	DTW	465.72	ft
2301031541Y	pH	8.72	NA
2301031541Y	Temperature	19.2	ºC
2301031541Y	Turbidity	1.27	NTU

Well ID PL-10-592 Event Date 1/4/2023

Sample	Parameter	Result	Units
2301041340Y	Atmospheric Pressure	12.14	psia
2301041340Y	Conductivity	1244	µS/cm
2301041340Y	DTW	465.72	ft
2301041340Y	Formation Pressure	66.27	psia
2301041340Y	pH	8.63	NA
2301041340Y	Temperature	21.3	ºC
2301041340Y	Turbidity	1.75	NTU
2301041418Y	Atmospheric Pressure	12.10	psia
2301041418Y	Conductivity	1254	µS/cm
2301041418Y	DTW	465.85	ft
2301041418Y	pH	8.55	NA
2301041418Y	Temperature	21.1	ºC
2301041418Y	Turbidity	1.45	NTU

Well ID PL-11-470 Event Date 12/5/2022

Sample	Parameter	Result	Units
2212051409B	Conductivity	1206	µS/cm
2212051409B	pH	8.75	NA
2212051409B	Temperature	20.4	ºC
2212051409B	Transducer	66.53	ft
2212051409B	Turbidity	0.94	NTU

Well ID PL-11-530 Event Date 12/5/2022

Sample	Parameter	Result	Units
2212051429B	Conductivity	1218	µS/cm
2212051429B	pH	8.17	NA
2212051429B	Temperature	20.8	ºC
2212051429B	Transducer	68.83	ft
2212051429B	Turbidity	0.99	NTU

Well ID PL-11-710 Event Date 12/6/2022

Sample	Parameter	Result	Units
2212061400B	Conductivity	1251	µS/cm
2212061400B	pH	8.62	NA
2212061400B	Temperature	20.0	ºC
2212061400B	Transducer	71.84	ft
2212061400B	Turbidity	0.55	NTU

Well ID PL-11-820 Event Date 12/6/2022

Sample	Parameter	Result	Units
2212061420B	Conductivity	1126	µS/cm
2212061420B	pH	8.33	NA
2212061420B	Temperature	19.9	ºC
2212061420B	Turbidity	0.71	NTU

Well ID PL-11-980 Event Date 12/6/2022

Sample	Parameter	Result	Units
2212061435B	Conductivity	1067	µS/cm
2212061435B	pH	8.36	NA
2212061435B	Temperature	20.5	ºC
2212061435B	Transducer	74.47	ft
2212061435B	Turbidity	0.63	NTU

Well ID PL-12-570 Event Date 11/10/2022

Sample	Parameter	Result	Units
2211100855C	Conductivity	1004	µS/cm
2211100855C	DO	4.69	mg/L
2211100855C	ORP	142	mV
2211100855C	pH	7.40	NA
2211100855C	Temperature	20.44	ºC
2211100855C	Transducer	16.42	ft
2211100855C	Turbidity	0.32	NTU
2211100857C	Conductivity	1003	µS/cm
2211100857C	DO	4.65	mg/L
2211100857C	ORP	141	mV
2211100857C	pH	7.36	NA
2211100857C	Temperature	20.43	ºC
2211100857C	Turbidity	0.35	NTU
2211100859C	Conductivity	1005	µS/cm
2211100859C	DO	4.64	mg/L
2211100859C	ORP	141	mV
2211100859C	pH	7.41	NA
2211100859C	Temperature	20.44	ºC
2211100859C	Turbidity	0.33	NTU

Well ID PL-12-800 Event Date 11/10/2022

Sample	Parameter	Result	Units
2211101410C	Conductivity	1013	µS/cm
2211101410C	DO	3.78	mg/L
2211101410C	ORP	139.9	mV
2211101410C	pH	7.48	NA
2211101410C	Temperature	20.96	ºC
2211101410C	Transducer	16.42	ft
2211101410C	Turbidity	0.30	NTU
2211101415C	Conductivity	1012	µS/cm
2211101415C	DO	3.71	mg/L
2211101415C	ORP	140	mV
2211101415C	pH	7.42	NA
2211101415C	Temperature	20.87	ºC
2211101415C	Turbidity	0.43	NTU
2211101420C	Conductivity	1012	µS/cm
2211101420C	DO	3.70	mg/L
2211101420C	ORP	140	mV
2211101420C	pH	7.48	NA
2211101420C	Temperature	20.95	ºC
2211101420C	Turbidity	0.29	NTU

Well ID PL-1-486 Event Date 1/24/2023

Sample	Parameter	Result	Units
2301241025C	Conductivity	951.88	µS/cm
2301241025C	DO	7.36	mg/L
2301241025C	DTW	487.43	ft
2301241025C	ORP	141.3	mV
2301241025C	pH	8.03	NA
2301241025C	Temperature	18.43	ºC
2301241025C	Turbidity	1.40	NTU
2301241028C	Conductivity	949.46	µS/cm
2301241028C	DO	7.12	mg/L
2301241028C	DTW	487.60	ft
2301241028C	ORP	140.4	mV
2301241028C	pH	8.02	NA
2301241028C	Temperature	18.39	ºC
2301241028C	Turbidity	1.33	NTU
2301241031C	Conductivity	943.70	µS/cm
2301241031C	DO	6.87	mg/L
2301241031C	DTW	487.60	ft
2301241031C	ORP	139.6	mV
2301241031C	pH	7.99	NA
2301241031C	Temperature	18.32	ºC
2301241031C	Turbidity	1.16	NTU

Well ID PL-2-504 Event Date 12/12/2022

Sample	Parameter	Result	Units
2212121400A	Conductivity	1001.3	µS/cm
2212121400A	DO	4.41	mg/L
2212121400A	ORP	183.7	mV
2212121400A	pH	7.84	NA
2212121400A	Temperature	20.67	ºC
2212121400A	Transducer	20.30	ft
2212121400A	Turbidity	3.33	NTU
2212121403A	Conductivity	1002.8	µS/cm
2212121403A	DO	4.32	mg/L
2212121403A	ORP	183.0	mV
2212121403A	pH	7.85	NA
2212121403A	Temperature	20.69	ºC
2212121403A	Transducer	20.34	ft
2212121403A	Turbidity	3.13	NTU
2212121406A	Conductivity	998.3	µS/cm
2212121406A	DO	4.20	mg/L
2212121406A	ORP	182.7	mV
2212121406A	pH	7.85	NA
2212121406A	Temperature	20.74	ºC
2212121406A	Transducer	20.34	ft
2212121406A	Turbidity	2.85	NTU

Well ID PL-4-464 Event Date 12/12/2022

Sample	Parameter	Result	Units
2212120915B	Conductivity	1043.9	µS/cm
2212120915B	DO	6.26	mg/L
2212120915B	DTW	449.54	ft
2212120915B	ORP	204.1	mV
2212120915B	pH	7.65	NA
2212120915B	Temperature	20.09	ºC
2212120915B	Turbidity	1.99	NTU
2212120918B	Conductivity	1055.9	µS/cm
2212120918B	DO	6.12	mg/L
2212120918B	DTW	449.54	ft
2212120918B	ORP	204.8	mV
2212120918B	pH	7.61	NA
2212120918B	Temperature	20.16	ºC
2212120918B	Turbidity	1.80	NTU
2212120921B	Conductivity	1067.7	µS/cm
2212120921B	DO	5.94	mg/L
2212120921B	DTW	449.54	ft
2212120921B	ORP	205.3	mV
2212120921B	pH	7.59	NA
2212120921B	Temperature	20.22	ºC
2212120921B	Turbidity	1.73	NTU

Well ID PL-6-1195 Event Date 1/5/2023

Sample	Parameter	Result	Units
2301051410Y	Atmospheric Pressure	12.14	psia
2301051410Y	Conductivity	1984	µS/cm
2301051410Y	DTW	470.93	ft
2301051410Y	Formation Pressure	337.28	psia
2301051410Y	pH	8.52	NA
2301051410Y	Temperature	23.2	ºC
2301051410Y	Turbidity	7.67	NTU
2301101354Y	Atmospheric Pressure	12.16	psia
2301101354Y	Conductivity	1995	µS/cm
2301101354Y	DTW	470.70	ft
2301101354Y	pH	8.31	NA
2301101354Y	Temperature	22.2	ºC
2301101354Y	Turbidity	4.67	NTU

Well ID PL-6-1335 Event Date 1/10/2023

Sample	Parameter	Result	Units
2301101520Y	Atmospheric Pressure	12.25	psia
2301101520Y	Conductivity	1974	µS/cm
2301101520Y	DTW	470.70	ft
2301101520Y	Formation Pressure	398.46	psia
2301101520Y	pH	8.91	NA
2301101520Y	Temperature	22.2	ºC
2301101520Y	Turbidity	6.79	NTU
2301111020Y	Atmospheric Pressure	12.33	psia
2301111020Y	Conductivity	1967	µS/cm
2301111020Y	DTW	470.83	ft
2301111020Y	pH	8.82	NA
2301111020Y	Temperature	21.8	ºC
2301111020Y	Turbidity	3.83	NTU

Well ID PL-6-545 Event Date 1/23/2023

Sample	Parameter	Result	Units
2301231505Y	Atmospheric Pressure	12.11	psia
2301231505Y	Conductivity	1093	µS/cm
2301231505Y	DTW	471.21	ft
2301231505Y	Formation Pressure	55.38	psia
2301231505Y	pH	8.72	NA
2301231505Y	Temperature	20.2	ºC
2301231505Y	Turbidity	0.87	NTU
2301231555Y	Atmospheric Pressure	12.13	psia
2301231555Y	Conductivity	1080	µS/cm
2301231555Y	DTW	471.33	ft
2301231555Y	pH	8.62	NA
2301231555Y	Temperature	19.8	ºC
2301231555Y	Turbidity	0.71	NTU

Well ID PL-6-725 Event Date 1/17/2023

Sample	Parameter	Result	Units
2301171330Y	Atmospheric Pressure	12.16	psia
2301171330Y	Conductivity	976	µS/cm
2301171330Y	DTW	471.12	ft
2301171330Y	Formation Pressure	134.01	psia
2301171330Y	pH	8.43	NA
2301171330Y	Temperature	19.7	ºC
2301171330Y	Turbidity	1.91	NTU
2301171417Y	Atmospheric Pressure	12.15	psia
2301171417Y	Conductivity	986	µS/cm
2301171417Y	DTW	471.21	ft
2301171417Y	pH	8.50	NA
2301171417Y	Temperature	19.5	ºC
2301171417Y	Turbidity	1.50	NTU

Well ID PL-6-915 Event Date 1/11/2023

Sample	Parameter	Result	Units
2301111345Y	Atmospheric Pressure	12.39	psia
2301111345Y	Conductivity	1042	µS/cm
2301111345Y	DTW	470.83	ft
2301111345Y	Formation Pressure	217.24	psia
2301111345Y	pH	8.92	NA
2301111345Y	Temperature	21.2	ºC
2301111345Y	Turbidity	3.55	NTU
2301111541Y	Atmospheric Pressure	12.42	psia
2301111541Y	Conductivity	1034	µS/cm
2301111541Y	DTW	471.12	ft
2301111541Y	pH	8.94	NA
2301111541Y	Temperature	21.0	ºC
2301111541Y	Turbidity	2.94	NTU

Well ID PL-7-560 Event Date 11/8/2022

Sample	Parameter	Result	Units
2211081000Y	Atmospheric Pressure	12.61	psia
2211081000Y	Conductivity	1009	µS/cm
2211081000Y	DTW	484.20	ft
2211081000Y	Formation Pressure	45.99	psia
2211081000Y	pH	8.19	NA
2211081000Y	Temperature	22.5	ºC
2211081000Y	Turbidity	1.25	NTU
2211081055Y	Atmospheric Pressure	12.63	psia
2211081055Y	Conductivity	997	µS/cm
2211081055Y	DTW	484.33	ft
2211081055Y	pH	8.24	NA
2211081055Y	Temperature	22.9	ºC
2211081055Y	Turbidity	1.14	NTU

Well ID PL-8-455 Event Date 12/14/2022

Sample	Parameter	Result	Units
2212150925Y	Atmospheric Pressure	12.15	psia
2212150925Y	Conductivity	1107	µS/cm
2212150925Y	DTW	440.95	ft
2212150925Y	Formation Pressure	21.66	psia
2212150925Y	pH	7.30	NA
2212150925Y	Temperature	17.9	ºC
2212150925Y	Turbidity	1.09	NTU
2212151027Y	Atmospheric Pressure	12.19	psia
2212151027Y	Conductivity	1117	µS/cm
2212151027Y	DTW	441.03	ft
2212151027Y	pH	7.13	NA
2212151027Y	Temperature	18.4	ºC
2212151027Y	Turbidity	1.13	NTU

Well ID PL-8-605 Event Date 12/14/2022

Sample	Parameter	Result	Units
2212141313Y	Atmospheric Pressure	12.17	psia
2212141313Y	Conductivity	1071	µS/cm
2212141313Y	DTW	440.87	ft
2212141313Y	Formation Pressure	86.91	psia
2212141313Y	pH	6.96	NA
2212141313Y	Temperature	12.1	ºC
2212141313Y	Turbidity	2.53	NTU
2212141412Y	Atmospheric Pressure	12.12	psia
2212141412Y	Conductivity	1135	µS/cm
2212141412Y	DTW	440.95	ft
2212141412Y	pH	8.21	NA
2212141412Y	Temperature	19.7	ºC
2212141412Y	Turbidity	1.09	NTU

Well ID ST-1-473 Event Date 11/9/2022

Sample	Parameter	Result	Units
2211091430C	Conductivity	1089.1	µS/cm
2211091430C	DO	6.32	mg/L
2211091430C	ORP	109	mV
2211091430C	pH	7.40	NA
2211091430C	Temperature	20.78	ºC
2211091430C	Transducer	18.58	ft
2211091430C	Turbidity	1.30	NTU
2211091432C	Conductivity	1092.3	µS/cm
2211091432C	DO	6.20	mg/L
2211091432C	ORP	114	mV
2211091432C	pH	7.38	NA
2211091432C	Temperature	20.84	ºC
2211091432C	Turbidity	1.18	NTU
2211091434C	Conductivity	1091.5	µS/cm
2211091434C	DO	6.13	mg/L
2211091434C	ORP	116	mV
2211091434C	pH	7.38	NA
2211091434C	Temperature	20.81	ºC
2211091434C	Turbidity	1.10	NTU

Well ID **ST-1-541** **Event Date** **11/16/2022**

Sample	Parameter	Result	Units
2211161020A	Conductivity	1156.5	µS/cm
2211161020A	DO	6.62	mg/L
2211161020A	DTW	470.25	ft
2211161020A	ORP	20.9	mV
2211161020A	pH	7.34	NA
2211161020A	Temperature	20.02	ºC
2211161020A	Turbidity	0.81	NTU
2211161022A	Conductivity	1159.2	µS/cm
2211161022A	DO	6.65	mg/L
2211161022A	DTW	470.40	ft
2211161022A	ORP	20.8	mV
2211161022A	pH	7.34	NA
2211161022A	Temperature	20.13	ºC
2211161022A	Turbidity	0.75	NTU
2211161024A	Conductivity	1158.4	µS/cm
2211161024A	DO	6.69	mg/L
2211161024A	DTW	470.40	ft
2211161024A	ORP	21.7	mV
2211161024A	pH	7.33	NA
2211161024A	Temperature	20.10	ºC
2211161024A	Turbidity	0.88	NTU

Well ID ST-1-630 Event Date 11/16/2022

Sample	Parameter	Result	Units
2211151520A	Conductivity	852.32	µS/cm
2211151520A	DO	4.62	mg/L
2211151520A	DTW	470.00	ft
2211151520A	ORP	136.8	mV
2211151520A	pH	7.63	NA
2211151520A	Temperature	19.68	ºC
2211151520A	Turbidity	2.11	NTU
2211151522A	Conductivity	853.57	µS/cm
2211151522A	DO	4.70	mg/L
2211151522A	DTW	470.00	ft
2211151522A	ORP	137.2	mV
2211151522A	pH	7.65	NA
2211151522A	Temperature	19.72	ºC
2211151522A	Turbidity	1.98	NTU
2211151524A	Conductivity	854.44	µS/cm
2211151524A	DO	4.65	mg/L
2211151524A	DTW	470.00	ft
2211151524A	ORP	138.3	mV
2211151524A	pH	7.63	NA
2211151524A	Temperature	19.67	ºC
2211151524A	Turbidity	1.87	NTU

Well ID ST-3-486 Event Date 12/7/2022

Sample	Parameter	Result	Units
2212070920C	Conductivity	959.20	µS/cm
2212070920C	DO	5.81	mg/L
2212070920C	ORP	226.4	mV
2212070920C	pH	7.26	NA
2212070920C	Temperature	19.89	ºC
2212070920C	Transducer	23.49	ft
2212070920C	Turbidity	4.55	NTU
2212070921C	Conductivity	957.33	µS/cm
2212070921C	DO	5.75	mg/L
2212070921C	ORP	225.9	mV
2212070921C	pH	7.25	NA
2212070921C	Temperature	19.85	ºC
2212070921C	Turbidity	4.20	NTU
2212070922C	Conductivity	958.15	µS/cm
2212070922C	DO	5.80	mg/L
2212070922C	ORP	226.1	mV
2212070922C	pH	7.26	NA
2212070922C	Temperature	19.86	ºC
2212070922C	Turbidity	4.10	NTU

Well ID ST-3-586 Event Date 12/15/2022

Sample	Parameter	Result	Units
2212151000C	Conductivity	851	µS/cm
2212151000C	DO	10.01	mg/L
2212151000C	DTW	460.95	ft
2212151000C	ORP	188	mV
2212151000C	pH	7.60	NA
2212151000C	Temperature	19.29	ºC
2212151000C	Turbidity	18.6	NTU
2212151002C	Conductivity	850	µS/cm
2212151002C	DO	9.93	mg/L
2212151002C	ORP	187	mV
2212151002C	pH	7.57	NA
2212151002C	Temperature	19.29	ºC
2212151002C	Turbidity	19.2	NTU
2212151004C	Conductivity	852	µS/cm
2212151004C	DO	9.90	mg/L
2212151004C	DTW	261.22	ft
2212151004C	ORP	187	mV
2212151004C	pH	7.59	NA
2212151004C	Temperature	19.28	ºC
2212151004C	Turbidity	19.6	NTU

Well ID ST-3-666 Event Date 12/8/2022

Sample	Parameter	Result	Units
2212080955C	Conductivity	1008.7	µS/cm
2212080955C	DO	5.63	mg/L
2212080955C	DTW	461.72	ft
2212080955C	ORP	202.4	mV
2212080955C	pH	7.49	NA
2212080955C	Temperature	20.85	ºC
2212080955C	Turbidity	3.56	NTU
2212080956C	Conductivity	1007.6	µS/cm
2212080956C	DO	5.58	mg/L
2212080956C	ORP	202.8	mV
2212080956C	pH	7.50	NA
2212080956C	Temperature	20.81	ºC
2212080956C	Turbidity	3.15	NTU
2212080957C	Conductivity	1008.1	µS/cm
2212080957C	DO	5.59	mg/L
2212080957C	ORP	202.7	mV
2212080957C	pH	7.49	NA
2212080957C	Temperature	20.90	ºC
2212080957C	Turbidity	3.20	NTU

Well ID ST-3-735		Event Date 12/8/2022	
Sample	**Parameter**	**Result**	**Units**
2212081355C	Conductivity	1016.6	µS/cm
2212081355C	DO	4.85	mg/L
2212081355C	DTW	462.35	ft
2212081355C	ORP	47.5	mV
2212081355C	pH	7.28	NA
2212081355C	Temperature	21.03	ºC
2212081355C	Turbidity	1.72	NTU
2212081356C	Conductivity	1018.8	µS/cm
2212081356C	DO	4.84	mg/L
2212081356C	ORP	49.6	mV
2212081356C	pH	7.27	NA
2212081356C	Temperature	20.63	ºC
2212081356C	Turbidity	1.80	NTU
2212081357C	Conductivity	1016.9	µS/cm
2212081357C	DO	4.85	mg/L
2212081357C	ORP	48.7	mV
2212081357C	pH	7.29	NA
2212081357C	Temperature	20.80	ºC
2212081357C	Turbidity	1.78	NTU

Well ID ST-4-481		Event Date 12/1/2022	
Sample	**Parameter**	**Result**	**Units**
2212011015A	Conductivity	1029.8	µS/cm
2212011015A	DO	6.28	mg/L
2212011015A	DTW	459.00	ft
2212011015A	ORP	190.4	mV
2212011015A	pH	7.46	NA
2212011015A	Temperature	20.56	ºC
2212011015A	Turbidity	1.11	NTU
2212011017A	Conductivity	1031.3	µS/cm
2212011017A	DO	6.25	mg/L
2212011017A	DTW	459.00	ft
2212011017A	ORP	190.1	mV
2212011017A	pH	7.47	NA
2212011017A	Temperature	20.58	ºC
2212011017A	Turbidity	0.53	NTU
2212011019A	Conductivity	1030.5	µS/cm
2212011019A	DO	6.27	mg/L
2212011019A	DTW	459.00	ft
2212011019A	ORP	191.1	mV
2212011019A	pH	7.46	NA
2212011019A	Temperature	20.54	ºC
2212011019A	Turbidity	0.33	NTU

Well ID ST-4-589 Event Date 11/16/2022

Sample	Parameter	Result	Units
2211161440C	Conductivity	741.58	µS/cm
2211161440C	DO	3.55	mg/L
2211161440C	ORP	147.1	mV
2211161440C	pH	7.94	NA
2211161440C	Temperature	20.14	ºC
2211161440C	Turbidity	1.13	NTU
2211161441C	Conductivity	740.58	µS/cm
2211161441C	DO	3.49	mg/L
2211161441C	ORP	147.7	mV
2211161441C	pH	7.93	NA
2211161441C	Temperature	20.12	ºC
2211161441C	Turbidity	1.08	NTU
2211161442C	Conductivity	741.38	µS/cm
2211161442C	DO	3.48	mg/L
2211161442C	ORP	148.4	mV
2211161442C	pH	7.93	NA
2211161442C	Temperature	20.13	ºC
2211161442C	Turbidity	1.21	NTU

Well ID ST-4-690 Event Date 12/1/2022

Sample	Parameter	Result	Units
2212011400A	Conductivity	817.90	µS/cm
2212011400A	DO	2.93	mg/L
2212011400A	DTW	458.00	ft
2212011400A	ORP	131.4	mV
2212011400A	pH	8.17	NA
2212011400A	Temperature	20.06	ºC
2212011400A	Turbidity	1.80	NTU
2212011402A	Conductivity	820.90	µS/cm
2212011402A	DO	2.79	mg/L
2212011402A	DTW	458.20	ft
2212011402A	ORP	131.7	mV
2212011402A	pH	8.17	NA
2212011402A	Temperature	19.99	ºC
2212011402A	Turbidity	1.53	NTU
2212011404A	Conductivity	822.37	µS/cm
2212011404A	DO	2.74	mg/L
2212011404A	DTW	458.20	ft
2212011404A	ORP	131.8	mV
2212011404A	pH	8.16	NA
2212011404A	Temperature	20.03	ºC
2212011404A	Turbidity	1.36	NTU

Well ID ST-5-485 Event Date 11/1/2022

Sample	Parameter	Result	Units
2211011430Y	Atmospheric Pressure	12.62	psia
2211011430Y	Conductivity	1077	µS/cm
2211011430Y	DTW	476.92	ft
2211011430Y	Formation Pressure	40.19	psia
2211011430Y	pH	8.45	NA
2211011430Y	Temperature	23.8	ºC
2211011430Y	Turbidity	1.05	NTU
2211011530Y	Atmospheric Pressure	12.60	psia
2211011530Y	Conductivity	1084	µS/cm
2211011530Y	DTW	477.00	ft
2211011530Y	pH	8.39	NA
2211011530Y	Temperature	23.5	ºC
2211011530Y	Turbidity	0.96	NTU

Well ID ST-5-655 Event Date 11/1/2022

Sample	Parameter	Result	Units
2211011030Y	Atmospheric Pressure	12.62	psia
2211011030Y	Conductivity	917	µS/cm
2211011030Y	DTW	476.76	ft
2211011030Y	Formation Pressure	113.82	psia
2211011030Y	pH	8.79	NA
2211011030Y	Temperature	22.1	ºC
2211011030Y	Turbidity	1.30	NTU
2211011057Y	Atmospheric Pressure	12.62	psia
2211011057Y	Conductivity	912	µS/cm
2211011057Y	DTW	476.92	ft
2211011057Y	pH	8.69	NA
2211011057Y	Temperature	22.3	ºC
2211011057Y	Turbidity	1.12	NTU

Well ID ST-6-528 Event Date 12/7/2022

Sample	Parameter	Result	Units
2212071429B	Conductivity	1256	µS/cm
2212071429B	pH	8.72	NA
2212071429B	Temperature	18.0	ºC
2212071429B	Transducer	73.06	ft
2212071429B	Turbidity	1.18	NTU

Well ID	ST-6-568	Event Date	12/7/2022
Sample	**Parameter**	**Result**	**Units**
2212071440B	Conductivity	1203	µS/cm
2212071440B	pH	8.25	NA
2212071440B	Temperature	18.7	ºC
2212071440B	Transducer	73.73	ft
2212071440B	Turbidity	0.57	NTU

Well ID	ST-6-678	Event Date	12/8/2022
Sample	**Parameter**	**Result**	**Units**
2212081350B	Conductivity	1176	µS/cm
2212081350B	pH	8.71	NA
2212081350B	Temperature	19.3	ºC
2212081350B	Turbidity	0.72	NTU

Well ID	ST-6-824	Event Date	12/8/2022
Sample	**Parameter**	**Result**	**Units**
2212081410B	Conductivity	1042	µS/cm
2212081410B	pH	8.57	NA
2212081410B	Temperature	18.4	ºC
2212081410B	Transducer	76.43	ft
2212081410B	Turbidity	1.39	NTU

Well ID	ST-6-970	Event Date	12/8/2022
Sample	**Parameter**	**Result**	**Units**
2212081418B	Conductivity	1172	µS/cm
2212081418B	pH	8.51	NA
2212081418B	Temperature	19.1	ºC
2212081418B	Turbidity	0.73	NTU

Well ID	ST-7-453	Event Date	1/9/2023
Sample	**Parameter**	**Result**	**Units**
2301091500B	Conductivity	1207	µS/cm
2301091500B	pH	8.40	NA
2301091500B	Temperature	20.5	ºC
2301091500B	Turbidity	1.05	NTU

Well ID	ST-7-544	Event Date	1/9/2023
Sample	**Parameter**	**Result**	**Units**
2301091510B	Conductivity	1169	µS/cm
2301091510B	pH	7.84	NA
2301091510B	Temperature	19.4	ºC
2301091510B	Turbidity	0.81	NTU

Well ID ST-7-779 Event Date 1/10/2023

Sample	Parameter	Result	Units
2301101330B	Conductivity	1046	µS/cm
2301101330B	pH	7.97	NA
2301101330B	Temperature	21.5	ºC
2301101330B	Turbidity	0.45	NTU

Well ID ST-7-970 Event Date 1/10/2023

Sample	Parameter	Result	Units
2301101338B	Conductivity	852	µS/cm
2301101338B	pH	7.99	NA
2301101338B	Temperature	19.3	ºC
2301101338B	Turbidity	0.64	NTU

Well ID WW-1-452 Event Date 12/5/2022

Sample	Parameter	Result	Units
2212051515C	Conductivity	1085.0	µS/cm
2212051515C	DO	5.84	mg/L
2212051515C	DTW	423.20	ft
2212051515C	ORP	177.6	mV
2212051515C	pH	7.63	NA
2212051515C	Temperature	21.89	ºC
2212051515C	Turbidity	2.96	NTU
2212051516C	Conductivity	1080.4	µS/cm
2212051516C	DO	5.79	mg/L
2212051516C	ORP	177.1	mV
2212051516C	pH	7.64	NA
2212051516C	Temperature	21.78	ºC
2212051516C	Turbidity	2.78	NTU
2212051517C	Conductivity	1083.2	µS/cm
2212051517C	DO	5.80	mg/L
2212051517C	ORP	177.4	mV
2212051517C	pH	7.62	NA
2212051517C	Temperature	21.81	ºC
2212051517C	Turbidity	2.81	NTU

Well ID	WW-2-489	Event Date	12/6/2022
Sample	**Parameter**	**Result**	**Units**
2212060945C	Conductivity	919.65	µS/cm
2212060945C	DO	3.80	mg/L
2212060945C	ORP	150.9	mV
2212060945C	pH	8.33	NA
2212060945C	Temperature	21.09	ºC
2212060945C	Transducer	23.99	ft
2212060945C	Turbidity	4.96	NTU
2212060946C	Conductivity	915.73	µS/cm
2212060946C	DO	3.73	mg/L
2212060946C	ORP	151.2	mV
2212060946C	pH	8.33	NA
2212060946C	Temperature	21.21	ºC
2212060946C	Turbidity	4.78	NTU
2212060947C	Conductivity	917.18	µS/cm
2212060947C	DO	3.74	mg/L
2212060947C	ORP	150.9	mV
2212060947C	pH	8.33	NA
2212060947C	Temperature	20.99	ºC
2212060947C	Turbidity	4.82	NTU

Well ID	WW-2-664	Event Date	12/6/2022
Sample	**Parameter**	**Result**	**Units**
2212061530C	Conductivity	906.10	µS/cm
2212061530C	DO	4.38	mg/L
2212061530C	ORP	152.6	mV
2212061530C	pH	7.78	NA
2212061530C	Temperature	20.62	ºC
2212061530C	Transducer	20.45	ft
2212061530C	Turbidity	1.28	NTU
2212061531C	Conductivity	906.11	µS/cm
2212061531C	DO	4.34	mg/L
2212061531C	ORP	153.2	mV
2212061531C	pH	7.80	NA
2212061531C	Temperature	20.61	ºC
2212061531C	Turbidity	1.60	NTU
2212061532C	Conductivity	906.10	µS/cm
2212061532C	DO	4.35	mg/L
2212061532C	ORP	152.9	mV
2212061532C	pH	7.81	NA
2212061532C	Temperature	20.62	ºC
2212061532C	Turbidity	1.48	NTU

Well ID WW-3-469 Event Date 12/13/2022

Sample	Parameter	Result	Units
2212131258Y	Atmospheric Pressure	12.12	psia
2212131258Y	Conductivity	1117	µS/cm
2212131258Y	DTW	409.78	ft
2212131258Y	Formation Pressure	38.42	psia
2212131258Y	pH	6.87	NA
2212131258Y	Temperature	18.0	ºC
2212131258Y	Turbidity	0.66	NTU
2212131330Y	Atmospheric Pressure	12.13	psia
2212131330Y	Conductivity	1120	µS/cm
2212131330Y	DTW	409.87	ft
2212131330Y	pH	7.48	NA
2212131330Y	Temperature	15.4	ºC
2212131330Y	Turbidity	0.51	NTU

Well ID WW-3-569 Event Date 12/12/2022

Sample	Parameter	Result	Units
2212121030Y	Atmospheric Pressure	12.02	psia
2212121030Y	Conductivity	1099	µS/cm
2212121030Y	DTW	412.09	ft
2212121030Y	Formation Pressure	89.98	psia
2212121030Y	pH	7.93	NA
2212121030Y	Temperature	18.8	ºC
2212121030Y	Turbidity	4.84	NTU
2212121355Y	Atmospheric Pressure	12.00	psia
2212121355Y	Conductivity	1127	µS/cm
2212121355Y	DTW	412.13	ft
2212121355Y	pH	7.90	NA
2212121355Y	Temperature	20.7	ºC
2212121355Y	Turbidity	3.19	NTU

Well ID WW-4-419 Event Date 11/8/2022

Sample	Parameter	Result	Units
2211081430B	Conductivity	1202	µS/cm
2211081430B	pH	7.97	NA
2211081430B	Temperature	21.1	ºC
2211081430B	Transducer	119.95	ft
2211081430B	Turbidity	1.56	NTU

Well ID	WW-4-589	Event Date	11/8/2022
Sample	**Parameter**	**Result**	**Units**
2211081451B	Conductivity	1151	µS/cm
2211081451B	pH	7.55	NA
2211081451B	Temperature	21.2	ºC
2211081451B	Transducer	124.27	ft
2211081451B	Turbidity	0.98	NTU

Well ID	WW-4-848	Event Date	11/9/2022
Sample	**Parameter**	**Result**	**Units**
2211091415B	Conductivity	991	µS/cm
2211091415B	pH	8.09	NA
2211091415B	Temperature	21.6	ºC
2211091415B	Transducer	122.74	ft
2211091415B	Turbidity	0.86	NTU

Well ID	WW-4-948	Event Date	11/9/2022
Sample	**Parameter**	**Result**	**Units**
2211091450B	Conductivity	1166	µS/cm
2211091450B	pH	8.00	NA
2211091450B	Temperature	20.7	ºC
2211091450B	Transducer	124.27	ft
2211091450B	Turbidity	0.55	NTU

Well ID	WW-5-459	Event Date	1/18/2023
Sample	**Parameter**	**Result**	**Units**
2301181435B	Conductivity	1052	µS/cm
2301181435B	pH	8.38	NA
2301181435B	Temperature	17.6	ºC
2301181435B	Transducer	87.70	ft
2301181435B	Turbidity	0.45	NTU

Well ID	WW-5-579	Event Date	1/18/2023
Sample	**Parameter**	**Result**	**Units**
2301181455B	Conductivity	1009	µS/cm
2301181455B	pH	8.53	NA
2301181455B	Temperature	17.0	ºC
2301181455B	Transducer	87.70	ft
2301181455B	Turbidity	0.36	NTU

Well ID WW-5-809 Event Date 1/19/2023

Sample	Parameter	Result	Units
2301191410B	Conductivity	971	µS/cm
2301191410B	pH	8.59	NA
2301191410B	Temperature	17.7	ºC
2301191410B	Transducer	87.70	ft
2301191410B	Turbidity	0.30	NTU

Well ID WW-5-909 Event Date 1/19/2023

Sample	Parameter	Result	Units
2301191434B	Conductivity	1265	µS/cm
2301191434B	pH	8.44	NA
2301191434B	Temperature	17.3	ºC
2301191434B	Transducer	87.70	ft
2301191434B	Turbidity	0.36	NTU

Appendix A.2
Monitor Well Analytical Data

Analytical Results for Sampling Events at 100-D-176

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/14/2022	8260	2211140930A	2-Propanol	5.4	ug/L	50	3.4		J
11/14/2022	8260	2211140930A	Trichloroethene (TCE)	3.5	ug/L	1	0.2		
11/14/2022	8260	2211140930A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.45	ug/L	1	0.2		J
11/14/2022	8260	2211140930A	Silane, fluorotrimethyl-	8	ug/L	NA	NA		TIC
11/14/2022	8260	2211140930A	Silane, methoxytrimethyl-	9.3	ug/L	NA	NA		TIC
11/14/2022	8260	2211140930A	1,1,2-Trichloro-1,2,2-Trifluoroethane	28	ug/L	1	0.2		
11/14/2022	8260	2211140932A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.52	ug/L	1	0.2		J
11/14/2022	8260	2211140932A	1,1,2-Trichloro-1,2,2-Trifluoroethane	28	ug/L	1	0.2		
11/14/2022	8260	2211140932A	Trichloroethene (TCE)	3.5	ug/L	1	0.2		
11/14/2022	607	2211140933A	Bromacil	0.09	µg/L	0.01	0.005	99	
11/14/2022	8270	2211140935A	1H-Benzotriazole, 4-methyl-	12	ug/L	NA	NA		TIC
11/14/2022	METALS	2211140936A	Molybdenum, Total	0.083	mg/L	0.025	0.003		
11/14/2022	METALS	2211140936A	Manganese, Total	0.064	mg/L	0.01	0.004		
11/14/2022	METALS	2211140936A	Zinc, Total	0.003	mg/L	0.02	0.003		J
11/14/2022	METALS	2211140936A	Vanadium, Total	0.009	mg/L	0.05	0.0007		J
11/14/2022	METALS	2211140936A	Strontium, Total	7.89	mg/L	0.1	0.002		
11/14/2022	METALS	2211140936A	Sodium, Total	246	mg/L	10	2		
11/14/2022	METALS	2211140936A	Selenium, Total	0.008	mg/L	0.01	0.007		J
11/14/2022	METALS	2211140936A	Potassium, Total	5.1	mg/L	2	0.4		
11/14/2022	METALS	2211140936A	Antimony, Total	0.0004	mg/L	0.001	0.0002		J
11/14/2022	METALS	2211140936A	Iron, Total	2.98	mg/L	0.1	0.07		
11/14/2022	METALS	2211140936A	Nickel, Total	0.397	mg/L	0.04	0.003		
11/14/2022	METALS	2211140936A	Copper, Total	0.006	mg/L	0.02	0.004		J
11/14/2022	METALS	2211140936A	Chromium, Total	0.796	mg/L	0.01	0.002		
11/14/2022	METALS	2211140936A	Calcium, Total	175	mg/L	1	0.3		
11/14/2022	METALS	2211140936A	Boron, Total	1.62	mg/L	0.2	0.02		
11/14/2022	METALS	2211140936A	Barium, Total	0.048	mg/L	0.02	0.003		
11/14/2022	METALS	2211140936A	Arsenic, Total	0.0026	mg/L	0.001	0.0004		
11/14/2022	METALS	2211140936A	Magnesium, Total	134	mg/L	1	0.03		
11/14/2022	SM2540C	2211140937A	Total Dissolved Solids (TDS)	2000	mg/L	13	12		
11/14/2022	353.2	2211140940A	Nitrate+Nitrite as Nitrogen	9.2	mg/L	0.5	0.02		
11/14/2022	300.0	2211140941A	Chloride	382	mg/L	10	3		

Analytical Results for Sampling Events at 100-F-358

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/24/2023	8270	2301241025A	Unknown	440	ug/L	NA	NA		TIC RB
1/24/2023	8270	2301241025A	Unknown	5.7	ug/L	NA	NA		TIC RB
1/24/2023	8270	2301241025A	Toluene	22	ug/L	NA	NA		TIC RB
1/24/2023	8270	2301241025A	Benzene, chloro-	8.1	ug/L	NA	NA		TIC RB
1/24/2023	METALS	2301241032A	Molybdenum, Total	0.013	mg/L	0.025	0.003		J
1/24/2023	METALS	2301241032A	Boron, Total	0.07	mg/L	0.2	0.02		J
1/24/2023	METALS	2301241032A	Strontium, Total	6.51	mg/L	0.1	0.002		
1/24/2023	METALS	2301241032A	Sodium, Total	40.6	mg/L	1	0.2		
1/24/2023	METALS	2301241032A	Potassium, Total	3.3	mg/L	2	0.4		
1/24/2023	METALS	2301241032A	Nickel, Total	0.004	mg/L	0.04	0.003		J
1/24/2023	METALS	2301241032A	Arsenic, Total	0.0018	mg/L	0.001	0.0004		
1/24/2023	METALS	2301241032A	Calcium, Total	154	mg/L	1	0.3		
1/24/2023	METALS	2301241032A	Manganese, Total	0.025	mg/L	0.01	0.004		
1/24/2023	METALS	2301241032A	Barium, Total	0.031	mg/L	0.02	0.003		
1/24/2023	METALS	2301241032A	Magnesium, Total	70.6	mg/L	1	0.03		
1/24/2023	ANIONS	2301241033A	Alkalinity, Total as CaCO3	221	mg/L	2	1.8		
1/24/2023	ANIONS	2301241033A	Chloride	33.7	mg/L	2	0.5		
1/24/2023	ANIONS	2301241033A	Fluoride, undistilled	1.12	mg/L	0.1	0.01		
1/24/2023	ANIONS	2301241033A	Sulfate	492	mg/L	20	4		
1/24/2023	SM2540C	2301241034A	Total Dissolved Solids (TDS)	1010	mg/L	10	9		
1/24/2023	353.2	2301241036A	Nitrate+Nitrite as Nitrogen	0.003	mg/L	0.05	0.002		J

Analytical Results for Sampling Events at 100-G-223

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/24/2023	8270	2301241426A	Unknown	6.2	ug/L	NA	NA		TIC RB
1/24/2023	8270	2301241426A	Toluene	27	ug/L	NA	NA		TIC RB
1/24/2023	8270	2301241426A	Benzene, chloro-	11	ug/L	NA	NA		TIC RB
1/24/2023	8270	2301241426A	Unknown	390	ug/L	NA	NA		TIC RB
1/24/2023	METALS	2301241433A	Boron, Total	0.07	mg/L	0.2	0.02		J
1/24/2023	METALS	2301241433A	Sodium, Total	39.9	mg/L	1	0.2		
1/24/2023	METALS	2301241433A	Potassium, Total	2.7	mg/L	2	0.4		
1/24/2023	METALS	2301241433A	Strontium, Total	3.75	mg/L	0.1	0.002		
1/24/2023	METALS	2301241433A	Molybdenum, Total	0.009	mg/L	0.025	0.003		J
1/24/2023	METALS	2301241433A	Barium, Total	0.022	mg/L	0.02	0.003		
1/24/2023	METALS	2301241433A	Arsenic, Total	0.0005	mg/L	0.001	0.0004		J
1/24/2023	METALS	2301241433A	Magnesium, Total	66.4	mg/L	1	0.03		
1/24/2023	METALS	2301241433A	Calcium, Total	121	mg/L	1	0.3		
1/24/2023	ANIONS	2301241435A	Sulfate	324	mg/L	8	1.6		
1/24/2023	ANIONS	2301241435A	Alkalinity, Total as CaCO3	266	mg/L	2	1.8		
1/24/2023	ANIONS	2301241435A	Chloride	38.6	mg/L	2	0.5		
1/24/2023	ANIONS	2301241435A	Fluoride, undistilled	1.18	mg/L	0.1	0.01		
1/24/2023	SM2540C	2301241436A	Total Dissolved Solids (TDS)	839	mg/L	10	9		
1/24/2023	353.2	2301241438A	Nitrate+Nitrite as Nitrogen	0.097	mg/L	0.05	0.002		

Analytical Results for Sampling Events at 200-G-175

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/7/2022	8260	2212071349Y	Silane, methoxytrimethyl-	14	ug/L	NA	NA		TIC
12/7/2022	8260	2212071349Y	1,1,2-Trichloro-1,2,2-Trifluoroethane	2.1	ug/L	1	0.2		
12/7/2022	8260	2212071349Y	Trichloroethene (TCE)	1.7	ug/L	1	0.2		
12/7/2022	8260	2212071349Y	Trichlorofluoromethane (CFC 11)	3.5	ug/L	1	0.24		QD
12/7/2022	8260	2212071349Y	Silane, fluorotrimethyl-	13	ug/L	NA	NA		TIC
12/7/2022	8260	2212071352Y	Trichlorofluoromethane (CFC 11)	4.6	ug/L	1	0.24		QD
12/7/2022	8260	2212071352Y	1,1,2-Trichloro-1,2,2-Trifluoroethane	2.5	ug/L	1	0.2		
12/7/2022	8260	2212071352Y	Trichloroethene (TCE)	1.7	ug/L	1	0.2		
12/7/2022	607	2212071353Y	Bromacil	0.35	µg/L	0.0098	0.0049	84	
12/7/2022	METALS	2212071419Y	Thallium, Total	0.0001	mg/L	0.001	0.00004		J
12/7/2022	METALS	2212071419Y	Zinc, Total	0.016	mg/L	0.02	0.003		J
12/7/2022	METALS	2212071419Y	Strontium, Total	2.04	mg/L	0.1	0.002		
12/7/2022	METALS	2212071419Y	Sodium, Total	53.2	mg/L	1	0.2		
12/7/2022	METALS	2212071419Y	Selenium, Total	0.007	mg/L	0.01	0.007		J
12/7/2022	METALS	2212071419Y	Potassium, Total	14	mg/L	2	0.4		
12/7/2022	METALS	2212071419Y	Magnesium, Total	73.4	mg/L	1	0.03		
12/7/2022	METALS	2212071419Y	Cobalt, Total	0.001	mg/L	0.05	0.0009		J
12/7/2022	METALS	2212071419Y	Calcium, Total	140	mg/L	1	0.3		
12/7/2022	METALS	2212071419Y	Boron, Total	0.15	mg/L	0.2	0.02		J
12/7/2022	METALS	2212071419Y	Arsenic, Total	0.0008	mg/L	0.001	0.0004		J
12/7/2022	METALS	2212071419Y	Barium, Total	0.03	mg/L	0.02	0.003		
12/7/2022	METALS	2212071419Y	Molybdenum, Total	0.013	mg/L	0.025	0.003		J
12/7/2022	ANIONS	2212071444Y	Sulfate	338	mg/L	8	1.6		
12/7/2022	ANIONS	2212071444Y	Alkalinity, Total as CaCO3	299	mg/L	2	1.8		
12/7/2022	ANIONS	2212071444Y	Chloride	73.1	mg/L	2	0.5		
12/7/2022	ANIONS	2212071444Y	Fluoride, undistilled	0.89	mg/L	0.1	0.01		
12/7/2022	SM2540C	2212071446Y	Total Dissolved Solids (TDS)	991	mg/L	10	9		
12/7/2022	6850	2212071447Y	Perchlorate	0.448	ug/L	0.1	0.025		
12/7/2022	353.2	2212071506Y	Nitrate+Nitrite as Nitrogen	5.69	mg/L	0.5	0.02		

Analytical Results for Sampling Events at 200-G-220

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/5/2022	8260	2212051526Y	Trichlorofluoromethane (CFC 11)	0.24	ug/L	1	0.24		J
12/5/2022	METALS	2212051551Y	Nickel, Total	0.006	mg/L	0.04	0.003		J
12/5/2022	METALS	2212051551Y	Vanadium, Total	0.0007	mg/L	0.05	0.0007		J RB EB
12/5/2022	METALS	2212051551Y	Zinc, Total	0.012	mg/L	0.02	0.003		J
12/5/2022	METALS	2212051551Y	Thallium, Total	0.0002	mg/L	0.001	0.00004		J
12/5/2022	METALS	2212051551Y	Strontium, Total	15.4	mg/L	1	0.02		
12/5/2022	METALS	2212051551Y	Sodium, Total	30.8	mg/L	1	0.2		
12/5/2022	METALS	2212051551Y	Potassium, Total	2.6	mg/L	2	0.4		
12/5/2022	METALS	2212051551Y	Manganese, Total	0.063	mg/L	0.01	0.004		
12/5/2022	METALS	2212051551Y	Magnesium, Total	96.5	mg/L	1	0.03		
12/5/2022	METALS	2212051551Y	Cobalt, Total	0.002	mg/L	0.05	0.0009		J
12/5/2022	METALS	2212051551Y	Calcium, Total	201	mg/L	1	0.3		
12/5/2022	METALS	2212051551Y	Boron, Total	0.06	mg/L	0.2	0.02		J
12/5/2022	METALS	2212051551Y	Barium, Total	0.029	mg/L	0.02	0.003		
12/5/2022	METALS	2212051551Y	Arsenic, Total	0.0006	mg/L	0.001	0.0004		J
12/5/2022	METALS	2212051551Y	Molybdenum, Total	0.004	mg/L	0.025	0.003		J

Analytical Results for Sampling Events at 200-G-340

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/5/2022	8260	2212051304Y	Silane, fluorotrimethyl-	7.3	ug/L	NA	NA		TIC
12/5/2022	METALS	2212051341Y	Iron, Total	0.31	mg/L	0.1	0.07		
12/5/2022	METALS	2212051341Y	Vanadium, Total	0.001	mg/L	0.05	0.0007		J RB
12/5/2022	METALS	2212051341Y	Strontium, Total	13.5	mg/L	1	0.02		
12/5/2022	METALS	2212051341Y	Sodium, Total	33.9	mg/L	1	0.2		
12/5/2022	METALS	2212051341Y	Potassium, Total	2.5	mg/L	2	0.4		
12/5/2022	METALS	2212051341Y	Nickel, Total	0.004	mg/L	0.04	0.003		J
12/5/2022	METALS	2212051341Y	Magnesium, Total	109	mg/L	1	0.03		
12/5/2022	METALS	2212051341Y	Zinc, Total	0.012	mg/L	0.02	0.003		J
12/5/2022	METALS	2212051341Y	Calcium, Total	240	mg/L	1	0.3		
12/5/2022	METALS	2212051341Y	Boron, Total	0.06	mg/L	0.2	0.02		J
12/5/2022	METALS	2212051341Y	Barium, Total	0.02	mg/L	0.02	0.003		
12/5/2022	METALS	2212051341Y	Arsenic, Total	0.0004	mg/L	0.001	0.0004		J
12/5/2022	METALS	2212051341Y	Manganese, Total	0.009	mg/L	0.01	0.004		J

Analytical Results for Sampling Events at 200-G-420

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/1/2022	METALS	2212011522Y	Manganese, Total	0.013	mg/L	0.01	0.004		
12/1/2022	METALS	2212011522Y	Strontium, Total	15.7	mg/L	1	0.02		
12/1/2022	METALS	2212011522Y	Zinc, Total	0.025	mg/L	0.02	0.003		
12/1/2022	METALS	2212011522Y	Sodium, Total	32.9	mg/L	1	0.2		
12/1/2022	METALS	2212011522Y	Potassium, Total	2.4	mg/L	2	0.4		
12/1/2022	METALS	2212011522Y	Nickel, Total	0.004	mg/L	0.04	0.003		J
12/1/2022	METALS	2212011522Y	Iron, Total	0.19	mg/L	0.1	0.07		
12/1/2022	METALS	2212011522Y	Calcium, Total	414	mg/L	10	3		
12/1/2022	METALS	2212011522Y	Boron, Total	0.07	mg/L	0.2	0.02		J
12/1/2022	METALS	2212011522Y	Arsenic, Total	0.0006	mg/L	0.001	0.0004		J
12/1/2022	METALS	2212011522Y	Barium, Total	0.011	mg/L	0.02	0.003		J
12/1/2022	METALS	2212011522Y	Magnesium, Total	138	mg/L	1	0.03		
12/1/2022	ANIONS	2212011545Y	Chloride	32.4	mg/L	8	1.7		
12/1/2022	ANIONS	2212011545Y	Fluoride, undistilled	1.81	mg/L	0.1	0.01		
12/1/2022	ANIONS	2212011545Y	Alkalinity, Total as CaCO3	232	mg/L	2	1.8		
12/1/2022	ANIONS	2212011545Y	Sulfate	1230	mg/L	40	8		
12/1/2022	SM2540C	2212011546Y	Total Dissolved Solids (TDS)	2190	mg/L	13	12		

Analytical Results for Sampling Events at 200-G-495

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/1/2022	METALS	2212011310Y	Nickel, Total	0.006	mg/L	0.04	0.003		J
12/1/2022	METALS	2212011310Y	Barium, Total	0.014	mg/L	0.02	0.003		J
12/1/2022	METALS	2212011310Y	Zinc, Total	0.044	mg/L	0.02	0.003		
12/1/2022	METALS	2212011310Y	Strontium, Total	15.3	mg/L	1	0.02		
12/1/2022	METALS	2212011310Y	Sodium, Total	33.4	mg/L	1	0.2		
12/1/2022	METALS	2212011310Y	Potassium, Total	2.4	mg/L	2	0.4		
12/1/2022	METALS	2212011310Y	Magnesium, Total	136	mg/L	1	0.03		
12/1/2022	METALS	2212011310Y	Arsenic, Total	0.0005	mg/L	0.001	0.0004		J
12/1/2022	METALS	2212011310Y	Boron, Total	0.08	mg/L	0.2	0.02		J
12/1/2022	METALS	2212011310Y	Calcium, Total	508	mg/L	10	3		
12/1/2022	METALS	2212011310Y	Manganese, Total	0.014	mg/L	0.01	0.004		

Analytical Results for Sampling Events at 200-I-185

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/10/2022	8260	2211101540Y	Tetrachloroethene (PCE)	0.53	ug/L	1	0.21		J
11/10/2022	8260	2211101540Y	Trichloroethene (TCE)	14	ug/L	1	0.2		
11/10/2022	8260	2211101540Y	Dichlorofluoromethane (CFC 21)	0.26	ug/L	1	0.2		J
11/10/2022	8260	2211101540Y	1,1,2-Trichloro-1,2,2-Trifluoroethane	8.3	ug/L	1	0.2		
11/10/2022	8260	2211101540Y	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.5	ug/L	1	0.2		
11/10/2022	607	2211140935Y	Bromacil	1.82	µg/L	0.0095	0.0048	99	
11/10/2022	METALS	2211141440Y	Strontium, Total	3.09	mg/L	0.1	0.002		
11/10/2022	METALS	2211141440Y	Nickel, Total	0.007	mg/L	0.04	0.003		J
11/10/2022	METALS	2211141440Y	Zinc, Total	0.012	mg/L	0.02	0.003		J
11/10/2022	METALS	2211141440Y	Thallium, Total	0.0001	mg/L	0.001	0.00004		J
11/10/2022	METALS	2211141440Y	Sodium, Total	169	mg/L	1	0.2		
11/10/2022	METALS	2211141440Y	Potassium, Total	47.5	mg/L	2	0.4		
11/10/2022	METALS	2211141440Y	Magnesium, Total	99.7	mg/L	1	0.03		
11/10/2022	METALS	2211141440Y	Calcium, Total	156	mg/L	1	0.3		
11/10/2022	METALS	2211141440Y	Arsenic, Total	0.0005	mg/L	0.001	0.0004		J
11/10/2022	METALS	2211141440Y	Boron, Total	1.05	mg/L	0.2	0.02		
11/10/2022	METALS	2211141440Y	Barium, Total	0.059	mg/L	0.02	0.003		
11/10/2022	METALS	2211141440Y	Molybdenum, Total	0.012	mg/L	0.025	0.003		J
11/10/2022	METALS	2211141440Y	Vanadium, Total	0.001	mg/L	0.05	0.0007		J
11/10/2022	SM2540C	2211150945Y	Total Dissolved Solids (TDS)	1520	mg/L	17	15		
11/10/2022	353.2	2211151050Y	Nitrate+Nitrite as Nitrogen	2.89	mg/L	0.25	0.008		
11/10/2022	300.0	2211151340Y	Chloride	321	mg/L	20	5		

Analytical Results for Sampling Events at 200-I-300

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/10/2022	8260	2211101035Y	Benzene	0.47	ug/L	1	0.2		J
11/10/2022	8260	2211101035Y	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	24	ug/L	1	0.2		
11/10/2022	8260	2211101035Y	cis-1,2-Dichloroethene	0.52	ug/L	1	0.23		J
11/10/2022	8260	2211101035Y	Trichlorofluoromethane (CFC 11)	0.36	ug/L	1	0.24		J Q
11/10/2022	8260	2211101035Y	Trichloroethene (TCE)	30	ug/L	1	0.2		Q
11/10/2022	8260	2211101035Y	Tetrahydrofuran (THF)	34	ug/L	5	1.7		
11/10/2022	8260	2211101035Y	Dichlorofluoromethane (CFC 21)	5.6	ug/L	1	0.2		
11/10/2022	8260	2211101035Y	1,1-Dichloroethene	0.27	ug/L	1	0.2		J
11/10/2022	8260	2211101035Y	1,1,2-Trichloro-1,2,2-Trifluoroethane	17	ug/L	1	0.2		Q
11/10/2022	8260	2211101035Y	Tetrachloroethene (PCE)	0.52	ug/L	1	0.21		J Q
11/10/2022	607	2211101036Y	Bromacil	0.02	µg/L	0.0095	0.0048	99	
11/10/2022	METALS	2211101100Y	Manganese, Total	0.004	mg/L	0.01	0.004		J
11/10/2022	METALS	2211101100Y	Zinc, Total	0.005	mg/L	0.02	0.003		J
11/10/2022	METALS	2211101100Y	Strontium, Total	2.79	mg/L	0.1	0.002		
11/10/2022	METALS	2211101100Y	Sodium, Total	20.3	mg/L	1	0.2		
11/10/2022	METALS	2211101100Y	Potassium, Total	3.5	mg/L	2	0.4		
11/10/2022	METALS	2211101100Y	Iron, Total	0.78	mg/L	0.1	0.07		RB
11/10/2022	METALS	2211101100Y	Calcium, Total	86.6	mg/L	1	0.3		
11/10/2022	METALS	2211101100Y	Magnesium, Total	52	mg/L	1	0.03		
11/10/2022	METALS	2211101100Y	Barium, Total	0.036	mg/L	0.02	0.003		
11/10/2022	METALS	2211101100Y	Boron, Total	0.07	mg/L	0.2	0.02		J
11/10/2022	ANIONS	2211101101Y	Fluoride, undistilled	2.64	mg/L	0.1	NA		
11/10/2022	ANIONS	2211101101Y	Sulfate	125	mg/L	8	NA		
11/10/2022	ANIONS	2211101101Y	Chloride	26.1	mg/L	2	NA		
11/10/2022	ANIONS	2211101101Y	Alkalinity, Total as CaCO3	304	mg/L	2	NA		
11/10/2022	SM2540C	2211101102Y	Total Dissolved Solids (TDS)	523	mg/L	11	NA		
11/10/2022	6850	2211101103Y	Perchlorate	0.0381	ug/L	0.1	0.025		J

Analytical Results for Sampling Events at 200-I-375

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/10/2022	METALS	2211100855Y	Iron, Total	0.33	mg/L	0.1	0.07		RB
11/10/2022	METALS	2211100855Y	Strontium, Total	12.4	mg/L	1	0.02		
11/10/2022	METALS	2211100855Y	Sodium, Total	23.6	mg/L	1	0.2		
11/10/2022	METALS	2211100855Y	Potassium, Total	3.3	mg/L	2	0.4		
11/10/2022	METALS	2211100855Y	Molybdenum, Total	0.014	mg/L	0.025	0.003		J
11/10/2022	METALS	2211100855Y	Zinc, Total	0.021	mg/L	0.02	0.003		
11/10/2022	METALS	2211100855Y	Calcium, Total	115	mg/L	1	0.3		
11/10/2022	METALS	2211100855Y	Boron, Total	0.06	mg/L	0.2	0.02		J
11/10/2022	METALS	2211100855Y	Barium, Total	0.027	mg/L	0.02	0.003		
11/10/2022	METALS	2211100855Y	Arsenic, Total	0.0004	mg/L	0.001	0.0004		J
11/10/2022	METALS	2211100855Y	Manganese, Total	0.007	mg/L	0.01	0.004		J
11/10/2022	METALS	2211100855Y	Magnesium, Total	62.1	mg/L	1	0.03		

Analytical Results for Sampling Events at 200-I-490

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/9/2022	8260	2211091400Y	Unknown	6.5	ug/L	NA	NA		TIC
11/9/2022	8260	2211091400Y	Benzene	0.4	ug/L	1	0.2		J
11/9/2022	8260	2211091400Y	Tetrahydrofuran (THF)	18	ug/L	5	1.7		
11/9/2022	METALS	2211091402Y	Molybdenum, Total	0.027	mg/L	0.025	0.003		
11/9/2022	METALS	2211091402Y	Sodium, Total	22.9	mg/L	1	0.2		
11/9/2022	METALS	2211091402Y	Potassium, Total	3.2	mg/L	2	0.4		
11/9/2022	METALS	2211091402Y	Calcium, Total	116	mg/L	1	0.3		
11/9/2022	METALS	2211091402Y	Nickel, Total	0.003	mg/L	0.04	0.003		J
11/9/2022	METALS	2211091402Y	Zinc, Total	0.011	mg/L	0.02	0.003		J
11/9/2022	METALS	2211091402Y	Strontium, Total	25.3	mg/L	1	0.02		
11/9/2022	METALS	2211091402Y	Iron, Total	1.13	mg/L	0.1	0.07		
11/9/2022	METALS	2211091402Y	Boron, Total	0.06	mg/L	0.2	0.02		J
11/9/2022	METALS	2211091402Y	Barium, Total	0.03	mg/L	0.02	0.003		
11/9/2022	METALS	2211091402Y	Arsenic, Total	0.0056	mg/L	0.001	0.0004		
11/9/2022	METALS	2211091402Y	Magnesium, Total	61.5	mg/L	1	0.03		
11/9/2022	METALS	2211091402Y	Manganese, Total	0.005	mg/L	0.01	0.004		J

Analytical Results for Sampling Events at 200-I-675

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/9/2022	8260	2211090955Y	Tetrahydrofuran (THF)	39	ug/L	5	1.7		
11/9/2022	8260	2211090955Y	Unknown	24	ug/L	NA	NA		TIC
11/9/2022	8260	2211090955Y	2-Propanol	3.9	ug/L	50	3.4		J
11/9/2022	8260	2211090955Y	Unknown	6	ug/L	NA	NA		TIC
11/9/2022	METALS	2211091025Y	Nickel, Total	0.003	mg/L	0.04	0.003		J
11/9/2022	METALS	2211091025Y	Manganese, Total	0.023	mg/L	0.01	0.004		
11/9/2022	METALS	2211091025Y	Zinc, Total	0.016	mg/L	0.02	0.003		J
11/9/2022	METALS	2211091025Y	Strontium, Total	25	mg/L	1	0.02		
11/9/2022	METALS	2211091025Y	Potassium, Total	3.8	mg/L	2	0.4		
11/9/2022	METALS	2211091025Y	Molybdenum, Total	0.004	mg/L	0.025	0.003		J
11/9/2022	METALS	2211091025Y	Iron, Total	0.74	mg/L	0.1	0.07		
11/9/2022	METALS	2211091025Y	Arsenic, Total	0.0022	mg/L	0.001	0.0004		
11/9/2022	METALS	2211091025Y	Calcium, Total	233	mg/L	1	0.3		
11/9/2022	METALS	2211091025Y	Sodium, Total	26.6	mg/L	1	0.2		
11/9/2022	METALS	2211091025Y	Boron, Total	0.06	mg/L	0.2	0.02		J
11/9/2022	METALS	2211091025Y	Barium, Total	0.02	mg/L	0.02	0.003		J
11/9/2022	METALS	2211091025Y	Magnesium, Total	95.9	mg/L	1	0.03		
11/9/2022	ANIONS	2211091026Y	Sulfate	718	mg/L	20	4		
11/9/2022	ANIONS	2211091026Y	Alkalinity, Total as CaCO3	238	mg/L	2	1.8		
11/9/2022	ANIONS	2211091026Y	Chloride	35.6	mg/L	2	0.5		
11/9/2022	ANIONS	2211091026Y	Fluoride, undistilled	1.74	mg/L	0.1	0.01		
11/9/2022	SM2540C	2211091027Y	Total Dissolved Solids (TDS)	1350	mg/L	14	13		
11/9/2022	6850	2211091028Y	Perchlorate	0.045	ug/L	0.1	0.025		J

Analytical Results for Sampling Events at 200-I-795

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/8/2022	8260	2211081520Y	2-Propanol	8.9	ug/L	50	3.4		J
11/8/2022	8260	2211081520Y	Tetrahydrofuran (THF)	140	ug/L	5	1.7		
11/8/2022	8260	2211081520Y	Silane, fluorotrimethyl-	28	ug/L	NA	NA		TIC
11/8/2022	8260	2211081520Y	Silane, methoxytrimethyl-	18	ug/L	NA	NA		TIC RB
11/8/2022	METALS	2211081522Y	Nickel, Total	0.003	mg/L	0.04	0.003		J
11/8/2022	METALS	2211081522Y	Strontium, Total	18.1	mg/L	1	0.02		
11/8/2022	METALS	2211081522Y	Beryllium, Total	0.0002	mg/L	0.003	0.0002		J
11/8/2022	METALS	2211081522Y	Sodium, Total	27.8	mg/L	1	0.2		
11/8/2022	METALS	2211081522Y	Zinc, Total	0.02	mg/L	0.02	0.003		J
11/8/2022	METALS	2211081522Y	Potassium, Total	3.9	mg/L	2	0.4		
11/8/2022	METALS	2211081522Y	Magnesium, Total	95.9	mg/L	1	0.03		
11/8/2022	METALS	2211081522Y	Iron, Total	1.91	mg/L	0.1	0.07		
11/8/2022	METALS	2211081522Y	Boron, Total	0.11	mg/L	0.2	0.02		J
11/8/2022	METALS	2211081522Y	Barium, Total	0.022	mg/L	0.02	0.003		
11/8/2022	METALS	2211081522Y	Calcium, Total	376	mg/L	10	3		
11/8/2022	METALS	2211081522Y	Manganese, Total	0.02	mg/L	0.01	0.004		

Analytical Results for Sampling Events at 300-F-175

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/25/2023	8260_LL	2301250945C	Sulfur Dioxide	11	ug/L	NA	NA		TIC RB FB
1/25/2023	NDMA_LL	2301250948C	N-Nitrosodimethylamine	0.42	ng/L	0.48	0.35		J TB
1/25/2023	METALS	2301250958C	Molybdenum, Total	0.007	mg/L	0.025	0.003		J
1/25/2023	METALS	2301250958C	Zinc, Total	0.007	mg/L	0.02	0.003		J
1/25/2023	METALS	2301250958C	Vanadium, Total	0.001	mg/L	0.05	0.0007		J
1/25/2023	METALS	2301250958C	Strontium, Total	8.12	mg/L	0.1	0.002		
1/25/2023	METALS	2301250958C	Sodium, Total	70.6	mg/L	1	0.2		
1/25/2023	METALS	2301250958C	Nickel, Total	0.005	mg/L	0.04	0.003		J
1/25/2023	METALS	2301250958C	Calcium, Total	103	mg/L	1	0.3		
1/25/2023	METALS	2301250958C	Boron, Total	0.09	mg/L	0.2	0.02		J
1/25/2023	METALS	2301250958C	Barium, Total	0.033	mg/L	0.02	0.003		
1/25/2023	METALS	2301250958C	Arsenic, Total	0.0014	mg/L	0.001	0.0004		
1/25/2023	METALS	2301250958C	Antimony, Total	0.0004	mg/L	0.001	0.0002		J
1/25/2023	METALS	2301250958C	Magnesium, Total	75.8	mg/L	1	0.03		
1/25/2023	METALS	2301250958C	Potassium, Total	2.2	mg/L	2	0.4		
1/25/2023	ANIONS	2301250959C	Alkalinity, Total as CaCO3	255	mg/L	2	1.8		
1/25/2023	ANIONS	2301250959C	Sulfate	367	mg/L	8	1.6		
1/25/2023	ANIONS	2301250959C	Chloride	53.1	mg/L	2	0.5		
1/25/2023	ANIONS	2301250959C	Fluoride, undistilled	0.97	mg/L	0.1	0.01		
1/25/2023	SM2540C	2301251000C	Total Dissolved Solids (TDS)	915	mg/L	10	9		
1/25/2023	6850	2301251001C	Perchlorate	0.0627	ug/L	0.1	0.025		J
1/25/2023	353.2	2301251002C	Nitrate+Nitrite as Nitrogen	0.344	mg/L	0.05	0.002		

Analytical Results for Sampling Events at 400-A-151

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/17/2023	8260	2301171435A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	4.3	ug/L	1	0.2		
1/17/2023	8260	2301171435A	Trichlorofluoromethane (CFC 11)	190	ug/L	1	0.24		
1/17/2023	8260	2301171435A	Silane, fluorotrimethyl-	5.7	ug/L	NA	NA		TIC
1/17/2023	8260	2301171435A	1,1,2-Trichloro-1,2,2-Trifluoroethane	94	ug/L	1	0.2		
1/17/2023	8260	2301171435A	Dichlorofluoromethane (CFC 21)	4.5	ug/L	1	0.2		
1/17/2023	8260	2301171435A	Silane, methoxytrimethyl-	11	ug/L	NA	NA		TIC RB
1/17/2023	8260	2301171435A	Trichloroethene (TCE)	0.77	ug/L	1	0.2		J
1/17/2023	8260	2301171436A	1,1,2-Trichloro-1,2,2-Trifluoroethane	93	ug/L	1	0.2		
1/17/2023	8260	2301171436A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	4.3	ug/L	1	0.2		
1/17/2023	8260	2301171436A	Trichlorofluoromethane (CFC 11)	190	ug/L	1	0.24		
1/17/2023	8260	2301171436A	Trichloroethene (TCE)	0.78	ug/L	1	0.2		J
1/17/2023	8260	2301171436A	Dichlorofluoromethane (CFC 21)	4.6	ug/L	1	0.2		
1/17/2023	607	2301171438A	N-Nitrodimethylamine	3.28	µg/L	0.0095	0.0048	64	
1/17/2023	607	2301171438A	Bromacil	1.93	µg/L	0.0095	0.0048	102	
1/17/2023	607	2301171438A	N-Nitrosodimethylamine	7.6	µg/L	0.048	0.024	52	D
1/17/2023	METALS	2301171439A	Molybdenum, Total	0.006	mg/L	0.025	0.003		J
1/17/2023	METALS	2301171439A	Magnesium, Total	69	mg/L	1	0.03		
1/17/2023	METALS	2301171439A	Vanadium, Total	0.002	mg/L	0.05	0.0007		J
1/17/2023	METALS	2301171439A	Strontium, Total	3.35	mg/L	0.1	0.002		
1/17/2023	METALS	2301171439A	Potassium, Total	3.5	mg/L	2	0.4		
1/17/2023	METALS	2301171439A	Sodium, Total	99.2	mg/L	1	0.2		
1/17/2023	METALS	2301171439A	Calcium, Total	98.9	mg/L	1	0.3		
1/17/2023	METALS	2301171439A	Boron, Total	0.24	mg/L	0.2	0.02		
1/17/2023	METALS	2301171439A	Barium, Total	0.028	mg/L	0.02	0.003		
1/17/2023	METALS	2301171439A	Arsenic, Total	0.0005	mg/L	0.001	0.0004		J
1/17/2023	METALS	2301171439A	Chromium, Total	0.002	mg/L	0.01	0.002		J
1/17/2023	ANIONS	2301171440A	Alkalinity, Total as CaCO3	288	mg/L	2	1.8		
1/17/2023	ANIONS	2301171440A	Chloride	78.2	mg/L	2	0.5		
1/17/2023	ANIONS	2301171440A	Fluoride, undistilled	0.9	mg/L	0.1	0.01		
1/17/2023	ANIONS	2301171440A	Sulfate	320	mg/L	8	1.6		
1/17/2023	SM2540C	2301171441A	Total Dissolved Solids (TDS)	943	mg/L	10	9		
1/17/2023	6850	2301171442A	Perchlorate	0.434	ug/L	0.1	0.025		
1/17/2023	353.2	2301171443A	Nitrate+Nitrite as Nitrogen	6.71	mg/L	0.25	0.008		

Analytical Results for Sampling Events at 400-C-143

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/17/2022	8260	2211170920C	Dichlorofluoromethane (CFC 21)	1.6	ug/L	1	0.2		
11/17/2022	8260	2211170920C	1,1,2-Trichloro-1,2,2-Trifluoroethane	64	ug/L	1	0.2		
11/17/2022	8260	2211170920C	Trichloroethene (TCE)	1	ug/L	1	0.2		
11/17/2022	8260	2211170920C	Trichlorofluoromethane (CFC 11)	190	ug/L	1	0.24		
11/17/2022	8260	2211170920C	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.4	ug/L	1	0.2		
11/17/2022	607	2211170922C	N-Nitrosodimethylamine	2.21	µg/L	0.0095	0.0048	47	
11/17/2022	607	2211170922C	N-Nitrodimethylamine	2.2	µg/L	0.0095	0.0048	77	
11/17/2022	607	2211170922C	Bromacil	2.01	µg/L	0.0095	0.0048	101	
11/17/2022	8270	2211170923C	Unknown	230	ug/L	NA	NA		TIC RB
11/17/2022	8270	2211170923C	Unknown	4.2	ug/L	NA	NA		TIC
11/17/2022	8270	2211170923C	Unknown	6.1	ug/L	NA	NA		TIC
11/17/2022	8290	2211170925C	1,2,3,4,6,7,8-HpCDD	0.253	pg/L	24	0.0768		J RB
11/17/2022	8290	2211170925C	OCDD	0.9	pg/L	48.1	0.0645		J RB
11/17/2022	8290	2211170925C	Total Hepta-Dioxins	0.253	pg/L	NA	NA		J RB
11/17/2022	8290	2211170925C	Total Tetra-Furans	2.34	pg/L	NA	NA		J
11/17/2022	8290	2211170925C	Total Penta-Furans	0.461	pg/L	NA	NA		J
11/17/2022	METALS	2211170929C	Calcium, Total	99.3	mg/L	1	0.3		
11/17/2022	METALS	2211170929C	Thallium, Total	0.00005	mg/L	0.001	0.00004		J
11/17/2022	METALS	2211170929C	Strontium, Total	2.49	mg/L	0.1	0.002		
11/17/2022	METALS	2211170929C	Sodium, Total	91.6	mg/L	1	0.2		
11/17/2022	METALS	2211170929C	Selenium, Total	0.007	mg/L	0.01	0.007		J
11/17/2022	METALS	2211170929C	Potassium, Total	2.6	mg/L	2	0.4		
11/17/2022	METALS	2211170929C	Molybdenum, Total	0.004	mg/L	0.025	0.003		J
11/17/2022	METALS	2211170929C	Magnesium, Total	69.2	mg/L	1	0.03		
11/17/2022	METALS	2211170929C	Vanadium, Total	0.001	mg/L	0.05	0.0007		J
11/17/2022	METALS	2211170929C	Boron, Total	0.25	mg/L	0.2	0.02		
11/17/2022	METALS	2211170929C	Barium, Total	0.032	mg/L	0.02	0.003		
11/17/2022	METALS	2211170929C	Arsenic, Total	0.0008	mg/L	0.001	0.0004		J
11/17/2022	METALS	2211170929C	Manganese, Total	0.008	mg/L	0.01	0.004		J
11/17/2022	ANIONS	2211170930C	Sulfate	333	mg/L	8	1.6		
11/17/2022	ANIONS	2211170930C	Fluoride, undistilled	0.86	mg/L	0.1	0.01		
11/17/2022	ANIONS	2211170930C	Chloride	73.4	mg/L	2	0.5		
11/17/2022	ANIONS	2211170930C	Alkalinity, Total as CaCO3	281	mg/L	2	1.8		
11/17/2022	SM2540C	2211170931C	Total Dissolved Solids (TDS)	919	mg/L	10	9		
11/17/2022	6850	2211170932C	Perchlorate	0.554	ug/L	0.1	0.025		
11/17/2022	353.2	2211170933C	Nitrate+Nitrite as Nitrogen	5.95	mg/L	0.5	0.02		

Analytical Results for Sampling Events at 600-G-138

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/25/2023	8260	2301251300A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.58	ug/L	1	0.2		J
1/25/2023	8260	2301251300A	Unknown	5.2	ug/L	NA	NA		TIC RB FB
1/25/2023	8260	2301251300A	Trichlorofluoromethane (CFC 11)	0.48	ug/L	1	0.24		J
1/25/2023	8260	2301251300A	Trichloroethene (TCE)	33	ug/L	1	0.2		
1/25/2023	8260	2301251300A	1,1,2-Trichloro-1,2,2-Trifluoroethane	26	ug/L	1	0.2		
1/25/2023	METALS	2301251302A	Nickel, Total	0.009	mg/L	0.04	0.003		J
1/25/2023	METALS	2301251302A	Zinc, Total	0.005	mg/L	0.02	0.003		J
1/25/2023	METALS	2301251302A	Vanadium, Total	0.002	mg/L	0.05	0.0007		J
1/25/2023	METALS	2301251302A	Strontium, Total	4.4	mg/L	0.1	0.002		
1/25/2023	METALS	2301251302A	Sodium, Total	128	mg/L	1	0.2		
1/25/2023	METALS	2301251302A	Selenium, Total	0.011	mg/L	0.01	0.007		
1/25/2023	METALS	2301251302A	Potassium, Total	4.3	mg/L	2	0.4		
1/25/2023	METALS	2301251302A	Iron, Total	0.12	mg/L	0.1	0.07		
1/25/2023	METALS	2301251302A	Magnesium, Total	79.1	mg/L	1	0.03		
1/25/2023	METALS	2301251302A	Antimony, Total	0.0003	mg/L	0.001	0.0002		J
1/25/2023	METALS	2301251302A	Chromium, Total	0.014	mg/L	0.01	0.002		
1/25/2023	METALS	2301251302A	Calcium, Total	116	mg/L	1	0.3		
1/25/2023	METALS	2301251302A	Boron, Total	0.69	mg/L	0.2	0.02		
1/25/2023	METALS	2301251302A	Barium, Total	0.044	mg/L	0.02	0.003		
1/25/2023	METALS	2301251302A	Arsenic, Total	0.0021	mg/L	0.001	0.0004		
1/25/2023	METALS	2301251302A	Molybdenum, Total	0.015	mg/L	0.025	0.003		J
1/25/2023	ANIONS	2301251303A	Chloride	138	mg/L	8	1.7		
1/25/2023	ANIONS	2301251303A	Fluoride, undistilled	1.89	mg/L	0.1	0.01		
1/25/2023	ANIONS	2301251303A	Alkalinity, Total as CaCO3	228	mg/L	2	1.8		
1/25/2023	ANIONS	2301251303A	Sulfate	959	mg/L	20	4		
1/25/2023	SM2540C	2301251304A	Total Dissolved Solids (TDS)	1160	mg/L	11	10		
1/25/2023	6850	2301251305A	Perchlorate	0.844	ug/L	0.1	0.025		
1/25/2023	300.0	2301251306A	Chloride	137	mg/L	20	5		
1/25/2023	353.2	2301251307A	Nitrate+Nitrite as Nitrogen	5.32	mg/L	0.5	0.02		

Analytical Results for Sampling Events at 700-B-510

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/13/2022	METALS	2212131547C	Boron, Total	0.15	mg/L	0.2	0.02		J
12/13/2022	METALS	2212131547C	Potassium, Total	1.5	mg/L	2	0.4		J
12/13/2022	METALS	2212131547C	Vanadium, Total	0.009	mg/L	0.05	0.0007		J
12/13/2022	METALS	2212131547C	Strontium, Total	0.93	mg/L	0.1	0.002		
12/13/2022	METALS	2212131547C	Sodium, Total	95.3	mg/L	1	0.2		
12/13/2022	METALS	2212131547C	Arsenic, Total	0.0021	mg/L	0.001	0.0004		
12/13/2022	METALS	2212131547C	Calcium, Total	22.2	mg/L	1	0.3		
12/13/2022	METALS	2212131547C	Barium, Total	0.022	mg/L	0.02	0.003		
12/13/2022	METALS	2212131547C	Molybdenum, Total	0.01	mg/L	0.025	0.003		J
12/13/2022	METALS	2212131547C	Magnesium, Total	8.3	mg/L	1	0.03		
12/13/2022	METALS	2212131548C	Boron, Total	0.15	mg/L	0.2	0.02		J
12/13/2022	METALS	2212131548C	Vanadium, Total	0.009	mg/L	0.05	0.0007		J
12/13/2022	METALS	2212131548C	Strontium, Total	0.94	mg/L	0.1	0.002		
12/13/2022	METALS	2212131548C	Sodium, Total	95.8	mg/L	1	0.2		
12/13/2022	METALS	2212131548C	Potassium, Total	1.5	mg/L	2	0.4		J
12/13/2022	METALS	2212131548C	Molybdenum, Total	0.01	mg/L	0.025	0.003		J
12/13/2022	METALS	2212131548C	Calcium, Total	22.4	mg/L	1	0.3		
12/13/2022	METALS	2212131548C	Barium, Total	0.022	mg/L	0.02	0.003		
12/13/2022	METALS	2212131548C	Arsenic, Total	0.002	mg/L	0.001	0.0004		
12/13/2022	METALS	2212131548C	Magnesium, Total	8.3	mg/L	1	0.03		
12/13/2022	ANIONS	2212131555C	Chloride	22.5	mg/L	2	0.5		
12/13/2022	ANIONS	2212131555C	Fluoride, undistilled	0.28	mg/L	0.1	0.01		
12/13/2022	ANIONS	2212131555C	Alkalinity, Total as CaCO3	93.2	mg/L	2	1.8		
12/13/2022	ANIONS	2212131555C	Sulfate	144	mg/L	8	1.6		
12/13/2022	SM2540C	2212131600C	Total Dissolved Solids (TDS)	395	mg/L	10	9		
12/13/2022	6850	2212131605C	Perchlorate	0.235	ug/L	0.1	0.025		
12/13/2022	353.2	2212131609C	Nitrate+Nitrite as Nitrogen	1.29	mg/L	0.05	0.002		

Analytical Results for Sampling Events at BLM-10-517

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/3/2023	8260_LL	2301031545C	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	ug/L	0.5	0.2		
1/3/2023	8260_LL	2301031545C	Trichlorofluoromethane (CFC 11)	0.47	ug/L	0.5	0.24		J
1/3/2023	NDMA_LL	2301031547C	N-Nitrosodimethylamine	0.64	ng/L	0.48	0.35		FB
1/3/2023	METALS	2301031549C	Vanadium, Total	0.003	mg/L	0.05	0.0007		J
1/3/2023	METALS	2301031549C	Zinc, Total	0.014	mg/L	0.02	0.003		J
1/3/2023	METALS	2301031549C	Strontium, Total	2.33	mg/L	0.1	0.002		
1/3/2023	METALS	2301031549C	Sodium, Total	43.2	mg/L	1	0.2		
1/3/2023	METALS	2301031549C	Potassium, Total	3.9	mg/L	2	0.4		
1/3/2023	METALS	2301031549C	Molybdenum, Total	0.007	mg/L	0.025	0.003		J
1/3/2023	METALS	2301031549C	Chromium, Total	0.004	mg/L	0.01	0.002		J
1/3/2023	METALS	2301031549C	Calcium, Total	98.7	mg/L	1	0.3		
1/3/2023	METALS	2301031549C	Boron, Total	0.06	mg/L	0.2	0.02		J
1/3/2023	METALS	2301031549C	Barium, Total	0.021	mg/L	0.02	0.003		
1/3/2023	METALS	2301031549C	Arsenic, Total	0.0007	mg/L	0.001	0.0004		J
1/3/2023	METALS	2301031549C	Magnesium, Total	65.2	mg/L	1	0.03		

Analytical Results for Sampling Events at BLM-15-305

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/9/2023	8260	2301091450A	Dichlorofluoromethane (CFC 21)	3.2	ug/L	1	0.2		
1/9/2023	8260	2301091450A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	2.5	ug/L	1	0.2		
1/9/2023	8260	2301091450A	1,1,2-Trichloro-1,2,2-Trifluoroethane	43	ug/L	1	0.2		
1/9/2023	8260	2301091450A	Trichloroethene (TCE)	1.9	ug/L	1	0.2		
1/9/2023	8260	2301091450A	Dibromochloromethane	0.43	ug/L	1	0.2		J
1/9/2023	8260	2301091450A	Chloroform	1.3	ug/L	1	0.51		
1/9/2023	8260	2301091450A	Bromoform	0.67	ug/L	1	0.25		J
1/9/2023	8260	2301091450A	Bromodichloromethane	1	ug/L	1	0.2		
1/9/2023	8260	2301091450A	Trichlorofluoromethane (CFC 11)	110	ug/L	1	0.24		
1/9/2023	607	2301091452A	N-Nitrosodimethylamine	10.42	µg/L	0.094	0.047	47	D
1/9/2023	607	2301091452A	N-Nitrodimethylamine	4.09	µg/L	0.0094	0.0047	59	
1/9/2023	607	2301091452A	Bromacil	0.82	µg/L	0.0094	0.0047	96	
1/9/2023	METALS	2301091453A	Molybdenum, Total	0.013	mg/L	0.025	0.003		J
1/9/2023	METALS	2301091453A	Vanadium, Total	0.002	mg/L	0.05	0.0007		J
1/9/2023	METALS	2301091453A	Strontium, Total	2.38	mg/L	0.1	0.002		
1/9/2023	METALS	2301091453A	Barium, Total	0.044	mg/L	0.02	0.003		
1/9/2023	METALS	2301091453A	Sodium, Total	86.1	mg/L	1	0.2		
1/9/2023	METALS	2301091453A	Zinc, Total	0.003	mg/L	0.02	0.003		J
1/9/2023	METALS	2301091453A	Potassium, Total	3.7	mg/L	2	0.4		
1/9/2023	METALS	2301091453A	Magnesium, Total	60.6	mg/L	1	0.03		
1/9/2023	METALS	2301091453A	Boron, Total	0.23	mg/L	0.2	0.02		
1/9/2023	METALS	2301091453A	Arsenic, Total	0.006	mg/L	0.001	0.0004		
1/9/2023	METALS	2301091453A	Antimony, Total	0.0004	mg/L	0.001	0.0002		J
1/9/2023	METALS	2301091453A	Calcium, Total	95.4	mg/L	1	0.3		
1/9/2023	METALS	2301091453A	Manganese, Total	0.014	mg/L	0.01	0.004		
1/9/2023	ANIONS	2301091454A	Chloride	53.9	mg/L	2	0.5		
1/9/2023	ANIONS	2301091454A	Fluoride, undistilled	0.94	mg/L	0.1	0.01		
1/9/2023	ANIONS	2301091454A	Alkalinity, Total as CaCO3	289	mg/L	4	3.6		
1/9/2023	ANIONS	2301091454A	Sulfate	233	mg/L	8	1.6		
1/9/2023	SM2540C	2301091455A	Total Dissolved Solids (TDS)	1040	mg/L	11	10		
1/9/2023	6850	2301091456A	Perchlorate	0.623	ug/L	0.1	0.025		
1/9/2023	353.2	2301091457A	Nitrate+Nitrite as Nitrogen	6.4	mg/L	1	0.03		

Analytical Results for Sampling Events at BLM-17-493

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/3/2022	8260	2211030930A	1,1,2-Trichloro-1,2,2-Trifluoroethane	82	ug/L	1	0.2		
11/3/2022	8260	2211030930A	Trichlorofluoromethane (CFC 11)	50	ug/L	1	0.24		
11/3/2022	8260	2211030930A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.68	ug/L	1	0.2		J
11/3/2022	8260	2211030930A	Trichloroethene (TCE)	53	ug/L	1	0.2		
11/3/2022	8260	2211030930A	Dichlorofluoromethane (CFC 21)	0.42	ug/L	1	0.2		J
11/3/2022	8260	2211030930A	Tetrachloroethene (PCE)	2.4	ug/L	1	0.21		
11/3/2022	607	2211030932A	N-Nitrosodimethylamine	0.76	µg/L	0.0096	0.0048	44	
11/3/2022	607	2211030932A	N-Nitrodimethylamine	0.59	µg/L	0.0096	0.0048	74	
11/3/2022	607	2211030932A	Bromacil	0.47	µg/L	0.0096	0.0048	95	
11/3/2022	METALS	2211030933A	Molybdenum, Total	0.009	mg/L	0.025	0.003		J
11/3/2022	METALS	2211030933A	Vanadium, Total	0.002	mg/L	0.05	0.0007		J
11/3/2022	METALS	2211030933A	Zinc, Total	0.011	mg/L	0.02	0.003		J
11/3/2022	METALS	2211030933A	Strontium, Total	3.19	mg/L	0.1	0.002		
11/3/2022	METALS	2211030933A	Sodium, Total	40.8	mg/L	1	0.2		
11/3/2022	METALS	2211030933A	Potassium, Total	3.5	mg/L	2	0.4		
11/3/2022	METALS	2211030933A	Nickel, Total	0.227	mg/L	0.04	0.003		
11/3/2022	METALS	2211030933A	Barium, Total	0.028	mg/L	0.02	0.003		
11/3/2022	METALS	2211030933A	Manganese, Total	0.006	mg/L	0.01	0.004		J
11/3/2022	METALS	2211030933A	Arsenic, Total	0.0008	mg/L	0.001	0.0004		J
11/3/2022	METALS	2211030933A	Boron, Total	0.07	mg/L	0.2	0.02		J
11/3/2022	METALS	2211030933A	Calcium, Total	118	mg/L	1	0.3		
11/3/2022	METALS	2211030933A	Chromium, Total	0.209	mg/L	0.01	0.002		
11/3/2022	METALS	2211030933A	Iron, Total	1.06	mg/L	0.1	0.07		
11/3/2022	METALS	2211030933A	Magnesium, Total	69.1	mg/L	1	0.03		
11/3/2022	METALS	2211030934A	Zinc, Total	0.011	mg/L	0.02	0.003		J
11/3/2022	METALS	2211030934A	Sodium, Total	40.3	mg/L	1	0.2		
11/3/2022	METALS	2211030934A	Manganese, Total	0.006	mg/L	0.01	0.004		J
11/3/2022	METALS	2211030934A	Strontium, Total	3.15	mg/L	0.1	0.002		
11/3/2022	METALS	2211030934A	Potassium, Total	3.5	mg/L	2	0.4		
11/3/2022	METALS	2211030934A	Nickel, Total	0.225	mg/L	0.04	0.003		
11/3/2022	METALS	2211030934A	Molybdenum, Total	0.009	mg/L	0.025	0.003		J
11/3/2022	METALS	2211030934A	Arsenic, Total	0.0008	mg/L	0.001	0.0004		J
11/3/2022	METALS	2211030934A	Iron, Total	1.08	mg/L	0.1	0.07		
11/3/2022	METALS	2211030934A	Cobalt, Total	0.001	mg/L	0.05	0.0009		J
11/3/2022	METALS	2211030934A	Chromium, Total	0.213	mg/L	0.01	0.002		
11/3/2022	METALS	2211030934A	Calcium, Total	117	mg/L	1	0.3		
11/3/2022	METALS	2211030934A	Boron, Total	0.07	mg/L	0.2	0.02		J
11/3/2022	METALS	2211030934A	Barium, Total	0.028	mg/L	0.02	0.003		

Analytical Results for Sampling Events at BLM-17-493

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/3/2022	METALS	2211030934A	Vanadium, Total	0.003	mg/L	0.05	0.0007		J
11/3/2022	METALS	2211030934A	Magnesium, Total	68.4	mg/L	1	0.03		

Analytical Results for Sampling Events at BLM-17-550

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/9/2023	8260	2301091020A	Trichlorofluoromethane (CFC 11)	91	ug/L	1	0.24		
1/9/2023	8260	2301091020A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.1	ug/L	1	0.2		
1/9/2023	8260	2301091020A	Trichloroethene (TCE)	83	ug/L	1	0.2		
1/9/2023	8260	2301091020A	Dichlorofluoromethane (CFC 21)	0.5	ug/L	1	0.2		J
1/9/2023	8260	2301091020A	1,1,2-Trichloro-1,2,2-Trifluoroethane	190	ug/L	1	0.2		
1/9/2023	8260	2301091020A	Tetrachloroethene (PCE)	3.3	ug/L	1	0.21		
1/9/2023	607	2301091022A	N-Nitrosodimethylamine	0.5	µg/L	0.0095	0.0048	47	
1/9/2023	607	2301091022A	N-Nitrodimethylamine	0.38	µg/L	0.0095	0.0048	59	
1/9/2023	607	2301091022A	Bromacil	0.33	µg/L	0.0095	0.0048	96	
1/9/2023	607	2301091023A	N-Nitrodimethylamine	0.38	µg/L	0.0097	0.0049	59	
1/9/2023	607	2301091023A	Bromacil	0.34	µg/L	0.0097	0.0049	96	
1/9/2023	607	2301091023A	N-Nitrosodimethylamine	0.48	µg/L	0.0097	0.0049	47	
1/9/2023	METALS	2301091024A	Manganese, Total	0.009	mg/L	0.01	0.004		J
1/9/2023	METALS	2301091024A	Strontium, Total	3.24	mg/L	0.1	0.002		
1/9/2023	METALS	2301091024A	Sodium, Total	53.1	mg/L	1	0.2		
1/9/2023	METALS	2301091024A	Potassium, Total	5.3	mg/L	2	0.4		
1/9/2023	METALS	2301091024A	Zinc, Total	0.013	mg/L	0.02	0.003		J
1/9/2023	METALS	2301091024A	Molybdenum, Total	0.008	mg/L	0.025	0.003		J
1/9/2023	METALS	2301091024A	Vanadium, Total	0.005	mg/L	0.05	0.0007		J
1/9/2023	METALS	2301091024A	Iron, Total	1.25	mg/L	0.1	0.07		
1/9/2023	METALS	2301091024A	Cobalt, Total	0.001	mg/L	0.05	0.0009		J
1/9/2023	METALS	2301091024A	Chromium, Total	0.07	mg/L	0.01	0.002		
1/9/2023	METALS	2301091024A	Calcium, Total	122	mg/L	1	0.3		
1/9/2023	METALS	2301091024A	Boron, Total	0.08	mg/L	0.2	0.02		J
1/9/2023	METALS	2301091024A	Barium, Total	0.034	mg/L	0.02	0.003		
1/9/2023	METALS	2301091024A	Arsenic, Total	0.0012	mg/L	0.001	0.0004		
1/9/2023	METALS	2301091024A	Magnesium, Total	63.5	mg/L	1	0.03		
1/9/2023	METALS	2301091024A	Nickel, Total	0.045	mg/L	0.04	0.003		
1/9/2023	ANIONS	2301091025A	Chloride	61.9	mg/L	2	0.5		
1/9/2023	ANIONS	2301091025A	Fluoride, undistilled	0.94	mg/L	0.1	0.01		
1/9/2023	ANIONS	2301091025A	Alkalinity, Total as CaCO3	228	mg/L	2	1.8		
1/9/2023	ANIONS	2301091025A	Sulfate	335	mg/L	8	1.6		
1/9/2023	SM2540C	2301091026A	Total Dissolved Solids (TDS)	888	mg/L	10	9		
1/9/2023	6850	2301091027A	Perchlorate	0.27	ug/L	0.1	0.025		
1/9/2023	353.2	2301091028A	Nitrate+Nitrite as Nitrogen	2.41	mg/L	0.25	0.008		

Analytical Results for Sampling Events at BLM-18-430

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/17/2023	8260	2301170950A	Trichlorofluoromethane (CFC 11)	21	ug/L	1	0.24		Q
1/17/2023	8260	2301170950A	1,1,2-Trichloro-1,2,2-Trifluoroethane	22	ug/L	1	0.2		Q
1/17/2023	8260	2301170950A	Tetrachloroethene (PCE)	0.52	ug/L	1	0.21		J
1/17/2023	8260	2301170950A	Trichloroethene (TCE)	15	ug/L	1	0.2		Q
1/17/2023	8260	2301170951A	Trichlorofluoromethane (CFC 11)	18	ug/L	1	0.24		Q
1/17/2023	8260	2301170951A	Trichloroethene (TCE)	13	ug/L	1	0.2		Q
1/17/2023	8260	2301170951A	Tetrachloroethene (PCE)	0.46	ug/L	1	0.21		J
1/17/2023	8260	2301170951A	1,1,2-Trichloro-1,2,2-Trifluoroethane	19	ug/L	1	0.2		Q
1/17/2023	607	2301170953A	N-Nitrosodimethylamine	0.02	µg/L	0.0094	0.0047	52	
1/17/2023	607	2301170954A	N-Nitrosodimethylamine	0.02	µg/L	0.0094	0.0047	52	
1/17/2023	METALS	2301170955A	Magnesium, Total	57.1	mg/L	1	0.03		
1/17/2023	METALS	2301170955A	Vanadium, Total	0.003	mg/L	0.05	0.0007		J
1/17/2023	METALS	2301170955A	Strontium, Total	2.48	mg/L	0.1	0.002		
1/17/2023	METALS	2301170955A	Sodium, Total	51.8	mg/L	1	0.2		
1/17/2023	METALS	2301170955A	Silver, Total	0.0008	mg/L	0.01	0.0006		J RB
1/17/2023	METALS	2301170955A	Molybdenum, Total	0.009	mg/L	0.025	0.003		J
1/17/2023	METALS	2301170955A	Calcium, Total	101	mg/L	1	0.3		
1/17/2023	METALS	2301170955A	Boron, Total	0.14	mg/L	0.2	0.02		J
1/17/2023	METALS	2301170955A	Barium, Total	0.028	mg/L	0.02	0.003		
1/17/2023	METALS	2301170955A	Arsenic, Total	0.0016	mg/L	0.001	0.0004		
1/17/2023	METALS	2301170955A	Zinc, Total	0.009	mg/L	0.02	0.003		J
1/17/2023	METALS	2301170955A	Potassium, Total	6.3	mg/L	2	0.4		
1/17/2023	ANIONS	2301170956A	Sulfate	299	mg/L	8	1.6		
1/17/2023	ANIONS	2301170956A	Fluoride, undistilled	0.73	mg/L	0.1	0.01		
1/17/2023	ANIONS	2301170956A	Alkalinity, Total as CaCO3	228	mg/L	2	1.8		
1/17/2023	ANIONS	2301170956A	Chloride	42.1	mg/L	2	0.5		
1/17/2023	SM2540C	2301170957A	Total Dissolved Solids (TDS)	771	mg/L	10	9		
1/17/2023	6850	2301170958A	Perchlorate	0.141	ug/L	0.1	0.025		
1/17/2023	353.2	2301170959A	Nitrate+Nitrite as Nitrogen	1.52	mg/L	0.05	0.002		

Analytical Results for Sampling Events at BLM-22-570

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/15/2022	8260_LL	2211151510A	Silane, methoxytrimethyl-	5.8	ug/L	NA	NA		TIC
11/15/2022	NDMA_LL	2211151512A	N-Nitrosodimethylamine	0.52	ng/L	0.47	0.34		FB

Analytical Results for Sampling Events at BLM-24-565

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/2/2022	8260_LL	2211021333A	1,2-Dichloroethane	3.1	ug/L	0.5	0.2		
11/2/2022	NDMA_LL	2211021337A	N-Nitrosodimethylamine	0.42	ng/L	0.47	0.34		J RB TB FB

Analytical Results for Sampling Events at BLM-2-630

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/15/2022	8260	2211151030A	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.24	ug/L	1	0.2		J
11/15/2022	8260	2211151030A	Trichloroethene (TCE)	0.2	ug/L	1	0.2		J
11/15/2022	NDMA_LL	2211151033A	N-Nitrosodimethylamine	0.75	ng/L	0.47	0.34		TB FB
11/15/2022	NDMA_LL	2211151034A	N-Nitrosodimethylamine	0.75	ng/L	0.47	0.34		TB FB
11/15/2022	METALS	2211151036A	Chromium, Total	0.119	mg/L	0.01	0.002		
11/15/2022	METALS	2211151036A	Strontium, Total	2.79	mg/L	0.1	0.002		
11/15/2022	METALS	2211151036A	Sodium, Total	51.1	mg/L	1	0.2		
11/15/2022	METALS	2211151036A	Potassium, Total	6.8	mg/L	2	0.4		
11/15/2022	METALS	2211151036A	Nickel, Total	0.006	mg/L	0.04	0.003		J
11/15/2022	METALS	2211151036A	Vanadium, Total	0.008	mg/L	0.05	0.0007		J
11/15/2022	METALS	2211151036A	Molybdenum, Total	0.022	mg/L	0.025	0.003		J
11/15/2022	METALS	2211151036A	Calcium, Total	90.8	mg/L	1	0.3		
11/15/2022	METALS	2211151036A	Boron, Total	0.08	mg/L	0.2	0.02		J
11/15/2022	METALS	2211151036A	Barium, Total	0.032	mg/L	0.02	0.003		
11/15/2022	METALS	2211151036A	Arsenic, Total	0.0009	mg/L	0.001	0.0004		J
11/15/2022	METALS	2211151036A	Iron, Total	0.46	mg/L	0.1	0.07		J RB
11/15/2022	METALS	2211151036A	Magnesium, Total	53.9	mg/L	1	0.03		

Analytical Results for Sampling Events at BLM-26-404

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/7/2022	8260	2211071450C	Dichlorofluoromethane (CFC 21)	0.3	ug/L	1	0.2		J
11/7/2022	8260	2211071450C	Silane, methoxytrimethyl-	5	ug/L	NA	NA		TIC RB
11/7/2022	8260	2211071450C	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.31	ug/L	1	0.2		J
11/7/2022	8260	2211071450C	Trichlorofluoromethane (CFC 11)	65	ug/L	1	0.24		
11/7/2022	8260	2211071450C	Tetrachloroethene (PCE)	0.48	ug/L	1	0.21		J
11/7/2022	8260	2211071450C	1,1,2-Trichloro-1,2,2-Trifluoroethane	49	ug/L	1	0.2		
11/7/2022	8260	2211071450C	Trichloroethene (TCE)	21	ug/L	1	0.2		
11/7/2022	607	2211071452C	N-Nitrodimethylamine	0.06	µg/L	0.0094	0.0047	76	
11/7/2022	607	2211071452C	N-Nitrosodimethylamine	0.14	µg/L	0.0094	0.0047	44	
11/7/2022	607	2211071452C	Bromacil	0.007	µg/L	0.0094	0.0047	90	J

Analytical Results for Sampling Events at BLM-27-270

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/12/2022	8260	2212120935C	Dichlorofluoromethane (CFC 21)	4.9	ug/L	1	0.2		
12/12/2022	8260	2212120935C	Tetrachloroethene (PCE)	0.43	ug/L	1	0.21		J Q
12/12/2022	8260	2212120935C	Trichloroethene (TCE)	1.4	ug/L	1	0.2		Q
12/12/2022	8260	2212120935C	Trichlorofluoromethane (CFC 11)	400	ug/L	5	1.2		Q
12/12/2022	8260	2212120935C	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	5.2	ug/L	1	0.2		
12/12/2022	8260	2212120935C	1,1,2-Trichloro-1,2,2-Trifluoroethane	170	ug/L	5	1		Q
12/12/2022	8260	2212120936C	Trichlorofluoromethane (CFC 11)	420	ug/L	5	1.2		Q
12/12/2022	8260	2212120936C	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	5	ug/L	1	0.2		
12/12/2022	8260	2212120936C	Trichloroethene (TCE)	1.1	ug/L	1	0.2		Q
12/12/2022	8260	2212120936C	Dichlorofluoromethane (CFC 21)	4.6	ug/L	1	0.2		
12/12/2022	8260	2212120936C	1,1,2-Trichloro-1,2,2-Trifluoroethane	190	ug/L	1	0.2		Q
12/12/2022	607	2212120938C	N-Nitrodimethylamine	1.05	µg/L	0.0098	0.0049	78	
12/12/2022	607	2212120938C	Bromacil	0.08	µg/L	0.0098	0.0049	84	
12/12/2022	607	2212120938C	N-Nitrosodimethylamine	2.32	µg/L	0.0098	0.0049	47	Q
12/12/2022	METALS	2212120939C	Magnesium, Total	20.1	mg/L	1	0.03		
12/12/2022	METALS	2212120939C	Molybdenum, Total	0.007	mg/L	0.025	0.003		J
12/12/2022	METALS	2212120939C	Zinc, Total	0.02	mg/L	0.02	0.003		J
12/12/2022	METALS	2212120939C	Vanadium, Total	0.005	mg/L	0.05	0.0007		J
12/12/2022	METALS	2212120939C	Strontium, Total	1.84	mg/L	0.1	0.002		
12/12/2022	METALS	2212120939C	Sodium, Total	114	mg/L	1	0.2		
12/12/2022	METALS	2212120939C	Arsenic, Total	0.001	mg/L	0.001	0.0004		
12/12/2022	METALS	2212120939C	Chromium, Total	0.007	mg/L	0.01	0.002		J
12/12/2022	METALS	2212120939C	Calcium, Total	48.1	mg/L	1	0.3		
12/12/2022	METALS	2212120939C	Boron, Total	0.08	mg/L	0.2	0.02		J
12/12/2022	METALS	2212120939C	Barium, Total	0.049	mg/L	0.02	0.003		
12/12/2022	METALS	2212120939C	Potassium, Total	3.3	mg/L	2	0.4		

Analytical Results for Sampling Events at BLM-3-182

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/1/2022	8260	2211010932A	1,1,2-Trichloro-1,2,2-Trifluoroethane	180	ug/L	2.5	0.5		
11/1/2022	8260	2211010932A	Trichloroethene (TCE)	13	ug/L	1	0.2		
11/1/2022	8260	2211010932A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.49	ug/L	1	0.2		J
11/1/2022	607	2211010934A	Bromacil	1.52	µg/L	0.0095	0.0048	95	
11/1/2022	8290	2211010939A	Total Tetra-Dioxins	41.2	pg/L	NA	NA		
11/1/2022	8290	2211010939A	2,3,7,8-TCDD	41.2	pg/L	9.43	0.193		
11/1/2022	8290	2211010939A	OCDD	1.49	pg/L	47.2	0.0895		J RB
11/1/2022	METALS	2211010941A	Boron, Total	0.24	mg/L	0.2	0.02		
11/1/2022	METALS	2211010941A	Manganese, Total	0.006	mg/L	0.01	0.004		J
11/1/2022	METALS	2211010941A	Strontium, Total	15.8	mg/L	1	0.02		
11/1/2022	METALS	2211010941A	Sodium, Total	179	mg/L	1	0.2		
11/1/2022	METALS	2211010941A	Selenium, Total	0.042	mg/L	0.01	0.007		
11/1/2022	METALS	2211010941A	Potassium, Total	7	mg/L	2	0.4		
11/1/2022	METALS	2211010941A	Nickel, Total	0.289	mg/L	0.04	0.003		
11/1/2022	METALS	2211010941A	Molybdenum, Total	0.021	mg/L	0.025	0.003		J
11/1/2022	METALS	2211010941A	Iron, Total	0.47	mg/L	0.1	0.07		
11/1/2022	METALS	2211010941A	Cobalt, Total	0.001	mg/L	0.05	0.0009		J RB
11/1/2022	METALS	2211010941A	Arsenic, Total	0.0025	mg/L	0.001	0.0004		
11/1/2022	METALS	2211010941A	Calcium, Total	455	mg/L	10	3		
11/1/2022	METALS	2211010941A	Chromium, Total	0.068	mg/L	0.01	0.002		
11/1/2022	METALS	2211010941A	Barium, Total	0.022	mg/L	0.02	0.003		
11/1/2022	METALS	2211010941A	Magnesium, Total	253	mg/L	1	0.03		
11/1/2022	353.2	2211010942A	Nitrate+Nitrite as Nitrogen	6.6	mg/L	0.5	0.02		
11/1/2022	9030	2211010944A	Sulfide, Acid-Soluble	1	mg/L	1	1		

Analytical Results for Sampling Events at BLM-32-543

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/7/2022	8260_LL	2211071410B	1,4-Dioxane	27	ug/L	40	13		J
11/7/2022	8260_LL	2211071410B	Tetrahydrofuran (THF)	2.4	ug/L	5	1.7		J
11/7/2022	NDMA_LL	2211071412B	N-Nitrosodimethylamine	1.05	ng/L	0.48	0.35		RB FB

Analytical Results for Sampling Events at BLM-32-571

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/7/2022	NDMA_LL	2211071452B	N-Nitrosodimethylamine	1.61	ng/L	0.48	0.35		RB FB

Analytical Results for Sampling Events at BLM-32-632

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/7/2022	8260_LL	2211071545B	Toluene	0.21	ug/L	0.5	0.2		J
11/7/2022	NDMA_LL	2211071547B	N-Nitrosodimethylamine	0.72	ng/L	0.49	0.35		RB FB

Analytical Results for Sampling Events at BLM-36-350

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/4/2022	8260	2211041130Y	Trichlorofluoromethane (CFC 11)	33	ug/L	1	0.24		
11/4/2022	8260	2211041130Y	cis-1,2-Dichloroethene	0.33	ug/L	1	0.23		J
11/4/2022	8260	2211041130Y	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	5	ug/L	1	0.2		
11/4/2022	8260	2211041130Y	Trichloroethene (TCE)	63	ug/L	1	0.2		
11/4/2022	8260	2211041130Y	Tetrachloroethene (PCE)	3	ug/L	1	0.21		
11/4/2022	8260	2211041130Y	1,1,2-Trichloro-1,2,2-Trifluoroethane	66	ug/L	1	0.2		
11/4/2022	8260	2211041130Y	Dichlorofluoromethane (CFC 21)	7.4	ug/L	1	0.2		
11/4/2022	8260	2211041131Y	1,1,2-Trichloro-1,2,2-Trifluoroethane	83	ug/L	1	0.2		
11/4/2022	8260	2211041131Y	Dichlorofluoromethane (CFC 21)	7.4	ug/L	1	0.2		
11/4/2022	8260	2211041131Y	Tetrachloroethene (PCE)	3.1	ug/L	1	0.21		
11/4/2022	8260	2211041131Y	Trichloroethene (TCE)	64	ug/L	1	0.2		
11/4/2022	8260	2211041131Y	Trichlorofluoromethane (CFC 11)	42	ug/L	1	0.24		
11/4/2022	8260	2211041131Y	cis-1,2-Dichloroethene	0.34	ug/L	1	0.23		J
11/4/2022	8260	2211041131Y	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	5.9	ug/L	1	0.2		
11/4/2022	607	2211041132Y	N-Nitrodimethylamine	0.36	µg/L	0.0098	0.0049	74	
11/4/2022	607	2211041132Y	Bromacil	0.68	µg/L	0.0098	0.0049	95	
11/4/2022	607	2211041132Y	N-Nitrosodimethylamine	0.44	µg/L	0.0098	0.0049	44	
11/4/2022	607	2211041155Y	N-Nitrodimethylamine	0.38	µg/L	0.0095	0.0048	74	
11/4/2022	607	2211041155Y	Bromacil	0.7	µg/L	0.0095	0.0048	95	
11/4/2022	607	2211041155Y	N-Nitrosodimethylamine	0.46	µg/L	0.0095	0.0048	44	

Analytical Results for Sampling Events at BLM-38-480

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/7/2022	8260_LL	2211071325Y	2-Propanol	6.6	ug/L	40	3.4		J TB
11/7/2022	8260_LL	2211071325Y	Silane, methoxytrimethyl-	6.3	ug/L	NA	NA		TIC RB TB
11/7/2022	NDMA_LL	2211071326Y	N-Nitrosodimethylamine	0.96	ng/L	0.48	0.35		RB TB EB

Analytical Results for Sampling Events at BLM-38-620

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/7/2022	NDMA_LL	2211071546Y	N-Nitrosodimethylamine	0.62	ng/L	0.49	0.35		RB EB

Analytical Results for Sampling Events at BLM-42-569

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/13/2022	NDMA_LL	2212131007A	N-Nitrosodimethylamine	0.41	ng/L	0.48	0.35		J

Analytical Results for Sampling Events at BLM-6-488

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/5/2023	8260	2301051000C	Trichloroethene (TCE)	2.2	ug/L	1	0.2		
1/5/2023	8260	2301051000C	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.36	ug/L	1	0.2		J
1/5/2023	8260	2301051000C	1,1,2-Trichloro-1,2,2-Trifluoroethane	1.5	ug/L	1	0.2		
1/5/2023	607	2301051003C	Bromacil	0.94	µg/L	0.0095	0.0048	91	
1/5/2023	NDMA_LL	2301051004C	N-Nitrosodimethylamine	1.36	ng/L	0.48	0.35		FB
1/5/2023	METALS	2301051007C	Boron, Total	0.11	mg/L	0.2	0.02		J
1/5/2023	METALS	2301051007C	Molybdenum, Total	0.019	mg/L	0.025	0.003		J
1/5/2023	METALS	2301051007C	Zinc, Total	0.015	mg/L	0.02	0.003		J
1/5/2023	METALS	2301051007C	Vanadium, Total	0.0007	mg/L	0.05	0.0007		J
1/5/2023	METALS	2301051007C	Thallium, Total	0.00005	mg/L	0.001	0.00004		J
1/5/2023	METALS	2301051007C	Strontium, Total	6.07	mg/L	0.1	0.002		
1/5/2023	METALS	2301051007C	Sodium, Total	80.7	mg/L	1	0.2		
1/5/2023	METALS	2301051007C	Potassium, Total	5.2	mg/L	2	0.4		
1/5/2023	METALS	2301051007C	Nickel, Total	0.501	mg/L	0.04	0.003		
1/5/2023	METALS	2301051007C	Manganese, Total	0.046	mg/L	0.01	0.004		
1/5/2023	METALS	2301051007C	Magnesium, Total	73.3	mg/L	1	0.03		
1/5/2023	METALS	2301051007C	Iron, Total	0.19	mg/L	0.1	0.07		
1/5/2023	METALS	2301051007C	Cobalt, Total	0.001	mg/L	0.05	0.0009		J
1/5/2023	METALS	2301051007C	Calcium, Total	147	mg/L	1	0.3		
1/5/2023	METALS	2301051007C	Barium, Total	0.042	mg/L	0.02	0.003		
1/5/2023	METALS	2301051007C	Arsenic, Total	0.001	mg/L	0.001	0.0004		
1/5/2023	METALS	2301051007C	Antimony, Total	0.0003	mg/L	0.001	0.0002		J
1/5/2023	METALS	2301051007C	Chromium, Total	0.026	mg/L	0.01	0.002		
1/5/2023	ANIONS	2301051008C	Fluoride, undistilled	0.76	mg/L	0.1	0.01		
1/5/2023	ANIONS	2301051008C	Sulfate	480	mg/L	20	4		
1/5/2023	ANIONS	2301051008C	Alkalinity, Total as CaCO3	128	mg/L	2	1.8		
1/5/2023	ANIONS	2301051008C	Chloride	142	mg/L	8	1.7		
1/5/2023	SM2540C	2301051009C	Total Dissolved Solids (TDS)	1110	mg/L	10	9		
1/5/2023	6850	2301051010C	Perchlorate	0.666	ug/L	0.1	0.025		
1/5/2023	353.2	2301051011C	Nitrate+Nitrite as Nitrogen	3.14	mg/L	0.25	0.008		

Analytical Results for Sampling Events at BLM-7-509

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/5/2022	8260_LL	2212050925C	Sulfur Dioxide	6.6	ug/L	NA	NA		TIC RB TB FB
12/5/2022	NDMA_LL	2212050927C	N-Nitrosodimethylamine	0.45	ng/L	0.48	0.35		J

Analytical Results for Sampling Events at BLM-8-418

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/1/2022	8260_LL	2211011455A	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.41	ug/L	0.5	0.2		J
11/1/2022	8260_LL	2211011455A	Trichlorofluoromethane (CFC 11)	0.24	ug/L	0.5	0.24		J
11/1/2022	NDMA_LL	2211011510A	N-Nitrosodimethylamine	0.75	ng/L	0.47	0.34		RB FB

Analytical Results for Sampling Events at BW-5-295

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/7/2022	8260	2211070950C	Trichloroethene (TCE)	0.31	ug/L	1	0.2		J
11/7/2022	8260	2211070950C	Trichlorofluoromethane (CFC 11)	60	ug/L	1	0.24		
11/7/2022	8260	2211070950C	Dichlorofluoromethane (CFC 21)	0.4	ug/L	1	0.2		J
11/7/2022	8260	2211070950C	1,1,2-Trichloro-1,2,2-Trifluoroethane	3.9	ug/L	1	0.2		
11/7/2022	607	2211070952C	N-Nitrodimethylamine	1.63	µg/L	0.0098	0.0049	76	
11/7/2022	607	2211070952C	Bromacil	0.05	µg/L	0.0098	0.0049	90	
11/7/2022	607	2211070952C	N-Nitrosodimethylamine	0.43	µg/L	0.0098	0.0049	44	
11/7/2022	METALS	2211070953C	Barium, Total	0.013	mg/L	0.02	0.003		J
11/7/2022	METALS	2211070953C	Molybdenum, Total	0.033	mg/L	0.025	0.003		
11/7/2022	METALS	2211070953C	Vanadium, Total	0.007	mg/L	0.05	0.0007		J
11/7/2022	METALS	2211070953C	Strontium, Total	1.15	mg/L	0.1	0.002		
11/7/2022	METALS	2211070953C	Sodium, Total	114	mg/L	1	0.2		
11/7/2022	METALS	2211070953C	Zinc, Total	0.012	mg/L	0.02	0.003		J
11/7/2022	METALS	2211070953C	Potassium, Total	1.2	mg/L	2	0.4		J
11/7/2022	METALS	2211070953C	Nickel, Total	0.004	mg/L	0.04	0.003		J
11/7/2022	METALS	2211070953C	Manganese, Total	0.007	mg/L	0.01	0.004		J
11/7/2022	METALS	2211070953C	Magnesium, Total	20.4	mg/L	1	0.03		
11/7/2022	METALS	2211070953C	Iron, Total	0.64	mg/L	0.1	0.07		
11/7/2022	METALS	2211070953C	Chromium, Total	0.009	mg/L	0.01	0.002		J
11/7/2022	METALS	2211070953C	Boron, Total	0.53	mg/L	0.2	0.02		
11/7/2022	METALS	2211070953C	Arsenic, Total	0.0012	mg/L	0.001	0.0004		
11/7/2022	METALS	2211070953C	Antimony, Total	0.0002	mg/L	0.001	0.0002		J
11/7/2022	METALS	2211070953C	Calcium, Total	32.4	mg/L	1	0.3		
11/7/2022	ANIONS	2211070954C	Alkalinity, Total as CaCO3	234	mg/L	2	1.8		
11/7/2022	ANIONS	2211070954C	Chloride	32.8	mg/L	2	0.5		
11/7/2022	ANIONS	2211070954C	Fluoride, undistilled	2.16	mg/L	0.1	0.01		
11/7/2022	ANIONS	2211070954C	Sulfate	145	mg/L	8	1.6		
11/7/2022	SM2540C	2211070955C	Total Dissolved Solids (TDS)	523	mg/L	10	9		
11/7/2022	6850	2211070956C	Perchlorate	0.78	ug/L	0.1	0.025		
11/7/2022	353.2	2211070957C	Nitrate+Nitrite as Nitrogen	4.51	mg/L	0.25	0.008		

Analytical Results for Sampling Events at BW-7-211

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/13/2022	8260	2212130826C	1,1,2-Trichloro-1,2,2-Trifluoroethane	8.6	ug/L	1	0.2		
12/13/2022	8260	2212130826C	Dichlorofluoromethane (CFC 21)	0.29	ug/L	1	0.2		J
12/13/2022	8260	2212130826C	Trichloroethene (TCE)	1.3	ug/L	1	0.2		
12/13/2022	8260	2212130826C	Trichlorofluoromethane (CFC 11)	150	ug/L	1	0.24		
12/13/2022	8260	2212130826C	Silane, fluorotrimethyl-	5.4	ug/L	NA	NA		TIC
12/13/2022	607	2212130828C	N-Nitrosodimethylamine	0.96	µg/L	0.0094	0.0047	47	
12/13/2022	607	2212130828C	N-Nitrodimethylamine	3.4	µg/L	0.0094	0.0047	82	
12/13/2022	607	2212130828C	Bromacil	1.98	µg/L	0.0094	0.0047	82	
12/13/2022	METALS	2212130829C	Molybdenum, Total	0.011	mg/L	0.025	0.003		J
12/13/2022	METALS	2212130829C	Zinc, Total	0.017	mg/L	0.02	0.003		J
12/13/2022	METALS	2212130829C	Vanadium, Total	0.003	mg/L	0.05	0.0007		J
12/13/2022	METALS	2212130829C	Thallium, Total	0.00005	mg/L	0.001	0.00004		J
12/13/2022	METALS	2212130829C	Strontium, Total	2.57	mg/L	0.1	0.002		
12/13/2022	METALS	2212130829C	Nickel, Total	0.01	mg/L	0.04	0.003		J
12/13/2022	METALS	2212130829C	Potassium, Total	3.3	mg/L	2	0.4		
12/13/2022	METALS	2212130829C	Sodium, Total	76.4	mg/L	1	0.2		
12/13/2022	METALS	2212130829C	Chromium, Total	0.005	mg/L	0.01	0.002		J
12/13/2022	METALS	2212130829C	Calcium, Total	82.6	mg/L	1	0.3		
12/13/2022	METALS	2212130829C	Boron, Total	0.23	mg/L	0.2	0.02		
12/13/2022	METALS	2212130829C	Barium, Total	0.041	mg/L	0.02	0.003		
12/13/2022	METALS	2212130829C	Arsenic, Total	0.0009	mg/L	0.001	0.0004		J
12/13/2022	METALS	2212130829C	Antimony, Total	0.0003	mg/L	0.001	0.0002		J
12/13/2022	METALS	2212130829C	Magnesium, Total	59.3	mg/L	1	0.03		

Analytical Results for Sampling Events at JER-1-483

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/11/2023	8260_LL	2301111536B	2-Butanone (MEK)	1.1	ug/L	5	0.78		J
1/11/2023	8260_LL	2301111536B	Toluene	0.66	ug/L	0.5	0.2		
1/11/2023	8260_LL	2301111536B	1,4-Dioxane	54	ug/L	40	13		
1/11/2023	8260_LL	2301111536B	1,4-Dioxane, 2,5-dimethyl-	6.4	ug/L	NA	NA		TIC
1/11/2023	NDMA_LL	2301111538B	N-Nitrosodimethylamine	0.48	ng/L	0.47	0.34		RB
1/11/2023	8270	2301111540B	1,4-Dioxane	0.81	ug/L	0.04	0.027		

Analytical Results for Sampling Events at JER-1-563

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/11/2023	8260_LL	2301111555B	Unknown	5.3	ug/L	NA	NA		TIC
1/11/2023	8260_LL	2301111555B	1,4-Dioxane	16	ug/L	40	13		J
1/11/2023	8260_LL	2301111555B	Toluene	3.3	ug/L	0.5	0.2		
1/11/2023	NDMA_LL	2301111557B	N-Nitrosodimethylamine	1.06	ng/L	0.48	0.35		RB
1/11/2023	NDMA_LL	2301111557B	N-Nitrodimethylamine	0.67	ng/L	0.48	0.34		
1/11/2023	8270	2301111559B	1,4-Dioxane	1.2	ug/L	0.04	0.027		

Analytical Results for Sampling Events at JER-1-683

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/12/2023	8260_LL	2301121425B	Silane, fluorotrimethyl-	8.9	ug/L	NA	NA		TIC
1/12/2023	8260_LL	2301121425B	Toluene	0.4	ug/L	0.5	0.2		J
1/12/2023	8260_LL	2301121425B	1,4-Dioxane	83	ug/L	40	13		
1/12/2023	8260_LL	2301121425B	Unknown	12	ug/L	NA	NA		TIC RB TB FB
1/12/2023	8260_LL	2301121425B	1,4-Dioxane, 2,5-dimethyl-	12	ug/L	NA	NA		TIC
1/12/2023	NDMA_LL	2301121427B	N-Nitrosodimethylamine	1.68	ng/L	0.49	0.35		RB
1/12/2023	NDMA_LL	2301121427B	N-Nitrodimethylamine	1.09	ng/L	0.49	0.34		
1/12/2023	NDMA_LL	2301121428B	N-Nitrosodimethylamine	1.57	ng/L	0.49	0.35		RB
1/12/2023	8270	2301121451B	1,4-Dioxane	1.1	ug/L	0.04	0.027		

Analytical Results for Sampling Events at JER-2-504

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/23/2023	8260_LL	2301231416B	Toluene	1.4	ug/L	0.5	0.2		
1/23/2023	NDMA_LL	2301231455B	N-Nitrosodimethylamine	2.52	ng/L	0.48	0.35		TB FB
1/23/2023	8270	2301231457B	1,4-Dioxane	0.45	ug/L	0.04	0.027		

Analytical Results for Sampling Events at JER-2-584

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/23/2023	8260_LL	2301231434B	Silane, fluorotrimethyl-	12	ug/L	NA	NA		TIC
1/23/2023	8260_LL	2301231434B	Toluene	0.79	ug/L	0.5	0.2		
1/23/2023	NDMA_LL	2301231515B	N-Nitrosodimethylamine	3.24	ng/L	0.48	0.35		
1/23/2023	8270	2301231517B	1,4-Dioxane	0.48	ug/L	0.04	0.027		
1/23/2023	8270	2301231518B	1,4-Dioxane	0.51	ug/L	0.04	0.027		

Analytical Results for Sampling Events at JER-2-684

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/24/2023	8260_LL	2301241450B	Toluene	1.1	ug/L	0.5	0.2		
1/24/2023	NDMA_LL	2301241452B	N-Nitrosodimethylamine	4.15	ng/L	0.49	0.36		FB Q
1/24/2023	8270	2301241454B	1,4-Dioxane	0.51	ug/L	0.04	0.027		

Analytical Results for Sampling Events at JP-1-424

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/18/2023	NDMA_LL	2301181028A	N-Nitrosodimethylamine	0.5	ng/L	0.47	0.34		FB

Analytical Results for Sampling Events at JP-3-509

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/23/2023	METALS	2301231015A	Nickel, Total	0.004	mg/L	0.04	0.003		J
1/23/2023	METALS	2301231015A	Vanadium, Total	0.003	mg/L	0.05	0.0007		J
1/23/2023	METALS	2301231015A	Zinc, Total	0.005	mg/L	0.02	0.003		J
1/23/2023	METALS	2301231015A	Strontium, Total	2.41	mg/L	0.1	0.002		
1/23/2023	METALS	2301231015A	Sodium, Total	40.5	mg/L	1	0.2		
1/23/2023	METALS	2301231015A	Potassium, Total	3.2	mg/L	2	0.4		
1/23/2023	METALS	2301231015A	Molybdenum, Total	0.009	mg/L	0.025	0.003		J
1/23/2023	METALS	2301231015A	Magnesium, Total	68.4	mg/L	1	0.03		
1/23/2023	METALS	2301231015A	Calcium, Total	99.9	mg/L	1	0.3		
1/23/2023	METALS	2301231015A	Boron, Total	0.06	mg/L	0.2	0.02		J
1/23/2023	METALS	2301231015A	Arsenic, Total	0.0008	mg/L	0.001	0.0004		J
1/23/2023	METALS	2301231015A	Barium, Total	0.024	mg/L	0.02	0.003		
1/23/2023	METALS	2301231016A	Magnesium, Total	68.5	mg/L	1	0.03		
1/23/2023	METALS	2301231016A	Molybdenum, Total	0.008	mg/L	0.025	0.003		J
1/23/2023	METALS	2301231016A	Nickel, Total	0.004	mg/L	0.04	0.003		J
1/23/2023	METALS	2301231016A	Potassium, Total	3.2	mg/L	2	0.4		
1/23/2023	METALS	2301231016A	Zinc, Total	0.005	mg/L	0.02	0.003		J
1/23/2023	METALS	2301231016A	Sodium, Total	40.4	mg/L	1	0.2		
1/23/2023	METALS	2301231016A	Strontium, Total	2.4	mg/L	0.1	0.002		
1/23/2023	METALS	2301231016A	Vanadium, Total	0.003	mg/L	0.05	0.0007		J
1/23/2023	METALS	2301231016A	Arsenic, Total	0.0007	mg/L	0.001	0.0004		J
1/23/2023	METALS	2301231016A	Calcium, Total	99.8	mg/L	1	0.3		
1/23/2023	METALS	2301231016A	Boron, Total	0.06	mg/L	0.2	0.02		J
1/23/2023	METALS	2301231016A	Barium, Total	0.024	mg/L	0.02	0.003		
1/23/2023	ANIONS	2301231017A	Chloride	41.4	mg/L	2	0.5		
1/23/2023	ANIONS	2301231017A	Fluoride, undistilled	0.89	mg/L	0.1	0.01		
1/23/2023	ANIONS	2301231017A	Sulfate	323	mg/L	8	1.6		
1/23/2023	ANIONS	2301231017A	Alkalinity, Total as CaCO3	226	mg/L	2	1.8		
1/23/2023	SM2540C	2301231018A	Total Dissolved Solids (TDS)	787	mg/L	10	9		
1/23/2023	6850	2301231019A	Perchlorate	0.0478	ug/L	0.1	0.025		J
1/23/2023	353.2	2301231020A	Nitrate+Nitrite as Nitrogen	0.669	mg/L	0.05	0.002		

Analytical Results for Sampling Events at JP-3-689

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/23/2023	NDMA_LL	2301231434A	N-Nitrosodimethylamine	0.39	ng/L	0.47	0.34		J
1/23/2023	METALS	2301231436A	Potassium, Total	3.2	mg/L	2	0.4		
1/23/2023	METALS	2301231436A	Arsenic, Total	0.0006	mg/L	0.001	0.0004		J
1/23/2023	METALS	2301231436A	Zinc, Total	0.007	mg/L	0.02	0.003		J
1/23/2023	METALS	2301231436A	Vanadium, Total	0.004	mg/L	0.05	0.0007		J
1/23/2023	METALS	2301231436A	Strontium, Total	2.42	mg/L	0.1	0.002		
1/23/2023	METALS	2301231436A	Sodium, Total	40.8	mg/L	1	0.2		
1/23/2023	METALS	2301231436A	Nickel, Total	0.008	mg/L	0.04	0.003		J
1/23/2023	METALS	2301231436A	Molybdenum, Total	0.007	mg/L	0.025	0.003		J
1/23/2023	METALS	2301231436A	Magnesium, Total	69	mg/L	1	0.03		
1/23/2023	METALS	2301231436A	Calcium, Total	101	mg/L	1	0.3		
1/23/2023	METALS	2301231436A	Barium, Total	0.024	mg/L	0.02	0.003		
1/23/2023	METALS	2301231436A	Boron, Total	0.06	mg/L	0.2	0.02		J
1/23/2023	ANIONS	2301231437A	Fluoride, undistilled	0.89	mg/L	0.1	0.01		
1/23/2023	ANIONS	2301231437A	Alkalinity, Total as CaCO3	228	mg/L	2	1.8		
1/23/2023	ANIONS	2301231437A	Sulfate	315	mg/L	8	1.6		
1/23/2023	ANIONS	2301231437A	Chloride	42	mg/L	2	0.5		
1/23/2023	SM2540C	2301231438A	Total Dissolved Solids (TDS)	802	mg/L	10	9		
1/23/2023	6850	2301231439A	Perchlorate	0.0721	ug/L	0.1	0.025		J
1/23/2023	353.2	2301231440A	Nitrate+Nitrite as Nitrogen	0.662	mg/L	0.05	0.002		

Analytical Results for Sampling Events at NASA 6

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/16/2022	8260	2211161012B	Silane, fluorotrimethyl-	7.2	ug/L	NA	NA		TIC
11/16/2022	8260	2211161012B	Silane, methoxytrimethyl-	9.5	ug/L	NA	NA		TIC
11/16/2022	8260	2211161012B	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.1	ug/L	1	0.2		
11/16/2022	8260	2211161012B	2-Propanol	7.3	ug/L	50	3.4		J
11/16/2022	8260	2211161012B	1,1,2-Trichloro-1,2,2-Trifluoroethane	25	ug/L	1	0.2		
11/16/2022	8260	2211161012B	Trichlorofluoromethane (CFC 11)	74	ug/L	1	0.24		
11/16/2022	8260	2211161012B	Trichloroethene (TCE)	0.63	ug/L	1	0.2		J
11/16/2022	8260	2211161012B	Dichlorofluoromethane (CFC 21)	1.7	ug/L	1	0.2		
11/16/2022	607	2211161013B	N-Nitrodimethylamine	7.63	µg/L	0.094	0.047	77	D
11/16/2022	607	2211161013B	Bromacil	1.62	µg/L	0.0094	0.0047	101	
11/16/2022	607	2211161013B	N-Nitrosodimethylamine	6.49	µg/L	0.094	0.047	47	D
11/16/2022	METALS	2211161014B	Boron, Total	0.33	mg/L	0.2	0.02		
11/16/2022	METALS	2211161014B	Molybdenum, Total	0.007	mg/L	0.025	0.003		J
11/16/2022	METALS	2211161014B	Thallium, Total	0.0001	mg/L	0.001	0.00004		J
11/16/2022	METALS	2211161014B	Strontium, Total	2.63	mg/L	0.1	0.002		
11/16/2022	METALS	2211161014B	Sodium, Total	108	mg/L	1	0.2		
11/16/2022	METALS	2211161014B	Vanadium, Total	0.005	mg/L	0.05	0.0007		J
11/16/2022	METALS	2211161014B	Potassium, Total	3.3	mg/L	2	0.4		
11/16/2022	METALS	2211161014B	Nickel, Total	0.018	mg/L	0.04	0.003		J
11/16/2022	METALS	2211161014B	Manganese, Total	0.024	mg/L	0.01	0.004		
11/16/2022	METALS	2211161014B	Magnesium, Total	76.5	mg/L	1	0.03		
11/16/2022	METALS	2211161014B	Iron, Total	0.5	mg/L	0.1	0.07		J RB
11/16/2022	METALS	2211161014B	Calcium, Total	95.7	mg/L	1	0.3		
11/16/2022	METALS	2211161014B	Barium, Total	0.064	mg/L	0.02	0.003		
11/16/2022	METALS	2211161014B	Arsenic, Total	0.0014	mg/L	0.001	0.0004		
11/16/2022	METALS	2211161014B	Zinc, Total	0.004	mg/L	0.02	0.003		J
11/16/2022	METALS	2211161014B	Chromium, Total	0.096	mg/L	0.01	0.002		
11/16/2022	ANIONS	2211161015B	Alkalinity, Total as CaCO3	304	mg/L	2	1.8		
11/16/2022	ANIONS	2211161015B	Chloride	90.6	mg/L	2	0.5		
11/16/2022	ANIONS	2211161015B	Fluoride, undistilled	0.97	mg/L	0.1	0.01		
11/16/2022	ANIONS	2211161015B	Sulfate	336	mg/L	8	1.6		
11/16/2022	SM2540C	2211161016B	Total Dissolved Solids (TDS)	1020	mg/L	10	9		
11/16/2022	6850	2211161017B	Perchlorate	0.765	ug/L	0.1	0.025		
11/16/2022	353.2	2211161018B	Nitrate+Nitrite as Nitrogen	10.8	mg/L	0.5	0.02		

Analytical Results for Sampling Events at PL-10-484

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/3/2023	NDMA_LL	2301031511Y	N-Nitrosodimethylamine	1.81	ng/L	0.48	0.35		EB
1/3/2023	8270	2301031540Y	1,4-Dioxane	0.43	ug/L	0.04	0.027		

Analytical Results for Sampling Events at PL-10-592

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/4/2023	NDMA_LL	2301041416Y	N-Nitrosodimethylamine	1.02	ng/L	0.48	0.35		EB
1/4/2023	NDMA_LL	2301041416Y	N-Nitrodimethylamine	0.41	ng/L	0.48	0.33		J

Analytical Results for Sampling Events at PL-11-470

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/5/2022	8260_LL	2212051410B	Dichlorofluoromethane (CFC 21)	0.31	ug/L	0.5	0.2		J
12/5/2022	8260_LL	2212051410B	Toluene	0.95	ug/L	0.5	0.2		
12/5/2022	8260_LL	2212051410B	Trichloroethene (TCE)	0.25	ug/L	0.5	0.2		J
12/5/2022	8260_LL	2212051410B	Trichlorofluoromethane (CFC 11)	0.31	ug/L	0.5	0.24		J
12/5/2022	8260_LL	2212051410B	Sulfur Dioxide	5.8	ug/L	NA	NA		TIC RB FB
12/5/2022	NDMA_LL	2212051412B	N-Nitrosodimethylamine	1.4	ng/L	0.48	0.35		FB

Analytical Results for Sampling Events at PL-11-530

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/5/2022	8270	2212051434B	1,4-Dioxane	1.1	ug/L	0.04	0.027		FB
12/5/2022	8270	2212051434B	1,4-Dioxane	1.8	ug/L	0.04	0.027		T FB

Analytical Results for Sampling Events at PL-11-710

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/6/2022	NDMA_LL	2212061403B	N-Nitrosodimethylamine	1.08	ng/L	0.47	0.34		
12/6/2022	NDMA_LL	2212061403B	N-Nitrodimethylamine	0.35	ng/L	0.47	0.33		J
12/6/2022	NDMA_LL	2212061404B	N-Nitrosodimethylamine	0.73	ng/L	0.47	0.34		
12/6/2022	8270	2212061406B	1,4-Dioxane	1.6	ug/L	0.04	0.027		

Analytical Results for Sampling Events at PL-11-820

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/6/2022	NDMA_LL	2212061423B	N-Nitrosodimethylamine	0.53	ng/L	0.47	0.34		

Analytical Results for Sampling Events at PL-11-980

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/6/2022	8260_LL	2212061436B	Silane, methoxytrimethyl-	8	ug/L	NA	NA		TIC
12/6/2022	NDMA_LL	2212061438B	N-Nitrosodimethylamine	0.63	ng/L	0.48	0.35		

Analytical Results for Sampling Events at PL-12-570

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/10/2022	8260	2211100902C	1,1,2-Trichloro-1,2,2-Trifluoroethane	2.2	ug/L	1	0.2		
11/10/2022	8260	2211100902C	2-Propanol	4.4	ug/L	50	3.4		J
11/10/2022	8260	2211100902C	Trichloroethene (TCE)	4.4	ug/L	1	0.2		
11/10/2022	8260	2211100902C	Trichlorofluoromethane (CFC 11)	4.2	ug/L	1	0.24		
11/10/2022	8260	2211100902C	Silane, methoxytrimethyl-	8.6	ug/L	NA	NA		TIC
11/10/2022	8260	2211100902C	Unknown	5.3	ug/L	NA	NA		TIC
11/10/2022	NDMA_LL	2211100904C	N-Nitrosodimethylamine	1.09	ng/L	0.47	0.34		
11/10/2022	NDMA_LL	2211100905C	N-Nitrosodimethylamine	1.14	ng/L	0.49	0.35		

Analytical Results for Sampling Events at PL-12-800

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/10/2022	8260	2211101425C	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.4	ug/L	1	0.2		J
11/10/2022	8260	2211101425C	Silanol, trimethyl-	5.8	ug/L	NA	NA		TIC
11/10/2022	8260	2211101425C	Silane, methoxytrimethyl-	9.5	ug/L	NA	NA		TIC
11/10/2022	8260	2211101425C	Silane, fluorotrimethyl-	6.6	ug/L	NA	NA		TIC
11/10/2022	8260	2211101425C	Trichloroethene (TCE)	5.4	ug/L	1	0.2		
11/10/2022	8260	2211101425C	Dichlorofluoromethane (CFC 21)	0.63	ug/L	1	0.2		J
11/10/2022	8260	2211101425C	2-Propanol	5.8	ug/L	50	3.4		J
11/10/2022	8260	2211101425C	1,1,2-Trichloro-1,2,2-Trifluoroethane	3.3	ug/L	1	0.2		
11/10/2022	8260	2211101425C	Trichlorofluoromethane (CFC 11)	4.3	ug/L	1	0.24		
11/10/2022	8260	2211101426C	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.47	ug/L	1	0.2		J
11/10/2022	8260	2211101426C	1,1,2-Trichloro-1,2,2-Trifluoroethane	3.4	ug/L	1	0.2		
11/10/2022	8260	2211101426C	Dichlorofluoromethane (CFC 21)	0.65	ug/L	1	0.2		J
11/10/2022	8260	2211101426C	Trichloroethene (TCE)	5.3	ug/L	1	0.2		
11/10/2022	8260	2211101426C	Trichlorofluoromethane (CFC 11)	4.5	ug/L	1	0.24		
11/10/2022	NDMA_LL	2211101435C	N-Nitrosodimethylamine	1.74	ng/L	0.5	0.36		

Analytical Results for Sampling Events at PL-1-486

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/24/2023	8260_LL	2301241035C	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.8	ug/L	0.5	0.2		
1/24/2023	8260_LL	2301241036C	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.86	ug/L	0.5	0.2		
1/24/2023	8260_LL	2301241036C	Trichlorofluoromethane (CFC 11)	0.25	ug/L	0.5	0.24		J

Analytical Results for Sampling Events at PL-2-504

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/12/2022	8260	2212121410A	Unknown	5.2	ug/L	NA	NA		TIC
12/12/2022	8260	2212121410A	1,1,2-Trichloro-1,2,2-Trifluoroethane	28	ug/L	1	0.2		
12/12/2022	8260	2212121410A	Dichlorofluoromethane (CFC 21)	0.56	ug/L	1	0.2		J
12/12/2022	8260	2212121410A	Tetrachloroethene (PCE)	0.83	ug/L	1	0.21		J
12/12/2022	8260	2212121410A	Trichloroethene (TCE)	50	ug/L	1	0.2		
12/12/2022	8260	2212121410A	Unknown	6.8	ug/L	NA	NA		TIC
12/12/2022	8260	2212121410A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.3	ug/L	1	0.2		J
12/12/2022	8260	2212121410A	Trichlorofluoromethane (CFC 11)	38	ug/L	1	0.24		
12/12/2022	607	2212121412A	N-Nitrosodimethylamine	0.02	µg/L	0.0095	0.0048	47	
12/12/2022	607	2212121412A	N-Nitrodimethylamine	0.02	µg/L	0.0095	0.0048	78	
12/12/2022	607	2212121412A	Bromacil	0.01	µg/L	0.0095	0.0048	84	

Analytical Results for Sampling Events at PL-4-464

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/12/2022	8260	2212120925B	Silane, fluorotrimethyl-	7.5	ug/L	NA	NA		TIC
12/12/2022	8260	2212120925B	Trichlorofluoromethane (CFC 11)	0.27	ug/L	1	0.24		J
12/12/2022	NDMA_LL	2212120927B	N-Nitrosodimethylamine	0.45	ng/L	0.48	0.35		J RB TB FB

Analytical Results for Sampling Events at PL-6-1195

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/5/2023	8260_LL	2301051440Y	Silane, methoxytrimethyl-	6.8	ug/L	NA	NA		TIC
1/5/2023	NDMA_LL	2301101100Y	N-Nitrosodimethylamine	5.18	ng/L	0.48	0.35		EB
1/5/2023	METALS	2301101101Y	Strontium, Total	2.27	mg/L	0.1	0.002		
1/5/2023	METALS	2301101101Y	Nickel, Total	0.009	mg/L	0.04	0.003		J
1/5/2023	METALS	2301101101Y	Sodium, Total	242	mg/L	10	2		
1/5/2023	METALS	2301101101Y	Thallium, Total	0.00008	mg/L	0.001	0.00004		J
1/5/2023	METALS	2301101101Y	Vanadium, Total	0.012	mg/L	0.05	0.0007		J
1/5/2023	METALS	2301101101Y	Zinc, Total	0.023	mg/L	0.02	0.003		EB
1/5/2023	METALS	2301101101Y	Iron, Total	0.08	mg/L	0.1	0.07		J
1/5/2023	METALS	2301101101Y	Arsenic, Total	0.0022	mg/L	0.001	0.0004		
1/5/2023	METALS	2301101101Y	Barium, Total	0.018	mg/L	0.02	0.003		J
1/5/2023	METALS	2301101101Y	Boron, Total	0.34	mg/L	0.2	0.02		
1/5/2023	METALS	2301101101Y	Calcium, Total	106	mg/L	1	0.3		
1/5/2023	METALS	2301101101Y	Molybdenum, Total	0.015	mg/L	0.025	0.003		J
1/5/2023	METALS	2301101101Y	Chromium, Total	0.002	mg/L	0.01	0.002		J
1/5/2023	METALS	2301101101Y	Potassium, Total	8.1	mg/L	2	0.4		
1/5/2023	METALS	2301101101Y	Manganese, Total	0.006	mg/L	0.01	0.004		J
1/5/2023	METALS	2301101101Y	Magnesium, Total	41.9	mg/L	1	0.03		
1/5/2023	METALS	2301101101Y	Aluminum, Total	0.12	mg/L	0.1	0.03		
1/5/2023	ANIONS	2301101350Y	Sulfate	663	mg/L	20	4		
1/5/2023	ANIONS	2301101350Y	Fluoride, undistilled	0.53	mg/L	0.1	0.01		
1/5/2023	ANIONS	2301101350Y	Alkalinity, Total as CaCO3	78.7	mg/L	2	1.8		
1/5/2023	ANIONS	2301101350Y	Chloride	122	mg/L	4	0.9		
1/5/2023	SM2540C	2301101351Y	Total Dissolved Solids (TDS)	1350	mg/L	11	10		
1/5/2023	6850	2301101352Y	Perchlorate	0.169	ug/L	0.1	0.025		
1/5/2023	353.2	2301101353Y	Nitrate+Nitrite as Nitrogen	4.45	mg/L	0.5	0.02		

Analytical Results for Sampling Events at PL-6-1335

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/10/2023	NDMA_LL	2301110935Y	N-Nitrodimethylamine	1.71	ng/L	0.48	0.33		EB
1/10/2023	NDMA_LL	2301110935Y	N-Nitrosodimethylamine	44.03	ng/L	0.48	0.35		
1/10/2023	METALS	2301110936Y	Molybdenum, Total	0.045	mg/L	0.025	0.003		
1/10/2023	METALS	2301110936Y	Zinc, Total	0.027	mg/L	0.02	0.003		
1/10/2023	METALS	2301110936Y	Vanadium, Total	0.016	mg/L	0.05	0.0007		J
1/10/2023	METALS	2301110936Y	Thallium, Total	0.0002	mg/L	0.001	0.00004		J
1/10/2023	METALS	2301110936Y	Strontium, Total	2.47	mg/L	0.1	0.002		
1/10/2023	METALS	2301110936Y	Sodium, Total	335	mg/L	10	2		
1/10/2023	METALS	2301110936Y	Potassium, Total	9.8	mg/L	2	0.4		
1/10/2023	METALS	2301110936Y	Manganese, Total	0.188	mg/L	0.01	0.004		
1/10/2023	METALS	2301110936Y	Magnesium, Total	23.7	mg/L	1	0.03		
1/10/2023	METALS	2301110936Y	Lead, Total	0.004	mg/L	0.05	0.003		J
1/10/2023	METALS	2301110936Y	Iron, Total	0.1	mg/L	0.1	0.07		J
1/10/2023	METALS	2301110936Y	Copper, Total	0.011	mg/L	0.02	0.004		J
1/10/2023	METALS	2301110936Y	Chromium, Total	0.002	mg/L	0.01	0.002		J
1/10/2023	METALS	2301110936Y	Calcium, Total	92.4	mg/L	1	0.3		
1/10/2023	METALS	2301110936Y	Boron, Total	0.43	mg/L	0.2	0.02		
1/10/2023	METALS	2301110936Y	Barium, Total	0.02	mg/L	0.02	0.003		J
1/10/2023	METALS	2301110936Y	Antimony, Total	0.0007	mg/L	0.001	0.0002		J
1/10/2023	METALS	2301110936Y	Aluminum, Total	0.06	mg/L	0.1	0.03		J
1/10/2023	METALS	2301110936Y	Nickel, Total	0.008	mg/L	0.04	0.003		J
1/10/2023	METALS	2301110936Y	Arsenic, Total	0.0043	mg/L	0.001	0.0004		

Analytical Results for Sampling Events at PL-6-545

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/23/2023	NDMA_LL	2301231531Y	N-Nitrodimethylamine	0.48	ng/L	0.48	0.33		EB
1/23/2023	NDMA_LL	2301231531Y	N-Nitrosodimethylamine	9.58	ng/L	0.48	0.35		* EB

Analytical Results for Sampling Events at PL-6-725

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/17/2023	NDMA_LL	2301171416Y	N-Nitrosodimethylamine	10.33	ng/L	0.48	0.35		EB

Analytical Results for Sampling Events at PL-6-915

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/11/2023	NDMA_LL	2301111435Y	N-Nitrodimethylamine	0.53	ng/L	0.48	0.33		EB
1/11/2023	NDMA_LL	2301111435Y	N-Nitrosodimethylamine	1.25	ng/L	0.48	0.35		EB
1/11/2023	NDMA_LL	2301111436Y	N-Nitrosodimethylamine	1.5	ng/L	0.48	0.35		EB
1/11/2023	METALS	2301111505Y	Vanadium, Total	0.016	mg/L	0.05	0.0007		J
1/11/2023	METALS	2301111505Y	Strontium, Total	2.31	mg/L	0.1	0.002		
1/11/2023	METALS	2301111505Y	Zinc, Total	0.003	mg/L	0.02	0.003		J
1/11/2023	METALS	2301111505Y	Calcium, Total	38.5	mg/L	1	0.3		
1/11/2023	METALS	2301111505Y	Sodium, Total	135	mg/L	1	0.2		
1/11/2023	METALS	2301111505Y	Nickel, Total	0.005	mg/L	0.04	0.003		J
1/11/2023	METALS	2301111505Y	Molybdenum, Total	0.016	mg/L	0.025	0.003		J
1/11/2023	METALS	2301111505Y	Arsenic, Total	0.0026	mg/L	0.001	0.0004		
1/11/2023	METALS	2301111505Y	Potassium, Total	4.6	mg/L	2	0.4		
1/11/2023	METALS	2301111505Y	Boron, Total	0.18	mg/L	0.2	0.02		J
1/11/2023	METALS	2301111505Y	Chromium, Total	0.003	mg/L	0.01	0.002		J
1/11/2023	METALS	2301111505Y	Magnesium, Total	30.5	mg/L	1	0.03		
1/11/2023	METALS	2301111505Y	Manganese, Total	0.004	mg/L	0.01	0.004		J
1/11/2023	METALS	2301111505Y	Barium, Total	0.013	mg/L	0.02	0.003		J
1/11/2023	METALS	2301111540Y	Barium, Total	0.015	mg/L	0.02	0.003		J
1/11/2023	METALS	2301111540Y	Calcium, Total	37.9	mg/L	1	0.3		
1/11/2023	METALS	2301111540Y	Chromium, Total	0.003	mg/L	0.01	0.002		J
1/11/2023	METALS	2301111540Y	Magnesium, Total	30	mg/L	1	0.03		
1/11/2023	METALS	2301111540Y	Molybdenum, Total	0.016	mg/L	0.025	0.003		J
1/11/2023	METALS	2301111540Y	Nickel, Total	0.006	mg/L	0.04	0.003		J
1/11/2023	METALS	2301111540Y	Potassium, Total	4.6	mg/L	2	0.4		
1/11/2023	METALS	2301111540Y	Sodium, Total	133	mg/L	1	0.2		
1/11/2023	METALS	2301111540Y	Strontium, Total	2.29	mg/L	0.1	0.002		
1/11/2023	METALS	2301111540Y	Vanadium, Total	0.016	mg/L	0.05	0.0007		J
1/11/2023	METALS	2301111540Y	Zinc, Total	0.013	mg/L	0.02	0.003		J
1/11/2023	METALS	2301111540Y	Arsenic, Total	0.0029	mg/L	0.001	0.0004		
1/11/2023	METALS	2301111540Y	Boron, Total	0.18	mg/L	0.2	0.02		J

Analytical Results for Sampling Events at PL-7-560

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/8/2022	NDMA_LL	2211081032Y	N-Nitrosodimethylamine	0.5	ng/L	0.47	0.34		RB

Analytical Results for Sampling Events at PL-8-455

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/14/2022	NDMA_LL	2212150946Y	N-Nitrosodimethylamine	0.56	ng/L	0.48	0.35		EB
12/14/2022	8270	2212151023Y	1,4-Dioxane	0.038	ug/L	0.04	0.027		J

Analytical Results for Sampling Events at PL-8-605

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/14/2022	NDMA_LL	2212141341Y	N-Nitrosodimethylamine	0.96	ng/L	0.48	0.35		EB

Analytical Results for Sampling Events at ST-1-473

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/9/2022	8260	2211091440C	1,1,2-Trichloro-1,2,2-Trifluoroethane	90	ug/L	1	0.2		
11/9/2022	8260	2211091440C	Chloroform	0.3	ug/L	1	0.24		J
11/9/2022	8260	2211091440C	Dichlorofluoromethane (CFC 21)	0.38	ug/L	1	0.2		J
11/9/2022	8260	2211091440C	Tetrachloroethene (PCE)	3.1	ug/L	1	0.21		
11/9/2022	8260	2211091440C	Trichloroethene (TCE)	180	ug/L	1	0.2		
11/9/2022	8260	2211091440C	Trichlorofluoromethane (CFC 11)	110	ug/L	1	0.24		
11/9/2022	8260	2211091440C	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.54	ug/L	1	0.2		J
11/9/2022	607	2211091442C	Bromacil	0.007	µg/L	0.01	0.005	90	J
11/9/2022	607	2211091442C	N-Nitrosodimethylamine	0.19	µg/L	0.01	0.005	44	
11/9/2022	607	2211091442C	N-Nitrodimethylamine	0.08	µg/L	0.01	0.005	76	

Analytical Results for Sampling Events at ST-1-541

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/16/2022	8260	2211161030A	2-Propanol	4.8	ug/L	50	3.4		J FB
11/16/2022	8260	2211161030A	Dichlorofluoromethane (CFC 21)	1.2	ug/L	1	0.2		
11/16/2022	8260	2211161030A	Trichloroethene (TCE)	150	ug/L	1	0.2		
11/16/2022	8260	2211161030A	Trichlorofluoromethane (CFC 11)	160	ug/L	1	0.24		
11/16/2022	8260	2211161030A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.6	ug/L	1	0.2		
11/16/2022	8260	2211161030A	Silane, fluorotrimethyl-	5.5	ug/L	NA	NA		TIC
11/16/2022	8260	2211161030A	Silane, methoxytrimethyl-	7.7	ug/L	NA	NA		TIC FB
11/16/2022	8260	2211161030A	Tetrachloroethene (PCE)	8.2	ug/L	1	0.21		
11/16/2022	8260	2211161030A	1,1,2-Trichloro-1,2,2-Trifluoroethane	330	ug/L	5	1		
11/16/2022	607	2211161032A	Bromacil	0.22	µg/L	0.0094	0.0047	101	
11/16/2022	607	2211161032A	N-Nitrodimethylamine	0.88	µg/L	0.0094	0.0047	77	
11/16/2022	607	2211161032A	N-Nitrosodimethylamine	1.32	µg/L	0.0094	0.0047	47	
11/16/2022	METALS	2211161033A	Iron, Total	0.08	mg/L	0.1	0.07		J RB
11/16/2022	METALS	2211161033A	Calcium, Total	120	mg/L	1	0.3		
11/16/2022	METALS	2211161033A	Vanadium, Total	0.002	mg/L	0.05	0.0007		J
11/16/2022	METALS	2211161033A	Strontium, Total	2.83	mg/L	0.1	0.002		
11/16/2022	METALS	2211161033A	Sodium, Total	38.2	mg/L	1	0.2		
11/16/2022	METALS	2211161033A	Molybdenum, Total	0.005	mg/L	0.025	0.003		J
11/16/2022	METALS	2211161033A	Chromium, Total	0.014	mg/L	0.01	0.002		
11/16/2022	METALS	2211161033A	Boron, Total	0.06	mg/L	0.2	0.02		J
11/16/2022	METALS	2211161033A	Magnesium, Total	72	mg/L	1	0.03		
11/16/2022	METALS	2211161033A	Potassium, Total	3.5	mg/L	2	0.4		
11/16/2022	METALS	2211161033A	Nickel, Total	0.019	mg/L	0.04	0.003		J
11/16/2022	METALS	2211161033A	Barium, Total	0.029	mg/L	0.02	0.003		
11/16/2022	METALS	2211161034A	Sodium, Total	38.1	mg/L	1	0.2		
11/16/2022	METALS	2211161034A	Strontium, Total	2.82	mg/L	0.1	0.002		
11/16/2022	METALS	2211161034A	Potassium, Total	3.4	mg/L	2	0.4		
11/16/2022	METALS	2211161034A	Nickel, Total	0.019	mg/L	0.04	0.003		J
11/16/2022	METALS	2211161034A	Molybdenum, Total	0.004	mg/L	0.025	0.003		J
11/16/2022	METALS	2211161034A	Magnesium, Total	71.7	mg/L	1	0.03		
11/16/2022	METALS	2211161034A	Iron, Total	0.07	mg/L	0.1	0.07		J RB
11/16/2022	METALS	2211161034A	Chromium, Total	0.013	mg/L	0.01	0.002		
11/16/2022	METALS	2211161034A	Calcium, Total	119	mg/L	1	0.3		
11/16/2022	METALS	2211161034A	Boron, Total	0.06	mg/L	0.2	0.02		J
11/16/2022	METALS	2211161034A	Arsenic, Total	0.0004	mg/L	0.001	0.0004		J
11/16/2022	METALS	2211161034A	Vanadium, Total	0.002	mg/L	0.05	0.0007		J
11/16/2022	METALS	2211161034A	Barium, Total	0.029	mg/L	0.02	0.003		

Analytical Results for Sampling Events at ST-1-630

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/16/2022	8260	2211161530A	Trichlorofluoromethane (CFC 11)	39	ug/L	1	0.24		
11/16/2022	8260	2211161530A	Trichloroethene (TCE)	49	ug/L	1	0.2		
11/16/2022	8260	2211161530A	Tetrachloroethene (PCE)	2.3	ug/L	1	0.21		
11/16/2022	8260	2211161530A	1,1,2-Trichloro-1,2,2-Trifluoroethane	52	ug/L	1	0.2		
11/16/2022	607	2211161532A	N-Nitrosodimethylamine	0.05	µg/L	0.0094	0.0047	47	
11/16/2022	607	2211161532A	N-Nitrodimethylamine	0.03	µg/L	0.0094	0.0047	77	
11/16/2022	607	2211161533A	N-Nitrodimethylamine	0.03	µg/L	0.0094	0.0047	77	
11/16/2022	607	2211161533A	N-Nitrosodimethylamine	0.05	µg/L	0.0094	0.0047	47	

Analytical Results for Sampling Events at ST-3-486

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/7/2022	8260	2212070930C	Trichlorofluoromethane (CFC 11)	18	ug/L	1	0.24		
12/7/2022	8260	2212070930C	1,1,2-Trichloro-1,2,2-Trifluoroethane	31	ug/L	1	0.2		
12/7/2022	8260	2212070930C	Trichloroethene (TCE)	4.3	ug/L	1	0.2		
12/7/2022	607	2212070932C	N-Nitrosodimethylamine	0.04	µg/L	0.0096	0.0048	47	
12/7/2022	607	2212070932C	N-Nitrodimethylamine	0.03	µg/L	0.0096	0.0048	78	

Analytical Results for Sampling Events at ST-3-586

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/15/2022	8260	2212151008C	1,1,2-Trichloro-1,2,2-Trifluoroethane	5.9	ug/L	1	0.2		
12/15/2022	8260	2212151008C	Trichlorofluoromethane (CFC 11)	6.8	ug/L	1	0.24		
12/15/2022	8260	2212151008C	Trichloroethene (TCE)	12	ug/L	1	0.2		
12/15/2022	8260	2212151008C	Tetrachloroethene (PCE)	0.42	ug/L	1	0.21		J
12/15/2022	8260	2212151009C	Trichloroethene (TCE)	11	ug/L	1	0.2		
12/15/2022	8260	2212151009C	Tetrachloroethene (PCE)	0.43	ug/L	1	0.21		J
12/15/2022	8260	2212151009C	1,1,2-Trichloro-1,2,2-Trifluoroethane	5.9	ug/L	1	0.2		
12/15/2022	8260	2212151009C	Trichlorofluoromethane (CFC 11)	6.5	ug/L	1	0.24		
12/15/2022	607	2212151011C	N-Nitrosodimethylamine	0.01	µg/L	0.01	0.005	47	

Analytical Results for Sampling Events at ST-3-666

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/8/2022	8260	2212081000C	Tetrachloroethene (PCE)	0.65	ug/L	1	0.21		J
12/8/2022	8260	2212081000C	Trichlorofluoromethane (CFC 11)	12	ug/L	1	0.24		
12/8/2022	8260	2212081000C	1,1,2-Trichloro-1,2,2-Trifluoroethane	13	ug/L	1	0.2		
12/8/2022	8260	2212081000C	Trichloroethene (TCE)	19	ug/L	1	0.2		
12/8/2022	607	2212081002C	N-Nitrodimethylamine	0.02	µg/L	0.0094	0.0047	78	
12/8/2022	607	2212081002C	N-Nitrosodimethylamine	0.05	µg/L	0.0094	0.0047	47	
12/8/2022	607	2212081003C	N-Nitrosodimethylamine	0.05	µg/L	0.0095	0.0048	47	
12/8/2022	607	2212081003C	N-Nitrodimethylamine	0.02	µg/L	0.0095	0.0048	78	

Analytical Results for Sampling Events at ST-3-735

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/8/2022	8260	2212081400C	1,1,2-Trichloro-1,2,2-Trifluoroethane	5.4	ug/L	1	0.2		
12/8/2022	8260	2212081400C	Trichlorofluoromethane (CFC 11)	8	ug/L	1	0.24		
12/8/2022	8260	2212081400C	Trichloroethene (TCE)	14	ug/L	1	0.2		
12/8/2022	607	2212081402C	Bromacil	0.008	µg/L	0.0095	0.0048	84	J
12/8/2022	607	2212081402C	N-Nitrodimethylamine	0.16	µg/L	0.0095	0.0048	78	
12/8/2022	607	2212081402C	N-Nitrosodimethylamine	0.26	µg/L	0.0095	0.0048	47	

Analytical Results for Sampling Events at ST-4-481

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/1/2022	8260_LL	2212011025A	Silane, fluorotrimethyl-	7.7	ug/L	NA	NA		TIC
12/1/2022	NDMA_LL	2212011027A	N-Nitrosodimethylamine	0.5	ng/L	0.47	0.34		

Analytical Results for Sampling Events at ST-4-589

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/16/2022	NDMA_LL	2211161447C	N-Nitrosodimethylamine	0.4	ng/L	0.48	0.35		J TB

Analytical Results for Sampling Events at ST-5-485

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/1/2022	NDMA_LL	2211011506Y	N-Nitrosodimethylamine	0.8	ng/L	0.48	0.35		RB EB

Analytical Results for Sampling Events at ST-5-655

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/1/2022	NDMA_LL	2211011056Y	N-Nitrosodimethylamine	0.85	ng/L	0.5	0.36		RB EB

Analytical Results for Sampling Events at ST-6-528

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/7/2022	8270	2212071434B	1,4-Dioxane	1.6	ug/L	0.04	0.027		

Analytical Results for Sampling Events at ST-6-568

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/7/2022	8260_LL	2212071441B	Trichloroethene (TCE)	0.26	ug/L	0.5	0.2		J
12/7/2022	NDMA_LL	2212071443B	N-Nitrosodimethylamine	0.4	ng/L	0.48	0.35		J Q
12/7/2022	NDMA_LL	2212071443B	N-Nitrodimethylamine	0.39	ng/L	0.48	0.33		J Q
12/7/2022	8270	2212071445B	1,4-Dioxane	1.9	ug/L	0.04	0.027		

Analytical Results for Sampling Events at ST-6-678

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/8/2022	8260_LL	2212081430B	Acetone	6.5	ug/L	5	5		
12/8/2022	8260_LL	2212081430B	Toluene	0.58	ug/L	0.5	0.2		T
12/8/2022	8260_LL	2212081430B	1,4-Dioxane	28	ug/L	40	13		J
12/8/2022	8260_LL	2212081430B	Toluene	0.72	ug/L	0.5	0.2		
12/8/2022	8260_LL	2212081430B	Silane, fluorotrimethyl-	5.5	ug/L	NA	NA		TIC T
12/8/2022	NDMA_LL	2212081432B	N-Nitrosodimethylamine	0.42	ng/L	0.47	0.34		J RB FB
12/8/2022	NDMA_LL	2212081535B	N-Nitrosodimethylamine	0.47	ng/L	0.49	0.36		J RB FB
12/8/2022	8270	2212081537B	1,4-Dioxane	1	ug/L	0.04	0.027		
12/8/2022	8270	2212081538B	1,4-Dioxane	1.1	ug/L	0.04	0.027		

Analytical Results for Sampling Events at ST-6-824

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/8/2022	8260_LL	2212081448B	Toluene	0.26	ug/L	0.5	0.2		J
12/8/2022	8260_LL	2212081448B	Silane, methoxytrimethyl-	9.3	ug/L	NA	NA		TIC
12/8/2022	NDMA_LL	2212081450B	N-Nitrosodimethylamine	0.81	ng/L	0.48	0.35		RB FB
12/8/2022	NDMA_LL	2212081450B	N-Nitrodimethylamine	0.34	ng/L	0.48	0.33		J

Analytical Results for Sampling Events at ST-6-970

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/8/2022	NDMA_LL	2212081512B	N-Nitrosodimethylamine	0.78	ng/L	0.47	0.34		RB FB
12/8/2022	NDMA_LL	2212081512B	N-Nitrodimethylamine	0.43	ng/L	0.47	0.33		J

Analytical Results for Sampling Events at ST-7-453

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/9/2023	8260_LL	2301091530B	Toluene	0.23	ug/L	0.5	0.2		J
1/9/2023	NDMA_LL	2301091532B	N-Nitrosodimethylamine	0.51	ng/L	0.49	0.35		FB

Analytical Results for Sampling Events at ST-7-544

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/9/2023	8260_LL	2301091548B	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.55	ug/L	0.5	0.2		
1/9/2023	8260_LL	2301091548B	Toluene	0.48	ug/L	0.5	0.2		J
1/9/2023	8260_LL	2301091548B	Trichloroethene (TCE)	1.6	ug/L	0.5	0.2		
1/9/2023	8260_LL	2301091548B	Trichlorofluoromethane (CFC 11)	1.4	ug/L	0.5	0.24		
1/9/2023	NDMA_LL	2301091550B	N-Nitrosodimethylamine	0.65	ng/L	0.48	0.35		* FB

Analytical Results for Sampling Events at ST-7-779

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/10/2023	8260_LL	2301101355B	Toluene	0.32	ug/L	0.5	0.2		J
1/10/2023	NDMA_LL	2301101357B	N-Nitrosodimethylamine	0.83	ng/L	0.48	0.35		FB

Analytical Results for Sampling Events at ST-7-970

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/10/2023	8260_LL	2301101407B	Toluene	0.58	ug/L	0.5	0.2		
1/10/2023	NDMA_LL	2301101409B	N-Nitrodimethylamine	0.42	ng/L	0.47	0.33		J
1/10/2023	NDMA_LL	2301101409B	N-Nitrosodimethylamine	0.5	ng/L	0.47	0.34		FB

Analytical Results for Sampling Events at WW-1-452

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/5/2022	NDMA_LL	2212051532C	N-Nitrosodimethylamine	0.85	ng/L	0.47	0.34		FB

Analytical Results for Sampling Events at WW-2-664

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/6/2022	8260_LL	2212061535C	Silane, methoxytrimethyl-	9.5	ug/L	NA	NA		TIC
12/6/2022	8260_LL	2212061535C	Unknown	11	ug/L	NA	NA		TIC

Analytical Results for Sampling Events at WW-3-469

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/13/2022	8260_LL	2212131320Y	Silane, fluorotrimethyl-	7.1	ug/L	NA	NA		TIC
12/13/2022	NDMA_LL	2212131321Y	N-Nitrosodimethylamine	0.84	ng/L	0.48	0.35		EB

Analytical Results for Sampling Events at WW-3-569

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/12/2022	NDMA_LL	2212121316Y	N-Nitrosodimethylamine	1.09	ng/L	0.48	0.35		RB EB
12/12/2022	NDMA_LL	2212121317Y	N-Nitrosodimethylamine	0.77	ng/L	0.48	0.35		RB EB

Analytical Results for Sampling Events at WW-4-419

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/8/2022	8260_LL	2211081433B	Toluene	0.69	ug/L	0.5	0.2		
11/8/2022	NDMA_LL	2211081435B	N-Nitrodimethylamine	1.18	ng/L	0.47	0.33		
11/8/2022	NDMA_LL	2211081435B	N-Nitrosodimethylamine	2.21	ng/L	0.47	0.34		RB FB
11/8/2022	8270	2211081520B	Unknown	10	ug/L	NA	NA		TIC
11/8/2022	8270	2211081520B	Benzenesulfonamide, N-butyl-	240	ug/L	NA	NA		TIC
11/8/2022	8270	2211081520B	1,3,5-Cycloheptatriene	14	ug/L	NA	NA		TIC
11/8/2022	8270	2211081520B	Unknown	11	ug/L	NA	NA		TIC
11/8/2022	8270	2211081520B	Unknown	7.1	ug/L	NA	NA		TIC
11/8/2022	8270	2211081520B	Unknown	7.7	ug/L	NA	NA		TIC
11/8/2022	8270	2211081520B	Benzene, chloro-	4.1	ug/L	NA	NA		TIC

Analytical Results for Sampling Events at WW-4-589

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/8/2022	8260_LL	2211081453B	Toluene	1.4	ug/L	0.5	0.2		
11/8/2022	NDMA_LL	2211081455B	N-Nitrosodimethylamine	0.9	ng/L	0.47	0.34		RB
11/8/2022	NDMA_LL	2211081455B	N-Nitrodimethylamine	0.74	ng/L	0.47	0.33		
11/8/2022	8270	2211081548B	Benzene, chloro-	5.7	ug/L	NA	NA		TIC
11/8/2022	8270	2211081548B	Unknown	8.9	ug/L	NA	NA		TIC
11/8/2022	8270	2211081548B	Toluene	15	ug/L	NA	NA		TIC
11/8/2022	8270	2211081548B	Unknown	4.4	ug/L	NA	NA		TIC
11/8/2022	8270	2211081548B	Unknown	5.7	ug/L	NA	NA		TIC
11/8/2022	8270	2211081548B	Benzenesulfonamide, N-butyl-	110	ug/L	NA	NA		TIC
11/8/2022	8270	2211081548B	Unknown	8	ug/L	NA	NA		TIC

Analytical Results for Sampling Events at WW-4-848

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/9/2022	8260_LL	2211091418B	Toluene	0.61	ug/L	0.5	0.2		
11/9/2022	8260_LL	2211091418B	2-Propanol	5.8	ug/L	40	3.4		J
11/9/2022	NDMA_LL	2211091420B	N-Nitrosodimethylamine	0.6	ng/L	0.48	0.35		FB
11/9/2022	NDMA_LL	2211091420B	N-Nitrodimethylamine	0.36	ng/L	0.48	0.34		J
11/9/2022	8270	2211091518B	Benzenesulfonamide, N-butyl-	21	ug/L	NA	NA		TIC *
11/9/2022	8270	2211091518B	Benzenesulfonamide, N-butyl-	31	ug/L	NA	NA		TIC T
11/9/2022	8270	2211091518B	Unknown	13	ug/L	NA	NA		TIC RB T
11/9/2022	8270	2211091518B	Unknown	5	ug/L	NA	NA		TIC T

Analytical Results for Sampling Events at WW-4-948

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/9/2022	8260_LL	2211091452B	Toluene	0.54	ug/L	0.5	0.2		
11/9/2022	NDMA_LL	2211091540B	N-Nitrodimethylamine	0.4	ng/L	0.49	0.34		J
11/9/2022	NDMA_LL	2211091540B	N-Nitrosodimethylamine	0.71	ng/L	0.49	0.35		
11/9/2022	8270	2211091600B	Unknown	39	ug/L	NA	NA		TIC T
11/9/2022	8270	2211091600B	Unknown	12	ug/L	NA	NA		TIC T
11/9/2022	8270	2211091600B	Unknown	4	ug/L	NA	NA		TIC T
11/9/2022	8270	2211091600B	Benzenesulfonamide, N-butyl-	29	ug/L	NA	NA		TIC *

Analytical Results for Sampling Events at WW-5-459

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/18/2023	8260_LL	2301181440B	Toluene	1.5	ug/L	0.5	0.2		
1/18/2023	NDMA_LL	2301181520B	N-Nitrosodimethylamine	1.22	ng/L	0.47	0.34		

Analytical Results for Sampling Events at WW-5-579

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/18/2023	8260_LL	2301181500B	Toluene	2.9	ug/L	0.5	0.2		
1/18/2023	NDMA_LL	2301181535B	N-Nitrodimethylamine	0.41	ng/L	0.48	0.33		J
1/18/2023	NDMA_LL	2301181535B	N-Nitrosodimethylamine	1.49	ng/L	0.48	0.35		

Analytical Results for Sampling Events at WW-5-809

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/19/2023	8260_LL	2301191415B	Toluene	7.7	ug/L	0.5	0.2		
1/19/2023	NDMA_LL	2301191417B	N-Nitrosodimethylamine	2.1	ng/L	0.47	0.34		QD
1/19/2023	NDMA_LL	2301191418B	N-Nitrosodimethylamine	1.13	ng/L	0.47	0.34		QD

Analytical Results for Sampling Events at WW-5-909

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/19/2023	8260_LL	2301191435B	Toluene	1	ug/L	0.5	0.2		
1/19/2023	NDMA_LL	2301191437B	N-Nitrodimethylamine	0.68	ng/L	0.47	0.33		
1/19/2023	NDMA_LL	2301191437B	N-Nitrosodimethylamine	4.41	ng/L	0.47	0.34		

Appendix A.3
PFTS Indicator Parameters

Summary of Water Quality Parameters
for the Plume Front Sampling Events in this Reporting Period

Well ID B650-EFF-1 Event Date 11/10/2022

Sample	Parameter	Result	Units
2211100759	Conductivity	1234	µS/cm
2211100759	pH	8.52	NA
2211100759	Temperature	24.2	ºC
2211100759	Turbidity	0.37	NTU

Well ID B650-EFF-1 Event Date 12/9/2022

Sample	Parameter	Result	Units
2212090529	Conductivity	1196	µS/cm
2212090529	pH	7.89	NA
2212090529	Temperature	25.5	ºC
2212090529	Turbidity	0.38	NTU

Well ID B650-EFF-1 Event Date 1/19/2023

Sample	Parameter	Result	Units
2301190746	Conductivity	1078	µS/cm
2301190746	pH	8.30	NA
2301190746	Temperature	20.6	ºC
2301190746	Turbidity	0.41	NTU

Well ID B650-INF-1 Event Date 11/10/2022

Sample	Parameter	Result	Units
2211100829	Conductivity	1932	µS/cm
2211100829	pH	7.72	NA
2211100829	Temperature	23.4	ºC
2211100829	Turbidity	1.64	NTU

Well ID B650-INF-1 Event Date 12/9/2022

Sample	Parameter	Result	Units
2212090552	Conductivity	1209	µS/cm
2212090552	pH	7.28	NA
2212090552	Temperature	23.7	ºC
2212090552	Turbidity	1.00	NTU

Well ID B650-INF-1 Event Date 1/19/2023

Sample	Parameter	Result	Units
2301190758	Conductivity	1158	µS/cm
2301190758	pH	7.34	NA
2301190758	Temperature	20.7	ºC
2301190758	Turbidity	1.14	NTU

Well ID PFE-4A Event Date 1/26/2023

Sample	Parameter	Result	Units
2301260918	Conductivity	1106	µS/cm
2301260918	pH	7.63	NA
2301260918	Temperature	17.2	ºC
2301260918	Turbidity	1.89	NTU

Well ID PFE-5 Event Date 1/19/2023

Sample	Parameter	Result	Units
2301191004	Conductivity	979	µS/cm
2301191004	pH	7.97	NA
2301191004	Temperature	22.4	ºC
2301191004	Turbidity	0.42	NTU

Well ID PFE-7 Event Date 1/26/2023

Sample	Parameter	Result	Units
2301260847	Conductivity	1080	µS/cm
2301260847	pH	7.28	NA
2301260847	Temperature	20.7	ºC
2301260847	Turbidity	0.48	NTU

Appendix A.4
PFTS Analytical Data

Detections for Plume Front Treatment System Sampling Events in this Reporting Period

Analytical Results for Sampling Events at B650-EFF-1

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/9/2022	NDMA_LL	2212090538	N-Nitrosodimethylamine	0.4	ng/L	0.48	0.35		J RB FB
1/19/2023	NDMA_LL	2301190750	N-Nitrosodimethylamine	0.44	ng/L	0.47	0.34		J FB

Analytical Results for Sampling Events at B650-INF-1

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/10/2022	8260	2211100830	1,1,2-Trichloro-1,2,2-Trifluoroethane	2.2	ug/L	1	0.2		
11/10/2022	8260	2211100830	Trichloroethene (TCE)	3.3	ug/L	1	0.2		
11/10/2022	8260	2211100830	Trichlorofluoromethane (CFC 11)	1.9	ug/L	1	0.24		
11/10/2022	8260	2211100831	Trichlorofluoromethane (CFC 11)	2	ug/L	1	0.24		
11/10/2022	8260	2211100831	Trichloroethene (TCE)	3.4	ug/L	1	0.2		
11/10/2022	8260	2211100831	1,1,2-Trichloro-1,2,2-Trifluoroethane	2.3	ug/L	1	0.2		
11/10/2022	607	2211100833	N-Nitrodimethylamine	0.005	µg/L	0.01	0.005	77	J
11/10/2022	607	2211100833	N-Nitrosodimethylamine	0.007	µg/L	0.01	0.005	45	J
12/9/2022	8260	2212090557	Trichloroethene (TCE)	3.5	ug/L	1	0.2		
12/9/2022	8260	2212090557	Trichlorofluoromethane (CFC 11)	2.2	ug/L	1	0.24		
12/9/2022	8260	2212090557	1,1,2-Trichloro-1,2,2-Trifluoroethane	3.3	ug/L	1	0.2		
12/9/2022	607	2212090559	N-Nitrosodimethylamine	0.008	µg/L	0.0099	0.005	47	J
1/19/2023	8260	2301190800	Trichlorofluoromethane (CFC 11)	1.8	ug/L	1	0.24		
1/19/2023	8260	2301190800	1,1,2-Trichloro-1,2,2-Trifluoroethane	2.8	ug/L	1	0.2		
1/19/2023	8260	2301190800	Trichloroethene (TCE)	3.2	ug/L	1	0.2		
1/19/2023	8260	2301190801	1,1,2-Trichloro-1,2,2-Trifluoroethane	2.6	ug/L	1	0.2		
1/19/2023	8260	2301190801	Trichloroethene (TCE)	2.7	ug/L	1	0.2		
1/19/2023	8260	2301190801	Trichlorofluoromethane (CFC 11)	1.8	ug/L	1	0.24		
1/19/2023	607	2301190803	N-Nitrosodimethylamine	0.009	µg/L	0.0097	0.0049	52	J
1/19/2023	607	2301190803	N-Nitrodimethylamine	0.006	µg/L	0.0097	0.0049	64	J

Analytical Results for Sampling Events at PFE-4A

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/26/2023	8260	2301260925	Trichlorofluoromethane (CFC 11)	1.3	ug/L	1	0.24		
1/26/2023	8260	2301260925	1,1,2-Trichloro-1,2,2-Trifluoroethane	3	ug/L	1	0.2		
1/26/2023	8260	2301260925	Unknown	5.7	ug/L	NA	NA		TIC RB FB
1/26/2023	8260	2301260925	Trichloroethene (TCE)	1.7	ug/L	1	0.2		
1/26/2023	607	2301260927	N-Nitrodimethylamine	0.006	µg/L	0.0096	0.0048	66	J
1/26/2023	607	2301260927	Bromacil	0.01	µg/L	0.0096	0.0048	103	
1/26/2023	607	2301260927	N-Nitrosodimethylamine	0.008	µg/L	0.0096	0.0048	56	J
1/26/2023	NDMA_LL	2301260928	N-Nitrodimethylamine	13.65	ng/L	0.48	0.34		
1/26/2023	NDMA_LL	2301260928	N-Nitrosodimethylamine	13.89	ng/L	0.48	0.35		
1/26/2023	NDMA_LL	2301260929	N-Nitrodimethylamine	16.85	ng/L	0.47	0.33		
1/26/2023	NDMA_LL	2301260929	N-Nitrosodimethylamine	13.05	ng/L	0.47	0.34		

Analytical Results for Sampling Events at PFE-5

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/19/2023	8260	2301191010	Dichlorofluoromethane (CFC 21)	0.34	ug/L	1	0.2		J
1/19/2023	8260	2301191010	Tetrachloroethene (PCE)	2.4	ug/L	1	0.21		
1/19/2023	8260	2301191010	Trichloroethene (TCE)	60	ug/L	1	0.2		
1/19/2023	8260	2301191010	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.31	ug/L	1	0.2		J
1/19/2023	8260	2301191010	Trichlorofluoromethane (CFC 11)	21	ug/L	1	0.24		
1/19/2023	8260	2301191010	1,1,2-Trichloro-1,2,2-Trifluoroethane	16	ug/L	1	0.2		
1/19/2023	607	2301191012	N-Nitrosodimethylamine	0.39	µg/L	0.0095	0.0048	52	
1/19/2023	607	2301191012	N-Nitrodimethylamine	0.2	µg/L	0.0095	0.0048	64	
1/19/2023	607	2301191012	Bromacil	0.05	µg/L	0.0095	0.0048	102	

Analytical Results for Sampling Events at PFE-7

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/26/2023	8260	2301260852	1,1,2-Trichloro-1,2,2-Trifluoroethane	6.2	ug/L	1	0.2		
1/26/2023	8260	2301260852	Sulfur Dioxide	6.5	ug/L	NA	NA		TIC RB
1/26/2023	8260	2301260852	Trichlorofluoromethane (CFC 11)	5.8	ug/L	1	0.24		
1/26/2023	8260	2301260852	Unknown	5.9	ug/L	NA	NA		TIC FB
1/26/2023	8260	2301260852	Trichloroethene (TCE)	5.5	ug/L	1	0.2		
1/26/2023	8260	2301260853	Unknown	6.3	ug/L	NA	NA		TIC FB
1/26/2023	8260	2301260853	Trichlorofluoromethane (CFC 11)	5.6	ug/L	1	0.24		
1/26/2023	8260	2301260853	Trichloroethene (TCE)	5.3	ug/L	1	0.2		
1/26/2023	8260	2301260853	1,1,2-Trichloro-1,2,2-Trifluoroethane	5.8	ug/L	1	0.2		
1/26/2023	8260	2301260853	Tetrachloroethene (PCE)	0.21	ug/L	1	0.21		J
1/26/2023	NDMA_LL	2301260856	N-Nitrodimethylamine	0.71	ng/L	0.49	0.34		
1/26/2023	NDMA_LL	2301260856	N-Nitrosodimethylamine	1.75	ng/L	0.49	0.36		

Appendix A.5
MPITS Indicator Parameters

Summary of Water Quality Parameters
for the Mid-plume Sampling Events in this Reporting Period

Well ID B655-EFF-2 Event Date 11/10/2022

Sample	Parameter	Result	Units
2211100859	Conductivity	1258	µS/cm
2211100859	pH	8.34	NA
2211100859	Temperature	24.4	ºC
2211100859	Turbidity	0.54	NTU

Well ID B655-EFF-2 Event Date 12/8/2022

Sample	Parameter	Result	Units
2212081050	Conductivity	1255	µS/cm
2212081050	pH	7.31	NA
2212081050	Temperature	24.1	ºC
2212081050	Turbidity	2.45	NTU

Well ID B655-EFF-2 Event Date 1/19/2023

Sample	Parameter	Result	Units
2301190846	Conductivity	1269	µS/cm
2301190846	pH	8.75	NA
2301190846	Temperature	17.8	ºC
2301190846	Turbidity	1.69	NTU

Well ID B655-INF-2 Event Date 11/10/2022

Sample	Parameter	Result	Units
2211100915	Conductivity	1244	µS/cm
2211100915	pH	7.38	NA
2211100915	Temperature	24.0	ºC
2211100915	Turbidity	2.68	NTU

Well ID B655-INF-2 Event Date 12/8/2022

Sample	Parameter	Result	Units
2212081020	Conductivity	1590	µS/cm
2212081020	pH	8.21	NA
2212081020	Temperature	25.1	ºC
2212081020	Turbidity	0.51	NTU

Well ID B655-INF-2 Event Date 1/19/2023

Sample	Parameter	Result	Units
2301190908	Conductivity	1255	µS/cm
2301190908	pH	7.94	NA
2301190908	Temperature	19.3	ºC
2301190908	Turbidity	1.07	NTU

Well ID	MPE-1	Event Date	11/14/2022
Sample	**Parameter**	**Result**	**Units**
2211141324	Conductivity	1411	µS/cm
2211141324	pH	8.09	NA
2211141324	Temperature	21.7	ºC
2211141324	Turbidity	0.72	NTU

Well ID	MPE-10	Event Date	11/15/2022
Sample	**Parameter**	**Result**	**Units**
2211151256	Conductivity	1341	µS/cm
2211151256	pH	6.74	NA
2211151256	Temperature	19.2	ºC
2211151256	Turbidity	1.58	NTU

Well ID	MPE-11	Event Date	11/15/2022
Sample	**Parameter**	**Result**	**Units**
2211151237	Conductivity	1026	µS/cm
2211151237	pH	7.14	NA
2211151237	Temperature	23.7	ºC
2211151237	Turbidity	1.21	NTU

Well ID	MPE-9	Event Date	11/14/2022
Sample	**Parameter**	**Result**	**Units**
2211141343	Conductivity	1571	µS/cm
2211141343	pH	7.01	NA
2211141343	Temperature	20.5	ºC
2211141343	Turbidity	0.79	NTU

Appendix A.6
MPITS Analytical Data

Detections for MPITS Sampling Events in this Reporting Period

Analytical Results for Sampling Events at B655-EFF-2

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/8/2022	NDMA_LL	2212081058	N-Nitrosodimethylamine	0.56	ng/L	0.49	0.36		RB
1/19/2023	607	2301190854	Bromacil	0.02	µg/L	0.0096	0.0048	102	
1/19/2023	METALS	2301190857	Arsenic, Total	0.0006	mg/L	0.001	0.0004		J
1/19/2023	METALS	2301190857	Barium, Total	0.028	mg/L	0.02	0.003		
1/19/2023	METALS	2301190857	Boron, Total	0.12	mg/L	0.2	0.02		J
1/19/2023	METALS	2301190857	Calcium, Total	131	mg/L	1	0.3		
1/19/2023	METALS	2301190857	Magnesium, Total	67.1	mg/L	1	0.03		
1/19/2023	METALS	2301190857	Molybdenum, Total	0.008	mg/L	0.025	0.003		J
1/19/2023	METALS	2301190857	Potassium, Total	4.5	mg/L	2	0.4		
1/19/2023	METALS	2301190857	Silver, Total	0.0006	mg/L	0.01	0.0006		J RB
1/19/2023	METALS	2301190857	Sodium, Total	52.7	mg/L	1	0.2		
1/19/2023	METALS	2301190857	Strontium, Total	2.73	mg/L	0.1	0.002		
1/19/2023	METALS	2301190857	Vanadium, Total	0.001	mg/L	0.05	0.0007		J
1/19/2023	ANIONS	2301190858	Fluoride, undistilled	0.86	mg/L	0.1	0.01		
1/19/2023	ANIONS	2301190858	Sulfate	344	mg/L	8	1.6		
1/19/2023	ANIONS	2301190858	Chloride	65.6	mg/L	2	0.5		
1/19/2023	ANIONS	2301190858	Alkalinity, Total as CaCO3	256	mg/L	2	1.8		
1/19/2023	SM2540C	2301190859	Total Dissolved Solids (TDS)	932	mg/L	10	9		
1/19/2023	6850	2301190900	Perchlorate	0.282	ug/L	0.1	0.025		
1/19/2023	353.2	2301190901	Nitrate+Nitrite as Nitrogen	4.08	mg/L	0.25	0.008		

Analytical Results for Sampling Events at B655-INF-2

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/10/2022	8260	2211100916	Trichloroethene (TCE)	51	ug/L	1	0.2		
11/10/2022	8260	2211100916	1,1,2-Trichloro-1,2,2-Trifluoroethane	150	ug/L	1	0.2		
11/10/2022	8260	2211100916	Trichlorofluoromethane (CFC 11)	79	ug/L	1	0.24		
11/10/2022	8260	2211100916	Tetrachloroethene (PCE)	2.4	ug/L	1	0.21		
11/10/2022	8260	2211100916	Dichlorofluoromethane (CFC 21)	1.2	ug/L	1	0.2		
11/10/2022	8260	2211100916	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.1	ug/L	1	0.2		
11/10/2022	607	2211100918	Bromacil	0.4	µg/L	0.0094	0.0047	99	
11/10/2022	607	2211100918	N-Nitrosodimethylamine	2.16	µg/L	0.0094	0.0047	45	
11/10/2022	607	2211100918	N-Nitrodimethylamine	1.07	µg/L	0.0094	0.0047	77	
12/8/2022	8260	2212081025	Trichloroethene (TCE)	58	ug/L	1	0.2		
12/8/2022	8260	2212081025	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.6	ug/L	1	0.2		
12/8/2022	8260	2212081025	Trichlorofluoromethane (CFC 11)	110	ug/L	1	0.24		
12/8/2022	8260	2212081025	Dichlorofluoromethane (CFC 21)	1.1	ug/L	1	0.2		
12/8/2022	8260	2212081025	1,1,2-Trichloro-1,2,2-Trifluoroethane	190	ug/L	2.5	0.5		T
12/8/2022	8260	2212081025	Tetrachloroethene (PCE)	3	ug/L	1	0.21		
12/8/2022	8260	2212081026	1,1,2-Trichloro-1,2,2-Trifluoroethane	190	ug/L	2.5	0.5		T
12/8/2022	8260	2212081026	Dichlorofluoromethane (CFC 21)	1.2	ug/L	1	0.2		
12/8/2022	8260	2212081026	Tetrachloroethene (PCE)	2.9	ug/L	1	0.21		
12/8/2022	8260	2212081026	Trichloroethene (TCE)	61	ug/L	1	0.2		
12/8/2022	8260	2212081026	Trichlorofluoromethane (CFC 11)	120	ug/L	1	0.24		
12/8/2022	8260	2212081026	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.5	ug/L	1	0.2		
12/8/2022	607	2212081028	N-Nitrosodimethylamine	1.89	µg/L	0.0099	0.005	47	
12/8/2022	607	2212081028	N-Nitrodimethylamine	0.97	µg/L	0.0099	0.005	78	
12/8/2022	607	2212081028	Bromacil	0.35	µg/L	0.0099	0.005	84	
12/8/2022	607	2212081029	N-Nitrosodimethylamine	1.95	µg/L	0.0098	0.0049	47	
12/8/2022	607	2212081029	N-Nitrodimethylamine	0.99	µg/L	0.0098	0.0049	78	
12/8/2022	607	2212081029	Bromacil	0.34	µg/L	0.0098	0.0049	84	
1/19/2023	8260	2301190914	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	2.4	ug/L	1	0.2		
1/19/2023	8260	2301190914	1,1,2-Trichloro-1,2,2-Trifluoroethane	360	ug/L	2.5	0.5		
1/19/2023	8260	2301190914	Dichlorodifluoromethane (CFC 12)	0.32	ug/L	1	0.21		J
1/19/2023	8260	2301190914	Dichlorofluoromethane (CFC 21)	1.7	ug/L	1	0.2		
1/19/2023	8260	2301190914	Tetrachloroethene (PCE)	4	ug/L	1	0.21		
1/19/2023	8260	2301190914	Trichloroethene (TCE)	79	ug/L	1	0.2		
1/19/2023	8260	2301190914	Trichlorofluoromethane (CFC 11)	160	ug/L	1	0.24		
1/19/2023	8260	2301190914	cis-1,2-Dichloroethene	0.24	ug/L	1	0.23		J

Analytical Results for Sampling Events at B655-INF-2

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/19/2023	607	2301190916	N-Nitrodimethylamine	1.53	µg/L	0.0094	0.0047	64	
1/19/2023	607	2301190916	N-Nitrosodimethylamine	3.02	µg/L	0.0094	0.0047	52	
1/19/2023	607	2301190916	Bromacil	0.6	µg/L	0.0094	0.0047	102	
1/19/2023	METALS	2301190917	Barium, Total	0.029	mg/L	0.02	0.003		
1/19/2023	METALS	2301190917	Boron, Total	0.13	mg/L	0.2	0.02		J
1/19/2023	METALS	2301190917	Calcium, Total	132	mg/L	1	0.3		
1/19/2023	METALS	2301190917	Magnesium, Total	67.3	mg/L	1	0.03		
1/19/2023	METALS	2301190917	Molybdenum, Total	0.008	mg/L	0.025	0.003		J
1/19/2023	METALS	2301190917	Potassium, Total	4.6	mg/L	2	0.4		
1/19/2023	METALS	2301190917	Silver, Total	0.001	mg/L	0.01	0.0006		J RB
1/19/2023	METALS	2301190917	Sodium, Total	53.5	mg/L	1	0.2		
1/19/2023	METALS	2301190917	Strontium, Total	2.79	mg/L	0.1	0.002		
1/19/2023	METALS	2301190917	Vanadium, Total	0.002	mg/L	0.05	0.0007		J
1/19/2023	METALS	2301190917	Zinc, Total	0.003	mg/L	0.02	0.003		J
1/19/2023	METALS	2301190917	Arsenic, Total	0.0006	mg/L	0.001	0.0004		J
1/19/2023	ANIONS	2301190918	Fluoride, undistilled	1	mg/L	1	0.1		J *
1/19/2023	ANIONS	2301190918	Sulfate	339	mg/L	8	1.6		
1/19/2023	ANIONS	2301190918	Chloride	64.7	mg/L	2	0.5		
1/19/2023	ANIONS	2301190918	Alkalinity, Total as CaCO3	252	mg/L	2	1.8		
1/19/2023	SM2540C	2301190919	Total Dissolved Solids (TDS)	918	mg/L	10	9		
1/19/2023	6850	2301190920	Perchlorate	0.295	ug/L	0.1	0.025		
1/19/2023	353.2	2301190921	Nitrate+Nitrite as Nitrogen	4.06	mg/L	0.25	0.008		

Analytical Results for Sampling Events at MPE-1

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/14/2022	8260	2211141331	Trichloroethene (TCE)	76	ug/L	1	0.2		
11/14/2022	8260	2211141331	1,1,2-Trichloro-1,2,2-Trifluoroethane	260	ug/L	2.5	0.5		
11/14/2022	8260	2211141331	Trichlorofluoromethane (CFC 11)	140	ug/L	1	0.24		
11/14/2022	8260	2211141331	Tetrachloroethene (PCE)	3.8	ug/L	1	0.21		
11/14/2022	8260	2211141331	Dichlorofluoromethane (CFC 21)	1.4	ug/L	1	0.2		
11/14/2022	8260	2211141331	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.6	ug/L	1	0.2		
11/14/2022	607	2211141333	N-Nitrosodimethylamine	2.79	µg/L	0.0096	0.0048	45	
11/14/2022	607	2211141333	N-Nitrodimethylamine	1.45	µg/L	0.0096	0.0048	77	
11/14/2022	607	2211141333	Bromacil	0.6	µg/L	0.0096	0.0048	99	

Analytical Results for Sampling Events at MPE-10

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/15/2022	8260	2211151301	1,1,2-Trichloro-1,2,2-Trifluoroethane	150	ug/L	1	0.2		
11/15/2022	8260	2211151301	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.7	ug/L	1	0.2		
11/15/2022	8260	2211151301	Trichlorofluoromethane (CFC 11)	120	ug/L	1	0.24		
11/15/2022	8260	2211151301	Dichlorofluoromethane (CFC 21)	1.8	ug/L	1	0.2		
11/15/2022	8260	2211151301	Tetrachloroethene (PCE)	3.5	ug/L	1	0.21		
11/15/2022	8260	2211151301	Trichloroethene (TCE)	71	ug/L	1	0.2		
11/15/2022	607	2211151303	N-Nitrosodimethylamine	3.02	µg/L	0.01	0.005	45	
11/15/2022	607	2211151303	N-Nitrodimethylamine	1.41	µg/L	0.01	0.005	77	
11/15/2022	607	2211151303	Bromacil	0.33	µg/L	0.01	0.005	99	

Analytical Results for Sampling Events at MPE-11

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/15/2022	8260	2211151243	Dichlorofluoromethane (CFC 21)	0.64	ug/L	1	0.2		J
11/15/2022	8260	2211151243	Tetrachloroethene (PCE)	0.26	ug/L	1	0.21		J
11/15/2022	8260	2211151243	Trichloroethene (TCE)	5.1	ug/L	1	0.2		
11/15/2022	8260	2211151243	Trichlorofluoromethane (CFC 11)	7.8	ug/L	1	0.24		
11/15/2022	8260	2211151243	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.49	ug/L	1	0.2		J
11/15/2022	8260	2211151243	1,1,2-Trichloro-1,2,2-Trifluoroethane	11	ug/L	1	0.2		
11/15/2022	607	2211151245	N-Nitrosodimethylamine	0.13	µg/L	0.01	0.005	45	
11/15/2022	607	2211151245	N-Nitrodimethylamine	0.06	µg/L	0.01	0.005	77	
11/15/2022	607	2211151245	Bromacil	0.01	µg/L	0.01	0.005	99	

Analytical Results for Sampling Events at MPE-9

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/14/2022	8260	2211141348	Dichlorofluoromethane (CFC 21)	1.6	ug/L	1	0.2		
11/14/2022	8260	2211141348	Tetrachloroethene (PCE)	4.8	ug/L	1	0.21		
11/14/2022	8260	2211141348	Trichloroethene (TCE)	99	ug/L	1	0.2		
11/14/2022	8260	2211141348	Trichlorofluoromethane (CFC 11)	130	ug/L	1	0.24		
11/14/2022	8260	2211141348	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.7	ug/L	1	0.2		
11/14/2022	8260	2211141348	1,1,2-Trichloro-1,2,2-Trifluoroethane	130	ug/L	1	0.2		
11/14/2022	607	2211141350	N-Nitrosodimethylamine	3.47	µg/L	0.0094	0.0047	45	
11/14/2022	607	2211141350	N-Nitrodimethylamine	1.7	µg/L	0.0094	0.0047	77	
11/14/2022	607	2211141350	Bromacil	0.46	µg/L	0.0094	0.0047	99	
11/14/2022	607	2211141351	Bromacil	0.46	µg/L	0.0095	0.0048	99	
11/14/2022	607	2211141351	N-Nitrosodimethylamine	3.54	µg/L	0.0095	0.0048	45	
11/14/2022	607	2211141351	N-Nitrodimethylamine	1.74	µg/L	0.0095	0.0048	77	

Appendix B
Sampling Event Logbook Entries and Internal CoC Forms

PROJECT 100-D-176 ENV-0053

Matt Garcia & Marcus Avalos present. Weather is clear & cool. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a teflon discharge hose. Water quality Parameters monitored using an In-situ Aqua Troll 500. Carboy G1

'initial - 184.50 ft.
final - 185 ft.

Calibrations
Do sensor = 'in 100% Sat. Air
PH sensor = 'insitu 4,7,10 buffers
Conductivity = 'insitu 1413 us/cm std.
Turbidity = 'insitu turb std.

IDW .7 gal

Parameters (Time)	Temp	Cond	Do	PH	ORP	Turb	DTW
2211140915A	18.78	2571	.35	7.47	105	34.7	185 ft
—— 0920A	19.33	2570	.41	7.48	106	34.1	"
—— 0925A	19.25	2571	.39	7.48	105	33.7	"

Samples

Sample	Analysis	Preserv.	Container	Lot	Lab
2211140930A	VOA 8260	Ice/HCL	(3) 40ML vials	2649-1	ALS
—— 0931A	" (FB)	"	"	"	"
—— 0932A	" (Dup)	"	"	"	"
—— 0933A	607	Ice	(1) 1L Amber	0100301H	SRL
—— 0934A	Gro 8015	Ice/HCL	(3) 40ML vials	2649-1	ALS
—— 0935A	SVOA 8270D	"	(2) 1L Amber	0100301H	"
—— 0936A	T. Metals	Ice/HNO3	(2) 125ML Poly	220421	"
—— 0937A	TDS SM2540C	Ice	(1) 250ML Poly	090219-2AAO	"
—— 0938A	Dro 8015D	"	(1) 1L Amber	090522 1BK	"
—— 0939A	TKN	Ice/H2SO4	(1) 250ML Poly	090219-2AAO	"
—— 0940A	NO2 NO3	"	"	"	"
—— 0941A	Chloride	Ice	"	"	"

Trip Blank

Sample	Analysis	Preserv.	Container	Lot	Lab
2211140730A	VOA 8260	Ice/HCL	(3) 40ML vials		ALS

Continued from page

Read and Understood By

Matt G [signature] Signed 11/14/22 Date

[signature] Signed 11-16-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/14/22 Page 1 of 1

Sample Location: 100-D-176

Pertinent Notes (if any)

Charge Number: XGMO

Sample Number	# of Containers	Sample Matrix*	VOA 8260	6007	GRO 8015	SVOA 8270D			
221114 0730A (TB)	3	A	X						
0930A	3		X						
0931A (FB)	3		X						
0932A (Dup)	3		X						
0933A	1			X					
0934A	3				X				
0935A	2					X			

Sample Location:

Pertinent Notes (if any)

Charge Number: XGMD

Sample Number	# of Containers	Sample Matrix*	T. Metals	TDS	Dro 8015D	TKN	NO_2, NO_3	Chloride	
221114 0936A	2	A	X						
0937A	1			X					
0938A	1				X				
0939A	1					X			
0940A	1						X		
0941A	1							X	

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
Matt [signature]	11/14/22 1100hrs	[signature]	11-15-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

PROJECT 200-I-185 WJI ENV-0020 11/10/22

Notebook No. D64#130(y)

Continued from page N/A

Bob Tufts & Craig Del Ferraro present. Weather is clear, cool, & breezy. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe #4955. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G1

Sample	Analysis	Preservative	Container	Lot	Lab
221110 1345y	VOA by 8260	ice / HCL	(3) 40ml vials	2649-1	ALS

Initial Parameters	Final	Meter ID
Time - 221110 1450y	Time - 221115 1435y	pH/cond - 92
PH - 8.21	PH - 8.12	Turb - 7
Temp - 20.2°c	Temp - 19.8°C	" std - 49.6
Cond - 2.07 ms/cm	Cond - 2.12 ms/cm	" rdg - 48.9
Turb - 0.72 NTU's	Turb - 0.64 NTU's	" lot - 210966
pH pre - 7.10/10.12 (18.4°c)	pH pre - 7.12/10.14 (16.0°c)	" Exp - 11/30/22
pH post - 7.08/10.13	pH post - 7.11/10.15	
DTW - 216.58 Ft.	DTW - 216.62 ft.	Buffers Lot Exp
Atmos - 12.36 psia	Atmos - 12.49 psia	7 1202A44 8/23
	IDW - φ	10 4107E30 1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
221110 1540y	VOA by 8260	ice / HCL	(3) 40ml vials	2649-1	ALS
221114 0935y	607/Bromacil	ice	(1) 1L Amber	010030 1H	SRI
——— 1440y	Total Metals	ice / HNO_3	(2) 125ml poly's	22-04-21	ALS

DP-392 Samples

Sample	Analysis	Preservative	Container	Lot	Lab
221115 0945y	TDS by SM2540C	ice	(1) 250ml poly	111620-2AA0	ALS
——— 0946y	TKN	ice / H_2SO_4	"	22-01-14	"
——— 1050y	NO_2/NO_3 by 353.2	"	"	"	"
——— 1340y	Chloride	ice	"	111620-2AA0	"

Runs	1)	2)	3)	4)	5)	6)	
	12.41	12.45	12.50	12.54	12.53	12.51	13.35
	13.52	13.48	13.47	13.44	13.41	13.31	12.49
	13.48	13.44	13.48	13.35	13.34		
	12.45	12.46	12.46	12.54	12.50		

Continued ~~from page~~ on 6

Read and Understood By

Craig Del Ferraro 11/15/22 — Signed, Date

[signature] 11-16-22 — Signed, Date

ROJECT 200 - I - 185 WJI ENV-0020 11/14/22

Notebook No. D64 #130 (y)

Continued from page 5

Runs	7) 12.51	8) 12.51	9) 12.53	10) 12.56	11) 12.53	12) 12.53
	13.23	13.18	13.12	13.06	13.01	12.95
	13.20	13.18	13.08	13.02	13.01	12.94
	12.48	12.49	12.54	12.57	12.54	12.56

Continued from page N/A

Read and Understood By

Craig Del Ferno — Signed — 11/15/22 Date

Lori [signature] — Signed — 11-16-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/10/22 Page 1 of 2

Sample Location: 200-I-185

Sample Number	# of Containers	Sample Matrix*	8260							Charge Number
2211101345Y (EB)	3	A	✓							XGMD
——— 1540Y	3	A	✓							"

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelFuria	11/10/22/1630hrs.		[signature]	11-14-22/0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ________

WSTF 381C (05/2016)

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/14/22 Page 2 of 3

Sample Location: 200-I-185

Sample Number	# of Containers	Sample Matrix*	607	Total Metals						Charge Number
221114 0935Y	1	A	✓							XGMD
1440Y	2	A		✓						"

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	11/14/22 / 1600hrs.		[signature]	11-15-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/15/22

Page 3 of 3

Sample Location: 200-I-185

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	TDS	TKN	NO_2/NO_3	Chloride				Charge Number
221115 0945Y	1	A	✓							X002
——0946Y	1	A		✓						"
——1050Y	1	A			✓					"
——1340Y	1	A				✓				"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	11/15/22/1520hrs.		[signature]	11-16-22 /0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT 200-I-300 WJI ENV-0020 11/10/22

Notebook No. D64 #130(Y) 3

Continued from page N/A

Bob Tufts & Craig Del Ferraro present. Weather is clear & cool. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe #4955. Surface checks performed on probe prior to sampling.

30 Min Equipment Blanks - Carboy G1

Sample	Analysis	Preservative	Container	Lot	Lab
221110 0935Y	VOA by 8260	ice/HCL	(3) 40ml vials	2649-1	ALS
——— 0936Y	Total Metals	ice/HNO_3	(2) 125ml poly's	22-04-21	"

Initial Parameters	Final	Meter ID
Time - 2211101015Y	Time - 2211101305Y	pH/cond - 92
PH - 7.88	PH - 7.69	Turb - 7
Temp - 20.5°C	Temp - 20.8°C	" Std - 49.6
Cond - 845 us/cm	Cond - 880 us/cm	" rdg - 48.9
Turb - 2.90 NTU's	Turb - 2.02 NTU's	" lot - 210966
pH pre - 7.12/10.08 (19.3°C)	pH pre - 7.08/10.05 (21.0°C)	" Exp - 11/30/22
pH post - 7.11/10.09	pH post - 7.10/10.03	
DTW - 216.50 ft.	DTW - 216.58 ft.	
Atmos - 12.41 psia	Atmos - 12.36 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
221110 1035Y	VOA by 8260	ice/HCL	(3) 40ml vials	2649-1	ALS
——— 1036Y	607/Bromacil	ice	(1) 1L Amber	0100301H	SRI
——— 1100Y	Total Metals	ice/HNO_3	(2) 125ml poly's	22-04-21	ALS
——— 1101Y	Anions/Alk.	ice	"	N/A	"
——— 1102Y	TDS by SM2540C	"	(1) 250ml poly	111620-2AA0	"
——— 1103Y	Perchlorate by 6850	"	(1) 125ml poly	N/A	"
——— 1104Y	NO_2/NO_3 by 353.2	ice/H_2SO_4	(1) 250ml poly	22-01-14	"

Blind Controls

Sample	Analysis	Preservative	Container	Lot	Lab
221110 1125Y	VOA by 8260	ice/HCL	(3) 40ml vials	22MM153A	ALS
——— 1126Y	607/Bromacil	ice	(1) 1L Amber	22MM153B	SRI
——— 1127Y	Total Metals	ice/HNO_3	(2) 125ml poly's	22MM153C	ALS

Continued ~~from page N/A~~ on page 4

Read and Understood By

Craig Del Ferraro 11/10/22 — Signed / Date

[signature] 11-14-22 — Signed / Date

Notebook No. D64 #130(y)

Continued from page 3

PROJECT 200-I-300 WJI ENV-0020 11/10/22

Runs	1) 51.88	2) 51.83	3) 51.82	4) 51.71
	64.75	64.70	64.67	64.63
	64.74	64.68	64.68	64.60
	51.83	51.86	51.79	51.73

Continued from page N/A

Read and Understood By

Craig Del Ferro 11/10/22

Signed Date

Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/10/22 Page 1 of 1

Sample Location: 200-I-300

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	607	Total Metals	Anions/Alk	TDS			Charge Number
2211100935y (EB)	3	A	✓							XGMD
——— 0936y (EB)	2	A			✓					"
——— 1035y	3	A	✓							"
——— 1036y	1	A		✓						"
——— 1100y	2	A			✓					"
——— 1101y	2	A				✓				"
——— 1102y	1	A					✓			"

Sample Location: 200-I-300

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Perchlorate	NO_2/NO_3	8260	607	Total Metals			Charge Number
2211101103y	1	A	✓							XGMD
——— 1104y	1	A		✓						"
——— 1125y (BC)	3	A			✓					"
——— 1126y (BC)	1	A				✓				"
——— 1127y (BC)	2	A					✓			"

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	11/10/22/1630hrs.		[signature]	11-14-22 /0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

ROJECT 200-I-375 WJI ENV-0020 11/9/22

Notebook No. D64 #120 (y)

Continued from page N/A

ob Tufts & Craig Del Ferraro present. Weather is clear, warm, & windy. This one will be sampled using 5 triple rinsed, stainless steel sample tubes, Gen. use. Probe #4955. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G3

Sample	Analysis	Preservative	Container	Lot	Lab
221109 1500y	VOA by 8260	(3) ice / HCL	(3) 40ml vials	2621	ALS
—— 1501y	607/Bromacil	ice	(1) 1L Amber	0100301H	SRI

Initial Parameters	Final	Meter ID
Time - 2211091540y	Time - 2211100856y	pH/Cond - 92
pH - 7.30	pH - 7.41	Turb - 7
Temp - 22.0 °C	Temp - 22.1 °C	" Std - 49.6
Cond - 1024 us/cm	Cond - 1029 us/cm	" rdg - 48.4
Turb - 2.02 NTU's	Turb - 1.70 NTU's	" lot - 210966
pH pre - 7.09/10.04 (21.1 °C)	pH pre - 7.13/10.10 (16.4 °C)	" Exp - 11/30/22
pH post - 7.07/10.04	pH post - 7.14/10.09	
DTW - 216.41 ft.	DTW - 216.50 ft.	
Atmos - 12.40 psia	Atmos - 12.46 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
221110 0825y	VOA by 8260	ice / HCL	(3) 40ml vials	2621	ALS
—— 0826y	607/Bromacil	ice	(1) 1L Amber	0100301H	SRI
—— 0855y	Total Metals	ice / HNO_3	(2) 125ml polys	22-04-21	ALS

Runs 1) 84.65 ~~101.24~~ CO 98.84 98.86 84.60

2) 84.50 98.12 98.06 84.53

3) 84.55 98.13 98.15 84.54

Continued from page N/A

Read and Understood By

Craig Del Ferraro 11/10/22
Signed Date

[signature] 11-14-22
Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/9/22 — Page 1 of 2

Sample Location: 200-I-375

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	607						Charge Number
2211091500Y (EB)	3	A	✓							XGMD
—1501Y (EB)	1	A		✓						"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelFerro	11/9/22/1620hrs.		[signature]	11-10-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11|10|22 Page 2 of 2

Sample Location: 200-I-375			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260	607	Total Metals					Charge Number
221110 0825 y	3	A	✓							XGMD
——— 0826 y	1	A		✓						"
——— 0855 y	2	A			✓					"

Sample Location:			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
Craig DelFerro	11/10/22 / 1115hrs.	[signature]	11-14-22 / 0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT 200-I-490 WJI ENV-0020 11/9/22

Notebook No. D64#130(y)

Continued from page N/A

Bob Tufts & Craig Del Ferraro present. Weather is clear, warm, & breezy. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe#4955. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy 63

Sample	Analysis	Preservative	Container	Lot	Lab
2211091300Y	VOA by 8260	ice/HCL	(3) 40ml vials	2621	ALS
—— 1301Y	Total Metals	ice/HNO_3	(2) 125ml polys	22-04-21	"

Initial Parameters	Final	Meter ID
Time - 2211091330Y	Time - 2211091425Y	pH/Cond - 92
PH - 7.92	PH - 7.85	Turb - 7
Temp - 22.3	Temp - 22.5°C	" std - 49.6
Cond - 933 us/cm	Cond - 928 us/cm	" rds - 48.4
Turb - 2.40 NTU's	Turb - 1.84 NTU's	" lot - 210966
pH pre - 7.08/10.05 (22.9°C)	pH pre - 7.04/10.03 (22.5°C)	" Exp - 11/30/22
pH post - 7.09/10.03	pH post - 7.03/10.06	
DTW - 216.31 ft.	DTW - 216.41 ft.	
Atmos - 12.38 psia	Atmos - 12.40 psia	
	IDW - ½ gal.	

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2211091400Y	VOA by 8260	ice/HCL	(3) 40ml vials	2621	ALS
—— 1401Y	607/Bromacil	ice	(1) 1L Amber	0100301H	SRI
—— 1402Y	Total Metals	ice/HNO_3	(2) 125ml poly's	22-04-21	ALS

Runs	1)	2)	3)
	134.62	134.56	134.47
	176.30	176.27	176.24
	176.26	176.22	176.18
	134.63	134.59	134.49

Continued from page N/A

Read and Understood By

Craig Del Ferraro 11/9/22   [signature] 11-10-22

Signed   Date   Signed   Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/9/22 Page 1 of 1

Sample Location: 200-I-490			Analytical Requirement							
Pertinent Notes (if any)										
Sample Number	# of Containers	Sample Matrix*	8260	607	Total Metals					Charge Number
2211091300y (EB)	3	A	✓							XGMD
——1301y (EB)	2	A			✓					"
——1400y	3	A	✓							"
——1401y	1	A		✓						"
——1402y	2	A			✓					"

Sample Location:			Analytical Requirement							
Pertinent Notes (if any)										
Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelFerro	11/9/22 / 1620hrs.		[signature]	11-10-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: __________

PROJECT 200-I-675 WJI ENV-0020 11/9/22

Notebook No. D64#129(Y)

Continued from page N/A

Bob Tufts & Craig Del Ferraro present. Weather is clear, cool, & breezy. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe #4955 Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G3

Sample	Analysis	Preservative	Container	Lot	Lab
2211090845Y	VOA by 8260	ice/HCL	(3) 40ml vials	2621	ALS

Initial Parameters	Final	Meter ID
Time - 2211090925Y	Time - 2211091030Y	pH/Cond - 92
PH - 7.69	PH - 7.77	Turb - 7
Temp - 20.8°C	Temp - 20.9°C	" Std - 49.6
Cond - 1604us/cm	Cond - 1615us/cm	" rdg - 48.4
Turb - 4.19 NTU's	Turb - 2.80 NTU's	" lot - 210966
pH pre - 7.10/10.07 (18.4°C)	pH pre - 7.08/10.10 (19.0°C)	" Exp - 11/30/22
pH post - 7.11/10.07	pH post - 7.09/10.07	
DTW - 216.23 ft.	DTW - 216.31 ft.	
Atmos - 12.41 psia	Atmos - 12.47 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2211090955Y	VOA by 8260	ice/HCL	(3) 40ml vials	2621	ALS
——0956Y	607/Bromacil	ice	(1) 1L Amber	0100301H	SRI
——1025Y	Total Metals	ice/HNO_3	(2) 125ml poly's	22-04-21	ALS
——1026Y	Anions/Alk.	ice	"	N/A	"
——1027Y	TDS by SM2540C	"	(1) 250ml poly	"	"
——1028Y	Perchlorate by 6850	"	(1) 125ml poly	"	"
——1029Y	NO_2/NO_3 by 353.2	ice/H_2SO_4	(1) 250ml poly	22-01-14	"

Runs	1)	2)	3)
	214.48	214.38	214.32
	255.40	255.43	255.43
	255.37	255.39	255.41
	214.45	214.38	214.26

Continued from page N/A

Read and Understood By

Craig Del Ferraro — Signed — 11/9/22 Date

[signature] — Signed — 11-9-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/9/22 Page 1 of 1

Sample Location: 200-I-675

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	607	Total Metals	Anions/Alk.	TDS	Perchlorate		Charge Number
2211090845Y (EB)	3	A	✓							XGMD
———0955Y	3	A	✓							"
———0956Y	1	A		✓						"
———1025Y	2	A			✓					"
———1026Y	2	A				✓				"
———1027Y	1	A					✓			"
———1028Y	1	A						✓		"

Sample Location: 200-I-675

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NO_2/NO_3							Charge Number
2211091029Y	1	A	✓							XGMD

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelFerro	11/9/22 / 1115hrs.		[signature]	11-10-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ________

PROJECT 200-I-795 WJI ENV-0020 11/8/22
Continued from page N/A

Robert Burrows & Craig Del Ferraro present. Weather is clear, warm, & breezy. This zone will be sampled using 5 steam cleaned & triple rinsed, stainless steel sample tubes. Gen. in use. Probe #4955. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G3

Sample	Analysis	Preservative	Container	Lot	Lab
2211081420Y	VOA by 8260	ice/HCL	(3) 40ml vials	2621	ALS

Initial Parameters	Final	Meter ID
Time - 2211081450Y	Time - 2211081545Y	pH/Cond - 92
PH - 7.56	PH - 7.61	Turb - 7
Temp - 22.9°c	Temp - 22.6°c	" std - 49.6
Cond - 2.12 ms/cm	Cond - 2.36 ms/cm	" rdg - 48.3
Turb - 1.68 NTU's	Turb - 1.51 NTU's	" lot - 210966
pH pre - 7.02/10.01 (26.1°c)	pH pre - 7.04/10.02 (25.3°c)	" Exp - 11/30/22
pH post - 7.04/10.01	pH post - 7.05/10.01	
DTW - 216.15 ft.	DTW - 216.23 ft.	
Atmos - 12.46 psia	Atmos - 12.50 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2211081520Y	VOA by 8260	ice/HCL	(3) 40ml vials	2621	ALS
——— 1521Y	607/Bromacil	ice	(1) 1L Amber	0100301H	SRI
——— 1522Y	Total Metals	ice/HNO_3	(2) 125ml poly's	22-04-21	ALS

* Samples were very aerated.

Runs			
	1) 266.25	2) 266.18	3) 266.07
	306.75	306.73	306.71
	306.74	306.71	306.70
	266.20	266.20	266.09

Continued from page N/A

Read and Understood By

Craig Del Ferraro — Signed — 11/8/22 Date

[signature] — Signed — 11-9-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/8/22 Page 1 of 1

Sample Location: 200-I-795

Sample Number	# of Containers	Sample Matrix*	8260	607	Total Metals					Charge Number
2211081420Y (EB)	3	A	✓							XGMD
1520Y	3	A	✓							"
1521Y	1	A		✓						"
1522Y	2	A			✓					"

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	11/8/22 / 1600hrs.		[signature]	11-9-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

DAN HALVORSEN & TONY TORREZ PRESENT. THE WEATHER IS cloudy, windy & cool. SAMPLES COLLECTED FROM A TEFLON discharge TUBE. PARAMETERS collected WITH A INSITU AquaTroll 500. Carboy G.

CALIBRATIONS

DO SENSOR CALIBRATED IN 100% SATURATED AIR
COND SENSOR CALIBRATED IN 1413 uS/cm STANDARD.
pH SENSOR CALIBRATED WITH 4,7,10 BUFFERS.
TURB SENSOR CALIBRATED WITH 20 NTU'S STANDARD.

PARAMETERS

SAMPLE#	TEMP(°C)	COND (uS/cm)	DO (mg/L)	pH	ORP	TURB (NTU)
221117 0910C	20.45	1,295.6	5.28	7.40	197.2	~~19.97~~ 1.73
— 0911C	20.47	1,295	5.27	7.42	198.5	1.39
— 0912C	20.44	1,294	~~TE~~ 5.28	7.40	196.9	1.48

SAMPLES

SAMPLE#	ANALYSIS	PRESERV	CONT	LAB
221117 0920C	8260	ICE/HCl	(3) 40ml VIALS	ALS
— 0921C	" (FB)	"	"	"
— 0922C	607	ICE	(1) 1LT AMBER	SRI
— 0923C	8270	"	(2) "	"
— 0924C	HERBICIDES	"	(1) "	ALS
— 0925C	DIOXIN/FURANS	"	"	SRI
— 0926C	PESTICIDES	"	"	ALS
— 0927C	PCB'S	"	"	"
— 0928C	PHENOLICS	ICE/H_2SO_4	(1) 250ml AMBER	"
— 0929C	TOTAL METAL	ICE/HNO_3	(2) 125ml poly	"
— 0930C	ANIONS/ALK	ICE	"	"
— 0931C	TDS	"	(1) 125ml poly	"
— 0932C	PERCHLORATE	"	"	"
— 0933C	NO_2/NO_3	ICE/H_2SO_4	(1) 250ml poly	"
— 0934C	CYANIDE	ICE/NaOH	(1) 125ml poly	"
— 0935C	SULFIDES	ICE/NaOH/ZINC ACETATE	(1) 250ml poly	"

Continued from page

Read and Understood By

T. [signature] Signed 11.17.22 Date [signature] Signed 11-21-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-17-22 Page 1 of 1

Sample Location: 400-C-143

Pertinent Notes (if any)

Charge Number: XGMD

Sample Number	# of Containers	Sample Matrix*	8260	607	8270	Herbicides	D-0842/F443	Pesticides		Charge Number
221117 0920c	3	A	X							
— 0921c (EB)	3		X							
— 0922c	1			X						
— 0923c	2				X					
— 0924c	1					X				
— 0925c	1						X			
— 0926c	1							X		

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	PCBs	Phenolics	Total Metals	Anions/Alk	TDS	Perchlorate	NO2 NO3	Charge Number
— 0927c	1	A	X							
— 0928c	1			X						
— 0929c	2				X					
— 0930c	2					X				
— 0931c	1						X			
— 0932c	1							X		
— 0933c	1								X	

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
T. [signature]	11-17-22 / 1100		[signature]	11-17-22 / 1030

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-17-22 Page 1 of 1

Sample Location: 400-C-143

Sample Number	# of Containers	Sample Matrix*	Cyanide	Sulfides						Charge Number
										X6MD
221117 0934C	1	A	X							
—— 0935C	1	A		X						

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
J-[signature]	11-17-22/1100		[signature]	11-17-22 /1036

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

ROJECT B650-EFF-1

Notebook No. PFTS #11

Continued from page N/A

Frank Gallegos & Tim Moore present. Weather is clear and cool. This ~~well~~ bldg will be purged and sampled using a dedicated sampling port on the effluent side. Carboy "plume front 1"

Parameters	Meter ID	Buffers	LOT#	Exp
Time - 221110 0759	Ph/cond - ~~N/A~~ 12	7	1202A44	8/23
Ph - 8.52	Turb - ~~N/A~~ 8	10	4107E30	1/23
Temp - 24.2°C	" STD - 61.3			
cond - 1234 uS/cm	RDG - 61.4			
Turb 0.37 NTUs	" LOT# 210966			
Ph pre - 7.00/10.00 (23.8°C)	Exp 11/30/22			
Ph post - 7.02/10.02				

Samples

Sample #	Analysis	Pres	LOT#	LAB	Cont
221110 0800	VOA by 8260(1)	ICE; HCl	2648-1	ALS	(3) 40mL V; al
— 0801	" (FB)	"	"	"	"
— 0802	NDMA 1DMND by 6007	ICE	2100301H	SWRI	(1) L+ amber
— 0803	LL NDMA	"	"	"	"
— 0804	" (FB)	"	"	"	"

Continued from page N/A

[signature] Signed 11-10-22 Date

Read and Understood By [signature] Signed 11-10-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-10-22 | Page 1 of 1

Sample Location: B650-EFF-1

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOA 8260	LL-VOA 8260LL	NDMA/DMN/BROMACIL 607	LOW LEVEL NDMA	TOTAL METALS	ANIONS/ALK	TDS SM2540C	XGMD Charge Number
2211100800	3	A		X						..
— 0801 (FB)	3	A		X						..
— 0802	1	A			X					..
— 0803	1	A				X				..
— 0804 (FB	1	A				X				..

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	PERCHLORATE 6850	NO2/NO3 353.2						XGMD Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[illegible]	11-10-22 (1000)		[illegible]	11-14-22 / 0945

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT B650-INF-1

Frank Gallegos & Tim Moore present. Weather is clear and cool, This ~~well~~ will be purged and sampled using a dedicated sampling port, on the influent side. Carboy "Plume front 1"

Parameters	meter ID	Buffers	Lot #	Exp
Time - 221110 0830	ph/cond-NA 12	7	1202A44	8/23
ph - 7.72	Turb-NA 8	10	4107E30	1/23
Temp - 23.4 °C	Turb - 61.3			
cond - 1232 us/cm	STD - 61.4			
Turb - 1.64 NTUs	Lot # 210966			
Ph pre - 7.00/10.02 (23.8)	Exp - 11/30/22			
Ph post - 7.02/10.04				

Samples

Sample #	Analysis	Pres	Lot #	LAB	CONT
221110 0830	VOA by 8260	ICE HCl	2649-1	ALS	(3) 40 ml vial
—— 0831	" (Dup)	"	"	"	"
—— 0832	" (FB)	"	"	"	"
—— 0833	NDMA/DMN/BIO by 607	ICE	010030AH	SWRI	(1) Lt amber

Continued from page N/A

[signature] Signed 11-10-22 Date

Read and Understood By [signature] Signed 11-10-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-10-22 | Page 1 of 1

Sample Location: B650-INF-1

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOA 8260	LL-VOA 8260LL	NDMA/DMN/BROMACIL 607	LOW LEVEL NDMA	TOTAL METALS	ANIONS/ALK	TDS SM2540C	XGMD Charge Number
221110 0830	3	A	X							"
—— 0831 (DUP)	3	A	X							"
—— 0832 (FB)	3	A	X							"
—— 0833	1	A			X					"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	PERCHLORATE 6850	NO_2/NO_3 353.2						XGMD Charge Number

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	11-10-22 (1000)	[signature]	11-14-22 / 0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

PROJECT B655-EFF-2

Notebook No. PFTS#11
Continued from page N/A

Frank Gallegos & Tim Moore present. weather is Clear and cool, This bldg will be sampled and purged using a dedicated sampling port, ON the effluent side, Carboy "Plme front 1"

Parameters	Meter ID	Buffers	LOT#	EXP
Time-221110 0859	Ph/cond-~~NTA~~ 12	7	1202A94	8/23
Ph-8.34	Turb-NTA 8	10	4107E30	1/23
Temp-24.4°C	" STD-61.3			
cond-1258 uS/cm	" RDG-61.4			
Turb-0.54 NTUs	" LOT# 210966			
Pre-7.02/10.00 (24.0°C)	" Exp-11/30/22			
Ph Post-7.00/10.02				

Samples

Sample#	Analysis	Pres	LOT#	LAB	CONT
2211100900	VOA by 8260 (LL)	ICE & HCL	2649-1	ALS	(3) 40ml Vial
— 0901	" (FB)	"	"	"	"
— 0902	NDMA/DMN/ELO by 607	ICE	0100301H	SWRI	(1) 1L amber
— 0903	LL NDMA	"	"	"	"
— 0904	" (FB)	"	"	"	"

Continued from page N/A

Read and Understood By

[signature] 11-10-22 [signature] 11-10-22

Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 15-10-22

Page 1 of 1

Sample Location: B655-FFF-2

Analytical Requirement

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOA 8260	LL-VOA 8260LL	NDMA/DMN/BROMACIL 607	LOW LEVEL NDMA	TOTAL METALS	ANIONS/ALK	TDS SM2540C	Charge Number XGMD
2211100900	3	A		X						"
— 0901 (FB)	3	A		X						"
— 0902	1	A			X					"
— 0903	1	A				X				"
— 0904	1	A				X				"

Sample Location:

Analytical Requirement

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	PERCHLORATE 6850	NO_2/NO_3 353.2						Charge Number XGMD

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	11-10-22 (1000)	[signature]	11-14-22 / 0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT B 655 - INF-2

Frank Gallegos & Tim Moore present. Weather is clear and cool. This bldg will be purged and sampled using a dedicated sampling port on the influent side of Calboy "Plumefront1"

Parameters	Meter ID	Buffers	Lot#	Exp
Time - 2211100915	Ph/cond - 12	7	1202A44	8/23
Ph - 7.38	Turb - 8	10	4107E30	1/23
Temp - 24.0°C	" STD - 61.3			
Cond - 1244 us/cm	" RDG - 61.4			
Turb - 2.08 NTU's	" Lot# 210966			
Ph pre - 7.00/10.02 (24.29)	Exp - 1/30/22			
Ph post - 7.00/10.04				

Samples

Sample#	Analysis	~~Pres~~	Lot#	LAB	Cont
221110 0916	VOA by 8260	1 CE; HCl	7621	ALS	(5) 40ml Vial
——— 0917	" (FB)	"	"	"	"
——— 0918	NDMA/DMN/Bio by 607	1 CE	0100301H	SWRI	(1) 1L Amber

Continued from page N/A

Signed 11-10-22 Date

Read and Understood By

Signed 11-10-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-10-22 | Page 1 of 1

Sample Location: B655-INF-2

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOA 8260	LL-VOA 8260LL	NDMA/DMN/ BROMACIL 607	LOW LEVEL NDMA	TOTAL METALS	ANIONS/ALK	TDS SM2540C	XGMD Charge Number
221110 0916	3	A	X							"
— 0917 (FB)	3	A	X							"
— 0918	1	A			X					"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	PERCHLORATE 6850	NO_2/NO_3 353.2						XGMD Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11-10-22 (1000)		[signature]	11-14-22 / 0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

PROJECT BIM-2-630

Continued from page

Matt Garcia ~~pres~~ MA & Marcus Avalos & present. Weather is clear & cold. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a teflon discharge hose. Water quality parameters monitored using an In-Situ Aqua Troll 800. Carboy Co.1

Calibrations

DO - Cal in 100% saturated air
PH - Cal using In-Situ Buffers (4,7,10)
Conductivity - Cal using 1413 uS/cm STD.
Turbidity - Cal using 10 NTU

Transducer Reading
Pressure - 8.93 psi
Temp - 23.74 °C
Depth - 20.61 ft

Trip Blanks

Sample #	Analysis	Preserve	Container	lot	lab
221115 0730A	VOA by 8260	HCl/Ice	(3) 40 ml vials	26491	ALS
— 0731A	Low level NDMA	Ice	(1) 1L Amber	0100301H	SRI

Parameters (time)	Temp (°C)	Cond (uS/cm)	DO	pH	ORP	Turb (NTU)	DTW (ft)
1) 2211151020A	19.72	945.14	7.21	7.66	189.6	10.2	N/A
2) — 1022A	19.68	942.84	7.14	7.64	190.6	10.4	"
3) — 1024A	19.70	946.39	7.14	7.61	193.3	8.71	"

Samples

Sample #	Analysis	Preserve	Container	lot	lab
221115 1030A	VOA by 8260	HCl/Ice	(3) 40 ml vials	26491	ALS
— 1031A	" (FB)	"	"	"	"
— 1032A	607/Bromacil	Ice	(1) 1L Amber	0100301H	SRI
— 1033A	Low Level NDMA	"	"	"	"
— 1034A	" (Dup)	"	"	"	"
— 1035A	" (FB)	"	"	"	"
— 1036A	Total Metals	HNO3/Ice	(2) 125 ml poly	220421	ALS

Blind Controls

Sample #	Analysis	Preserve	Container	lot	lab
221115 1110A	Low Level NDMA	Ice	(1) 1L Amber	SAMPLE # 22MM154A ANALYSIS NDMA	ALS

IDW - 2 gal

Continued from page

Read and Understood By

Signed 11/15/22 Date — Signed 11-16-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/15/22 Page 1 of 1

Sample Location: BIM-2-630

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	607/8ro	LL NDMA	T. Metals				Charge Number
221115 0730 A (TB)	3	A	X							XGMD
0731 A (TB)	1	↓		~~X~~ MD	X					↓
1030 A	3	↓	X							↓
1031 A (FB)	3	↓	X							↓
1032 A	1	↓		X						↓
1033 A	1	↓			X					↓
1034 A (Dup)	1				X					

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*			LL NDMA	T. Metals				Charge Number
221115 1035 A (FB)	1	A			X					XGMD
1036 A	2	↓				X				↓
1110 A (BC)	1	↓			X					↓

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11/15/22 @ 1125		[signature]	11-16-22 / 0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

PROJECT BLM-3-182 ENV-0053

Dan Halvorsen & Tony Torrez present. Weather is clear and cold. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a new Teflon discharge hose. Water quality parameters will be monitored using an In-Situ AquaTroll 500. Carboy G3 in use.

Calibrations:

DO Sensor = In saturated air @ 100 %

pH Sensor: Using a 3 pt. 4,7,10 In-Situ Buffer

Conductivity = Using a 1413 uS/cm In-Situ STD.

Turbidity = Using an In-Situ STD. Solution.

Initial DTW: 179.55 ft.
Final " = 179.67
IDW: 2.5 gal.

Parameters (Time)	Temp	Cond	DO	pH	ORP	Turb	DTW (ft)
221101 0925 A	21.41	4072	0.63	7.86	142	7.26	179.67
—— 0927 A	21.40	4072	0.64	7.79	140	7.23	179.67
—— 0929 A	21.41	4071	0.62	7.83	142	7.20	179.67

SAMPLES

Sample #	Analysis	Preserve	Container	Lab
221101 0932 A	VOA by 8260	Ice/HCl	(3) 40 ml Vial	ALS
—— 0933 A	" " (FB)	"	"	"
—— 0934 A	NDMA/DMN Bromacil by 607	Ice	(1) 1L Amber	SRL
—— 0935 A	SVOC by 8270D	"	(2) "	ALS
—— 0936 A	PCBs by 8082A	"	(1) "	"
—— 0937 A	Pesticides	"	(1) "	"
—— 0938 A	Herbicides	"	(1) "	"
—— 0939 A	Dioxins/Furans	"	(1) "	SRL
—— 0940 A	Phenolics	Ice/H2SO4	(1) 250 ml Amber	ALS
—— 0941 A	Total Metals	Ice/HNO3	(2) 125 ml Poly	"
—— 0942 A	NO2/NO3	Ice/H2SO4	(1) 250 ml Poly	"
—— 0943 A	Cyanide	Ice/NaOH	(1) 125 ml Poly	"
—— 0944 A	Sulfide	NaOH Zinc Acetate	(1) 500 ml Poly	"

Continued from page

Read and Understood By

Signed 11-01-2022 Date B-34 Signed 11-1-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-01-2022 Page 1 of 1

Sample Location: Bldg-3-182

Sample Number	# of Containers	Sample Matrix*	VOA	GOT	SVOs	PCBs	Pesticides	Herbicides		Charge Number
										X Comp
2211010932 A	3	A	X							
0933 A FB	3	A	X							
0934 A	1	A		X						
0935 A	2	A			X					
0936 A	1	A				X				
0937 A	1	A					X			
0938 A	1	A						X		

Sample Location:

Sample Number	# of Containers	Sample Matrix*	Dioxins/Furans	Phenolics	Metals	No2/No3	Cyanide	Sulfide		Charge Number
2211010939 A	1	A	X							
0940 A	1	A		X						
0941 A	2	A			X					
0942 A	1	A				X				
0943 A	1	A					X			
0944 A	1	A						X		

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11-1-2022 ~~1100~~ 1010		[signature]	11-2-22 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

12/15/22

ROJECT BLM-3-182 Resample WJI-ENV-0020

Notebook No. D32#126 (A)

Continued from page N/A

Tony Torrez & Craig Del Ferraro present. Weather is clear & cold. This well will be purged using a dedicated bladder pump. Samples will be collected using a teflon discharge hose. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. This is a resample event with no field blanks required.

Calibrations

DO sensors - calibrated in 100% saturation.
Cond. sensor - calibrated using 1413us/cm std. solution.
PH sensor - calibrated using 4, 7, and 10 buffers.
Turb. sensor - calibrated using 10 NTU std.

Parameters (time)	temp (°C)	cond (us/cm)	PH	ORP	DO	Turb (NTU's)	DTW (ft)
221215 1000A	18.79	4033.36	7.33	135	1.51	7.59	159.78
——— 1003A	18.92	4039.67	7.36	138	1.36	7.24	159.78
——— 1006A	19.03	4040.02	7.37	139	1.12	6.90	159.78

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
221215 1010A	Dioxins/Furans by 8290	ice	(1) 1L Amber	010030 1H	SRI

Resample Event

Initial DTW - ~~179.71ft.~~ cd 159.71ft.

Total gallons purged (IDW) - 1

Continued from page N/A

Read and Understood By

Craig Del Ferraro 12/15/22 Signed Date

[signature] 12-15-22 Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/15/22 Page 1 of 1

Sample Location: BLM-3-182

Pertinent Notes (if any): Resample Event

Sample Number	# of Containers	Sample Matrix*	Dioxins/Furans						Charge Number
221215101OA	1	A	✓						XGMD

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Dell Ferro	12/15/22/1040hrs.		[signature]	12-15-22 / 1030

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

1/24/23

ROJECT BLM-3-182 Resample WJICNV-0053

Notebook No. D32#127(c)

Continued from page N/A

Robert Burrows & Craig Del Ferraro present. Weather is cloudy, windy, & cold. his well will be purged using a dedicated bladder pump. Samples will be ollected using a teflon discharge hose. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. Resample event.

Calibrations

DO sensor - calibrated in 100% saturation.
Cond. sensor - calibrated using 1413 us/cm std. solution.
pH sensor - calibrated using 4, 7, & 10 buffers.
Turb. sensor - calibrated using 20 NTU std.

Parameters (time)	temp (°c)	cond (us/cm)	DO	ORP	PH	Turb (NTU's)	DTW (ft)
1) 230124 1340C	20.10	3890.1	4.51	97.7	8.14	1.47	179.48
2) ——— 1343C	20.14	3878.8	4.27	98.9	8.14	1.24	179.48
3) ——— 1346C	20.16	3868.4	4.13	99.5	8.13	1.19	179.48

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2301241350C	Dioxins/Furans by 8290	ice	(1) 1L Amber	0100301H	SRI

This is a resample event

Initial DTW - 179.36 ft.   Total gallons purged - 1

Continued from page N/A

Read and Understood By

Craig Del Ferraro
Signed

1/24/23
Date

Signed

1-26-23
Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/24/23 Page 1 of 1

Sample Location: BLM-3-182			Analytical Requirement							
Pertinent Notes (if any) Resample event	# of Containers	Sample Matrix*	Dioxins Furans							
Sample Number										Charge Number
230124 1350C	1	A	✓							XGMD

Sample Location:			Analytical Requirement							
Pertinent Notes (if any)	# of Containers	Sample Matrix*								
Sample Number										Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	1/24/23/1410hrs.		[signature]	1-25-23 / 0915

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

Dan Halvorsen & Tony Torrez present. Weather is clear and warm. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a new Teflon discharge hose. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. Carboy G3 in use.

Calibrations

Initial DTW = 335.75 ft.
Final " = 335.81
IDW = 2.5 gal.

DO Sensor: In 100% saturated Air
pH Sensor: using a 3 pt. 4,7,10 In-Situ Buffer.
Conductivity: using an In-Situ STD. Solution.
Turbidity: using an In-Situ STD.

Parameters (Time)	Temp	Cond	DO	pH	ORP	Turb	DTW
221101 1445 A	21.82	1056	6.70	7.43	185	1.55	335.81
— 1447 A	21.81	1053	6.68	7.41	186	1.62	335.81
— 1449 A	21.81	1051	6.69	7.44	186	1.59	335.81

SAMPLES

Sample #	Analysis	Preserve	Container	LAB
221101 1455 A	VOCs by 8260 LL	Ice/HCl	(3) 40 ml Vial	ALS
— 1456 A	" " (FB)	"	"	"
— 1510 A	NDMA LL	Ice	(1) 1L Amber	SRI
— 1511 A	" " (FB)	"	"	"

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-01-2022 Page 1 of 1

Sample Location: Bldg. 8-418			Analytical Requirement							
Pertinent Notes (if any)										X6NMD
Sample Number	# of Containers	Sample Matrix*	VOC	NDMA LL						Charge Number
2211011455A	3	A	X							
1456A FB	3		X							
1510A	1			X						
1511A FB	1			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]	11-1-2022 1630		[signature]	11-2-22 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

ROJECT BLM-17-493 ENV-0053

Notebook No. D32 #126 A
Continued from page

...an Halvorsen & Tony Torrez present. Weather is clear and Cool. This well
will be purged and sampled using a dedicated bladder pump. Samples will
be collected using a new Teflon discharge hose. Water quality parameters
monitored using an In-Situ Aqua Troll 500. CarDog G3 in use.

Calibrations
DO Sensor = In 100 % saturated air
pH Sensor = using In-Situ 4,7,10 Buffers
Conductivity = using a 1413 uS/cm In-Situ STD.
Turbidity = using an In-Situ STD.

Initial DTW = 498.90 ft
Final " = 498.98
IDW = 1.5 gal.

Parameters (Time)	Temp	Cond	DO	pH	ORP	Turb	DTW
2211030920 A	20.56	1138	7.31	7.71	218	5.10	498.96
— 0922 A	20.55	1141	7.26	7.69	215	5.12	498.96
— 0924 A	20.54	1138	7.30	7.69	215	5.09	498.96

SAMPLES

Sample #	Analysis	Preserve	Container	Lab
2211030930 A	VOC by 8260	Ice/HCl	(3) 40 ml VIAL	ALS
— 0931 A	" " (FB)	"	"	"
— 0932 A	NDMA/DMN Bromacil by 607	Ice	(1) 1L Amber	SRI
— 0933 A	Total metals	Ice/HNO3	(2) 125 ml Poly	ALS
— 0934 A	" " (Dup)	"	"	"

Continued from page

Read and Understood By

Signed 11-3-2022 Date

Signed 11-7-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-3-2022 Page 1 of 1

Sample Location: Bldg. 17-493

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOA	TOC	metals					Charge Number XGMD
2211030930A	3	A	X							
0931A	3		X							
0932A	1			X						
0933A	2				X					
0934A	2				X					

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11-3-2022 1100		[signature]	11-7-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

ROJECT BIM·22·570

Notebook No. D32 # 126(A)

Continued from page

lalt Garcia & Marcus Avalos present. Weather is cloudy & cool. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge tube. Water quality parameters will be monitored using a ~~QED~~ Aqua Troll 500. Carboy G.1

alibrations
DO - Cal in 100% saturation
pH - Cal using In-Situ Buffers (4,7,10)
onductivity - Cal using 1413 uS/cm STD.
Turbidity - Cal using 10 NTU.

Initial DTW - 514.95'

arameters (time)	Temp (°C)	Cond (uS/cm)	DO (mg/L)	pH	ORP	Turb (NTU)	DTW (ft)
) 221115 1500 A	20.06	1,018.6	7.72	7.56	125.4	0.81	515.10'
) —— 1502 A	20.11	1,049.1	7.75	7.56	129.1	0.72	"
) —— 1504 A	20.68	1,062.3	7.83	7.55	130.4	0.67	"

Samples

Sample #	Analysis	Preserve	Container	lot	lab
221115 1510 A	VOA by 8260	HCl/Ice	(3) 40ml vials	26491	ALS
—— 1511 A	" (FB)	"	"	"	"
—— 1512 A	Low level NDMA	Ice	(1) 1L Amber	0100301H	SGS
—— 1513 A	" (FB)	"	"	"	"

IDW - 2 gal

Continued from page

Read and Understood By

Signed [signature] Date 11/15/22

Signed [signature] Date 11-16-22

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/15/22 Page ______ of ______

Sample Location: BM·22·570

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	LC NDMA						Charge Number
221115 1510A	3	A	X							XGMO
1511A (FB)	3	↓	X							↓
1512A	1	↓		X						↓
1513A (FB)	1	↓		X						↓

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11/15/22 @ 1600		[signature]	11-16-22 / 0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________________

WSTF 381C (05/2016)

Dan Halvorsen & Craig Del Ferraro present. Weather is clear & warm. This well will be purged using a dedicated bladder pump. Samples will be collected using a teflon discharge hose. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. Carboy G3 in use.
*This will be a modified sampling event due to rapid drawdown.

Calibrations
DO sensor - calibrated in saturated air (100%).
Cond. sensor - calibrated using 1413us/cm std. solution.
PH - calibrated using 4, 7, 10 buffers.
Turb. sensor - calibrated using 10 NTU std. solution.

Parameters (time)	temp (°C)	cond (us/cm)	DO	ORP	PH	Turb (NTU's)	DTW (ft.)
1) 221102 1330A	22.96	1140	4.87	77.7	10.22	1.51	332.27
2) ——— 1331A	22.80	1150	4.68	75.0	10.31	1.45	332.45
3) ——— 1332A	22.74	1157	4.57	74.2	10.39	1.33	332.65

Trip blanks - Water purification system

Sample	Analysis	Preservative	Container	Lot	Lab
221102 1250A	VOA by 8260LL	ice/HCL	(3) 40ml vials	2621	ALS
——— 1251A	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
221102 1333A	VOA by 8260LL	ice/HCL	(3) 40ml vials	2621	ALS
——— 1334A	" (FB)	"	"	"	"
——— 1335A	607/Bromacil	ice	(1) 1L Amber	0100301H	SRI
——— 1336A	* " (MS) *	"	"	"	"
——— 1337A	Low Level NDMA	"	"	"	"
——— 1338A	" (FB)	"	"	"	"

Initial DTW - 332.20 ft. Total gallons purged - 1/8 gal.
(modified purge vol.)

Continued from page N/A

Read and Understood By

Craig Del Ferraro 11/2/22 [signature] 11-3-22
Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/2/22 Page 1 of 1

Sample Location: BLM-24-565

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260 LL	607	LL NDMA					Charge Number
2211021250A (TB)	3	A	✓							XGMD
——— 1251A (TB)	1	A			✓					"
——— 1333A	3	A	✓							"
——— 1334A (FB)	3	A	✓							"
——— 1335A	1	A		✓						"
——— 1336A (MS)	1	A		✓						"
——— 1337A	1	A			✓					"

Sample Location: BLM-24-565

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	LL NDMA							Charge Number
2211021338A (FB)	1	A	✓							XGMD

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	11/2/22 / 1420hrs.			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT BIM·26·404 WJI ENV·0053

Notebook No. D32nd 124(c)

Continued from page ______

Marcus Avalos + Al Montes present. Weather is cloudy + cool. This well will be purged using a dedicated bladder pump. Samples will be collected using a new teflon discharge hose. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. Carboy 6.2 in use.

Calibrations

DO - Cal in 100% saturation

Initial DTW - 310.98'

Conductivity - Cal using 1413 uS/cm STD.

PH - Cal using 4,7,10 Buffers

Turbidity - Cal using 10 NTU STD.

Parameters (time)	Temp (°C)	Cond (uS/cm)	DO	ORP	PH	Turb (NTU)	DTW (ft)
1) ~~220~~ 221107 1440C	21.46	1,016.2	7.02	110.3	7.50	0.73	310.98
2) 221107 1442C	21.44	1,017.4	7.01	120.2	7.50	0.54	"
3) 221107 1444C	21.41	1,016.4	6.99	133.7	7.49	0.69	"

Samples

Sample #	Analysis	Preserve	Container	lot	lab
221107 1450C	VOA by 8260	HCl/Ice	(3) 40 ml vials	26441	ALS
—— 1451C	" (FB)	"	"	"	"
—— 1452C	607/Bromacil	Ice	(1) 1L Amber	01003014	SRI

Total Gallons Purged - 1.5 gal

Final DTW - 310.98'

Continued from page

Read and Understood By

Signed 11/7/22 Date

Signed 11-8-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11·7·22 Page 1 of 1

Sample Location: BLU·26·404			Analytical Requirement							
Pertinent Notes (if any) Sample Number	# of Containers	Sample Matrix*	VOA 8260	NDMA·DMN·607						Charge Number
221107 1450C	3	A	X							XGMD
—— 1451C (FB)	3	A	X							⎮
—— 1452C	1	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]	11·7·22 4:30		[signature]	11-8-22 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

PROJECT BLM-32-543 FLUTe ENV-0020

Notebook No. D32 #1258

Continued from page ______

Don Halvorsen + Tony Torrez present. Weather is Partly Cloudy and Cool. This zone will be purged and sampled using a FLUTe System. Samples will be collected using a dedicated discharge hose. Purge pressure set at 281 psi, sample pressure at 252 psi. Flowmeter set at 3 psi., bladder stable at 7 psi. 15 minute recovery between purges. Minimum of 4 gallons purged prior to sampling. Carboy G1 in use.

Pre-Sample Parameters — No Transducer — Meter ID

pH = 7.83		PH/COND	= 93
Temp = 21.2		TURB	= 20
Cond = 1131		" STD	= 5.94
TURB = 1.10		" RDG	= 6.01
		" LOT	= ~~000~~ 210966
		" Exp	= 11/22

Parameters

Time = 2211071345 B
pH = 7.80
Temp = 21.1 °C
Cond = 1125 us/cm
TURB = 1.00 NTU's
pH Pre = 6.99-10.01 (25.1°C)
pH Post = 6.98-10.00

SAMPLES

Sample #	Analysis	Preserve	Container	LAB
2211071410 B	VOA by 8260	Ice/HCl	(3) 40 ml Vial	ALS
— 1411 B	" " (FB)	"	"	"
— 1412 B	NDMA LL	Ice	(1) 1L amber	SRI
— 1413 B	" " (FB)	"	"	"

Continued from page

Read and Understood By

Signed ______ Date 11-7-2022

Signed ______ Date 11-8-22

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-7-2022 Page 1 of 1

Sample Location: BLM. 32-543			Analytical Requirement							
Pertinent Notes (if any)										X6MD
Sample Number	# of Containers	Sample Matrix*	VOC	NOMA LI						Charge Number
2211071410 B	3	A	X							
1411 B FB	3		X							
1412 B	1			X						
1413 B FB	1			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]	11-7-2022 1630		[signature]	11-8-22 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

PROJECT BLM-32-571 FLUTe ENV-0020

Dan Halvorsen & Tony Torrez present. Weather is partly cloudy and cool. This zone will be purged and sampled using a FLUTe system. Samples will be collected using a dedicated discharge hose. Purge pressure set at 281 psi, Sample pressure at 252 psi. Flowmeter set at 3 psi., bladder stable at 7 psi. 15 minute recovery between purges. Minimum of 4 gallons purged prior to sampling. Carboy 31 in use.

Pre-Sample Parameters

pH - 7.30
Temp - 21.4
Cond = 1068
Turb = 2.34

No Transducer

Meter I.D
pH/Cond = 93
Turb = 20
" SD = 5.94
" RDS = 6.01
" Lot = 210966
" Exp = 11/22

Parameters

Time - 221107 1435 B
pH - 7.22
Temp = 21.5
Cond - 1074
Turb = 2.18 NTUs
DO Pre = 6.92 / 9.96 (24.7)
DO Post = 6.95 / 9.97

SAMPLES

Sample #	Analysis	Preserve	Container	LAB
221107 1450 B	VOC by 8260	Ice/HCl	(3) 40 ml Vial	GLS
— 1451 B	" " (FB)	"	"	"
— 1452 B	NDMA LL	Ice	(1) 1L Amber	SRI
— 1453 B	" " (FB)	"	"	"

Read and Understood By

Signed 11-7-2022 Date B-52 Signed 11-8-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-7-2022 Page 1 of 1

Sample Location: BLM.32-571

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOC	NDMA						Charge Number
221107 1450 B	3	A	✓							
1451 B FB	3		✓							
1452 B	1			✓						
1453 B FB	1			✓						

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11-7-2022 1630		[signature]	11-8-22 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

PROJECT BLM-32-632 FLUTe ENV-0020

Notebook No. D32 #125 B
Continued from page

Dan Halvorsen & Tony Torrez present. Weather is partly cloudy and cool. This zone will be purged and sampled using a FLUTe system. Samples will be collected using a dedicated discharge hose. Purge pressure set at 281 psi, sample pressure at 252 psi. Flowmeter set at 3 psi, bladder stable at 7 psi. 15 minute recovery between purges. Minimum of 4 gallons purged prior to sampling. Carboy G1 in use.

Pre-sample Parameters

PH = 7.51
Temp = 20.9
Cond = 1081
Turb = 0.93

No Transducer

Meter ID

PH/Cond = 93
Turb = 20
" STD = 5.94
" 20G = 6.01
" Lot = 210966
" Exp = 11/22

Parameters

Time = 221107 1522 B
PH = 7.47
Temp = 20.8°C
Cond = 1072 us/cm
Turb = 0.62 NTU's
PHPre = 6.98-10.01 (25.2°C)
PHPost = 6.99-10.00

SAMPLES

Sample #	Analysis	Preserve	Container	Lab
221107 1545 B	VOA by 8260	Ice/Hcl	(3) 40 ml vial	ALS
— 1546 B	" " (FB)	"	"	"
— 1547 B	NOMA 2L	Ice	(1) 1L Amber	SRI
— 1605 B	" " MS	"	"	"
— 1606 B	" " MSD	"	"	"
— 1607 B	" " (FB)	"	"	"

Continued from page

Read and Understood By

11-7-2022

11-8-22

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-7-2022 Page 1 of 1

Sample Location: Blm. 32-632

Sample Number (Pertinent Notes (if any))	# of Containers	Sample Matrix*	VOC	NDMA LL					Charge Number
									X6MD
2211071545 B	3	A	✓						
1546 B FB	3		✓						
1547 B	1			✓					
1605 B MS	1			✓					
1606 B MSD	1			✓					
1607 B FB	1			✓					

Sample Location:

Sample Number (Pertinent Notes (if any))	# of Containers	Sample Matrix*							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11-7-2022 1630		[signature]	11-8-22 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

PROJECT BM · 36 · 350

Continued from page

Marcus Avalos & Frank Gallegos present. Weather is breezy & cool. This zone will be sampled using 5 steam cleaned & triple rinsed, stainless steel sample tubes. Gen in use. Probe # 4955. Surface checks performed on probe prior to sampling.

30 Min Equip Blanks Carboy G-3

Sample #	Analysis	Preservative	Container	lot	lab
221104 1030 Y	VOA by 8260	HCl / Ice	(3) 40 ml vials	2621	Als

Initial Parameters		Final	Meter ID
Time	221104 1100 Y	221104 1220 Y	PH/cond · 92
PH	8.10	8.20	Turb · 7
Temp	18.5°C	18.7°C	= STD · 49.4 NTU
Cond	1268 us/cm	1283 us/cm	= RDG · 49.8 NTU
Turb	0.60 NTU	0.72 NTU	= LOT · 210966
PH pre	7.04 / 10.03 (18.6°C)	7.01 / 10.04	= Exp · 11/30/22
PH post	7.03 / 10.02	7.04 / 10.05	
DTW	573.25'	573.32'	
Atmos	12.56 psia	12.53 psia	
		IDW · 1/2 gal	

Buffers	lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample #	Analysis	Preservative	Container	lot	lab
221104 1130 Y	VOA by 8260	HCl / Ice	(3) 40 ml vials	2621	Als
——— 1131 Y	= (Dup)	=	=	=	=
——— 1132 Y	607 / Bromacil	Ice	(1) 1L Amber	01003014	SRI
——— 1155 Y	= (Dup)	=	=	=	=

Runs	1)	2)	3)	4)
	12.72	12.69	12.72	12.74
	32.84	33.20	33.15	33.12
	32.80	33.05	33.02	33.00
	12.70	12.71	12.75	12.71

Continued from page

Read and Understood By

Signed [signature] Date 11/4/22 Signed [signature] Date 11-7-22

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/4/22 Page 1 of 1

Sample Location: BIM-36-800			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260	607/80						Charge Number
2211040826Y (EB)	3	A	X							XGMD
— 0950Y	3	|	X							|
— 0951Y	1	|		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]	11/4/22 @ 1200		[signature]	11-7-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: __________

PROJECT BLM-36-61D WJI ENV-0020 11/3/22

Marcus Avalos & Craig Del Ferraro present. Weather is clear, cool, & windy. this zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe #4955. Surface checks performed on probe prior to sampling.

30 Min. Equipment blanks - Carboy G1

Sample	Analysis	Preservative	Container	Lot	Lab
2211031305Y	VOA by 8260	ice/HCL	(3) 40ml vials	2621	ALS

Initial Parameters
Time - 2211031345Y
PH - 7.92
Temp - 24.2°c
Cond - 1155 us/cm
Turb - 1.28 NTU's
pH pre - 7.04/10.02 (24.1°c)
pH post - 7.05/10.01
DTW - 573.17 ft.
Atmos - 12.40 psia

Final
Time - 2211031417Y
PH - 7.84
Temp - 24.8°c
Cond - 1162 us/cm
Turb - 1.17 NTU's
pH pre - 7.05/10.01 (25.0°c)
pH post - 7.03/10.00
DTW - 573.23 ft.
Atmos - 12.42 psia
IDW - 1/2 gal.

Meter ID
pH/Cond - 92
Turb - 7
" std - 49.6
" rdg - 48.7
" lot - 210966
" Exp - 11/30/22

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2211031415Y	VOA by 8260	ice/HCL	(3) 40ml vials	2621	ALS
——— 1416Y	607/Bromacil	ice	(1) 1L Amber	0100301H	SRI

Runs
1) 32.44
102.06
101.98
32.41

2) 32.41
101.97
101.93
32.33

Continued from page N/A

Read and Understood By

Craig Del Ferraro 11/3/22 B-58 [signature] 11-7-22

Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/3/22 | Page 1 of 1

Sample Location: BLM-36-610			Analytical Requirement							
Pertinent Notes (if any)										
Sample Number	# of Containers	Sample Matrix*	8260	607						Charge Number
2211031305Y (EB)	3	A	✓							XGMD
—— 1415Y	3	A	✓							"
—— 1416Y	1	A		✓						"

Sample Location:			Analytical Requirement							
Pertinent Notes (if any)										
Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Fano	11/3/22 / 1450hrs.		[illegible signature]	11-7-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT BM·36·800

Notebook No. D64 # 129 (Y)

Continued from page

Marcus Avalos & Frank Gallegos present. Weather is clear & cool. This zone will be sampled using SS steam cleaned & triple rinsed, stainless steel sample tubes. Gen in use. Probe # 4955. Surface checks performed on probe prior to sampling.

30. Min Equip Blanks
Carboy G-3

Sample #	Analysis	Preservative	Container	lot	lab
2211040820Y	VOA by 8260	HCl/Ice	(3) 40 ml vials	2621	ALS

Initial Parameters		Final
Time	2211040900Y	2211040955Y
PH	8.26	8.33
Temp	23.2°C	23.4°C
Cond	930 uS/cm	1008 uS/cm
Turb	1.50 NTU	1.34 NTU
PH pre	7.02/10.03 (17.5°C)	7.03/10.01
PH post	7.04/10.05	7.03/10.02
DTW	573.20'	573.25'
Atmos	12.48 psia	12.53 psia
		IDW · 1/2 gal

Meter ID

PH/Cond - 92
Turb - 7
= STD - 49.6 NTU
= Rdg - 49.8 NTU
= LOT - 210966
= Exp - 11/30/22

Buffers	lot	Exp
7	R02A44	8/23
10	4107630	1/23

Samples

Sample #	Analysis	Preservative	Container	lot	lab
2211040950Y	VOA by 8260	HCl/Ice	(3) 40 ml vials	2621	ALS
—— 0951Y	607/Bromacil	Ice	(1) 1L Amber	0100301H	SRI

Runs	1)	2)
	115.34	115.26
	177.00	177.10
	176.98	177.02
	115.30	115.20

Continued from page

Read and Understood By

Signed 11/4/22 Date

Signed 11-7-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/4/22

Sample Location: BIM · 36 · 350

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 8260	607/802						Charge Number
2211041030Y (EB)	3	A	X							X4MO
— 1130Y	3	|	X							|
— 1131Y (Dup)	3	|	X							|
— 1132Y	1	|		X						|
— 1155Y (Dup)	1	|		X						|

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	11/4/22 @ 1200	[signature]	11-7-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT BLM-36-860 WJI ENV-0020 11/3/22

Notebook No. D64 #129(Y)

Continued from page N/A

Marcus Avalos & Craig Del Ferraro present. Weather is clear & cool. This zone will be sampled using 5 steam cleaned & triple rinsed, stainless steel sample tubes. Gen. n use. Probe#4955. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G1

Sample	Analysis	Preservative	Container	Lot	Lab
2211030925Y	VOA by 8260	ice/HCL	(3)40ml vials	2621	ALS

Initial Parameters	Final	Meter ID
Time - 2211031010Y	Time - 2211031047Y	pH/cond - 92
PH - 8.13	PH - 8.00	Turb - 7
Temp - 23.3°C	Temp - 23.5°C	" std - 49.6
Cond - 1140 us/cm	Cond - 1135 us/cm	" rdg - 48.7
Turb - 10.2 NTU's	Turb - 10.8 NTU's	" lot - 210966
pH pre - 7.10/10.07 (18.0°C)	pH pre - 7.09/10.05 (18.9°C)	" Exp - 11/30/22
pH post - 7.12/10.07	pH post - 7.07/10.05	
DTW - 573.10 ft.	DTW - 573.17 ft.	
Atmos - 12.41 psia	Atmos - 12.39 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2211031045Y	VOA by 8260	ice/HCL	(3)40ml vials	2621	ALS
——— 1046Y	607/Bromacil	ice	(1)1L Amber	0100301H	SRI

*Samples were a bit aerated.

Runs	1)	2)
	141.24	141.14
	137.48	137.50
	137.43	137.47
	141.20	141.10

Continued from page N/A

Read and Understood By

Craig Del Ferraro 11/3/22
Signed Date

[signature] 11-7-22
Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/3/22 Page 1 of 1

Sample Location: BLM-36-860

Sample Number	# of Containers	Sample Matrix*	8260	607						Charge Number
2211030925Y (EB)	3	A	✓							XGMD
—— 1045Y	3	A	✓							"
—— 1046Y	1	A		✓						"

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferraro	11/3/22 / 1110hrs		[signature]	11-7-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT BLM-38-480 WJI ENV-0020 11/7/22

Notebook No. D64 #129(y)
Continued from page N/A

Robert Burrows & Craig Del Ferraro present. Weather is clear & warm. This zone will be sampled using 5 steam cleaned & triple rinsed, stainless steel sample tubes. Gen. in use. Probe #4955. Surface checks performed on probe prior to sampling.

Trip blanks - Water purification system

Sample	Analysis	Preservative	Container	Lot	Lab
2211070910y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2621	ALS
——— 0911y	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI

30 Min. Equipment Blanks - Carboy G3

Sample	Analysis	Preservative	Container	Lot	Lab
2211071000y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2621	ALS
——— 1001y	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI

Initial Parameters		Final		Meter ID	
Time	2211071055y	Time	2211071350y	pH/cond	92
PH	8.33	PH	8.25	Turb	7
Temp	22.9°c	Temp	22.7°c	" std	49.6
Cond	1068us/cm	Cond	1076us/cm	" rdg	49.0
Turb	0.79NTU's	Turb	0.70NTU's	" lot	210966
pH pre	7.06/10.02 (23.9°c)	pH pre	7.08/10.03	" Exp	11/30/22
pH post	7.06/10.04	pH post	7.06/10.03 (26.0°c)		
DTW	403.40ft	DTW	~~7.08/10.03~~ co 403.54ft.		
Atmos	12.53psia	Atmos	12.57psia		
		IDW	1/2 gal.		

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2211071325y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2621	ALS
——— 1326y	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI

Runs

1)	2)	3)
50.02	50.02	49.96
39.80	39.83	39.74
39.76	39.81	39.70
50.00	49.97	49.99

Continued from page N/A

Craig Del Ferraro 11/7/22
Signed Date

Read and Understood By
Lori [signature] 11-8-22
Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/7/22 | Page 1 of 1

Sample Location: BLM-38-480

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
221107 0910Y (TB)	3	A	✓							XGWD
——— 0911Y (TB)	1	A		✓						"
——— 1000Y (EB)	3	A	✓							"
——— 1001Y (EB)	1	A		✓						"
——— 1325Y	3	A	✓							"
——— 1326Y	1	A		✓						"

Pertinent Notes (if any):

Sample Location:

Pertinent Notes (if any):

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferraro	11/7/22 / 1615hrs.		[signature]	11-8-22 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

Continued from page N/A

PROJECT BLM-38-620 WJI ENV-0020 11/7/22

Robert Burrows & Craig Del Ferraro present. Weather is cloudy & warm. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe #4955. Surface checks performed on probe prior to sampling.

30 Min Equipment Blanks - Carboy G3

Sample	Analysis	Preservative	Container	Lot	Lab
2211071430y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2621	ALS
——— 1431y	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI

Initial Parameters	Final	Meter ID
Time - 2211071515y	Time - 2211071547y	pH/Cond - 92
PH - 7.98	PH - 7.88	Turb - 7
Temp - 22.8	Temp - 22.6°c	" std - 49.6
Cond - 1089 us/cm	Cond - 1097 us/cm	" rdg - 49.0
Turb - 1.12 NTU's	Turb - 1.02 NTU's	" lot - 210966
pH pre - 7.05/10.08 (23.1°c)	pH pre - 7.08/10.10 (22.6°c)	" Exp - 11/30/22
pH post - 7.07/10.06	pH post - 7.06/10.10	
DTW - 403.54 ft.	DTW - 403.69 ft.	
Atmos - 12.49 psia	Atmos - 12.55 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2211071545Y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2621	ALS
——— 1546Y	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI

Runs	1)	2)
	110.84	110.79
	87.00	86.86
	86.94	86.85
	110.82	110.77

Continued from page N/A

Read and Understood By

Craig Del Ferraro 11/7/22 [signature] 11-8-22

Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/7/22 Page 1 of 1

Sample Location: BLM-38-620

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA					Charge Number
2211071430Y (EB)	3	A	✓						XGMD
1431Y (EB)	1	A		✓					"
1545Y	3	A	✓						"
1546Y	1	A		✓					"

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	11/7/22/ 1615hrs.		[signature]	11-8-22 /0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

Notebook No. D32 # 124 (C)

PROJECT BW-5-295 WJI ENV-0053

Continued from page ________

Marcus Avalos & Dan Halvorsen present; Weather is clear & cool. This well will be purged using a dedicated bladder pump. Samples will be collected using a dedicated teflon hose. Water quality parameters will be monitored using a In-Situ Aqua Troll 500. Carboy G-2

Calibrations

DO - Cal in 100% saturated air

Cond - Cal using 1413 us/cm std. solution.

PH - Cal using 4,7,10 buffers

Turbidity - Cal using 10 NTU std.

Initial DTW - 236.56'

Parameters (time)	temp (°c)	Cond (us/cm)	DO (mg/L)	ORP	PH	Turb (NTU)	DTW (ft)
1) 2211070940C	21.83	799.34	6.22	161.7	8.10	0.38	236.85'
2) —— 0942C	21.86	809.46	6.11	162.7	8.07	0.34	"
3) —— 0944C	21.88	813.79	6.09	162.9	8.06	0.27	"

Samples

Sample #	Analysis	Preservative	Container	lot	lab
2211070950C	Voa by 8260	HCl/Ice	(3) 40ml vials	26491	ALS
—— 0951C	" (FB)	"	"	"	"
—— 0952C	607/Bromacil	Ice	(1) 1L Amber	0100301H	SRI
—— 0953C	Total Metals	HNO3/Ice	(2) 125ml poly	220421	ALS
—— 0954C	Anions/Alk	Ice/Zero HS	"	"	"
—— 0955C	TDS by SM2540C	Ice	(1) "	"	"
—— 0956C	Perchlorate 6850	Ice/1/3 HS	"	"	"
—— 0957C	NO2 NO3 by 353.2	H2SO4/Ice	(1) 250ml poly	220114	"

Total Gallons Purged - 1.5 gal

Final DTW - 236.90'

Continued from page

Read and Understood By

[signature] Signed 11/7/22 Date

[signature] Signed 11-8-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/7/22 | Page 1 of 1

Sample Location: BW-5-295

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	607/Bro	T. Metals	Anions/Alk	TDS	Perchlorate		Charge Number
2211070950C	3	A	X							XGMD
0951C (FB)	3		X							
0952C	1			X						
0953C	2				X					
0954C	2					X				
0955C	1						X			
0956C	1							X		

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NO2 NO3							Charge Number
2211070957C	1	A	X							X GMD

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[illegible]	11/7/22 @ 1100		[illegible]	11-8-22 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

OJECT MPE-1

Notebook No. PFTS #11

Continued from page N/A

Frank Gallegos & Tim Moore present. Weather is clear & cool. This well will be sampled and pulsed with a dedicated sampling port.

Parameters		Meter ID	Buffers	LOT#	EXP
Time	221114/1324	Ph/cond - N/A #691	7	1202A44	8/23
Ph	8.09	Turb - N/A #6	10	4107E30	7/23
Temp	21.7°C	STD 4.75 NTU			
cond	1411 uS/cm	RDG 4.74 NTU			
Turb	0.72 NTU	LOT# 210966			
Ph Pre	7.01-10.00 (17.3°C)	EXP 11/30/22			
Ph Post					

Samples

Sample#	Analysis	Preserve	LOT#	LAB	CONT
221114/1331	VOAs by 8260	ICE & HCl	2621	ALS	(3) 40 ml vial
— 1332	" (FB)	"		"	"
— 1333	NDMA/DMN/Bro by 607	ICE	01003014	SWRI	(2) 1 L amber

Continued from page N/A

Read and Understood By

Signed [signature] Date 14 NOV 2022

Signed [signature] Date 11-15-22

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-14-22 Page 1 of 1

Sample Location: MPE-1			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOA 8260	LL-VOA 8260LL	NDMA/DMN/BROMACIL 607	LOW LEVEL NDMA	TOTAL METALS	ANIONS/ALK	TDS SM2540C	XGMD Charge Number
221141331	3	A	X							"
— 1332 (FB)	3	A	X							"
— 1333	1	A			X					"

Sample Location:			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	PERCHLORATE 6850	NO_2/NO_3 353.2						XGMD Charge Number

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	11-14-22 (1400)	[signature]	11-15-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

Frank Calleros & Tim Moore present. Weather is Clear and Cool, This well will Be purged and sampled using a dedicated sampling port.

Parameters		Meter ID	Buffers	Lot#	Exp
Time	221114 1343	Ph/cond-N/A	7	1202A44	8/23
Ph	7.01	Turb-N/A	10	4107E30	1/23
Temp	20.5°c	" STD			
Cond	1371 us/cm	" RDG			
Turb	0.79 NTU	" Lot#			
Ph pre	6.92-10.00 (16.1c) Exp				
Ph post					

Samples

Sample#	Analysis	Pres	Lot#	LAB	CONT
221114 1348	VOA by 8260	ICE+HCl	2621	ALS	(3) 40ml Vial
— 1349	" (FB)	"	"	"	"
— 1350	NDMA/DMN (Bio by 607	ICE	4107E30	SWRL	(1) Lt amber
— 1351	" (Dup)	"	"	"	

Continued from page N/A

Read and Understood By

[signature] 14 Nov 2022 [signature] 11-15-22

Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-14-22

Page 1 of 1

Sample Location: MPE-9

Sample Number	# of Containers	Sample Matrix*	VOA 8260	LL-VOA 8260LL	NDMA/DMN/ BROMACIL 607	LOW LEVEL NDMA	TOTAL METALS	ANIONS/ALK	TDS SM2540C	Charge Number XGMD
221114 1348	3	A	X							"
— 1349 (FB)	3	A	X							"
— 1350	1	A			X					"
— 1351 (Dup)	1	A			X					"

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*	PERCHLORATE 6850	NO_2/NO_3 353.2						Charge Number XGMD

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11-14-22 (1400)		[signature]	11-15-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

Frank Gallegos & Tim Moore present. Weather is Partly Cloudy and Cool, this well will be purged and sampled using a dedicated sampling port.

Parameters		Meter ID	Buffers	Lot #	Exp
Time	221115 1258	Ph/cond - N/A	7	1202A44	8/23
Ph	6.74	Turb - N/A	10	4107E30	1/23
Temp	19.2°c	" STD 4.75 NTU			
cond	1341 us/cm	" RDG 4.75 NTU			
Turb	1.58 NTU	" Lot # 210966			

Ph Pre 6.99 - 10.00 (15.6c) Exp 11/30/2022
Ph POST - 7.02 / 10.02

Samples

Sample #	Analysis	Pres	Lot #	LAB	CONT
221115 1301	VOA by 8260	ICE & HCl	2621	A15	(5) 40ml vial
— 1302	" (FB)	"	"	"	"
— 1303	NDMA/DMN/BI by 607	ICE	01003014	SWRI	(1) Lt amber

Continued from page N/A

Read and Understood By

Signed [signature] Date 15 Nov 2022 Signed [signature] Date 11-15-22

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-15-22

Page 1 of 2

Sample Location: MPE-10

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOA 8260	LL-VOA 8260LL	NDMA/DMN/BROMACIL 607	LOW LEVEL NDMA	TOTAL METALS	ANIONS/ALK	TDS SM2540C	Charge Number XGMD
221115 1301	3	A	X							"
—— 1302 (FB)	3	A	X							"
—— 1303	1	A			X					"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	PERCHLORATE 6850	NO_2/NO_3 353.2						Charge Number XGMD

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	11-15-22 (1330)	[signature]	11-16-22 / 0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

OJECT MPE-11

Notebook No. PF~~#~~ 11

Continued from page N/A

Frank Gallegos & Tim Moore present. Weather is
tly Cloudy and Cool, This well will Be sampled
and Purged using a dedicated sampling port.

Parameters		Meter ID		Buffers	Lot	Exp
Time	221115 1237	ph/Cond	91	7	1202 444	8/23
ph	7.14	Turb	6	10	4107 E30	/23
Temp	23.7 c	" STD	4.75			
Cond	1026 us/cm	" RDG	4.75			
Turb	1.21 NTU	" LOT#	210766			
ph pre	7.02-10.01 (15.1c)	" Exp	11/30/22			
ph POST - 7.02 - 10.02						

Samples

Sample#	Analysis	Pres	Lot#	LAB	CONT
221115 1243	VOA by 8260	ICE & HCl	2621	ALS	(3) 40 ml vial
— 1244	" (FB)	"	"	"	"
— 1245	NDMA/Amin Bro by 607	ICE	010030	H SWRI	(1) L + amber

Continued from page N/A

Read and Understood By

Signed: [signature] Date: 15 Nov 2022 Signed: [signature] Date: 11-16-22

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-15-22

Page 1 of 1

Sample Location: MPE-11

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOA 8260	LL-VOA 8260LL	NDMA/DMN/BROMACIL 607	LOW LEVEL NDMA	TOTAL METALS	ANIONS/ALK	TDS SM2540C	XGMD Charge Number
221115 1243	3	A	X							..
—— 1244 (FB)	3	A	X							..
—— 1245	1	A			X					..

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	PERCHLORATE 6850	NO_2/NO_3 353.2						XGMD Charge Number

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	11-15-22 (1330)	[signature]	11-16-22 / 0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT NASA-6

Notebook No. D32 # 125 B

Continued from page

T. Kondy + R. Burrows present. Weather is cold and cloudy. Well will be purged with a dedicated bladder pump and sampled with a teflon discharge tube. Carboy #3

Initial Parameters		Final Parameters	Meter #	
Time –	221116 1005 B	221116 1020 B	pH/cond –	93
pH –	7.37	7.40	TURB –	20
Temp (c)	12.7	12.5	" std	5.94
cond (us/cm)	1723	1751	" Rdg	5.56
TURB (NTU)	4.33	5.20	" Lot #	210966
DTW (Ft)	128.62	137.85	" Exp	11/30/22
pH precal	7.02 – 10.05	7.05 · 10.07	Buff	Lot # E
pH post cal	7.05 – 10.11	7.07 – 10.11	7	
Gal purged –	15 gal		10	

Samples

Sample #	Analysis	Preserve	cont.	Lab
221116 1010 B	8260 (FB)	Ice, HCL	(3) 40 ml Vial	ALS
– 1011 B	Metals (FB)	Ice, HNO_3	(2) 125 ml poly	"
– 1012 B	8260	Ice, HCL	(3) 40 ml Vial	"
– 1013 B	NDMA/Bromacil/[illegible]	Ice	(1) 1 LT Amber	SRI
– 1014 B	Metals	Ice, HNO_3	(2) 125 ml poly	ALS
– 1015 B	Anions/Alk	Ice	(2) 125 ml poly	"
– 1016 B	TDS	Ice	(1) 250 ml poly	"
– 1017 B	perchlorate	Ice	(1) 125 poly	"
– 1018 B	NO_2/NO_3	Ice, H_2SO_4	(1) 250 ml poly	"

Continued from page

Read and Understood By

T. Kondy Signed 11-16-22 Date

B-78

[signature] Signed 11-17-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-16-22 Page ______ of ______

Sample Location: NASA-6

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	607	Metals	Anions/ALK	TDS			Charge Number
221116 1010 B (FB)	3	A	X							
— 1011 B (FB)	2				X					
— 1012 B	3		X							
— 1013 B	1			X						
— 1014 B	2				X					
— 1015 B	2					X				
— 1016 B	1						X			

Sample Location: NASA-6

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	perchlorate	NO2/NO3						Charge Number
221116 1017 B	1	A	X							
— 1018 B	1			X						

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11-16-22		[signature]	11-17-22 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

WSTF 381C (05/2016)

PROJECT PL-7-560 WJI ENV-0020 11/8/22

Notebook No. D64#129(Y)

Continued from page N/A

Robert Burrows & Craig Del Ferraro present. Weather is clear & cool. This zone will be sampled using 5' steam cleaned & triple rinsed, stainless steel sample tubes. Gen. in use. Probe #4955. Surface checks performed on probe prior to sampling.

Trip Blanks - Water Purification System.

Sample	Analysis	Preservative	Container	Lot	Lab
2211080810Y	VOA by 8260LL	ice/HCL	(3)40ml vials	2621	ALS
——— 0811Y	Low Level NDMA	ice	(1)1L Amber	0100301H	SRI

30 Min. Equipment Blanks - Carboy G3

Sample	Analysis	Preservative	Container	Lot	Lab
2211080920Y	VOA by 8260LL	ice/HCL	(3)40ml vials	2621	ALS
——— 0921Y	Low Level NDMA	ice	(1)1L Amber	0100301H	SRI

Initial Parameters	Final	Meter ID
Time - 2211081000Y	Time - 2211081055Y	pH/cond - 92
PH - 8.19	PH - 8.24	Turb - 7
Temp - 22.5°c	Temp - 22.9°c	" Std - 49.6
Cond - 1009us/cm	Cond - 997 us/cm	" rdg - 48.3
Turb - 1.25NTU's	Turb - 1.14NTU's	" lot - 210966
pH pre - 7.10/10.13 (19.3°c)	pH pre - 7.04/10.02 (24.1°c)	" Exp - 11/30/22
pH post - 7.08/10.13	pH post - 7.05/10.01	
DTW - 484.20ft.	DTW - 484.33ft.	
Atmos - 12.61psia	Atmos - 12.63psia	
	IDW - 1/2gal.	

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2211081030Y	VOA by 8260LL	ice/HCL	(3)40ml vials	2621	ALS
——— 1031Y	*" (MS)*	"	"	"	"
——— 1032Y	Low Level NDMA	ice	(1)1L Amber	0100301H	SRI

Runs			
	1) 49.97	2) 49.92	3) 49.91
	45.99	46.02	46.03
	46.01	46.00	46.00
	49.94	49.93	49.93

Continued from page N/A

Craig Del Ferraro
Signed
11/8/22
Date

Read and Understood By
Lori [signature]
Signed
11-9-22
Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/8/22 | Page 1 of 1

Sample Location: PL-7-560

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260LL	LLNDMA						Charge Number
2211080810Y (TB)	3	A	✓							XGMD
——— 0811Y (TB)	1	A		✓						"
——— 0920Y (EB)	3	A	✓							"
——— 0921Y (EB)	1	A		✓						"
——— 1030Y	3	A	✓							"
——— 1031Y (MS)	3	A	✓							"
——— 1032Y	1	A		✓						"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelFino	11/8/22/1120hrs.		[signature]	11-9-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT PL-12-570 ENV-0053

Notebook No. D32 #127 C

Continued from page

Dan Halvorsen & Marcus Avalos present. Weather is Clear and Cool. This Zone will be purged and sampled using a dedicated bladder pump. Samples will be collected using a new Teflon discharge hose. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. Carboy G2 in use.

Calibrations: IDW = 2 gal

DO Sensor: In 100% Saturated air

pH sensor: using a 3pt (4,7,10) Buffer method.

Conductivity = using a 1413 uS/cm In-Situ Standard.

Turbidity meter = #21 STD = 9.40 RDG: 9.43 LOT# = 21096 Exp = 11/22

Trip Blanks

Sample #	Analysis	Preserve	Container	LOT	LAB
2211100700 C	VOCs by 8260	Ice/HCl	(3) 40ml vial	2641	ALS
— 0701 C	NDMA LL	Ice	(1) 1L Amber		SRI

Parameters (Time)	Temp	Cond	DO	pH	ORP	Turb	DTW
2211100855 C	20.44	1004	4.69	7.40	142	0.32	N/A
— 0857 C	20.43	1003	4.65	7.36	141	0.35	
— 0859 C	20.44	1005	4.64	7.41	141	0.33	

SAMPLES

Sample #	Analysis	Preserve	Container	LOT	LAB
2211100902 C	VOCs by 8260	Ice/HCl	(3) 40ml vial	2461	ALS
— 0903 C	" " (FB)	"	"	"	"
— 0904 C	NDMA LL	Ice	(1) 1L Amber	0100301H	SRI
— 0905 C	" " (Dup)	"	"	—	"
— 0906 C	" " (FB)	"	"	=	"

Transducer = Psi = 7.11
Temp = 23.09
Depth = 16.42 ft.

Packer = Psi = Prior = 34
Post = 34

Continued from page

Read and Understood By

Signed 11-10-2022 Date

Signed 11-14-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/10/22 Page 1 of 1

Sample Location: 01.12.570

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	LC NDMA						Charge Number
22111006700C (TB)	3	A	X							XGMD
0701 C (TB)	1			X						
0902 C	3		X							
0903 C (FB)	3		X							
0904 C	1			X						
0905 C (Dup)	1			X						
0906 C (FB)	1			X						

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	11/10/22 @ 4:30pm	[signature]	11-14-22 / 0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT PL-12-800 ENV-0053

Dan Halvorsen + Marcus Avalos present. Weather is clear and cool. This zone will be purged and sampled using a dedicated bladder pump. Samples will be collected using a new Teflon discharge hose. Water quality parameters monitored using an In-Situ Aqua Troll 500. Carboy G2 in use.

Calibrations:

IDW = 3gal

DO Sensor: In 100% Saturated Air
pH Sensor: Using a 3pt. (4,7,10) Buffer method.
Conductivity: Using a 1413 us/cm In-Situ STD.
Turbidity meter: #21 STD = 9.40 RDG = 9.43 Lot # = 210916 Exp: 11/22

Parameters (Time)	Temp	Cond	DO	pH	ORP	Turb (NTU)	DTW
221110 1410 C	20.86	1013 us/cm	3.78 mg/L	7.48	139.9	0.30	N/A
— 1415 C	20.87	1012 "	3.71 "	7.42	140	0.43	"
— 1420 C	20.85	1012	3.70 "	7.48	140	0.24	"

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	Lab
221110 1425 C	VOA by 8260	Ice/HCl	(3) 40 ml Vial	2641	ALS
— 1426 C	" " (DUP)	"	"	"	"
— 1427 C	" " (FB)	"	"	"	"
— 1435 C	NDMA LL	Ice	(1) 1L Amber	010301H	SRI
— 1440 C	" " (FB)	"	"	"	"

Transducer:
PSI = 7.11
Temp = 23.09
Depth = 16.42

Packer =
Prior: 34 psi
Post: "

Continued from page NA

Signed [signature] Date 11.10.2022

B-84

Read and Understood By

Signed [signature] Date 11-14-22

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11.10.22 Page 1 of 1

Sample Location: PL.12.800

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 8260	LL26D3D						Charge Number
221110 1425C	3	A	X							
—— 1426C	3	A	X							
—— 1427C (FB)	3	A	X							
—— 1435C	1	A		X						
—— 1440C (FB)	1	A		X						

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11.10.22 1400		[signature]	11-14-22 /0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

Notebook No. D32 #127 C

PROJECT ST·1·473 WJI ENV·0053

Continued from page

Marcus Avalos & Al Montes present. Weather is breezy & warm. This well will be purged using a dedicated bladder pump. Samples will be collected using a new teflon discharge tube. Water quality parameters will be monitored using an In-Situ Aqua Troll 500.
Carboy G.2

Calibrations
DO · Cal in 100% saturation.
PH · Cal using Oakton Buffers (4,7,10)
Conductivity · Cal using 1413 us/cm STD.
Turbidity · Cal using 10 NTU STD.

Parameters (time)	Temp (°C)	PH	Conductivity (uS/cm)	DO (mg/L)	ORP	Turb	DTW
1) 221109 1430C	20.78	7.40	1,089.1	6.32	109	1.30	Transducer
2) —— 1432C	20.84	7.38	1,092.3	6.20	114	1.18	"
3) —— 1434C	20.81	7.38	1,091.5	6.13	116	1.10	"

Samples

Sample #	Analysis	Preserve	Container	lot	Lab
221109 1440C	VOA by 8260	HCl/Ice	(3) 40ml vials	26491	ALS
—— 1441C	" (FB)	"	"	"	"
—— 1442C	607/Bromacil	Ice	(1) 1L Amber		SRI

Transducer Reading
Pressure - 8.03 psi
Temp - 23.39 °C
Depth - 18.58 ft

Total Gallons Purged - 1.75 gal

Continued from page

Read and Understood By

Signed 11/9/22 Date Signed 11-10-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11·09·22 Page 1 of 1

Sample Location: ST·1·473

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOA 8260	20MA·RS2·BRO 607						Charge Number
221109I440C	3	A	X							
——— 1441C (FB)	3	A	X							
——— 1442C	1	A		X						

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11·09·22 4:33pm		[signature]	11-10-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

PROJECT ST-1-541

Continued from page

Matt Garcia & Marcus Avalos present. Weather is cloudy & cool. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge tube. Water quality parameters will be monitored using a In-Situ Aqua Troll 500. Carboy G-1.

Calibrations

Initial DTW - 470.25'

DO - Cal in 100% saturation
PH - Cal using In-Situ Buffers (4,7,10)
Conductivity - Cal using 1413 uS/cm STD.
Turbidity - Cal using 10 NTU

Trip Blanks

Sample #	Analysis	Preserve	Container	lot	lab
221116 0730A	VOA by 8260	HCl/Ice	(3) 40ml vials	26491	ALS

Parameters (time)	Temp(°C)	Cond(uS/cm)	DO(mg/L)	PH	ORP	Turb(NTU)	DTW(ft)
1) 221116 1020 A	20.02	1156.5	6.62	7.34	20.9	0.81	470.40'
2) —— 1022 A	20.13	1159.2	6.65	7.34	20.8	0.75	"
3) —— 1024 A	20.10	1158.4	6.69	7.33	21.7	0.88	"

Samples

Sample #	Analysis	Preserve	Container	lot	lab
221116 1030A	VOA by 8260	HCl/Ice	(3) 40ml vials	26491	ALS
—— 1031 A	" (FB)	"	"	"	"
—— 1032 A	607/Bromacil	Ice	(1) 1L Amber	0100301H	SRI
—— 1033 A	Total Metals	HNO3/Ice	(2) 125ml poly	220421	ALS
—— 1034 A	" (Dup)	"	"	"	"

Total Gallons Purged - 2 gal

Continued from page

Read and Understood By

Signed [signature] Date 11/16/22

Signed [signature] Date 11-17-22

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/16/22 | Page 1 of 1

Sample Location: ST-1-541			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260	607/8270	T. Metals					Charge Number
22111160730A (TB)	3	A	X							XGMD
1030A	3		X							
1031A (FB)	3		X							
1032A	1			X						
1033A	2				X					
1034A (Dup)	2				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]	11/16/22 @ 1110		[signature]	11-17-22 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

Notebook No. D32# 126(A)

ROJECT ST-1-630

Continued from page

Marcus Avalos & Matt Garcia present. Weather is clear & cold. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge tube. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. Carboy C-1

Calibrations

DO- Cal in 100% saturation

pH- Cal using In-Situ Buffers (4,7,10)

Conductivity- Cal using 1413 uS/cm STD.

Turbidity- Cal using 10 NTU

Initial DTW- 470.00'

Parameters (time)	Temp (°C)	Cond (uS/cm)	DO (mg/L)	pH	ORP	Turb (NTU)	DTW (ft)
221116 1520 A	19.68	852.32	4.62	7.63	136.8	2.11	470.00'
—— 1522 A	19.72	853.57	4.70	7.65	137.2	1.98	"
—— 1524 A	19.67	854.44	4.65	7.63	138.3	1.87	"

Samples

Sample #	Analysis	Preserve	Container	Lot	Lab
221116 1530 A	VOA by 8260	HCl/Ice	(3) 40 ml vials	26491	ALS
—— 1531 A	" (FB)	"	"	"	"
—— 1532 A	607/Bromacil	Ice	(1) 1L Amber	0100301H	SRI
—— 1533 A	" (Dup)	"	"	"	"

PDW - 2 gal

Continued from page

Signed: [signature] Date: 11/16/22

Read and Understood By

Signed: [signature] Date: 11-16-22

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/16/22 Page 1 of 1

Sample Location: ST-1-630

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 8260	608/80						Charge Number
221116/530A	3	A	X							YGMD
— 1531A (FB)	3		X							
— 1532A	1			X						
— 1533A (Dup)	1			X						

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
	11/16/22 @ 1600			11-17-22 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________________

PROJECT ST-4-589 11-16-22 ENV-0053

Notebook No. D32#127(C)

Continued from page

RAY HALVORSEN & TONY TORREZ PRESENT. THE WEATHER IS CLEAR BREEZY & COOL. THIS WELL WILL BE PURGED & SAMPLED USING A DEDICATED TEFLON BLADDER PUMP, SAMPLES COLLECTED FROM A TEFLON DISCHARGE TUBE. PARAMETERS COLLECTED WITH A IN SITU AQUA TROLL 500. CARBOY G-

CALIBRATIONS

DO CAL'D IN 100% SATURATION.

COND CAL'D IN 1413 µS/cm STANDARD.

TURB CAL'D IN 20 NTU'S STANDARD.

pH CAL'D IN 7, 10, 4 BUFFERS.

PARAMETERS

SAMPLE#	TEMP	DO	ORP	COND	pH	TURB
2211161440C	20.14°C	3.55	147.1 ~~3.55~~	741.58	7.94	1.13
— 1441C	20.12	3.49	147.7	740.58	7.93	1.08
— 1442C	20.13	3.48	148.4	741.38	7.93	1.21

SAMPLES

SAMPLE#	ANALYSIS	PRESERV	CONT	LAB
221116 1445C	8260LL	ICE/HCL	(3) 40ml VIALS	ALS
— 1446C	" (FB)	"	"	"
— 1447C	LLNDMA	ICE	(1) 1L AMBER	SKI
— 1448C	" (FB)	"	"	"

TRIP BLANKS

SAMPLE#	ANALYSIS	PRESERV.	CONT	LAB
2211170700C	8260LL NDMA	ICE	(1) 1L AMBER	SKI

*Trip blank made for shipping purposes only.

Continued from page

Read and Understood By

Signed [signature] Date 11-16-22

Signed [signature] Date 11-21-22

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-16-22 Page 1 of 1

Sample Location: ST-4-589			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260CC	CC4304						X6MD / Charge Number
2211161445c	3	A	x							
— 1446c	3	|	x							
— 1447c	1	|		x						
— 1448c	1	|		x						
2211170700C (TB)	1	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]	11-16-22 / 1630		[signature]	11-17-22 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT ST-5-485 WJI ENV-0020 11/1/22

Marcus Avalos & Craig Del Ferraro present. Weather is partly cloudy, breezy, and warm. this zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe #4955. Surface checks performed on probe prior to sampling.

30 Min. Equipment blanks - Carboy G1

Sample	Analysis	Preservative	Container	Lot	Lab
221101 1350Y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2621	ALS
——— 1351Y	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI

Initial Parameters	Final	Meter ID
Time - 2211011430Y	Time - 2211011530Y	pH/Cond - 92
PH - 8.45	PH - 8.39	Turb - 7
Temp - 23.8°C	Temp - 23.5°C	" std - 49.6
Cond - 1077us/cm	Cond - 1084us/cm	" rdg - 49.0
Turb - 1.05 NTU's	Turb - 0.96 NTU's	" lot - 210966
pH pre - 7.05/10.02 (24.0°C)	pH pre - 7.01/10.04 (24.5°C)	" Exp - 11/30/22
pH post - 7.04/10.01	pH post - 7.01/10.05	
DTW - 476.92ft.	DTW - 477.00ft.	
Atmos - 12.62psia	Atmos - 12.60psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
221101 1505Y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2621	ALS
——— 1506Y	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI

Runs

1)	2)	3)
17.92	17.90	17.88
40.19	40.16	40.16
40.21	40.19	40.16
17.94	17.93	17.90

Continued from page N/A

Craig Del Ferraro 11/1/22
Signed Date

Read and Understood By
[signature] 11-1-22
Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/1/22 Page 1 of 1

Sample Location: ST-5-485

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260LL	LL NDMA					Charge Number
2211011350Y (EB)	3	A	✓						XGMD
——1351Y (EB)	1	A		✓					"
——1505Y	3	A	✓						"
——1506Y	1	A		✓					"

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	11/1/22/1600hrs.		[signature]	11-2-22 /0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ________________

Notebook No. D64 #129 (Y)
Continued from page N/A

Marcus Avalos & Craig Del Ferraro present. Weather is clear & cool. This zone will be sampled using 5 steam cleaned & triple rinsed, stainless steel sample tubes. ...en. in use. Probe # 4955. Surface checks performed on probe prior to sampling.

30 Min. Equipment blanks – Carboy G1

Sample	Analysis	Preservative	Container	Lot	Lab
2211010945Y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2621	ALS
—— 0946Y	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI

Initial Parameters	Final	Meter ID
Time – 2211011030Y	Time – 2211011057Y	pH/cond – 92
pH – 8.79	PH – 8.69	Turb – 7
Temp – 22.1°C	Temp – 22.3°C	" std – 49.6
Cond – 917 us/cm	Cond – 912 us/cm	" rdg – 49.0
Turb – 1.30 NTU's	Turb – 1.12 NTU's	" lot – 210966
pH pre – 7.06/10.12 (17.7°C)	pH pre – 7.03/10.07 (20.1°C)	" exp – 11/30/22
pH post – 7.05/10.10	pH post – 7.04/10.07	
DTW – 476.76 ft. (top of well head)	DTW – 476.92 ft.	
Atmos – 12.62 psia	Atmos – 12.62 psia	
	IDW – 1/2 gal.	

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2211011055Y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2621	ALS
—— 1056Y	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI

Runs

1)	2)
92.17	92.11
113.82	113.77
113.80	113.82
92.17	92.10

Continued from page N/A

Read and Understood By

Craig Del Ferraro (Signed) 11/1/22 (Date)

[signature] (Signed) 11-1-22 (Date)

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/1/22 Page 1 of 1

Sample Location: ST-5-655

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260LL	LL NDMA						Charge Number
2211010945Y (EB)	3	A	✓							XGMD
0946Y (EB)	1	A		✓						"
1055Y	3	A	✓							"
1056Y	1	A		✓						"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Fenno	11/1/22/1120hrs.		[signature]	11-2-22 /0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: __________

WSTF 381C (05/2016)

PROJECT WW-4-419 FLUTe ENV-0020

Continued from page

Dan Halvorsen & Tony Torrez present. Weather is Clear and Cool. This zone will be purged and sampled using a FLUTe system. Samples will be collected using a dedicated discharge hose. Purge pressure set at 221 psi, Sample pressure at 199 psi. Flowmeter set at 3psi, bladder stable at 5 psi. 15 minute recovery between purges. Minimum of 4 gallons purged prior to sampling. G1 in use.

Pre-Sample Parameters	Transducer	Meter ID
PH = 7.94	52.02 = psi	PH/COND = 93
Temp = 21.2	24.48 = Temp	TurB = 20
Cond = 1210	119.95 = Depth	" STD = 5.94
TurB = 1.63		" RDG = 5.97
		" LOT = 210966
		" Exp = 11/22

Parameters

- Time = 221108 1430 B
- PH = 7.97
- Temp = 21.1 °C
- Cond = 1202 us/cm
- TurB = 1.56 ntus
- PH Pre = 6.98 - 10.01 (25.3 °C)
- PH Post = 6.98 - 10.00

SAMPLES

Sample #	Analysis	Preserve	Container	LAB
221108 1433 B	Voa by 8260 LL	Ice/HCl	(3) 40 ml vial	ALS
1434 B	" " (FB)	"	"	"
1435 B	NDMA LL	Ice	(1) 1L Amber	SRI
1436 B	" " (FB)	"	"	"
1520 B	Svoc by 8270 D	"	(2) "	ALS

Continued from page

Read and Understood By

Signed: [signature] Date: 11-8-2022

Signed: [signature] Date: 11-9-22

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-8-2022   Page 1 of 1

Sample Location: WW-4-419

Pertinent Notes (if any)

Charge Number: XGMD

Sample Number	# of Containers	Sample Matrix*	VOC	VOMD LL	SVOC				Charge Number
2211081433 B	3	A	X						
——— 1434 B	3		X						
——— 1435 B	1			X					
——— 1436 B	1			X					
——— 1520 B	2				X				

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*							Charge Number

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	11-8-2022 1630	[signature]	11-9-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

PROJECT WW-4-589 FLUTe GNV-0020

Notebook No. D32 #125 B

Continued from page

Dan Halvorsen & Tony Torrez present. Weather is Clear and Cool. This Zone will be purged and sampled using a FLUTe System. Samples will be collected using a dedicated discharge hose. Purge pressure set at 221 psi, sample pressure set at 199 psi. Flowmeter set at 3 psi, bladder stable at 5 psi. 15 minute recovery between purges. minimum of 4 gallons purged prior to sampling. Carboy G1 in use.

Pre-Sample Parameters

PH = 7.63
Temp = 21.1
Cond = 1148
Turb = 1.03

Transducer

PSI = 53.84
Temp = 24.48
Depth = 124.27

Meter ID

PH/Cond = 93
Turb = 20
" STD = 5.94
" RDG = 5.97
" Lot = 210966
" Exp = 11/22

Parameters

Time = 221108 1451 B
pH = 7.55
Temp = 21.2°C
Cond = 1151 us/cm
Turb = 0.98 ntus
pH Pre = 6.98 - 10.01 (25.3°C)
pH Post = 6.99 - 10.00

SAMPLES

Sample #	Analysis	Preserve	Container	LAB
221108 1453 B	VOC by 8260 LL	Ice/HCl	(3) 40 ml vial	ALS
—— 1454 B	" " (FB)	"	"	"
—— 1455 B	NDMA LL	Ice	(1) 1L Amber	SRS
—— 1456 B	" " (FB)	"	"	"
—— 1548 B	SVOC by 8270 D	"	(2) "	ALS

Continued from page

Read and Understood By

Signed 11-8-2022 Date

Signed 11-9-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-8-2022 | Page 1 of 1

Sample Location: WW-4-589

Sample Number	# of Containers	Sample Matrix*	VOC	NDMA LL	SVOC				Charge Number
Pertinent Notes (if any)									XGMO
221108 1453 B	3	A	X						
1454 B FB	3		X						
1455 B	1			X					
1456 B FB	1			X					
1548 B	2				X				

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number
Pertinent Notes (if any)										

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11-8-2022 1630		[signature]	11-9-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

PROJECT WW-4-848 FLUTe ENV.0020

Continued from page

Dan Halvorsen & Tony Torrez present. Weather is clear and warm. This zone will be purged and sampled using a FLUTe System. Samples will be collected using a dedicated discharge hose. Purge pressure set at 221 psi, sample pressure at 99 psi. Flowmeter set at 3 psi., bladder stable at 5 psi. 15 minute recovery between purges. Minimum of 4 gallons purged prior to sampling. Carboy G1 in use.

Pre-Sample Parameters

pH = 8.12
Temp = 21.5
Cond = 997
Turb = 1.02

Transducer

psi = 53.20
Temp = 24.50
Depth = 122.74

Meter ID

PH/Cond = 93
Turb = 20
" SD = 5.94
" RDO = 6.02
" Lot = 210966
" Exp = 11/22

Parameters

Time = 221109141 5B
pH = 8.09
Temp = 21.6°C
Cond = 991 us/cm
Turb = 0.86 ntu's
pH Pre = 7.01-10.01 (26.3°C)
pH Post = 6.99-10.00

SAMPLES

Sample #	Analysis	Preserve	Container	LAB
221109 1418 B	VOC by 8260 LL	Ice/HCl	(3) 40 ml Vial	ALS
—— 1419 B	" " (FB)	"	"	"
—— 1420 B	NDMA LL	Ice	(1) 1L Amber	SRI
—— 1421 B	" " (FB)	"	"	"
—— 1518 B	SVOC by 8270D	"	(2) 1L Amber	ALS

Trip Blanks

Sample #	Analysis	Preserve	Container	LAB
221109 0700 B	VOC by 8260 LL	Ice/HCl	(3) 40 ml Vial	ALS
—— 0701 B	NDMA LL	Ice	(1) 1L Amber	SRI

Continued from page

Read and Understood By

Signed 11-9-2022 Date

B-102

Signed 11-10-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-9-2022 Page 1 of 1

Sample Location: WW-41-848

Pertinent Notes (if any) / Sample Number		# of Containers	Sample Matrix*	V8	NDMA L	SVOC					Charge Number
											XGMD
221109 0700 B	TB	3	A	X							
—— 1418 B		3		X							
—— 1419 B	FB	3		X							
—— 0701 B	TB	1			X						
—— 1420 B		1			X						
—— 1421 B	FB	1			X						
—— 1518 B		2				X					

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11-9-2022 1620		[signature]	11-10-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

WSTF 381C (05/2016)

PROJECT WW-4-948 FLUTe ENV-0020

Notebook No. D32 4/25 B

Continued from page

Dan Halvorsen & Tony Torrez present. Weather is clear and warm. This zone will be purged and sampled using a FLUTe System. Samples will be collected using a dedicated discharge hose. Purge pressure set at 221 psi, sample pressure at 199 psi. Flowmeter set at 3psi, bladder stable at 5 psi. 15 minute recovery between purges. minimum of 4 gallons purged prior to sampling. Cur Day 51 in use.

Pre-Sample Parameters
pH = 7.97
Temp = 20.8
Cond = 1159
Turb = 0.73

Transducer
psi = 53.87
Temp = 24.50
Depth = 124.27

Meter ID
pH/Cond = 93
Turb = 20
" STD = 5.941
" RDG = 6.02
" LOT = 210966
" EXP = 11/22

Parameters
Time = 221109 1450 B
pH = 8.00
Temp = 20.7 °C
Cond = 1166 us/cm
Turb = 0.55 ntu's
pH Pre = 7.01-10.02 (26.3°C)
pH Post = 6.99-10.01

SAMPLES

Sample #	Analysis	Preserve	Container	LAB
221109 1452 B	VOC by 8260 LL	Ice/HCl	(3) 40 ml vial	ALS
— 1453 B	" " (FB)	"	"	"
— 1540 B	NDMA LL	Ice	(1) 1L Amber	SRE
— 1541 B	" " (FB)	"	"	"
— 1600 B	SVOC by 8270 D	"	(2) "	ALS

Continued from page

Read and Understood By

Signed

11-9-2022 B-104
Date

11-10-22

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-9-2022 Page 1 of 1

Sample Location: WW-4-948			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOA	NDMA LL	SVOA					XGMD Charge Number
2211091452B	3	A	X							
1453B FB	3		X							
1540 B	1			X						
1541B FB	1			X						
1600 B	2				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]	11-9-2022 1620		[signature]	11-10-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ________

PROJECT 200-G-175 WJE ENV-0020 12-7-22

Continued from page N/A

Robert Burrows & Marcus Avalos present. Weather is cloudy & breezy & cool. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Probe # 4951. Surface checks performed on probe prior to sampling. Carboy G-1.

30 min Equipment Blanks

Sample #	Analysis	Preservative	Container	Lot #	Lab
221207 1247 Y	VOA by 8260	HCl/ICE	(3) 40 mil vials	2649-1	ALS

Initial Parameters	Final Parameters	Meter ID
Time - 221207 1324 Y	Time - 221207 1507 Y	pH/Cond - 12 #
pH - 9.16	pH - 8.70	Turb - 8 #
Temp - 20.2 (°C)	Temp - 18.7 °C	" " Std. - 59.5 (NTUs)
Cond - 1354 (us/cm)	Cond - 1425 (us/cm)	" " Rdg - 59.9 NTU's
Turb - 1.03 (NTUs)	Turb - 0.50 (NTUs)	" " Lot # - 210966
pH pre - 7.86/10.01 (18.6°C)	pH pre - 7.78/10.01	" " Exp - 12/31/22
pH post - 7.77/10.02	pH post - 7.83/10.00 (18.0 °C)	
DTW - 218.20 (Ft)	DTW - 218.25 (Ft)	
Atmos - 12.07 (PSIA)	Atmos - 12.08 (PSIA)	
	IDW - 1 gal.	

Buffers	Lot #	Exp
7	1202A44	8/23
10	4157E30	1/23

Samples

Samples #	Analysis	Preservative	Container	Lot #	Lab
221207 1349 Y	VOA by 8260	HCl/ICE	(3) 40 ml vials	2649-1	ALS
— 1352 Y	" " (Dup)	" "	(3) " "	" "	" "
— 1353 Y	NDMA/DMN/Bromacil by 607	ICE	(1) 1L Amber	0100301H	SRF
— 1419 Y	Total metals	HNO3/ICE	(2) 125 mil poly	220421	ALS
— 1444 Y	Anions/Alk	ICE/Zero H.S.	(2) " "	N/A	" "
— 1446 Y	TDS by SM2540 C	ICE	(1) 250 mil poly	0120202AAO	" "
— 1447 Y	Perchlorate by 6850	ICE/1/3 H.S.	(1) 125 mil poly	N/A	" "
— 1506 Y	NO_2, NO_3 by 353.2	H_2SO_4/ICE	(1) 250 mil poly	220726	" "

Runs:

1)	2)	3)	4)	5)
12.13	12.19	12.17	12.17	12.17
24.25 RB	24.25	24.25	24.24	24.25
24.23	24.24	24.26	24.24	24.26
12.13	12.17	12.18	12.17	12.17

Continued from page N/A

Read and Understood By

Robert Burrows 12-7-22 Signed Date

[signature] Signed 12-8-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-7-22 Page 1 of 1

Sample Location: 200-G-175

Pertinent Notes (if any): TASK-memo-11460

Sample Number	# of Containers	Sample Matrix*	VOA by 8260	Bromacil nonaflamol by 607	Total Metals	Anions/Alk	TDS by SM2540C		Charge Number
									XGMO
2212071247Y (EB)	3	A	X						↓
——1349Y	3	A	X						
——1352Y (Dup)	3	~~A~~	X						
——1353Y	1	A		X					
——1419Y	2	A			X				
——1444Y	2	A				X			
——1446Y	1	A					X		

Sample Location: 200-G-175

Pertinent Notes (if any): TASK memo-11460

Sample Number	# of Containers	Sample Matrix*	Perchlorate by 6850	Nox, No3 by 353.2						Charge Number
										XGMO
2212071447Y	1	A	X							↓
——1506Y	1	A		X						

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Robert Simmons	12-7-22/4:10		[signature]	12-8-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

PROJECT 200-E-220 WJI ENV-0020 12-5-22

Notebook No. 0-64# 130(Y)

Continued from page N/A

Robert Burrow & Avelos Marcus present. Weather is Cloudy & Cool. This zone will be Sampled using 5 Triple rinsed, stainless steel sample tubes. Probe #4951. Surface checks performed on probe prior to Sampling. Carboy G-1

30 min Equipment Blanks

Sample #	Analysis	Preservative	Container	Lot #	Lab
221205 1433 Y	VOA by 8260	HCl/ICE	(3) 40 ml vials	2649-1	ALS
—— 1435 Y	Total Metals	HNO3/ICE	(2) 125 ml poly	220421	" "

Initial Parameters	Final Parameters	Meter ID
Time - 221205 1459 Y	Time - 221205 1503 Y	Ph/Cond - 12#
PH - 8.63	PH - 8.34	Turb - 8#
Temp - 20.5 (°C)	Temp - 18.9 (°C)	" " std - 59.5 (ntus)
Cond - 1469 (us/cm)	Cond - 1659 (us/cm)	" " Rdg - 59.2 (ntu's)
Turb - 2.40 (ntus)	Turb - 1.20 (ntus)	" " Lot # - 210966
PH PRE - 7.72/10.00 (19.6 °C)	PR PH - 7.90/10.00 (18.5 °C)	" " Exp - 12/31/22
PH post - 7.69/10.02	PH post - 7.75/10.06	
DTW - 218.10 ft.	DTW - 218.25 (ft)	
Atmos - 11.96 (psia)	Atmos - 12.00 (psia)	
	IOW - 1/2 gal	

Buffer	Lot #	Exp.
7	1202A44	8/23
10	4157E30	1/23

Samples

Sample #	Analysis	Preservative	Container	Lot #	Lab
221205 1526 Y	VOA by 8260	HCl/ICE	(3) 40 ml vials	2649-1	ALS
—— 1528 Y	NDMA/DMN/bromacil by 607	ICE	(1) 1L Amber	0100301H	SKI
—— 1551 Y	Total metals	HNO3/ICE	(2) 125 ml poly	220421	ALS

Runs:	1)	2)	3)
	16.96	16.96	16.94
	43.67	43.68	43.68
	43.68	43.67	43.67
	16.95	16.92	16.96

Continued from page N/A

Read and Understood By

Robert Burrow — Signed — 12-5-22 — Date

[signature] — Signed — 12-6-22 — Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-5-22 Page 1 of 1

Sample Location: 200-G-220

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOA by 8260	Bromacil NDMA/DMN/by 607	Total metals					Charge Number
TASK memo - 11458										X GMO
221205 14334 (EB)	3	A	X							↓
—— 14354 (EB)	2	↓			X					
—— 15264	3		X							
—— 15284	1			X						
—— 15514	2	↓			X					↓

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Robert Burrows	12-5-22/4:20		[signature]	12-6-22 / 0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

PROJECT 200-E-340 WJI ENV-0020 12-05-22

Robert Burrows & Marcus Avalos present, weather is cloudy & cool & wet. This zone will be sampled using 5 triple rinsed & steamed cleaned stainless steel sample tubes. Probe #4951. Surfaces checks performed on probe prior to sampling. Carboy-G-1

30min Equipment Blanks ~~& Field Blanks~~ RB

Sample #	Analysis	Preservative	Container	Lot #	Lab
221205 0956 Y	VOA by 8260 (EB)	HCl/ICE	(3) 40ml vials	2649-1	ALS
~~" "~~	RB ~~Total metals (EB)~~	~~HNO3/ICE~~	~~(2) 125 ml vials~~	~~220421~~	~~"~~

Initial Parameters	Final Parameters	Meter ID
Time - 221205 1040 Y	Time - 221205 1343 Y	PH/Cond - 12 #
PH - 7.87	PH - 7.81	Turb - 8 #
Temp - 23.4 (°C)	Temp - 20.3 (°C)	" " Std - 59.5 (ntu's)
Cond - 1875 (us/cm)	Cond - 1890 (us/cm)	" " Rdg - 59.2 (ntu's)
Turb - 1.63 (ntu's)	Turb - 1.63 (ntu's)	" " Lot - 210966
PH pre - 7.02/9.98 (21.4°C)	PH pre - 7.50/9.83 (21.2°C)	" " Exp - 12/31/22
PH post - 7.00/10.03	PH post - 7.47/10.00	
DTW - 218.03 ft.	DTW - 218.10 ft.	
Atmos - 12.07 (psia)	Atmos - 12.05 (psia)	
	IDW - 1/2 gal	

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample #	Analysis	Preservative	Container	Lot #	Lab
221205 1304 Y	VOA by 8260	HCl/ICE	(3) 40ml vials	2649-1	ALS
" " 1305 Y	NDMA/DMN/Bromacil by 607	ICE	(1) 1L Amber	0100301H	SRI
" " 1341 Y	Total metals	HNO3/ICE	(2) 125 ml poly	220421	ALS
" " 1342 Y	" " (EB)	" "	(2) " "	" "	ALS

Rinses: 1) 69.29 2) ~~69.42~~ RB 69.24 3) 69.26

1)	2)	3)
69.29	69.24	69.26
123.41	122.92	123.51
121.89	123.55	122.67
69.28	69.22	69.34

Continued from page N/A

Read and Understood By

Robert Burrows 12-5-22 B-110 [signature] 12-6-22

Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-5-22 | Page 1 of 1

Sample Location: 200-G-340

Pertinent Notes (if any)

Task Memo 11459

Sample Number	# of Containers	Sample Matrix*	VOA by 8260	Formaldehyde/NDMA/DMN/by 607	Total metals					Charge Number XGMD
22 1205 0956 Y (FB)	3	A	X							
—— 1304 Y	3		X							
—— 1305 Y	1			X						
—— 1341 Y	2				X					
—— 1342 Y (FB)	2				X					

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Robert Burrows	12-5-22 / 4:20		[signature]	12-6-22 / 0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

ROJECT 200-G-420 WJI ENV-0020 12/1/22

Notebook No. D64#130(y)

Continued from page N/A

Bob Tufts & Craig Del Ferraro present. Weather is clear & cool. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Probe #4951. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G1

Sample	Analysis	Preservative	Container	Lot	Lab
221201l400y	VOA by 8260	ice / HCL	(3) 40ml vials	2649-1	ALS

Initial Parameters	Final	Meter ID
Time - 2212011450y	Time - 2212011549y	pH/cond - 12
PH - 7.99	PH - 8.06	Turb - 8
Temp - 22.0°c	Temp - 22.2°c	" std - 59.5
Cond - 2.32 ms/cm	Cond - 2.36 ms/cm	" rdg - 59.1
Turb - 2.36 NTU's	Turb - 1.79 NTU's	" lot - 210966
pH pre - 7.06/10.10 (19.3°c)	pH pre - 7.09/10.13 (18.7°c)	" Exp - 12/31/22
pH post - 7.05/10.12	pH post - 7.09/10.15	
DTW - 217.78 ft.	DTW - 217.86 ft.	
Atmos - 12.02 psia	Atmos - 12.05 psia	
	IDW - 1/2 gals.	

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2212011520y	VOA by 8260	ice / HCL	(3) 40ml vials	2649-1	ALS
——— 1521y	607/Bromacil	ice	(1) 1L Amber	0100301H	SRI
——— 1522y	Total Metals	ice / HNO_3	(2) 125ml poly's	22-04-21	ALS
——— 1545y	Anions / Alk	ice	"	N/A	"
——— 1546y	TDS by SM2540C	"	(1) 250ml poly	111602-2AA0	"
——— 1547y	Perchlorate by 6850	"	(1) 125ml poly	N/A	"
——— 1548y	NO_2/NO_3 by 353.2	ice / H_2SO_4	(1) 250ml poly	22-07-26	"

Runs	1)	2)	3)
	104.13	104.17	104.14
	186.69	186.70	186.75
	186.67	186.69	186.73
	104.11	104.05	104.10

Continued from page N/A

Read and Understood By

Craig Del Ferraro — Signed — 12/1/22 — Date

B-112

[signature] — Signed — 12-5-22 — Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/1/22 | Page 1 of 1

Sample Location: 200-G-420

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	607	Total Metals	Anions/Alk	TDS	Perchlorate		Charge Number
2212011400Y (EB)	3	A	✓							XGMD
——— 1520Y	3	A	✓							"
——— 1521Y	1	A		✓						"
——— 1522Y	2	A			✓					"
——— 1545Y	2	A				✓				"
——— 1546Y	1	A					✓			"
——— 1547Y	1	A						✓		"

Sample Location: 200-G-420

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NO_2/NO_3							Charge Number
2212011548Y	1	A	✓							XGMD

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferno	12/1/22/1620hrs.		[signature]	12-6-22 /0815

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

Bob Tufts & Craig Del Ferraro present. Weather is clear & cool. This zone will be sampled using 5 steam cleaned & triple rinsed, stainless steel sample tubes. Probe #4955. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G1

Sample	Analysis	Preservative	Container	Lot	Lab
221201094OY	VOA by 8260	ice/HCL	(3) 40ml vials	2649-1	ALS

Initial Parameters
Time - 2212011015Y
PH - 8.81
Temp - 23.4°c
Cond - 2.63 ms/cm
Turb - 4.19 NTU's
pH pre - 7.13/10.09 (17.5°c)
pH post - 7.11/10.10
DTW - 217.64 ft.
Atmos - 12.11 psia

Final
Time - ~~221202~~ CD 2212011311Y
PH - 8.68
Temp - 23.0°C
Cond - 2.65 ms/cm
Turb - 3.37 NTU's
pH pre - 7.06/10.08 (20.6°c)
pH post - 7.07/10.05
DTW - 217.78 ft.
Atmos - 12.07 psia
IDW - 1/2 gal.

Meter ID
pH/cond - 12
Turb - 8
" std - 59.5
" rdg - 59.1
" lot - 210966
" Exp - 12/31/22

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2212011040Y	VOA by 8260	ice/HCL	(3) 40ml vials	2649-1	ALS
——— 1041Y	607/Bromacil	ice	(1) 1L Amber	0100301H	SRI
——— 1310Y	Total Metals	ice/HNO3	(2) 125ml poly's	22-04-21	ALS

* Samples were a bit aerated.

Runs			
	1) 137.31	2) 137.16	3) 136.83
	219.40	219.29	219.10
	219.38	219.35	219.08
	137.29	137.18	136.76

Continued from page N/A

Read and Understood By

Craig Del Ferraro 12/1/22 B-114 [signature] 12-5-22
Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/1/22 Page 1 of 1

Sample Location: 200-G-495

Sample Number	# of Containers	Sample Matrix*	8260	607	Total Metals				Charge Number
2212010940Y (EB)	3	A	✓						XGMD
——— 1040Y	3	A	✓						"
——— 1041Y	1	A		✓					"
——— 1310Y	2	A			✓				"

Pertinent Notes (if any):

Sample Location:

Sample Number	# of Containers	Sample Matrix*							Charge Number

Pertinent Notes (if any):

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	12/1/22/1620 hrs.		[signature]	12-5-22 / 0815

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ________

PROJECT 700-B-510 ENV-0053

Continued from page

Dan Halvorsen & Marcus Avalos present. Weather is partly Cloudy, Windy & Cold. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a new Teflon discharge hose. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. Carboy G5 in use.

Calibrations:

Initial DTW = 265.70 ft.
Final " = 265.73
EPW = 2 gal.

DO sensor: In 100% saturated air.
pH sensor: Using a 3pt. (4,7,10) Buffer method.
Conductivity = Using a 1413 us/cm STD. Solution.
Turbidity = Using an In-Situ STD.

Parameters (Time)	Temp	Cond	DO	pH	ORP	Turb	DTW (ft)
221213 1456 C	20.24	560	3.56	8.86	79	0.52	265.73
—— 1458 C	20.23	561	3.53	8.81	78	0.55	265.73
—— 1500 C	20.23	561	3.55	8.84	78	0.51	265.73

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	Lab
221213 1510 C	VOA by 8260	Ice/HCl	(3) 40 ml Vial	2641	ALS
—— 1511 C	" " (FB)	"	"	"	"
—— 1525 C	NDMA/DMN Bromacil by 607	Ice	(1) 1L Amber	0100301	SRL
—— 1547 C	Total metals	Ice/HNO3	(2) 125 ml Poly	220725	ALS
—— 1548 C	" " (Dup)	"	"	"	"
—— 1555 C	Anions/Alk	Ice	(2) "	N/A	"
—— 1600 C	TDS by SM2540C	"	(1) "	"	"
—— 1605 C	Perchlorate by 6850	"	(1) "	"	"
—— 1609 C	NO2/NO3 by 353.2	Ice/H2SO4	(1) 250 ml Poly	"	"

Continued from page

Read and Understood By

Signed 12-13-2022 Date

Signed 12-14-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-13-2022 | Page 1 of 1

Sample Location: 700-B-510

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOA	607	metals	Anions/NIK	TDS			Charge Number
										XBMD
2212131510 C	3	A	X							
—1511 C FB	3		X							
—1525 C	1			X						
—1547 C	2				X					
—1548 C	2				X					
—1555 C	2					X				
—1600 C	1						X			

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Perchlorate	NO2/NO3						Charge Number
2212131605 C	1	A	X							
—1609 C	1			X						

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12-13-2022 1630		[signature]	12-14-22 / 0840

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

PROJECT B650-EFF-1

Tim Moore present. These samples will be taken from a dedicated ~~bladde~~ sampling port, after one minute of purging is done.
Calboy " G-

Parameters	Meter/ID	Buffers	LOT#	EXP
Time 2212090529	Ph/cond -93	7	1202A44	8/23
Ph 7.89	Turb -20	10	4107E30	7/23
Temp 25.5°C	STD - 2.31			
Cond 1196 uS/cm	" RDG - 2.33			
Turb 0.38 NTU	" Lot# 20966			
Ph pre 7.00-10.00 (A.9%)	Exp 12/30			
Ph Post				

Samples

Sample#	Analysis	Pres	LOT#	LAB	CONT
2212090535	VOAs by 8260 (L)	ICE ! 4cl	2621	ALS	(3) 40ml Vial
— 0536	" (FB)	"	"	"	"
— 0537	NDMA (ORN/8100) 607	ICE	01003014	SWK	(1) L amber
— 0538	CL NDMA	"	"	"	"
— 0539	" (FB)	"	"	"	"

Continued from page N/A

Read and Understood By

9 Dec 2022 12-9-22

Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 9 Dec 2022 Page 1 of 1

Sample Location: B650-EFF-1

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOA 8260	LL-VOA 8260LL	NDMA/DMN/ BROMACIL 607	LOW LEVEL NDMA	TOTAL METALS	ANIONS/ALK	TDS SM2540C	Charge Number XGMD
2212090535	3			X						
— 0536 FB	3			X						
— 0537					X					
— 0538						X				
— 0539 FB						X				

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	PERCHLORATE 6850	NO_2/NO_3 353.2						Charge Number XGMD

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	9 Dec 2022 0757	[signature]	12-9-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT B650-INF-1

Notebook No. PFTS#1

Continued from page N/A

present. These samples will be taken from a dedicated sampling port after it has pulsed for one minute. Calboy

Parameters		Meter ID	Buffers	LOT#	EXP
Time	2212090552	Ph/cond-93	7	1202A44	8/23
Ph	7.28	Turb-20	10	4107E30	1/23
Temp	23.7°c	STD-2.31			
cond	1209 us/cm	RDG-2.33			
Turb	1.00 NTU	LOT# 20966			
Ph pre	7.01-10.00 (20.1°c)	Exp 12/30			
Ph POST					

Samples

Sample#	Analysis	Pres	LOT#	LAB	CONT
2212090557	VOA by 8260	ICE HCL	2621	ALS	(3) 40mL Vial
0558	" (FB)	"	"	"	"
0559	NDMA/DPA/BIO by 607	ICE	01003011	Swri	(1) L Amber

NOTE: Had To Close Down stream Valve going To Air Stripper To Be Able To get Sample because of low ~~System Flow~~ Flow from Wells.

There was a lot of air and Sample Flow inconsistancy During Samples And Parameters.

Continued from page N/A

Read and Understood By

Signed [signature] Date 9 Dec 2022

Signed [signature] Date 12-9-22

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 9 Dec 2022 Page 1 of 1

Sample Location: 8650-Inf-1

Sample Number / Pertinent Notes (if any)	# of Containers	Sample Matrix*	VOA 8260	LL-VOA 8260LL	NDMA/DMN/BROMACIL 607	LOW LEVEL NDMA	TOTAL METALS	ANIONS/ALK	TDS SM2540C	Charge Number XGMD
221209 0557	3	A	X							
0558 FB	3	A	X							
0559	1	A			X					

Sample Location:

Sample Number / Pertinent Notes (if any)	# of Containers	Sample Matrix*	PERCHLORATE 6850	NO_2/NO_3 353.2						Charge Number XGMD

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	9 Dec 2022 0757	[signature]	12-9-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

WSTF 381C (05/2016)

PROJECT B655-EFF-2

Notebook No. PFTS#11

Continued from page N/A

TIM KONDY and AL MONTEZ present. These samples will be taken from a dedicated sampling port after it has purged for one minute. Carboy "6-3"

Parameters		Meter ID		Buffers	LOT#	EXP
Time	221208 1050	ph/cond	93	7	1202A44	8/23
Ph	7.31	Turb	20	10	4107E30	1/25
Temp	29.1 °C	" STD	~~673~~ 2.31			
Cond	1255 us/cm	" RDG	~~625~~ 2.35			
Turb	2.45	LOT#	21096C			
Ph pre	7.03 - 10.05	" Exp	12/30			
Ph post	7.04 - 10.03					

Samples

Sample#	Analysis	pres	LOT#	LAB	CONT
221208 1055	VOA by 8260 (LL)	ICE ; HCL	2621	ALS	(3) 40mL vial
— 1056	" (FB)	"	"	"	"
— 1057	NDMA/DMN/Bro by 607	ice	8100301H	SWRL	(1) L+ amber
— 1058	LL NDMA	"	"	"	"
— 1059	" (FB)	"	"	"	"

Continued from page N/A

Read and Understood By

T. Kondy — Signed — 12-8-22 — Date

Lori W Munch — Signed — 12-9-22 — Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-8-22 Page ____ of ____

Sample Location: B655-EFF-2

Analytical Requirement

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOA 8260	LL-VOA 8260LL	NDMA/DMN/BROMACIL 607	LOW LEVEL NDMA	TOTAL METALS	ANIONS/ALK	TDS SM2540C	Charge Number: XGMD
221208 1055	3	A	~~X~~	X						
- 1056 (FB)	3		~~X~~	X						
- 1057	1				X					
- 1058	1					X				
- 1059 (FB)	1					X				

Sample Location:

Analytical Requirement

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	PERCHLORATE 6850	NO_2/NO_3 353.2						Charge Number: XGMD

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	12-8-22	[signature]	12-9-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

OJECT B655-1NF-2

Notebook No. PFTS#11

Continued from page N/A

~~Frank Gallegos~~ Thy Kelly and ~~AZ Montes~~ are present. These samples will be taken from a dedicated sampling port after a one minute purge. Carboy "6-3"

Parameters		Meter/ID		Buffers	Lot#	Exp
Time	221208 1020	ph/cond	93	7	1202A44	8/23
ph	8.21	Turb	20	10	4107E30	1/23
Temp	25.1 c	" STD	~~6.13~~ 2.31			
cond	1590 us/cm	" RDG	~~6.19~~ 2.35			
Turb	0.51	" LOT#	20966			
ph pre	7.02 - 10.01	" Exp	12/30			
ph post	7.07 - 10.05					

Samples

Sample#	Analysis	Preserve	Lot#	LAB	CONT
221208 1025	VOA by 8260	ICE & HCl	26627	ALS	(3) 40ml vial
— 1026	" (Dup)	"	"	"	"
— 1027	" (FB)	"	"	"	"
— 1028	NPMA/DAN/Bio by 607	ICE	0100301	SwRI	(1) L amber
— 1029	" (Dup)	"	"	"	

Continued from page N/A

Read and Understood By

[signature] 12.8.22
Signed Date

[signature] 12.9.22
Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-8-22 Page ____ of ____

Sample Location: BG55-INF-2

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOA 8260	LL-VOA 8260LL	NDMA/DMN/BROMACIL 607	LOW LEVEL NDMA	TOTAL METALS	ANIONS/ALK	TDS SM2540C	Charge Number XGMD
221208 1025	3	A	X							
— 1026 (Dup)	3		X							
— 1027 (FB)	3		X							
— 1028	1				X					
— 1029 (Dup)	1				X					

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	PERCHLORATE 6850	NO_2/NO_3 353.2						Charge Number XGMD

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12-8-22		[signature]	12-9-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT Blm-7-509 EVU.0053

Notebook No. D32#127(c)7
Continued from page N/A

Bob Tufts & Tony Torcefe present 12-5-22. The weather is clear & cool. This well will be purged & sampled using a dedicated Teflon bladder pump. Samples collected from a Teflon discharge Tube. Parameters collected from an InSitu AquaTroll 500. Carboy 6-2

DTW 98.73

Calibrations
DO Cal'd in 100% saturation
Cond cal'd in 1413 us/cm
Turb cal'd in 20 NTU standard
pH cal'd in 4,7,10 Buffers

Parameters

Sample#	Cond	Temp	DO	ORP	pH	Turb
221205 0920c	1080.6	20.50°c	5.39	205.4°c	7.54	4.81
—— 0921c	1,077.9	20.70°c	5.34	206.3	7.55	4.93
—— 0922c	1,080.5	20.69°c	5.47	206.3	7.54	4.78

Trip Blanks

Sample#	Analysis	Preserv	Cont	Lab
221205 0700c	8260LL	Ice/Hcl	(3) 40ml vials	Als
—— 0701c	LLNDMA	Ice	(1) 1LT Amber	SRI
~~——~~				

Samples

Sample#	Analysis	Preserv	Cont	Lab
221205 0925c	8260LL	Ice/Hcl	(3) 40ml vials	Als
—— 0926c	" (FB)	"	"	"
—— 0927c	LLNDMA	Ice	(1) 1LT Amber	SRI
—— 0928c	" (FB)	"	"	"

Continued from page

Read and Understood By

Signed [signature] Date 12-5-22 Signed [signature] Date 12-6-22

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-5-22 Page ______ of ______

Sample Location: Blm-7-509

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260CC	CLNAMA					Charge Number
									TGMA
221205 0700C (TB)	3	A	x						
— 0701C (TB)	1			x					
— 0925C	3		x						
— 0926C (FB)	3		x						
— 0927C	1			x					
— 0928C (FB)	1			x					

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
T. [signature]	22/05/22 / 1100		[signature]	12-6-22 / 0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________________

PROJECT Bldg 27-270 ENV-0053

Dan Halvorsen & Marcus Avalos present. Weather is clear, windy and cold. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a new Teflon discharge hose. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. Carboy G5 in use.

Calibrations:
DO Sensor = In 100% Saturated air.
Conductivity = Using a 1413 uS/cm standard.
PH Sensor = Using a 3 pt (4,7,10) Buffer method.
Turbidity = Using an In-Situ 570 Solution.

Initial DTW = 233.70 ft.
Final " = 234.41
PDW = 2 gal.

Parameters (Time)	Temp	Cond	DO	PH	ORP	Turb	DTW (ft.)
221212 0925 C	20.61	825	5.74	7.95	82	1.02	
—— 0927 C	20.62	827	5.71	7.92	81	.99	
—— 0929 C	20.61	825	5.74	7.92	81	1.03	

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	Lab
221212 0935 C	VOA by 8260	Ice/HCL	(3) 40 ml Vial	2461	ALS
—— 0936 C	" " (Dup)	"	"	"	"
—— 0937 C	" " (FB)	"	"	"	"
—— 0938 C	NDMA/DMN/Bromacil	Ice	(1) 1L amber	010030/	SRL
—— 0939 C	Total metals	Ice/HNO3	(2) 125 ml Poly		ALS

Blank Controls

Sample #	Analysis	Preserve	Container	Lot	Lab
221212 1030 C	VOA by 8260	Ice/HCL	(3) 40 ml Vial	22mm/SLA	ALS
—— 1031 C	NDMA/DMN/Bromacil	Ice	(1) 1L amber	" B	SRL
—— 1032 C	Total metals	Ice/HNO3	(2) 125 ml Poly	" C	ALS

Continued from page

Read and Understood By

Signed 12-12-2022 Date

Signed 12-13-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-12-2022

Page 1 of 1

Sample Location: 7xm-27-270

Sample Number	# of Containers	Sample Matrix*	VOC	607	Metals					Charge Number
Pertinent Notes (if any)										XGMD
2212120935 c	3	A	X							
0936 c	3		X							
0937 c FB	3		X							
0938 c	1			X						
0939 c	2				X					
1030 c BC	3		X							
1031 c BC	1			X						

Sample Location:

Sample Number	# of Containers	Sample Matrix*	Metals							Charge Number
Pertinent Notes (if any)										
2212121032 c BC	2	A	X							

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12-12-2022 1100		[signature]	12-13-22 / 0840

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

Tony Torrez & Craig Del Ferraro present. Weather is clear & cold. This well will be purged using a dedicated bladder pump. Samples will be collected using a teflon discharge hose. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. Carboy G2 in use. Initial packer pressure ~ 27psi.

Calibrations
DO sensor - calibrated in 100% saturation.
Cond. sensor - calibrated using 1413us/cm std. solution.
PH sensor - calibrated using 4,7, and 10 buffers.
Turb. sensor - calibrated using 10NTU std.

Trip blanks - Water Purification System

Sample	Analysis	Preservative	Container	Lot	Lab
2212130750A	Low Level NDMA	ice	(1)1L Amber	0100301H	SRI

Parameters (time)	temp (°c)	cond (us/cm)	DO	ORP	PH	Turb (NTU's)	DTW (ft.)
1) 221213 0955A	19.38	615.33	4.26	156.4	7.64	2.96	44.36
2) ——— 0958A	19.56	616.21	4.17	157.0	7.66	3.10	44.38
3) ——— 1001A	19.70	617.49	4.08	157.3	7.67	2.98	44.41
							(transducer)

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2212131005A	VOA by 8260LL	ice/HCL	(3)40ml vials	2649-1	ALS
——— 1006A	" (FB)	"	"	"	"
——— 1007A	Low Level NDMA	ice	(1)1L Amber	0100301H	SRI
——— 1008A	" (FB)	"	"	"	"

Initial DTW (transducer reading) - 44.36ft. Total gallons purged - 2

* Final packer pressure ~ 27psi.

Continued from page N/A

Read and Understood By

Craig Del Ferraro 12|13|22
Signed Date

[signature] 12-14-22
Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/13/22 Page 1 of 1

Sample Location: BLM-42-569

Analytical Requirement

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
2212130750A (TB)	1	A		✓						XGMD
—— 1005A	3	A	✓							"
—— 1006A (FB)	3	A	✓							"
—— 1007A	1	A		✓						"
—— 1008A (FB)	1	A		✓						"

Sample Location:

Analytical Requirement

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelFierro	12/13/22/1110hrs.		[signature]	12-14-22 / 0840

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

PROJECT BLM-42-709 WJI ENV-0053 12/13/22

Continued from page N/A

Tony Torrez & Craig Del Ferraro present. Weather is clear, cold, & windy. This well will be purged using a dedicated bladder pump. Samples will be collected using a teflon discharge hose. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. Carboy G2. Initial packer pressure ~ 27 psi.

Calibrations

DO sensor - calibrated in 100% saturation.
Cond. sensor - calibrated using 1413 us/cm std. solution.
PH sensor - calibrated using 4, 7, and 10 buffers.
Turb. sensor - calibrated using 10NTU std.

Parameters (time)	temp (°c)	cond (us/cm)	DO	ORP	PH	Turb (NTU's)	DTW (ft.)
1) 221213 1430A	18.83	561.40	7.12	160.2	7.93	2.00	44.41
2) ——— 1433A	18.97	568.78	6.85	159.8	7.86	1.79	44.43
3) ——— 1436A	19.06	573.20	6.61	159.0	7.84	1.51	44.43 (transducer)

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2212131440A	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
——— 1441A	" (FB)	"	"	"	"
——— 1442A	*" (MS)*	"	"	"	"
——— 1443A	Low Level NDMA	ice	(1) 1L Amber	01003014	SRI
——— 1444A	" (FB)	"	"	"	"

Initial DTW (transducer reading) - 44.40 ft. Total gallons purged - 2.5
Temp - 25.50 °c

* Final packer pressure ~ 27 psi.

Continued from page N/A

Read and Understood By

Craig Del Ferraro 12/13/22 [signature] 12-14-22

Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/13/22 | Page 1 of 1

Sample Location: BLM-42-709

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260LL	LLNDMA						Charge Number
221213 1440A	3	A	✓							XGMD
——— 1441A (FB)	3	A	✓							"
——— 1442A (MS)	3	A	✓							"
——— 1443A	1	A		✓						"
——— 1444A (FB)	1	A		✓						"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelFemo	12/13/22 / 1545hrs.		[signature]	12-14-22 / 0840

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

PROJECT BW-7-211 ENV-0053

Notebook No. D32 # 127 C

Continued from page

Dan Halvorsen, Marcus Avalos & Chuck Heird present. Weather is Partly Cloudy and Cold. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a new Teflon discharge hose. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. Carboy G5 in use.

Calibrations:

Initial DTW: 192.30 ft.
Final " = 192.30
IDW = 1.25 gal.

DO Sensor: In 100% Saturated air.
PH Sensor: Using a 3pt. (4,7,10) Buffer Method.
Conductivity: Using a 1413 us/cm STD. Solution.
Turbidity = Using an In-Situ Standard.

Parameters (Time)	Temp	Cond	DO	PH	ORP	Turb	DTW (ft)
221213 0819 C	19.59	1008	6.94	7.92	76	0.12	192.30
0820 C	19.58	1024	6.85	7.91	76	0.15	192.30
0821 C	19.60	1013	6.80	7.92	80	0.39	192.30

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	Lab
221213 0826 C	VOA by 8260	Ice/HCl	(3) 40ml Vial	2641	ALS
0827 C	" " (FB)	"	"	"	"
0828 C	NDMA/DMN Bromacil by 607	Ice	(1) 1L Amber	010301	SRI
0829 C	Total Metals	Ice/HNO3	(2) 125ml Poly	22-07-25	ALS

Continued from page

Read and Understood By

Signed [signature] Date 12-13-2022 Signed [signature] Date 12-14-22

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-13-2022 Page 1 of 1

Sample Location: BW-7-211

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Voa	TOC	Metals				Charge Number
									XGMD
2212130826 C	3	A	X						
—— 0827 C FB	3		X						
—— 0828 C	1			X					
—— 0829 C	2				X				

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12-13-2022 0900		[signature]	12-14-22 / 0840

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

Tony Torrez & Craig Del Ferraro present. Weather is cloudy, cool, & windy. This well will be purged using a dedicated bladder pump. Samples will be collected using a teflon discharge hose. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. Carboy G2 in use.

23.47°c
2030FT

Calibrations
DO sensor - calibrated in 100% saturation.
Conductivity sensor - calibrated using 1413 us/cm std. solution.
PH sensor - calibrated using 4, 7, and 10 buffers.
Turb. sensor - calibrated using 10 NTU std.

Parameters (time)	temp (°c)	cond (us/cm)	DO	ORP	PH	Turb (NTU's)	DTW (ft.)
1) 221212 1400 ~~B~~A	20.67	1001.3	4.41	183.7	7.84	3.33	20.32
2) ——— 1403 ~~B~~A	20.69	1002.8	4.32	183.0	7.85	3.13	20.34
3) ——— 1406 ~~B~~A	20.74	998.3	4.20	182.7	7.85	2.85	20.34 (transducer)

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
221212 ~~1410B~~ 1410A	VOA by 8260	ice / HCL	(3) 40ml vials	2649-1	ALS
——— ~~1411B~~ 1411A	" (FB)	"	"	"	"
——— ~~1412B~~ 1412A	607 / Bromacil	ice	(1) 1L Amber	0100301H	SRI

Initial DTW - 20.30 ft. (transducer reading)

Total gallons purged (IDW) - 2

Continued from page N/A

Read and Understood By

Craig Del Ferraro 12/12/22
Signed Date

[signature] 12-13-22
Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12|12|22 | Page 1 of 1

Sample Location: PL-2-504			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260	607						Charge Number
221212 ~~140~~ CO 1410A	3	A	✓							XGMD
—— 1411A (FB)	3	A	✓							〃
—— 1412A	1	A		✓						〃

Sample Location:			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelFerro	12|12|22 / 1500hrs.		[signature]	12-13-22 / 0840

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

ROJECT PL-4-464 WJI ENV-0053 12/12/22

Notebook No. D32#125(B)
Continued from page N/A

ony Torrez & Craig Del Ferraro present. Weather is clear & cool. This well will e purged using a dedicated bladder pump. Samples will be collected using a eflon discharge hose. Water quality parameters will be monitored using an n-Situ Aqua Troll 500. Carboy G2 in use.

alibrations
DO sensor - calibrated in 100% saturated air.
onductivity - calibrated using 1413us/cm std. solution.
H - calibrated using 4, 7, and 10 buffers.
urbidity - calibrated using 10NTU std.

Trip blanks - Water Purification System

Sample	Analysis	Preservative	Container	Lot	Lab
221212 0730B	VOA by 8260	ice / HCL	(3) 40ml vials	2649-1	ALS
——— 0731B	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI

Parameters (time)	temp (°c)	cond (us/cm)	DO	ORP	PH	Turb (NTU's)	DTW (ft.)
) 221212 0915B	20.09	1043.9	6.26	204.1	7.65	1.99	449.54
) ——— 0918B	20.16	1055.9	6.12	204.8	7.61	1.80	449.54
) ——— 0921B	20.22	1067.7	5.94	205.3	7.59	1.73	449.54

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
221212 0925B	VOA by 8260	ice / HCL	(3) 40ml vials	2649-1	ALS
——— 0926B	" (FB)	"	"	"	"
——— 0927B	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI
——— 0928B	*" (MS)*	"	"	"	"
——— 0929B	*" (MSD)*	"	"	"	"
——— 0930B	" (FB)	"	"	"	"

Initial DTW - 449.54ft. Total gallons purged (IDW) - 2

Continued from page N/A

Read and Understood By

Craig Del Ferraro Signed 12/12/22 Date [signature] Signed 12-13-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/12/22

Page 1 of 1

Sample Location: PL-4-464

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	LL NDMA						Charge Number
221212 0730B (TB)	3	A	✓							XGMD
——— 0731B (TB)	1	A		✓						"
——— 0925B	3	A	✓							"
——— 0926B (FB)	3	A	✓							"
——— 0927B	1	A		✓						"
——— 0928B (MS)	1	A		✓						"
——— 0929B (MSD)	1	A		✓						"

Sample Location: PL-4-464

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	LL NDMA							Charge Number
2212120930B (FB)	1	A	✓							XGMD

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	12/12/22 / 1100hrs		[signature]	12-13-22 / 0840

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

Notebook No. D64 #130 (Y) 17

Continued from page NA

PROJECT PL-8-455 ~~UUOS~~ MG WJI ENU-0020

Matt Garcia & Bob Tufts present. Weather is clear & cool. This zone will be sampled using 5 stainless steel/triple rinsed sample tubes. Probe-4951. Surface checks performed on probe prior to sampling. IDW 5gal Carboy - G1

30 min. Equip. Blanks

Sample	Analysis	Preservative	Container	Lot	Lab
221214 1453Y	VOA 8260LL	Ice/HCL	(3) 40ML vials	2649-1	ALS
——— 1454Y	LL NDMA	Ice	(1) 1L Amber	0100301H	SRI

Initial Parameters		Final	Meter I.D.	
Time	- 2212150925Y	2212151027Y	PH/cond	- 12
PH	- 7.30	7.13	Turb	- 8
Temp	- 17.9°c	18.4°c	Std	- 59.8 NTU
Cond	- 1107 us/cm	1117 us/cm	Rdg	- 59.8 NTU
Turb	- 1.09 ntu's	1.13 ntu's	Lot	- 210966
PH pre	- 7.02/10.06 (19.7°c)	7.06/10.04 (12.4°c)	EXP	- 12/31/22
PH post	" "	7.04/10.06		
DTW	- 440.95 ft	441.03 ft		
ATMOS	- 12.15 psia	12.19 psia		

Buffers	Lot	EXP
7	1202144	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2212150945Y	VOA 8260LL	Ice/HCL	(3) 40ML vials	2649-1	ALS
——— 0946Y	LL NDMA	Ice	(1) 1L Amber	0100301H	SRI
——— 1023Y	1,4-Dioxane 8270D	"	(1) 250ML Amber		ALS

Runs -				
	1) 23.03	2) 22.91	3) 22.85	22.81
	21.66	21.62	21.58	21.52
	21.03	21.17	21.07	20.06
	22.86	22.82	22.79	22.67

Continued from page

Read and Understood By

Bob Tufts Signed   12-15-22 Date   B-140   [signature] Signed   12-15-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/15/22 Page 1 of 1

Sample Location: PL-8-455

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOA 8260LL	LL NDMA	1,4 Dioxane 8270D				Charge Number
22121509454	3	A	X						X6MD
——0946Y	1	↓		X					↓
——1023Y	1	↓			X				↓
~~221214~~ 1453X (EB)			X						
——1454X				X					

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Matt [signature]	12/15/22		[signature]	12-15-22 / 1030

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

ROJECT PL-8-605 WJI ENV-0020

Notebook No. D64 #130(Y)
Continued from page NA

Matt Garcia & Bob Tufts present. Weather is clear & cool. This zone will be sampled using 5 stainless steel/triple rinsed sample tubes. Probe - 4951. Surface checks performed on Probe prior to sampling. IDW · .5gal. Carboy - G1

30 min. Equip. Blanks

Sample	Analysis	Preservative	Container	Lot	Lab
2212141045Y	VOA 8260LL	Ice/HCL	(3) 40 ML vials	2649-1	ALS
—— 1046Y	LL NDMA	Ice	(1) 1L Amber	0100301H	SRI

Initial Parameters		Final	Meter I.D.
Time	2212141313Y	2212141412Y	PH/Cond - 12
PH	6.96	8.21	Turb - 8
Temp	17.1 °C	19.7 °C	" Std - 59.5 NTU's
Cond	1071 us/cm	1135 us/cm	" Rdg - 59.8 NTU's
Turb	2.53 NTU's	1.09 NTU's	" Lot - 210966
PHpre	6.95 / 10.00 (18.9 °C)	6.96 / 10.03 (19.1 °C)	" EXP - 12/31/22
PH post	6.97 / 10.05	6.99 / 10.03	
DTW	440.87 ft	440.95 ft	
ATMOS	12.17 psia	12.12 psia	

Buffers	Lot	EXP
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2212141340Y	VOA 8260LL	Ice/HCL	(3) 40 ML vials	2649-1	ALS
—— 1341Y	LL NDMA	Ice	(1) 1L Amber	0100301H	SRI
—— 1407Y	1,4-Dioxane 8270D	"	"	050922-165	ALS
—— 1408Y	" (MS)	"	(1) 250 ML Amber	"	"

Trip Blanks

Sample	Analysis	Preservative	Container	Lot	
2212140939Y	VOA 8260LL	Ice/HCL	(3) 40 ML vials	2649-1	ALS
—— 0940Y	LL NDMA	Ice	(1) 1L Amber	0100301H	SRI

Runs -	1)	2)	3)
	87.52	88.80	88.26
	86.91	86.48	86.45
	86.39	86.41	86.47
	87.33	88.14	88.13

Continued from page

Read and Understood By

Matt Garcia — Signed — 12/14/22 — Date

Lori Munch — Signed — 12-15-22 — Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/14/22 Page 1 of 1

Sample Location: PL-8-605

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOA 8260LL	LL NDMA	1,4 Dioxane 8270D					Charge Number
2212140939Y (TB)	3	A	X							XGMD
—— 0940Y (TB)	1	↓		X						↓
—— 1045Y	3		X							
—— 1046Y	1			X						
—— 1340Y	3		X							
—— 1341Y	1			X						
—— 1407Y	1	↓			X					↓

Sample Location: PL-8-605

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	1,4 Dioxane 8270D							Charge Number
2212141408Y (MS)	1	A	X							XGMD

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Matt Garza	12/14/22 1530		[signature]	12-15-22 / 0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

Dan Halvorsen & Craig Del Ferraro present. Weather is clear & cool. This zone will be purged and sampled using a FLUTe system. Samples will be collected using a dedicated discharge hose. Purge pressure set @ 227psi, sample pressure set @ 205psi, flow meter set @ 3psi, and bubbler stable @ 9psi. There will be a 15 minute recovery between purges. Minimum of 4 gallons purged prior to sampling. Carboy G5 in use.

Pre-sample parameters
PH - 8.82
Temp - 21.0°c
Cond - 1213 us/cm
Turb - 0.79 NTU's

Transducer
pressure - 28.84 psi
temp - 24.32°c
depth - 66.53 ft.

Meter ID
pH/cond - 91
Turb - 6
" std - 4.20 NTU's
" rdg - 4.30 NTU's
" lot - 210966
" Exp - 12/31/22

Parameters
Time - 22120514093
PH - 8.75
Temp - 20.4°c
Cond - 1206 us/cm
Turb - 0.94 NTU's
pH pre - 7.09/10.06 (21.1°c)
pH post - 7.10/10.05

Buffers	Lot	Exp
7	1202A44	8/25
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2212051410B	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
——— 1411B	" (FB)	"	"	"	"
——— 1412B	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI
——— 1413B	" (FB)	"	"	"	"
——— 1414B	1,4 Dioxane by 8270D	"	(1) 250ml amber	050922-1GJ	ALS

IDW - 5 gallons

Continued from page N/A

Read and Understood By

Craig Del Ferraro 12/5/22 B-144 Lori W[illegible] 12-6-22

Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/5/22 Page 1 of 1

Sample Location: PL-11-470

Analytical Requirement

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA	Dioxane					Charge Number
2212051410B	3	A	✓							XGMD
——1411B (FB)	3	A	✓							"
——1412B	1	A		✓						"
——1413B (FB)	1	A		✓						"
——1414B	1	A			✓					"

Sample Location:

Analytical Requirement

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Dell Ferro	12/5/22/1530hrs.		[signature]	12-6-22 /0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

Notebook No. D32 #128(B)

Continued from page N/A

ROJECT PL-11-530 FLUTe WJI ENV-0020 12/5/22

an Halvorsen & Craig Del Ferraro present. Weather is clear & cool. this zone will e purged and sampled using a FLUTe system. Samples will be collected using a dicated discharge hose. Purge pressure set @ 227 psi, sample pressure set @ 05psi, flow meter set @ 3psi, and bubbler stable @ 9psi. there will be 15 minute recovery between purges. Minimum of 4 gallons purged prior sampling. Carboy G5 in use.

re-sample parameters
H - 7.94
emp - 21.2°c
ond - 1229 us/cm
urb - 0.83 NTU's

Transducer
pressure - 29.85 psi
temp - 24.33 °c
depth - 68.83 ft.

Meter ID
pH/cond - 91
Turb - 6
" std - 4.20 NTU's
" rdg - 4.30 NTU's
" lot - 210966
" Exp - 12/31/22

arameters
ime - 2212051429B
H - 8.17
emp - 20.8°c
ond - 1218 us/cm
urb - 0.99 NTU's
H pre - 7.12/10.06 (19.9°c)
H post - 7.10/10.06

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2212051430B	VOA by 8260LL	ice / HCL	(3) 40ml vials	2649-1	ALS
—— 1431B	" (FB)	"	"	"	"
—— 1432B	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI
—— 1433B	" (FB)	"	"	"	"
—— 1434B	1,4 Dioxane by 8270D	"	(1) 250ml amber	050922-16J	ALS
—— 1435B	" (FB)	"	"	"	"

DW - 5 gallons

Continued from page N/A

Read and Understood By

Craig Del Ferraro 12/5/22 B-146 [signature] 12-6-22

Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/5/22 | Page 1 of 1

Sample Location: PL-11-530

Sample Number	# of Containers	Sample Matrix*	8260LL	LLNDMA	Dioxane				Charge Number
2212051430B	3	A	✓						XGMD
——1431B (FB)	3	A	✓						"
——1432B	1	A		✓					"
——1433B (FB)	1	A		✓					"
——1434B	1	A			✓				"
——1435B (FB)	1	A			✓				"

Pertinent Notes (if any)

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Dell Fiume	12/5/22 / 1530hrs.		[signature]	12-6-22 / 0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT PL-11-710 WJI ENV-0020 FLUTe 12/6/22

Dan Halvorsen & Craig Del Ferraro present. Weather is clear & cool. This zone will be purged and sampled using a FLUTe system. Samples will be collected using a dedicated discharge hose. Purge pressure set @ 227 psi, sample pressure set @ 205 psi, flow meter set @ 3 psi, and bubbler stable @ 9 psi. There will be a 15 minute recovery time between purges. Minimum of 4 gallons will be purged prior to sample collection. Carboy G5 in use.

Pre-sample parameters
PH - 8.56
Temp - 19.6 °C
Cond - 1257 us/cm
Turb - 0.62 NTU's

Transducer
pressure - 31.14 psi
temp - 24.08 °C
depth - 71.84 ft.

Meter ID
pH/cond - 91
Turb - 6
" Std - 4.20 NTU's
" rdg - 4.28 NTU's
" Lot - 210966
" Exp - 12/31/22

Parameters
Time - 2212061400B
PH - 8.62
Temp - 20.0 °C
Cond - 1251 us/cm
Turb - 0.55 NTU's
pH pre - 7.08/10.13 (18.0 °C)
pH post - 7.09/10.11

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2212061401B	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
——— 1402B	" (FB)	"	"	"	"
——— 1403B	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI
——— 1404B	" (Dupl.)	"	"	"	"
——— 1405B	" (FB)	"	"	"	"
——— 1406B	1,4 Dioxane by 8270D	"	(1) 250ml amber	050922-16J	ALS

IDW - 5 gallons

Continued from page

Read and Understood By

Craig Del Ferraro 12/6/22 Lori W[illegible] 12-7-22
Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/6/22 Page 1 of 1

Sample Location: PL-11-710

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA	Dioxane					Charge Number
22120614O1B	3	A	✓							XGMD
—— 1402B (FB)	3	A	✓							"
—— 1403B	1	A		✓						"
—— 1404B (Dupl.)	1	A		✓						"
—— 1405B (FB)	1	A		✓						"
—— 1406B	1	A			✓					"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelFerro	12/6/22 / 1530hrs.		[illegible signature]	12-7-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

Notebook No. D32 #128(8)

ROJECT PL-11-820 FLUTe WJI ENV-0020 12/6/22

Continued from page N/A

an Halvorsen & Craig Del Ferraro present. Weather is clear & cool. This zone
ill be purged and sampled using a FLUTe system. Samples will be collected
sing a dedicated discharge hose. Purge pressure set @ 227 psi, sample pressure
et @ 205 psi, flow meter set @ 3 psi, and bubbler stable @ 9 psi. There
ill be a 15 minutes recovery time between purges. Minimum of 4 gallons
ill be purged prior to sampling. Carboy G5 in use.

re-Sample parameters
H - 8.42
emp - 19.6°c
ond - 1119 us/cm
urb - 0.60 NTU's

Transducer
N/A - no readings could be obtained from transducer.

Meter ID
pH/Cond - 91
Turb - 6
" std - 4.20 NTU's
" rdg - 4.28 NTU's
" lot - 210966
" Exp - 12/31/22

arameters
ime - 221206 1420B
H - 8.33
emp - 19.9°c
ond - 1126 us/cm
urb - 0.71 NTU's
Hpre - 7.14/10.10 (17.7°c)
Hpost - 7.11/10.08

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
21206 1421B	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
—— 1422B	" (FB)	"	"	"	"
—— 1423B	Low Level NDMA	ice	(1) 1L Amber	010030 1H	SRI
—— 1424B	" (FB)	"	"	"	"

DW - 5 gallons

Continued from page N/A

Read and Understood By

Craig Del Ferraro 12/6/22
Signed Date

[signature] 12-7-22
Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/6/22 Page 1 of 1

Sample Location: PL-11-820

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
Pertinent Notes (if any)										
2212061421B	3	A	✓							XGMD
——— 1422B (FB)	3	A	✓							"
——— 1423B	1	A		✓						"
——— 1424B (FB)	1	A		✓						"

Sample Location:

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number
Pertinent Notes (if any)										

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	12/6/22/1530hrs.		[signature]	12-7-22 0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

Notebook No. D32#128 (B)

PROJECT PL-11-980 WJI ENV-0020 FLUTe 12/6/22

Continued from page N/A

Dan Halvorsen & Craig Del Ferraro present. Weather is clear & cool. this zone will be purged and sampled using a FLUTe system. Samples will be collected using a dedicated discharge hose. Purge pressure set @ 227psi, sample pressure set @ 205 psi, flow meter set @ 3 psi, and bubbler stable @ 9psi. there will be a 15 minute recovery time between purges. Minimum of 4 gallons will be purged prior to sampling. Carboy G5 in use.

Pre-sample parameters
PH - 8.29
Temp - 20.3°C
Cond - 1075us/cm
Turb - 0.70NTU's

Transducer
pressure - 32.28psi
temp - 24.24°C
depth - 74.47ft.

Meter ID
pH/cond - 91
Turb - 6
" std - 4.20NTU's
" rdg - 4.28NTU's
" lot - 210966
" Exp - 12/31/22

Parameters
Time - 2212061435B
PH - 8.36
Temp - 20.5°c
Cond - 1067us/cm
Turb - 0.63NTU's
pH pre - 7.09/10.11 (17.9°c)
pH post - 7.11/10.10

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2212061436B	VOA by 8260LL	ice/HCL	(3)40ml vials	2649-1	ALS
—— 1437B	" (FB)	"	"	"	"
—— 1438B	Low Level NDMA	ice	(1)1L Amber	0100301H	SRI
—— 1439B	" (FB)	"	"	"	"

IDW - 5 gallons

Continued from page N/A

Read and Understood By

Craig Del Ferraro Signed 12/6/22 Date

[signature] Signed 12-7-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/6/22 Page 1 of 1

Sample Location: PL-11-980

Analytical Requirement

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260LL	LL NDMA						Charge Number
2212061436B	3	A	✓							XGMD
——1437B (FB)	3	A	✓							"
——1438B	1	A		✓						"
——1439B (FB)	1	A		✓						"

Sample Location:

Analytical Requirement

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelFermo	12/6/22/1530hrs.		[signature]	12-7-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT ST-3-486 EN.0053

Bob Tufts & Tony Torrez present on 12-7-22. The weather is overcast & cool. This zone will be purged & sampled using a dedicated Teflon bladder pump. Samples collected from a ~~dedicated~~ Teflon discharge tube. Parameters collected from a Aqua Troll 500 from instu. Carboy 6-2.

Transducer
20.76 ft
~~16.72~~ 23.49 °c

Calibrations
DO sensor cal'd in 100% saturation
Cond sensor cal'd in 1413 µs/cm standard
pH sensor cal'd in 4,7,10 buffers.
Turb sensor cal'd in 20 NTU buffers.

Parameters

Sample#	Cond	DO	ORP	Temp	pH	Turb
221207 0920c	959.20	5.81	226.4	19.89 °c	7.26	4.58
— 0921c	957.33	5.75	225.9	19.85 °c	7.25	4.20
— 0922	958.15	5.80	226.1	19.86	7.26	4.10

Samples

Sample#	Analysis	Preserv	Cont	Lab
221207 0930c	8260	Ice: Hcl	(3) 40ml vials	Als
— 0931c	" (PB)	"	"	"
— 0932c	607	Ice	(1) 1L Amber	SAt

Continued from page

Read and Understood By

Signed T. [signature] Date 12-7-22 B-154 Signed [signature] Date 12-8-22

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: ST-3-486 | Page 1 of 1

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 8260	607						Charge Number: X6mA
221207 0930c	3	A	X							
— 0931c (FB)	3	|	X							
— 0932c	1	|		X						

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
T. [illegible]	12.7.22 / 1100		[illegible]	12-8-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

Dan Halvorsen & Marcus Avalos present. Weather is Clear and below freezing. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a Teflon discharge hose. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. Carboy G3 in use.

alibrations:
Do sensor: In 100% saturated air.
pH sensor = using a 3pt. (4,7,10) Buffer method.
onductivity: using a 1413 uS/cm STD Solution.
urbidity: using an In-Situ STD.

Initial DTW: 460.95 ft.
Final " = 460.22
EDV = 2.5 gal.

Parameters (Time)	Temp	Cond	DO	pH	ORP	Turb	DTW(ft)
221215 1000 C	19.29	851	10.01	7.60	188	18.6	
— 1002 C	19.29	850	9.93	7.57	187	19.2	
— 1004 C	19.28	852	9.90	7.59	187	19.6	

SAMPLES

Sample #	Analysis	Preserve	Container	LOT	LAB
221215 1008 C	VOA by 8260	Ice/HCl	(3) 40 ml vial	2(41)	ALS
— 1009 C	" " (Dup)	"	"	"	"
— 1010 C	" " (FB)	"	"	"	"
— 1011 C	NOMA/ONV Bromacil by 607	Ice	(1) 1L Amber	010030)	SRI

NOTE: This well was not allowed to set for the 24 hours that is required after installation prior to sampling. This was ordered to be sampled against what is required in the WSI, by Robert Walker. Temperature is 25 degrees and as a result will freeze the water in the equipment.

* Very High Turbidity and DO

Read and Understood By

Signed 12/15/2022 Date

B-156

Signed 12-16-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-15-2022 Page 1 of 1

Sample Location: ST-3-586			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	V08	607						XGMD / Charge Number
221215 1008 c	3	A	X							
— 1009 c	3		X							
— 1010 c FB	3		X							
— 1011 c	1			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]	12-15-2022 1030		[signature]	12-15-22 / 1030

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

Notebook No. D32 #127(c) 13
Continued from page

PROJECT ST-J.6666 ENV.0053

Bob Tufts & Tony Torrez present 12/8/22. The weather is clear & cool. This well will be purged & sampled using a dedicated Teflon bladder pump. Samples collected from a Teflon discharge tube. Carboy G-2. Parameters collected from a insitu Aqua Troll 500

Calibrations

DTW 461.72 FT

DO cal'd in 100% saturation
COND cal'd in 1413 standard
Turb cal'd in 20NTU standard
pH cal'd in 4,7,10 buffer

Parameters

Sample#	Temp(°C)	Cond (us/cm)	DO (mg/L)	ORP (mV)	pH	Turb (NTU)
221208 0955C	20.85	1,008.7	5.63	202.4	7.49	3.56
— 0956C	20.81	1,007.6	5.58	202.8	7.50	3.15
— 0957C	20.90	1,008.1	5.59	202.7	7.49	3.20

Samples

Sample#	Analysis	Preserv	Cont	Lab
221208 1000C	8260	Ice/HCl	(3) 40ml vials	ALS
— 1001C	" (FS)	"	"	"
— 1002C	607	Ice	(1) 1L amber	SKL
— 1003C	" (Dup)	"	"	"

Continued from page

Read and Understood By

Signed 12-8-22 B-158 Signed 12.9.22
Date Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-8-22 Page 1 of 1

Sample Location: ST-3-666

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 8260	607						Charge Number: XGMJ
221208 1000C	3	4	x							
1001C (FB)	3		x							
1002C	1			x						
1003C (Dup)	1	4		x						

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
T-D8	12-8-22/1100		[illegible signature]	12-9-22/0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

Bob Tufts + Tony Torrez present 12-8-22. The weather is clear and cool. This well will be purged + sampled using a dedicated Teflon Bladder pump. Samples collected from a Teflon ~~lin~~ discharge Tube. Parameters collected from a insitu Aqua Troll 500 Canboy G-2

Calibrations DTW 462.35 F

DO cal'd in 100% saturation
Cond cal'd in 1413 us/cm standard
Turb cal'd in 20 NTU standard
pH cal'd in 4,7,10 buffer

Parameters

Sample#	DO (mg/L)	pH	ORP (mv)	Cond (us/cm)	Turb (NTUs)	Temp (c)
221208 1355C	4.85	7.28	47.5	1,016.0	1.72	21.03
— 1356C	4.84	7.27	49.6	1,018.8	1.80	20.63
— 1357C	4.85	7.29	48.7	1,016.9	1.78	20.80

Samples

Sample#	Analysis	Preserv	Cont	Lab
221208 1400C	8260	Ice, Hcl	(3) 40ml vials	ALS
— 1401C	" (FB)	"	"	"
— 1402C	607	Ice	(1) Lit Amber	SRL

Continued from page

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-8-22 Page 1 of 1

Sample Location: ST-3-735			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260	CCVOMA						Charge Number: XGMD
221208 1400c	3	A	X							
— 1401c (FB)	3	A	X							
— 1402c	1	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:
T. D[illegible]	12-8-22/1500		[signature]	12-9-22 /0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

PROJECT ST. 4. 481

Marcus Avalos & Robert Burrows present. Weather is clear & cool. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge tube. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. Carboy G-3

Calibrations
DO- Cal in 100% saturation
PH- Cal using In-Situ Buffers (4, 7, 10)
Conductivity- Cal using 1413 uS/cm STD
Turbidity- Cal using 10 NTU.

Initial DTW - 459.00'

Trip Blanks

Sample #	Analysis	Preserve	Container	Lot	Lab
221201 0800 A	VOA by 8260LL	HCl/Ice	(3) 40ml vials	26491	ALS
— 0801 A	Low Level NDMA	Ice	(1) 1L Amber	0100301H	SRI

Parameters (time)	Temp (°C)	Cond (uS/cm)	DO (mg/L)	PH	ORP	Turb (NTU)	DTW (ft)
1) 221201 1015 A	20.56	1029.8	6.28	7.46	190.4	1.11	459.00
2) — 1017 A	20.58	1031.3	6.25	7.47	190.1	0.53	"
3) — 1019 A	20.54	1030.5	6.27	7.46	191.1	0.33	"

Samples

Sample #	Analysis	Preserve	Container	Lot	Lab
221201 1025 A	VOA by 8260LL	HCl/Ice	(3) 40ml vials	26491	ALS
— 1026 A	" (FB)	"	"	"	"
— 1027 A	Low Level NDMA	Ice	(1) 1L Amber	0100301H	SRI
— 1028 A	" (FB)	"	"	"	"

FOW - 2 gal

Read and Understood By

Signed 12/1/22 Date

Lori U Munch Signed 12-5-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/1/22 Page 1 of 1

Sample Location: 8T-4-481			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
2212010800A (TB)	3	A	X							XGMD
0801A (TB)	1			X						
1025A	3		X							
1026A (FB)	3		X							
1027A	1			X						
1028A (FB)	1			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]	12/1/22 @ 1115		[signature]	12-6-22 / 0815

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

Notebook No. 032 # 126 (A)

Continued from page

Marcus Avalos & Robert Burrows present. Weather is clear & cool. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge tube. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. Carboy G-3

Calibrations

Initial DTW - 458.00'

DO. Cal in 100% saturation

pH - Cal using In-Situ Buffers (4,7,10)

Conductivity - Cal using 1413 us/cm STD.

Turbidity - Cal using 10 NTU

Parameters (time)	Temp(°C)	Cond(us/cm)	DO(mg/L)	PH	ORP	Turb(NTU)	DTW(ft)
) 221201 1400 A	20.06	817.90	2.93	8.17	131.4	1.80	458.20
) — 1402 A	19.99	820.90	2.79	8.17	131.7	1.53	"
) — 1404 A	20.03	822.37	2.74	8.16	131.8	1.36	"

Samples

Sample #	Analysis	Preservative	Container	lot	lab
221201 1410 A	VOA by 8260 LL	HCl/Ice	(3) 40 ml vials	26491	ALS
— 1411 A	" (FB)	"	"	"	"
— 1412 A	Low Level NDMA	Ice	(1) 1L Amber	010030H	SRI
— 1413 A	" (FB)	"	"	"	"

TOW - 2 gal

Continued from page

Read and Understood By

[signature] 12/1/22 B-164 [signature] 12-5-22

Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12.1.22 Page 1 of 1

Sample Location: ST.4.690

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
Pertinent Notes (if any)										
22120111410A	3	A	X							YGMD
1411A (FB)	3		X							
1412A	1			X						
1413A (FB)	1			X						

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number
Pertinent Notes (if any)										

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12/1/22 @ 1500		[signature]	12-5-22 / 0815

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

Notebook No. D32 #128(B)

Continued from page N/A

OJECT ST-6-528 FLUTe WJI ENV-0020 12/7/22

n Halvorsen & Craig Del Ferraro present. Weather is cloudy & cool. This zone will purged and sampled using a FLUTe system. Samples will be collected using a dicated discharge hose. Purge pressure set @ 228psi, sample pressure set @ 7psi, flow meter set @ 3psi, and bubbler stable @ 8psi. There will be 15 minute recovery time between purges. A minimum of 4 gallons will purged prior to sampling. Carboy G5 in use.

Trip blanks - Water Purification System

ample	Analysis	Preservative	Container	Lot	Lab
2120 70740B	VOA by 8260LL	ice / HCL	(3) 40ml vials	2649-1	ALS
——— 0741B	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI

re-sample parameters
H - 8.65
emp - 18.4°C
ond - 1244 us/cm
urb - 1.45 NTU's

Transducer
pressure - 31.67 psi
temp - 24.32°C
depth - 73.06 ft.

Meter ID
pH/Cond - 91
Turb - 6
" std - 4.20 NTU's
" rdg - 4.26 NTU's
" lot - 210966
" Exp - 12/31/22

arameters
ime - 221207 1429B
H - 8.72
emp - 18.0°C
ond - 1256 us/cm
urb - 1.18 NTU's
H pre - 7.13/10.11 (15.9°C)
H post - 7.10/10.10

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
221207 1430B	VOA by 8260LL	ice / HCL	(3) 40ml vials	2649-1	ALS
——— 1431B	" (FB)	"	"	"	"
——— 1432B	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI
——— 1433B	" (FB)	"	"	"	"
——— 1434B	1,4 Dioxane by 8270D	"	(1) 250ml amber	050922-1GJ	ALS

IDW - 5 gallons

Continued from page N/A

Read and Understood By

Craig Del Ferraro 12/7/22 [signature] 12-8-22

Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/7/22

Sample Location: ST-6-528

Sample Number	# of Containers	Sample Matrix*	8260LL	LL NDMA	Dioxane					Charge Number
2212070740B (TB)	3	A	✓							XGMD
—— 0741B (TB)	1	A		✓						″
—— 1430B	3	A	✓							″
—— 1431B (FB)	3	A	✓							″
—— 1432B	1	A		✓						″
—— 1433B (FB)	1	A		✓						″
—— 1434B	1	A			✓					″

Pertinent Notes (if any)

Sample Location:

Analytical Requirement

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Fumo	12/7/22/1545 hrs.		[signature]	12-8-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT ST-6-568 FLUTe WJI ENV-0020 12/7/22

Dan Halvorsen & Craig Del Ferraro present. Weather is cloudy & cool. This zone will be purged and sampled using a FLUTe system. Samples will be collected using a dedicated discharge hose. Purge pressure set @ 228psi, sample pressure set @ 207 psi, flow meter set @ 3psi, and bubbler stable @ 8psi. There will be a 15 minute recovery time between purges. A minimum of 4 gallons will be purged prior to sampling. Carboy G5 in use.

Pre-sample parameters
PH - 7.95
Temp - 19.1°C
Cond - 1225 us/cm
Turb - 0.64 NTU's

Transducer
pressure - 31.96 psi
temp - 24.14°C
depth - 73.73 ft.

Meter ID
pH/cond - 91
Turb - 6
" std - 4.20 NTU's
" rdg - 4.26 NTU's
" lot - 210966
" Exp - 12/31/22

Parameters
Time - 2212071440B
PH - 8.25
Temp - 18.7°C
Cond - 1203 us/cm
Turb - 0.57 NTU's
pH pre - 7.14/10.10 (16.2°C)
pH post - 7.12/10.07

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2212071441B	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
—— 1442B	" (FB)	"	"	"	"
—— 1443B	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI
—— 1444B	" (FB)	"	"	"	"
—— 1445B	1,4 Dioxane by 8270D	"	(1) 250ml amber	050922-16J	ALS

Blind Controls

Sample	Analysis	Preservative	Container	Lot	Lab
2212071530B	Low Level NDMA	ice	(1) 1L Amber	22MM155A	SRI

IDW - 5 gallons

Continued from page N/A

Read and Understood By

Craig Del Ferraro 12/7/22 Lori W[illegible] 12-8-22
Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/7/22 Page 1 of 1

Sample Location: ST-6-568

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260LL	LLNDMA	Dioxane					Charge Number
2212071441B	3	A	✓							XGMD
——1442B (FB)	3	A	✓							"
——1443B	1	A		✓						"
——1444B (FB)	1	A		✓						"
——1445B	1	A			✓					"
——1530B (BC)	1	A		✓						"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelFemo	12/7/22 / 1545hrs.		[illegible signature]	12-8-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

Notebook No. D32 #128(B)

ROJECT ST-6-678 ENV-0020

Continued from page

Dan Halvorsen + Marcus Avelos present. Weather is clear and cool. This zone will be purged and sampled using a FLUTe System. Samples will be collected using a dedicated discharge hose. Purge pressure set at 228 psi, Sample pressure at 207 psi. Flowmeter set at 3 psi and bubbler stable at 8 psi. 15 minute recovery between purges, minimum of 4 gallons purged prior to sampling. Carboy G5 in use.

Trip Blanks

Sample #	Analysis	Preserve	Container	LOT	LAB
221208 0700 B	Voa by 8260 LL	Ice/HCl	(3) 40ml Vial	2649-1	ALS
——— 0701 B	NDMA LL	Ice	(1) 1L Amber	010030)	SRI

Pre-Sample Parameters
- pH = 8.63
- Temp = 19.3
- Cond = 1183
- Turb = 0.80

Transducer
N/A

Meter ID
- pH/Cond = 91
- Turb = 6
- " STD = 4.20
- " RDG = 4.29
- " LOT = 210966
- " EXP = 12/22

Parameters
- Time = 221208 1350 B
- pH = 8.71
- Temp = 19.3°C
- Cond = 1176 us/cm
- Turb = 0.72 ntu's
- Pre = 7.11-10.12 (16.4°C)
- Post = 7.10-10.10

SAMPLES

Sample #	Analysis	Preserve	Container	LOT	LAB
221208 1430 B	Voa by 8260 LL	Ice/HCl	(3) 40ml Vial	2649-1	ALS
——— 1431 B	" " (FB)	"	"	"	"
——— 1432 B	NDMA LL	Ice	(1) 1L Amber	010030)	SRI
——— 1535 B	" " (Dup)	"	"	"	"
——— 1536 B	" " (FB)	"	"	"	"
——— 1537 B	SVOA SIM	"	(1) 250ml Amber	050922	ALS
——— 1538 B	" " (Dup)	"	"		"

* Note = Check ball does not hold *

Continued from page

Read and Understood By

Signed 12-8-2022 Date

B-170

Signed 12-9-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-8-2022

Sample Location: ST-6-678

Pertinent Notes (if any)

Charge Number: XGMD

Sample Number	# of Containers	Sample Matrix*	VOC	VOMA LL	~~SVOC-STAR~~				
2212080700B TB	3	A	X						
——1430 B	3		X						
——1431 B FB	3		X						
——0701 B TB	1			X					
——1432 B	1			X					
——1535 B	1			X					
——1536 B FB	1			X					

Sample Location:

Pertinent Notes (if any)

Charge Number:

Sample Number	# of Containers	Sample Matrix*	SVOC-SIM						
2212081537 B	1	A	X						
——1538 B	1	A	X						

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12-8-2022 1630		[signature]	12-9-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

Notebook No. D32 #128(B) 9

PROJECT ST-6-824 ENV-0020

Continued from page

Dan Halvorsen & Marcus Arabs present. Weather is clear and cool. This zone will be purged and sampled using a FLUTe system. Samples will be collected using a dedicated discharge hose. Purge pressure set at 228 psi, sample pressure at 207 psi. Flowmeter set at 3 psi, bubbler stable at 8 psi. 15 minute recovery between purges. Minimum of 4 gallons purged prior to sampling. Carboy G5 in use.

Pre-Sample Parameters	Transducer	Meter ID
pH = 8.46	Psi = 33.13	pH/Cond = 91
Temp = 18.4	Temp = 24.28	Turb = 6
Cond = 1050	Depth = 76.43	" SD = 4.20
Turb = 1.43		" ADG = 4.29
		" Lot = 910266
		" Exp = 12/22

Parameters

Time = 221208141OB

pH = 8.57

Temp = 18.4 °C

Cond = 1042 us/cm

Turb = 1.39 NTUs

pH Pre = 7.12-10.11 (16.5 °C)

pH Post = 7.11-10.10

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	LAB
2212081448 B	VOCs by 8260 LL	Ice/HCl	(3) 40 ml Vial	2649-1	ALS
—— 1449 B	" " (FB)	"	"	"	"
—— 1450 B	NDMA LL	Ice	(1) 1L Amber	010030	SRI
—— 1451 B	" " (FB)	"	"	"	"

Continued from page

Read and Understood By

[signature] Signed 12-8-2022 Date

[signature] Signed 12-9-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-8-2022 Page 1 of 1

Sample Location: STG-824

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOC	VOMA LL					Charge Number
									XGMD
2212081448B	3	A	✓						
1449B FB	3		✓						
1450B	1			✓					
1451B FB	1			✓					

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12-8-2022 1630		[signature]	12-9-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

ROJECT 5J-6-970 ENV-0020

Notebook No. D32 # 128 (B)

Continued from page

an Halvorsen + Marcus Avalos present. Weather is Clear and cool. This zone will be purged and sampled using a FLUTe system. Samples will be collected using a dedicated discharge hose. Purge pressure set at 228 psi, sample pressure at 207 si. Flowmeter set at 3 psi, bubbler stable at 8 psi. 15 minute recovery between urges. Minimum of 4 gallons purged prior to sampling. Carboy G5 in use.

re-Sample Parameters

PH = 8.46
emp = 19.1
ond = 1181
urB = 0.81

Transducer

N/A

Meter ID

PH/COND = 91
TURB = 6
" STD = 4.20
" RDG = 4.29
" LOT = 910266
" Exp = 12/22

arameters

ime = 221208141118 B
H = 8.51
emp = 19.1 °C
ond = 1172 us/cm
urB = 0.73 ntu's
Pre = 7.11 - 10.10 (16.5 °C)
Post = 7.10 - 10.10

SAMPLES

ample #	Analysis	Preserve	Container	Lot	LAB
221208 1510 B	VOC by 8260 LL	ICE/HCl	(3) 40 ml Vial	2649-1	ALS
— 1511 B	" " (FB)	"	"	"	"
— 1512 B	NDMA LL	ICE	(1) 1L Amber	010030	SBT
— 1513 B	" " (FB)	"	"	"	"

Continued from page

Read and Understood By

Signed 12-8-2022 Date

B-174

Signed 12-9-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-8-2022 Page 1 of 1

Sample Location: ST-6 970			Analytical Requirement							
Pertinent Notes (if any)										
Sample Number	# of Containers	Sample Matrix*	VOC	NDMA LL						Charge Number: X6MD
221208 1510 B	3	A	X							
1511 B FB	3		X							
1512 B	1			X						
1513 B FB	1			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]	12-8-2022 1630		[signature]	12-9-22 /0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

ROJECT WW-1-452 EAU.0053

Notebook No. D32#122(c)

Continued from page ________

Bob Tufts & Tony Torrez present on 12-5-22, the weather overcast & cool. This well will be purged & sampled using a Teflon bladder pump. Samples collected from a Teflon discharge tube. Param's collected from a Insitu Aqua Troll 500, Carboy 6.2

DTW - 423.20

Calibrations

DO sensor cal'd in 100% saturation

Cond sensor cal'd in 1413 µs/cm standard

Turb sensor cal'd in 20 NTU standard

pH sensor cal'd in 4, 7, 10 buffers.

PARAMETERS

Sample#	Temp	Turb	Cond	DO	ORP	pH
221205 1515c	21.89	2.96	1,085.0	5.84	177.6	7.63
— 1516c	21.78	2.78	1,080.4	5.79	177.1	7.64
— 1517c	21.81	2.81	1,083.2	5.80	177.4	7.62

Samples

Sample#	Analysis	Preserv	Cont	Lab
221205 1530c	8260LL	Ice HCl	(3) 40 ml vials	A/S
— 1531c	" (FB)	"	"	"
— 1532c	LLNDMA	Ice	(1) L T amber	SRI
— 1533c	" (FB)	"	"	"

Continued from page

Read and Understood By

[signature] Signed 12-5-22 Date B-176 [signature] Signed 12-6-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: WW 1-452 Page 1 of 1

Sample Location: 12/5/22

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260 SIM	8270 SIM						Charge Number
										X6an1
221205 1530C	3	A	X							
— 1531C	3		X							
— 1532C	1			X						
— 1533C	1			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:
T. [signature]	12-5-22/1630		[signature]	12-6-22 /0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

PROJECT GW-2-489 ENV.0053

Notebook No. D32 #127(c) 9

Continued from page

Bob Tufts & Tony Torrez present 12/6/22. The weather is clear & cool. This zone will be purged & sampled using a dedicated Teflon bladder pump. Samples collected from a Teflon discharge tube. Param's collected by a Insitu Aqua Troll 500 Carboy 6-2

Calibrations

DO sensor cal'd in 100% saturation

Cond sensor cal'd in 1413 µs/cm standard

Turb sensor cal'd w/ 20NTU standard.

pH sensor cal'd w/ 4,7,10 buffer.

Transducer readings

20.48 ft

23.99 °c

Parameters

Sample #	Cond	Turb	DO	pH	ORP	Temp
221206 0945c	919.65	4.96	3.80	8.33	150.9	21.09
— 0946c	915.73	4.78	3.73	8.33	151.2	21.21
— 0947c	917.18	4.82	3.74	8.33	150.9	20.99

Trip Blanks

Sample #	Analysis	Preserv	Cont	Lab
221206 0700c	8260LL	Ice/Hcl	(3) 40ml vials	ALS
— 0701c	LLNDMA	Ice	(1) 1Lt amber	SRF

Samples

Sample #	Analysis	Preserv	Cont	Lab
221206 0950c	8260LL	Ice/Hcl	(3) 40ml vials	ALS
— 0951c	〃 (FB)	〃	〃	〃
— 0952c	LLNDMA	Ice	(1) 1Lt amber	SRF
— 0953c	〃 (FB)	〃	〃	

Continued from page

Read and Understood By

[signature] Signed 12-6-22 Date

[signature] Signed 12-7-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-6-22 Page 1 of 1

Sample Location: WW-2-489

Sample Number	# of Containers	Sample Matrix*	8260 LL	LLNDMA						Charge Number
Pertinent Notes (if any)										XGMD
~~220~~ 221206 0700c (TB)	3	A	X							
—— 0701c (TB)	1			X						
—— 0950c	3		X							
—— 0951c (FB)	3		X							
—— 0952c	1			X						
—— 0953c (FB)	1			X						

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number
Pertinent Notes (if any)										

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
T. [signature]	12-6-22/1100		[signature]	12-7-22 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

PROJECT WW-2-664 ENV-0053

Notebook No. P32 #122(c)

Continued from page N/A

Bob Tufts & Tony Torrez present 12-6-22. The weather is clear, windy & cool. This zone will be purged & sampled using a dedicated Teflon bladder pump. Samples collected from a Teflon discharge tube. Parameters collected from a Insitu Aqua Troll 500 Carboy 6-2

Transducer
23.41 FT
20.45 c

Calibrations PATT

DO Sensor cal'd in 100% saturation
Cond Sensor cal'd in 1413 us/cm standard
Turb sensor cal'd in 20 NTU standard
pH sensor cal'd in 4,7,10 buffers.

Parameters

Sample#	Temp	Cond	DO	ORP	pH	Turb
221206 1530c	20.62	906.10	4.38	152.6	7.78	1.78
— 1531c	20.61	906.11	4.34	153.2	7.80	1.60
— 1532c	20.62	906.10	4.35	152.9	7.81	1.48

Samples

Sample#	Analysis	Preserv	Cont	Lab
221206 1535c	8260LL	ICE/HCl	(3) 40ml vials	ALS
— 1536c	" (FB)	"	"	"
— 1537c	LLNDMA	ICE	(1) 1LT amber	SRS
— 1538c	" (FB)	"	"	"
~~— 1539c~~				

TT

Continued from page

Read and Understood By

Signed [signature] Date 12-06-22 B-180 Signed Lori Wunch Date 12-7-22

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-6-22 Page ____ of ____

Sample Location: WW-2-664

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260CC	LC[illegible]						Charge Number: TGMD
2212061535C	3	A	X							
— 1536C (FB)	3		X							
— 1537C	1			X						
— 1538C (FS)	1			X						

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[illegible]	12-6-22/1630		[illegible]	12-7-22 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT WW-3-469 WJI ENV-0020

Continued from page NA

Matt Garcia & Bob Tufts present. Weather is clear & cold. This Zone will be sampled using 2 triple rinsed stainless sample tubes. Probe-2213. Surface checks performed on probe prior to sampling. IDW - .5gal

30 min. Equipment Blanks

Sample	Analysis	Preservative	Container	Lot	Lab
2212131045Y	VOA 8260LL	Ice/HCL	(3) 40ML Vials	2649-1	ALS
—— 1046Y	LL NDMA	Ice	(1) 1L Amber	0100301H	SRI

Initial Parameters		Final	Meter I.D.	
Time	- 2212131258Y	2212131330Y	PH/cond.	- 12
PH	- 6.87	7.48	Turb	- 8
Temp	- 18.0°C	15.4°C	"Std	- 59.5 NTU
Cond	- 1117 us/cm	1120 us/cm	"Rdg	- 59.5 NTU
Turb	- 0.66 NTU's	0.51 NTU's	"Lot	- 2109CC6
PH pre	- 7.04/10.08 (14.7°C)	7.06/10.05 (14.5°C)	"EXP	- 12/31/22
PH post	- 7.04/10.06	7.05/10.05		
DTW	- 409.78 ft.	409.87 ft		
ATMOS	- 12.12 psia	12.13 psia		

Buffers	Lot	exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	~~Preservative~~ Container MG	~~Container~~ Preservative MG	Lot	Lab
2212131320Y	VOA 8260LL	(3) 40ML Vials	Ice/HCL	2649-1	ALS
—— 1321Y	LL NDMA	(1) 1L Amber	Ice	0100301H	SRI

Runs -	1)	2)
	40.75	39.90
	38.42	38.37
	38.21	38.35
	38.84	39.57

Continued from page

Read and Understood By

Matt Garcia — Signed — 12/13/22 — Date

B-182

Lori Wunch — Signed — 12-14-22 — Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/13/22 Page 1 of 1

Sample Location: WW-3-469			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOA 8260 LL	LL NDMA						Charge Number
2212131045Y (EB)	3	A	X							XGMD
——1046Y (EB)	1	↓		X						↓
——1320Y	3	↓	X							↓
——1321Y	1	↓		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:
Mdt Gam	12/13/22 1410		[signature]	12-14-22 0840

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

Notebook No. DG4 #130(Y)

OJECT WW-3-569 WJI ENU-0020

Continued from page NA

latt Garcia & Bob Tufts Present. Weather cool & windy.
This zone will be sampled using 2 triple rinsed
Stainless sample tubes. Probe-2213. Surface checks performed
on Probe prior to sampling. IDW .5gal

30 min Equipment Blanks

ample	Analysis	Preservative	Container	Lot	Lab
221212 0930Y	VOA 8260 LL	Ice/HCL	(3) 40ML vials	2649-1	ALS
—— 0931Y	LL NDMA	Ice	(1) 1L Amber	010030 1H	SRI

nitial Parameters	Final	Meter ID
ime - 221212 1030Y	221212 1355Y	PH/cond - 12
PH - 7.93	7.90	Turb - 8
emp - 18.8°C	20.7°C	" Std - 59.5 NTU
ond - 1099 us/cm	1127 us/cm	" Rdg - 59.4 NTU
urb - 4.84 NTU's	3.19 NTU's	" Lot - 216966
H pre - 7.13/10.09 (17.2°C)	7.11/10.08	" EXP - 12/31/22
H post - 7.13/10.12	7.12/10.11	
TW - 412.09 ft.	412.13 ft	
tmos - 12.02 psia	12.00 psia	

Buffers	Lot	EXP
7	1202A44	8/23
10	4107E30	1/23

Samples

ample	Analysis	Preservative	Container	Lot	Lab
221212 1315Y	VOA 8260 LL	Ice/HCL	(3) 40ML vials	2649-1	ALS
—— 1316Y	LL NDMA	Ice	(1) 1L Amber	010030 1H	SRI
—— 1317Y	" (Dup)	"	"	"	"

uns - 1)	83.85	83.05	83.11
	89.98	81.43	81.45
	88.75	81.43	81.53
	83.75	81.92	83.25

Continued from page

Read and Understood By

Matt Garcia — Signed — 12/12/22 Date

B-184

Lori [signature] — Signed — 12-13-22 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/12/22 Page 1 of 1

Sample Location: WW-3-569

Analytical Requirement

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOA 8260LL	LLNDMA					Charge Number
2212120930Y	3	A	X						XGMP
0931Y	1			X					
1315Y	3		X						
1316Y	1			X					
1317Y (DUP)	1			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:
Matt [signature]	12/12/22 15:30		[signature]	12-13-22 0840

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

PROJECT 100-F-358 WJIENV-0053

M. Garcia & B. Tufts present. weather is breezy & cold. Well will be purged using a dedicated bladder pump. Samples collected with a teflon discharge tube. Parameters taken using Aquatroll 500

Carboy - 65

Initial DTW^{FT} - 317.15
Final " - "
IDW - 2.5gal

Aquatroll 500 cal.
DO - 100% sat. air @ 641 mm/HG
PH - Insitu Buffers 4,7,10
Cond - 1413 uS/cm STD
Turb - Insitu Turb STD (20)

Parameters	Temp	cond	PH	ORP	DO	Turb	DTW
2301241000A	19.88	1323	7.46	40	1.77	1.33	317.15
——— 1005A	19.93	1326	7.71	41	1.93	1.17	"
——— 1010A	19.90	1328	7.40	39	1.94	1.19	"

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2301241020A	8260LL	Ice/HCL	(3) 40mL vials	214491	ALS
——— 1021A	" (FB)	"	"	"	"
——— 1022A	607	Ice	(1) 1L Amber	010030, H	SRZ
——— 1023A	LLNDMA	"	"	"	SRZ
——— 1024A	" (FB)	"	"	"	"
——— 1025A	8270D	"	(2) 1L Amber	NA	ALS
——— 1026A	PCB 8082A	"	(1) 1L Amber	"	"
——— 1027A	Pesticides	"	"	"	"
——— 1028A	Herbicides	"	"	"	"
——— 1029A	Dioxins/Furans	"	"	010030, H	SRZ
——— 1030A	1,4 Dioxane	"	(1) 250mL Amber	0012106	ALS
——— 1031A	Phenolics	Ice/H_2SO_4	"	207253	"
——— 1032A	T. Metals	Ice/HNO_3	(2) 125mL Poly	220725	"
——— 1033A	Anions/ALK	Ice/zero H.S.	"	NA	"
——— 1034A	TDS	Ice	(1) 250mL Poly	012020-2AA0	"
——— 1035A	Perchlorate	Ice/1/3 H.S.	(1) 125mL Poly	NA	"
——— 1036A	NO_2/NO_3	Ice/H_2SO_4	(1) 250mL Poly	220919	"
——— 1037A	Cyanide	Ice/NaOH	(1) 125mL Poly	214719	"
——— 1038A	Sulfide		(1) 500mL Poly		

Continued from page

Read and Understood By

Matt Garcia Signed 1/24/23 Date
[signature] Signed 1-25-23 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/24/23

Sample Location: 100-F-358

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	8260 LL	607	LL NDMA	8270D	PCB 8082A	Pesticides	Herbicides	Dioxins/Furans	1,4 Dioxane	Phenolics	T. metals
2301241020A	3	A	X										
——1021A (FB)	3		X										
——1022A	1			X									
——1023A	1				X								
——1024A (FB)	1				X								
——1025A	2					X							
——1026A	1						X						
——1027A	1							X					
——1028A	1								X				
——1029A	1									X			
——1030A	1										X		
——1031A	1											X	
——1032A	2												X

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
Matt [signature]	1/24/23 1130hrs	[signature]	1-25-23 / 0915

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (03/09)

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/24/23 Page 2 of 2

Sample Location: 100-F-358

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Anions/ALK	TDS	Perchlorate	NO^2/NO^3	Cyanide	Sulfide					
23012410 33A	2	A	X										
——1034A	1	↓		X									
——1035A	1	↓			X								
——1036A	1	↓				X							
——1037A	1	↓					X						
——1038A	1	↓						X					

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
Matt [signature]	1/24/23 1130hrs	[signature]	1-25-23 / 0915

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

M. Garcia & B. Tufts present. Weather is windy & cool. Well purged using dedicated bladder pump. Samples collected from teflon discharge tube. Parameters taken using Insitu Aquatroll 500. Carboy - G5

IDW - 2.5 gal Initial DTW - 78.80
Final - "

Aquatroll Cal
DO - 100% sat. air @ 641 mm/HG
PH - Insitu Buffers 4,7,10
Cond - 1413 us/cm STD.
Turb - Insitu Turb STD. (20)

Parameters	Temp (oc)	Cond (us/cm)	PH	ORP	DO (MG/L)	Turb (NTU)	DTW (FT)
2301241400A	19.84	1174	7.51	123	2.47	.71	78.80
—— 1405A	19.86	1105	7.50	"	2.50	.46	"
—— 1410A	19.88	1171	"	"	2.56	.44	"

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2301241420A	8260LL	Ice (3) 40ML vials →		264911	ALS
—— 1421A	" (FB)	"	"	"	"
—— 1422A	607	Ice	(1) 1L Amber	010030IH	SRI
—— 1423A	" (FB)	"	"	"	"
—— 1424A	LLNDMA	"	"	"	"
—— 1425A	" (FB)	"	"	"	"
—— 1426A	8270D	"	(2) 1L Amber	NA	ALS
—— 1427A	PCB 8082A	"	(1) 1L Amber	"	"
—— 1428A	Pesticides	"	"	"	"
—— 1429A	Herbicides	"	"	"	"
—— 1430A	Dioxins/Furans	"	"	010030IH	"
—— 1431A	1,4 Dioxane	"	(1) 250ML Amber	9012106	"
—— 1432A	Phenolics	Ice/H^2SO^4	"	2022253	"
—— 1433A	T. Metals	Ice/HNO^3	(2) 125ML Poly	220725	"
—— 1434A	" (FB)	"	"	"	"
—— 1435A	Anions/ALK	Ice/zero H.S.	"	NA	"
—— 1436A	TDS	Ice	(1) 250ML Poly	0702020 2AAB	"
—— 1437A	Perchlorate	Ice/1/3 HS.	(1) 125ML Poly	NA	"
—— 1438A	NO^2/NO^3	Ice/H^2SO^4	(1) 250ML Poly	220919	"
—— 1439A	Cyanide	Ice/NaOH	(1) ~~125~~ ML Poly	"	"
—— 1440A	Sulfide	Ice/NaOH Zinc	(1) 500ML Poly	0129182AAW	"

Continued To Page

Read and Understood By

[signature]	1/24/23	[signature]	1-25-23
Signed	Date	Signed	Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/24/23 Page 2 of 2

Sample Location: 100·G·223

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	T. Metals	Anions/ALK	TDS	Perchlorate	NO^2/NO^3	Cyanide	Sulfide				
230124 1433A	2	A	X										
—— 1434A (FB)	2		X										
—— 1435A	2			X									
—— 1436A					X								
—— 1437A						X							
—— 1438A							X						
—— 1439A								X					
—— 1440A									X				

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
Matt [signature]	1/24/23 1530hrs	[signature]	1-25-23 / 0915

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/24/23 Page 1 of 2

Sample Location: 100-G-223

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	8260 LL	607	LLNDMA	8270D	PCB 8082A	Pesticides	Herbicides	Dioxins/Furans	1,4 Dioxane	Phenolics	~~T. Metals~~
230124 1420 A	3	A	X										
1421 A (FB)	3		X										
1422 A	1			X									
1423 A (FB)	1			X									
1424 A	1				X								
1425 A (FB)	1				X								
1426 A	2					X							
1427 A	1						X						
1428 A	1							X					
1429 A	1								X				
1430 A	1									X			
1431 A	1										X		
1432 A	1											X	

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
Matt [signature]	1/24/23 1530hrs	[signature]	1-25-23 / 0915

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (03/09)

PROJECT 300-F-175 ENV-0053

Dan Halvorsen + Tony Torrez present. Weather is clear and cold. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a new Teflon discharge hose. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. This is a modified sampling event. Carboy G1 in use.

Calibrations:
DO Sensor: In 100% Saturated air
PH Sensor: using 4,7,10 Buffers
Conductivity: using a 1413 uS/cm STD. Solution.

Parameters (Time)	Temp	Cond	DO	PH	ORP	TURB	DTW (ft)
230125 0935 C	18.3	1154	N/A	8.82	N/A	1.90	N/A
— 0937 C	18.6	1150	|	8.78	|	1.63	|
— 0939 C	18.8	1146	|	8.73	|	1.53	|

Trip Blanks

Sample #	Analysis	Preserve	Container	Lot	LAB
230125 0720 C	VOA by 8260 LL	Ice/HCl	(3) 40 ml Vial	2641	ALS
— 0721 C	NDMA LL	Ice	(1) 1L Amber	100301	SRI

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	LAB
230125 0945 C	VOA by 8260 LL	Ice/HCl	(3) 40 ml Vial	2641	ALS
— 0946 C	" " (FB)	"	"	"	"
— 0947 C	NDMA/DMN Bromacil by 607	Ice	(1) 1L Amber	100301	SRI
— 0948 C	NDMA LL	"	"	"	"
— 0949 C	" " (FB)	"	"	"	"
— 0950 C	SVOA-SIM	"	(1) 250 ml Amber	N/A	ALS
— 0951 C	" " (FB)	"	"		"
— 0952 C	Pesticides	"	(1) 1L Amber		"
— 0953 C	Dioxins/Furans	"	(1) "		SRI
— 0954 C	Herbicides	"	(1) "		ALS
— 0955 C	SVOA by 8270D	"	(2) "		"
— 0956 C	PCB's	"	(1)(1) "		"

Continued from page

Read and Understood By

Signed [signature] Date 1-25-2023 Signed [signature] Date 1-25-23

ROJECT 300-F-175 ENV-0053 (Cont.)

Notebook No. D32 # 127 C

Continued from page ________

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	Lab
230125 0957 C	Phenolics 9066	Ice/H_2SO_4	(1) 250 ml Amber	N/A	ALS
— 0958 C	Total metals	Ice/HNO_3	(2) 125 ml Poly		"
— 0959 C	Anions/Alk	Ice	(2) "		"
— 1000 C	TDS by SM2540C	"	(1) 250 ml Poly		"
— 1001 C	Perchlorate	"	(1) 125 ml Poly		"
— 1002 C	NO_2/NO_3 by 353.2	Ice/H_2SO_4	(1) 250 ml Poly		"
— 1003 C	Cyanide	Ice/NaOH	(1) 125 "		"
— 1004 C	Sulfide	Ice/NaOH Zinc Acetate	(1) 500 ml Poly		"

Continued from page

Read and Understood By

Signed: [signature] Date: 1-25-2023

Signed: [signature] Date: 1-25-23

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-25-2023 | Page 2 of 2

Sample Location: 300-F-175

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Phenolics	Metals	Anions/Alk	TDS	Perchlorate	NO2/NO3	Cyanide	X GMS / Charge Number
23012509 57C	1	A	X							
0958C	2			X						
0959C	2				X					
1000C	1					X				
1001C	1						X			
1002C	1							X		
1003C	1								X	

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Sulfide							Charge Number
230125 ~~1004C~~ 1004	1	A	X							

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-25-2023 1105		[signature]	1-26-23 / 0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-25-2023 | Page 1 of 2

Sample Location: 300-F-175

Pertinent Notes (if any)

Charge Number: XGMD

Sample Number		# of Containers	Sample Matrix*	VOC	Lead	NDMA LL				Charge Number
2301250720C	TB	3	A	✓						
— 0945C		3		✓						
— 0946C	FB	3		✓						
— 0947C		1			1					
— 0721C	TB	1				✓				
— 0948C		1				✓				
— 0949	FB	1				✓				

Sample Location:

Pertinent Notes (if any)

Sample Number		# of Containers	Sample Matrix*	SVOC-SIM	Pesticides	Dioxins/Furans	Herbicides	SVOC 8270	PCB's	Charge Number
2301250950C		1	A	✓						
— 0951C	FB	1		✓						
— 0952C		1			✓					
— 0953C		1				✓				
— 0954C		1					✓			
— 0955C		2						✓		
— 0956C		1							✓	

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-25-2023 1105		[signature]	1-26-23 / 0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

PROJECT 400·A·151 WJIENV·0053

Notebook No. D32#126A

Continued from page NA

AI MONTES & BOB TUFTS PRESENT. WEATHER IS CLOUDY & RAINY. WELL WILL BE PURGED USING A DEDICATED BLADDER PUMP. SAMPLE WILL BE COLLECTED USING A NEW TEFLON TUBE. PARAMETER WILL BE MONITORED W/ AN INSITU AQUA TROLL. CARBOY G-2

CALIBRATIONS

DO - 100% SATURATED AIR @ 642 mm/Hg

PH - W/ INSITU BUFFER 4,7,10

COND W/ 1413 uS/cm STD

TURB W/ INSITU TURB STD

INITIAL DTW - 161.21 ft

1 DW - 2.5 gal

PARAMETERS	TEMP (°C)	COND (uS/cm)	PH	ORP	DO	TURB	DTW
230117 1415A	20.10	1200.3	7.51	110.4	4.40 mg/L		161.2[illegible]
—— 1420A	20.11	1210.2	7.48	110.4	4.45 "		161.2[illegible]
—— 1425A	20.03	1205.7	7.36	110.4	4.49		161.2[illegible]

SAMPLES

SAMPLE #	ANALYSIS	PRESERV	CONTAINER	LOT #	LAB
230117 1435A	VOA 8260	ICE · HCL	3 · 40 ML VIALS	26491	AIS
—— 1436A	" (DUP)	"	"	"	"
—— 1437A	" (FB)	"	"	"	"
—— 1438A	NDMA · DMN · BRO 607	ICE	1 LT AMBER	0100301H	SAL
—— 1439A	TOTAL METALS	ICE · HNO3	2 · 125 ML Poly	220471	AIS
—— 1440A	ANIONS/ALK	ICE · NO HEAD	2 · "	NA	"
—— 1441A	TDS	ICE	125 Poly	NA	"
—— 1442A	PERCHLORATE	ICE · 2/3 full	"	NA	"
—— 1443A	NO2 NO3	ICE · H2SO4	250 ML Poly	220419	"

Continued from page NA

Signed [signature] Date 1·17·23

Read and Understood By

Signed [signature] Date 1-18-23

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1·17·23 Page 1 of 1

Sample Location: 400·A·151

Sample Number	Pertinent Notes (if any)	# of Containers	Sample Matrix*	8260	607	T. METALS	ANIONS·ALK	TDS			Charge Number
230117 1435A		3	A	X							
—— 1436A	DUP	3		X							
—— 1437A	FB	3		X							
—— 1438A		1			X						
—— 1439A		2				X					
—— 1440 A		2					X				
—— 1441 A		1						X			

Sample Location:

Sample Number	Pertinent Notes (if any)	# of Containers	Sample Matrix*	PERCHLORAT.	NO2NO3						Charge Number
230117 1442A		1	A	X							
—— 1443A		1	A		X						

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1·17·23 4PM		[signature]	1-18-23 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT 600-6-138 WJI ENV-0013

Continued from page NA

Matt Garcia, Bob Tufts, Craig Del Ferraro present. Weather is clear & cool. This well will be purged dry using a bennett pump. After well recovers, samples will be collected using a teflon bailer.

Carboy -

Total Depth - 148'
Initial DTW - 145'
Start Purge - 1030hrs
Stop Purge - 1037hrs
Total gallons - 6.5gal
Final DTW - 144.90'

Meter ID	
PH/cond	-
Turb	-
"	STD - 10.12 ntu's
"	RDG - 9.98 ntu's
"	LOT - 209606
"	EXP - 1/31/23

Buffers	Lot	EXP
7	1202A44	8/23
10	4167E30	1/23

Initial Parameters		Final
Time - 230125 1255A		230125 1310A
PH - 8.12		8.33
Temp - 17.0°c		16.8°c
cond - 1653 us/cm		1633 us/cm
Turb - 1.35 ntu's		5.86 nTu
PH Pre - 7.09, 10.12 (12.8)		7.12, 10.09 (12.7)
PH Post - 7.11, 10.12		7.09, 10.13
DTW - 145'		144.90'

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
230125 1300A	8260	Ice/HCL	(3) 40ML vials	2795	ALS
——— 1301A	" (FB)	"	"	"	"
——— 1302A	T. Metals	Ice/HNO_3	(2) 125ML Poly	220725	"
——— 1303A	Anions/ALK	Ice/zero HS.	"	NA	"
——— 1304A	TDS	Ice	(1) 250 ML Poly	0706202448	"
——— 1305A	Perchlorate	Ice/1/3 HS.	(1) 125ML Poly	NA	"
——— 1306A	chloride	Ice	"	214719	"
——— 1307A	NO_2/NO_3	Ice/H_2SO_4	(1) 250 ML Poly	220919	"

Continued from page

Read and Understood By

Signed: Matt G[signature]   Date: 1/25/23   Signed: [signature]   Date: 1-25-23

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/25/23 Page 1 of 1

Sample Location: 600-6-138

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260	T. Metals	Anions/ALK	TDS	Perchlorate	Chloride	NO^2/NO^3				
230125I300A	3	A	X										
1301A (FB)	3		X										
1302A	2			X									
1303A	2				X								
1304A	1					X							
1305A	1						X						
1306A	1							X					
1307A	1								X				

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
Matt [signature]	1/25/23 1345hrs	[signature]	1-26-23 / 0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (03/09)

XGmd

PROJECT B650-EFF-1 WS1 ENV0082 **Notebook No.** PFTS#11
Continued from page N/A

Jim Moore and Frank Gallegos present. The samples will be taken from a dedicated sampling port after it has been purged for one minute. Galboy "Plume front"

Parameters	Meter ID	Buffers	Lot#	Exp
Time - 230119 0746	Ph/cond - 12	7	1202A44	4/23
Ph - 8.30	Turb - 8	10	4107E30	1/23
Temp - 20.6°c	" STD - 60.1			
Cond - 1078 us/cm	" RDG - 60.2			
Turb - 0.41 NTUs	" Lot# 210966			
Ph pre - 7.00/10.02 (20.2)	Exp 1/31/23			
Ph post - 7.00/10.04				

Samples

Sample#	Analysis	Pres	Lot#	LAB	CONT
230119 0747	VOA by 8260 (1)	ICE & HCL	2680-3	AGS	(3) 40 mL vial
0748	" (FB)	"	"	"	"
0749	NDMA/AMN Brody 607	ICE	0100301H	SWRL	(1) Ctmber
0750	LL NDMA	"	"	"	"
0751	" (FB)	"	"	"	"

Continued from page N/A

Signed [signature] Date 1-19-23 Read and Understood By Signed [signature] Date 1-19-23

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-19-23

Page 1 of 1

Sample Location: B650 EFF-1

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOA 8260	LL-VOA 8260LL	NDMA/DMN/BROMACIL 607	LOW LEVEL NDMA	TOTAL METALS	ANIONS/ALK	TDS SM2540C	Charge Number XGMD
2301190747	3	A		X						"
— 0748 (FB)	3	A		X						"
— 0749	1	A			X					"
— 0750	1	A				X				"
— 0751 (FB)	1	A				X				"

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	PERCHLORATE 6850	NO_2/NO_3 353.2						Charge Number XGMD

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	1-19-23 (0930)	[signature]	1-20-23 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT B650-IWF-1 WJ1 ENV-0082

Tim Frank
Moore and Collet present. The samples will be taken from a dedicated sampling port after it has been purged for one minute. Carboy 'Plume front'

Parameters	Meter ID	Buffers	LOT#	Exp
Time - 230119 0758	Ph/cond - 12	7	1202A44	8/23
pH - 7.34	Turb - 8	10	4107E30	1/23
Temp - 20.7°C	" STD - 601			
Cond - 1158 uS/cm	" RDG - 60.2			
Turb - 1.14 NTUs	" LOT# 210966			
Ph Pre - 7.00/10.02/(20.5)	Exp 1/31/23			
Ph Post - 7.00/10.04				

Samples

Sample#	Analysis	~~Pres~~	LOT#	LAB	CONT
230119 0800	VOA by 8260	ICE / HCl	2680-3	A15	(3) 40 ml vial
— 0801	" (Dup)	"	"	"	"
— 0802	" (TB)	"	"	"	"
— 0803	NDMA/DMN/Nov 8270	ICE	0100301H	SWRI	(1) 1L amber

Signed [signature] Date 1-19-23

Read and Understood By [signature] Date 1-19-23

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-19-23 Page 1 of 1

Sample Location: B650-INF-1

Sample Number	# of Containers	Sample Matrix*	VOA 8260	LL-VOA 8260LL	NDMA/DMN/BROMACIL 607	LOW LEVEL NDMA	TOTAL METALS	ANIONS/ALK	TDS SM2540C	Charge Number XGMD
23011908000	3	A	x							"
— 0801 (Dup)	3	A	x							"
— 0802 (FB)	3	A	x							"
— 0803	1	A			x					"

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*	PERCHLORATE 6850	NO_2/NO_3 353.2						Charge Number XGMD

Pertinent Notes (if any)

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	1-19-23 (0930)	[signature]	1-20-23 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

XGMD

PROJECT B655-EFF-2 WJ1 ENV 0082

Notebook No. PFTSH 1 27

Continued from page N/A

Tim Moore and Frank Gallego present. The samples will Be taken from a dedicated sampling port after the sampling port is Pulsed for x minutes Cu/boy

Parameters	Meter ID	Buffers	Lot#	Exp
Time 230119 0846	Ph/cond #2	7	120A44	8/23
Ph 8.75	Turb	10	4107E30	1/23
Temp 17.8c	" STD 60.1 NTU			
cond 1269	" RDG 59.2 NTU			
Turb 1.69 NTU	" Lot# 210966			
Ph Pre 7.02-10.00 (20.7c)	" Exp 1/31/23			
Ph Post-7.00/10.04				

Sample

Sample#	Analysis	Pres	Lot#	LAB	CONT
230119 0852	VOA by 8260 (ll)	ICE & HCl	268063	Als	(3) 40ml vial
— 0853	" (FB)	"	"	"	"
— 0854	NDMA/DMN/DPA by 607	ICE	0100301	4 swri	(2) 1L ct amber
— 0855	LLNDMA	"	"	"	"
— 0856	" (FB)	"	"	"	"
— 0857	Total metals	ICE/HNO3	N/A	Als	(1) 125 mL poly
— 0858	ALK/anions	ICE	"	"	"
— 0859	TDS by SM2540C	"	"	"	(1) 250 mL poly
— 0900	Perchlorate by 6850	"	"	"	(1) 125 mL poly
— 0901	NO2/NO3 by 353.2	ICE/H2SO4	"	"	(1) 250 mL poly

Continued from page N/A

Read and Understood By

Signed [signature] Date 19 JAN 2023 Signed [signature] Date 1-19-23

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-19-23 Page 2 of 2

Sample Location: B655-EFF-2

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	VOA 8260	LL-VOA 8260LL	NDMA/DMN/BROMACIL 607	LOW LEVEL NDMA	TOTAL METALS	ANIONS/ALK	TDS SM2540C	Charge Number XGMD
230119 0852	3	A		X						..
—— 0853 (FB)	3	A		X						..
—— 0854	1	A			X					..
—— 0855	1	A				X				..
—— 0856 (FB)	1	A				X				..
—— 0857	2	A					X			..
—— 0858	2	A						X		..

Sample Location:

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	PERCHLORATE 6850	NO_2/NO_3 353.2	TDS by SM2540C					Charge Number XGMD
230119 0859	1	A			X					..
—— 0900	1	A	X							..
—— 0901	1	A		X						..

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	1-19-23 (0830)	[signature]	1-20-23 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

Y GAA

PROJECT B655 INF-2 WJ'ENV 0082

Notebook No. PF 5#11
Continued from page N/A

... Moore and Frank Gallegos present. These samples will be collected from a dedicated sampling port after a 30 minute purge is complete. Colby ..

Parameters	Meter ID	Buffers	LOT#	EXP
Time 2301190908	Ph/cond #12	7	120 A44	8/23
PH 7.94	Turb #8 10	10	4107 E30	1/23
Temp 19.3°c	STD 60.1 NTU			
Cond 1255 us/cm	RDG			
Turb 1.07 NTU	LOT# 210966			
Ph pre 7.01-10.01 (19.2°c)	Exp 1/31/23			
Ph post 7.00/10.04				

Samples

Sample#	Analysis	Pres	LOT#	LAB	CONT
2301190914	VOA by 8260	ice; HCl	2080-3	ALS	(3) 40 mL vial
0915	(FB)	..	..	..	..
0916	NDMA/DMN/by 607	ice	0100301H	SWQL	(1) L + amber
0917	TOTAL Metals	ice/HNO3	OP	ALS	(2) 125 mL poly
0918	Anions/Alk	ice		..	..
0919	TDS by SM2540C	..		..	(1) 250 mL poly
0920	Perchlorate by 6850	..		..	(1) 125 mL poly
0921	NO2/NO3 by 353.2	ice/H2SO4		..	(1) 250 mL poly

Continued from page N/A

Read and Understood By

Signed 19 JAN 2023 Date

Signed 1-19-23 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-19-23 Page 1 of 7

Sample Location: B655-IN F-7

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOA 8260	LL-VOA 8260LL	NDMA/DMN/BROMACIL 607	LOW LEVEL NDMA	TOTAL METALS	ANIONS/ALK	TDS SM2540C	Charge Number XGMD
230119 0914	3	A	x							"
— 0915 (FD)	3	A	x							"
— 0916	1	A			X					"
— 0917	2	A					X			"
— 0918	2	A						X		"
— 0919	1	A							X	"
~~— 0920~~	1	~~A~~								

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	PERCHLORATE 6850	NO_2/NO_3 353.2						Charge Number XGMD
230119 0920	1	A	x							"
— 0921	1	A		X						"

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	1-19-23 (0930)	[signature]	1-20-23 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

AL MONTES & TONY TORRES present. THE WEATHER IS CLEAR & COOL. THIS WELL will be purged & sampled using A dedicated Teflon bladder pump. SAMPLES collected from A Teflon discharge Tube. WATER Quality Param's collected from A INSITU AquaTroll 500 CarBoy G-3.

CALIBRATIONS
DO SENSOR cal'd in SATURATED WATER
COND SENSOR cal'd in 1413 µs/cm STANDARD
pH SENSOR cal'd in 4,7,10 buffers
Turb sensor cal'd in 20 NTU STANDARD

PARAMETERS

SAMPLE#	COND (µs/cm)	pH	DO (mg/L)	ORP (mv)	Temp (°c)	Turb
230105 0955C	1,470.1	7.54	1.05	78.5	20.47	2.09
— 0956C	1,469.2	7.52	1.03	79.2	20.49	2.11
— 0957C	1,470.3	7.52	1.01	79.6	20.45	2.04

SAMPLES

SAMPLE#	ANALYSIS	PRESERV	CONT	LAB
2301051000C	8260	ICE/HCl	(3) 40ml VIALS	ALS
— 1001C	" (FB)	"	"	"
— 1002C	GRO	"	"	"
— 1003C	607	ICE	(1) 1L AMBER	SGS
— 1004C	LLNDMA	"	"	"
— 1005C	" (FB)	"	"	"
— 1006C	DRO	"	"	ALS
— 1007C	TOTAL METALS	ICE/HNO_3	(2) 125ml poly	"
— 1008C	ALK/ANIONS	ICE	"	"
— 1009C	TDS	"	(1) 250ml poly	"
— 1010C	PERCHLORATE	"	(1) 125ml poly	"
— 1011C	NO_2/NO_3	ICE/H_2SO_4	(1) 250ml poly	"
— 1012C	8270			

Continued from page

Read and Understood By

Signed [signature] Date 1.5.23 Signed [signature] Date 1-6-23

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-5-23 | Page 1 of 1

Sample Location: B/m-6-488

Pertinent Notes (if any)

Charge Number: XGMD

Sample Number	# of Containers	Sample Matrix*	8260	6RO	607	LLNDMA	DRO			Charge Number
230105 1000C			X							
— 1001C (FB)			X							
— 1002C				X						
— 1003C					X					
— 1004C						X				
— 1005C (FB)						X				
— 1006C							X			

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	TOTAL METALS	ANIONS / ALK	TDS	PERCHLORATE	NO2/NO3	8270		Charge Number
— 1007C			X							
— 1008C				X						
— 1009C					X					
— 1010C						X				
— 1011C							X			
— 1012C								X		

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
T. [signature]	1-5-23/1100		[signature]	1-6-23 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: __________

PROJECT BM-10-517 ENV.0053

Notebook No. D32 #127C19
Continued from page N/A

TONY TORREZ & AL MONTES PRESENT ON 1-3-23. THE WEATHER IS PARTLY cloudy WITH A WESTERN WIND & cold. THIS WELL WILL BE purged using A dedicated TEFLON bladder pump. SAMPLES collected from A dedicated TEFLON discharge Tube WATER QUALITY PARAM'S collected From A INSITU Aqua Flow 500- Carboy 6.3 m...SE.

CALIBRATIONS
DO cal'd at 100% SATURATION
PH cal'd in 4,7,10 Buffers w/ 3pt cal method
COND cal'd in 1413 µs/cm STANDARD
Turbidity cal'd with ZENITH STANDARD

PARAMETERS

SAMPLE #	COND	PH	TEMP	DO	ORP	TURB
230103 1540C	1,029.6	7.66	18.70	4.78	186.2	1.44
— 1541C	1,022.3	7.66	18.70	5.01	186.2	1.37
— 1542C	1,024.6	7.66	18.66	4.70	186.2	1.35

SAMPLES

SAMPLE #	ANALYSIS	PRESERV	CONT	LAB
230103 1545C	8260LL	ICE/HCl	(3) 40ml VIALS	ALS
— 1546C	" (FB)	"	"	"
— 1547C	(NDMA)	ICE	(1) 1L Amber	SNI
— 1548C	" (FB)	"	"	"
— 1549C	TOTAL METALS	ICE/HNO_3	(2) 125 ml poly	ALS
— 1550C	607			

Continued from page

Read and Understood By

Signed 1-3-23 Date

Signed 1.4.23 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-3-23 Page 1 of 1

Sample Location: BLM-10-517

Sample Number	# of Containers	Sample Matrix*	8260 L	LLBM7	Total Metals	607				Charge Number XGMJ
230103 1545C	3	A	X							
— 1546C	3	|	X							
— 1547C	1	|		X						
— 1548C	1	|		X						
— 1549C	2	|			X					
— 1550C	1	|				X				

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-3-23/1630		[signature]	1-4-23/0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

Marcus Avalos & Matt Garcia present. Weather is clear & cool. This well will be purged using a dedicated bladder pump. Samples will be collected using a new teflon discharge hose. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. Carboy G-2

Calibrations
DO - Cal in 100% saturation
Cond - Cal using 1413 uS/cm STD.
pH - Cal using 4,7,10 In-Situ Buffers
Turb - Cal using 10 NTU STD.

Initial DTW - 281.10'

Parameters (time)	Temp (c)	Cond (uS/cm)	pH	ORP	DO	Turb (NTU)	DTW (ft)
230109 1440 A	20.57	1141.9	7.88	35.3	1.26	~~6.26~~ 1.66	282.15'
——— 1442 A	20.52	1139.2	7.88	37.2	1.13	1.51	"
——— 1444 A	20.55	1143.7	7.88	40.3	0.96	1.56	"

Samples

Sample #	Analysis	Preservative	Container	Lot	Lab
230109 1450 A	VOA by 8260	HCl/Ice	(3) 40 ml vials	26491	ALS
——— 1451 A	" (FB)	"	"	"	"
——— 1452 A	607/Bromacil	Ice	(1) 1L Amber	01008014	SRI
——— 1453 A	Total Metals	HNO3/Ice	(1) 125 ml poly	220121	ALS
——— 1454 A	Anions/ALK	~~Ice~~/Zero HS	"	N/A	"
——— 1455 A	TDS SM2540C	Ice	(1) 250 "	08302122AAG	"
——— 1456 A	Perchlorate 6850	Ice/1/3 HS	(1) 125 ml poly	"	"
——— 1457 A	NO2, NO3 353.2	H2SO4/Ice	(1) 250 ml poly	220919	"

K Dye Tracer Well

Total Gallons Purged · 1.5 gal

Read and Understood By

Signed	Date		Signed	Date
MJ [signature]	1/9/23	B-212	[signature]	1-10-23

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/9/23 — Page 1 of 1

Sample Location: BIM.15.305

Pertinent Notes (if any):

Sample Number	# of Containers	Sample Matrix*	8260	607/Bo	T. Metals	Anions/Alk	TDS	Perchlorate		Charge Number
230109 1450A	3	A	X							XGMD
1451A	3		X							
1452A	1			X						
1453A	2				X					
1454A	2					X				
1455A	1						X			
1456A	1							X		

Sample Location:

Pertinent Notes (if any):

Sample Number	# of Containers	Sample Matrix*	NO2 NO3							Charge Number
230109 1457A	1	A	X							XGMD

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	1/9/23 @ 1600	[signature]	1-10-23 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

PROJECT BIM-M-550 WJI ENV-0053

Continued from page

Marcus Avalos & Matt Garcia present. Weather is clear & cool. This well will be purged using a dedicated bladder pump. Samples will be collected using a teflon discharge hose. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. Carboys: 2

Calibrations

Initial DTW: 504.45

DO - Cal in 100% saturation
Cond - Cal using 1413 uS/cm STD.
PH - Cal using 4,7,10 buffers.
Turb - Cal using 10 NTU STD.

Parameters (time)	Temp (c)	Cond (uS/cm)	PH	ORP	DO	Turb (NTU)	DTW (ft)
1) 230109 1010A	19.63	1114.9	7.49	129.4	6.82	4.96	504.90
2) —— 1012A	19.64	1116.7	7.50	132.9	6.77	5.10	=
3) —— 1014A	19.65	1117.5	7.56	131.7	6.79	6.26	=

Sample #	Analysis	Samples Preservation	Container	lot	lab
230109 1020A	VOA by 8260	HCl/Ice	(3) 40 ml vials	26491	ALS
—— 1021A	= (TB)	=	=	=	=
—— 1022A	607/Bromacil	Ice	(1) 1L Amber	0100301H	SRI
—— 1023A	= (Dup)	=	=	=	=
—— 1024A	Total Metals	HNO3/Ice	(2) 125 ml poly	220421	ALS
—— 1025A	Anions/Alk	Ice/ZeroHS	=	=	=
—— 1026A	TDS SM2540C	Ice	(1) 250 ml poly	0830212AAG	=
—— 1027A	Perchlorate 6850	Ice/1/3 HS	(1) 125 ml poly	N/A	=
—— 1028A	NO2;NO3 353.2	H2SO4/Ice	(1) 250 ml poly	220919	ALS

Total Gallons Purged: 2 gal

Continued from page

Read and Understood By

[signature] Signed 1/9/23 Date

[signature] Signed 1-10-23 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/9/23 | Page 1 of 1

Sample Location: BIM·17·550

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	657/RSO	T. Metals	Anions/Alk	TDS			Charge Number
230109 1020 A	3	A	X							XGMD
230109 1021 A (FB)	3		X							
—— 1022 A	1			X						
—— 1023A (Dup)	1			X						
—— 1024 A	2				X					
—— 1025 A	2					X				
—— 1026 A	1						X			

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Perchlorate	NO2 NO3						Charge Number
230109 1027 A	1	A	X							XGMD
—— 1028 A	1			X						

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1/9/23 @ 1100		[signature]	1-10-23 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ________________

PROJECT BLL.18430 WSI · ENV · 0053

Al Montes & Bob Tufts present. Weather is cloudy & rainy. Well will be purged w/ a dedicated bladder pump. Samples will be collected using a new teflon discharge tube. Parameters will be monitored using an insitu Aquatroll

Carboy 6-3

Initial DTW · 398.50
1 PW · 2gal

CALIBRATIONS
DO - in 100% saturation
COND - in 1413 us/cm STD
PH - 4,7,10 insitu buffers
TURB - 10 NTU STD

PARAMETERS	TEMP (C)	COND (us/cm)	PH	ORP	DO	TURB	DTW (FT)
2301170935	17.30	925.53	7.67	76.8	6.88	1.09	398.84
——0940	17.11	901.60	7.68	75.8	6.78	1.12	"
——0945	16.95	910.12	7.68	75.9	6.67	1.03	"

SAMPLES

SAMPLE #	ANALYSIS	PRESERV	CONTAINER	LOT #	LAB
2301170950A	VOA 8260	ICE · HCL	3 · 40 ML VIALS	26491	ALS
——0951A	" (DUP)	"	"	"	"
——0952A	" (AB)	"	"	"	"
——0953A	NDMA · ORG 8260?	ICE	1 LT AMBER	0100301H	SRL
——0954A	" (DUP)	"	"	"	"
——0955A	TOTAL METALS	ICE · HNO_3	2 · 125 ML Poly	220421	ALS
——0956A	ANIONS/ALK	ICE · Ø HEAD	2 · 125 ML Poly	NA	"
——0957A	TDS	ICE	125 ML Poly	"	"
——0958A	PERCHLORATE	ICE/2/3 FULL	"	"	"
——0959A	NO_2NO_3	ICE · H_2SO_4	250 ML Poly	220919	"
——1105A	VOA 8260 (BC)	ICE · HCL	3 · 40 ML VIALS	26491	ALS
——1106A	NDMA 607 (BC)	ICE	1 LT AMBER	0100301H	SRL
——1107A	TOTAL METALS (BC)	ICE · HNO_3	2 - 125 ML Poly	220421	ALS

Continued from page NA

Signed 1·17·23 Date

Read and Understood By

Signed 1-18-23 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1.17.23 Page 1 of 1

Sample Location: BW.18.430

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOA 8260	607	T. METALS	ANIONS/ALK				Charge Number
2301170950	3	A	X							
0951 DUP	3		X							
0952 FB	3		X							
0953	1			X						
0954 DUP	1			X						
0955	2				X					
0956	2					X				

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	TDS	PERCHLR.	NO2 NO3	8260 VOA	607	T MET		Charge Number
2301170957	1	A	X							
0958	1	A		X						
0959	1	A			X					
1105A BC	3					X				
1106A BC	1						X			
1107A BC	2							X		

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-17-23 11:15am		[signature]	1-18-23 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

PROJECT JER-1-483 FLUTe ENV-0020

Continued from page

Dan Halvorsen & Tony Torrez present. Weather is partly cloudy, cold and breezy. This zone will be purged and sampled using a FLUTe system. Samples will be collected using a dedicated discharge hose. Purge pressure set at 248 psi, sample pressure at 227 psi. Flowmeter set at 3 psi, bubbler stable at 5 psi. 15 minute recovery between purges. Minimum of 4 gallons purged prior to sampling. Carboy G3 in use.

Pre-Sample Parameters	Transducer	Meter ID
PH = 7.62	N/A	PH/COND = 92
TEMP = 19.8		TURB = 7
COND = 1154		DO = 50.3
TURB = 1.80		RDG = 50.7
		LOT = 210946
		EXP = 1/23

Parameters

Time = 230111503 B
PH = 7.56
Temp = 19.9°C
Cond = 1157 us/cm
Turb = 1.73 NTUs
PHPre = 7.03 - 10.05 (18.1°C)
PHPost = 7.01 - 10.03

SAMPLES

Sample #	Analysis	Preserve	Container	LOT	LAB
230111536B	VOC by 8260 LL	Ice/HCl	(3) 40 ml Vial	2649	ALS
—1537B	" " (FB)	"	"	"	"
—1538B	NDMA LL	Ice	(1) 1L Amber	0100301	SRI
—1539B	" " (FB)	"	"	"	"
—1540B	SVOC - SIM	"	(1) 250 ml Amber	050922	ALS

Continued from page

Read and Understood By

Signed 1-11-2023 Date

Signed 1-12-23 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-11-2023 Page 1 of 1

Sample Location: JER-1-483			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOA	NDMA LL	SVOC-SIM					XGM / Charge Number
2301111536 B	3	A	X							
1537 B	3		X							
1538 B	1			X						
1539 B	1			X						
1540 B	1				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]	1-11-2023 1625		[signature]	1-12-23 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

Notebook No. D32#/28 B

ROJECT JER-1-563 FLUTe ENV-0020

Continued from page

...n Halvorsen & Tony Torrez Present. Weather is partly Cloudy, Cold and breezy. ...is zone will be purged and sampled using a FLUTe System. Samples will be ...llected using a dedicated discharge hose. Purge pressure set at 248 psi, ...mple pressure at 227 psi. Flowmeter set at 3 psi, bubbler stable at 5 psi. ... minute recovery between Purges. minimum of 4 gallons purged prior to ...mpling. Carboy 63 in use.

...e-Sample Parameters	Transducer	Meter ID
...H = 7.96	N\A	PH/COND = 92
...mp = 19.6		TURB = 7
...ond = 1188		" STD = 50.3
...rB = 2.73		" RDG = 50.7
		" LOT = 210966
		" Exp = 1/23

...rameters

...ime = 230111/510 B
...H = 8.03
...emp = 19.5 °C
...ond = 1191 us/cm
...urB = 2.68 ntu's
...Pre = 7.02-10.04 (18.1 °C)
...Post = 7.02-10.03

SAMPLES

...ample #	Analysis	Preserve	Container	LoT	LAB
230111/1555 B	Voc by 8260 LL	Ice/HCl	(3) 40ml Vial	2649	ALS
—1556 B	" " (FB)	"	"	"	"
—1557 B	NDMA LL	Ice	(1) 1L Amber	0100301	SRI
—1558 B	" " (FB)	"	"	"	"
—1559 B	SVOA - SIM	"	(1) 250 ml Amber	050922	ALS

Continued from page

Read and Understood By

Signed 1-11-2023 Date

Signed 1-12-23 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-11-2023 | Page 1 of 1

Sample Location: JER-1-563

Pertinent Notes (if any) / Sample Number		# of Containers	Sample Matrix*	VOC	NDMA LL	SVOC-SIM				Charge Number
										XGMO
2301111555 B		3	A	X						
1556 B	FB	3		X						
1557 B		1			X					
1558 B	FB	1			X					
1559 B		1				X				

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-11-2023 1625		[signature]	1-12-23 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

PROJECT JER-1-683 FLUTe ENV-0020

Dan Halvorsen + Tony Torrez present. Weather is partly cloudy and cold. This zone will be purged and sampled using a FLUTe system. Samples will be collected using a dedicated discharge hose. Purge pressure set at 248 psi, sample pressure set at 227 psi. Flowmeter set at 3psi, bubbler stable at 5 psi. 15 minute recovery between purges. minimum of 4 gallons purged prior to sampling. Carboy G3 in use.

Pre-Sample Parameters	Transducer	Meter ID
pH =	psi = 41.56	pH/Cond = 92
Temp = 19.9	Temp = 26.64	Turb = 7
Cond = 1192	Depth = 95.85	STD = 50.3
Turb = 0.93		RDG = 50.6
		LOT = 210966
		Exp = 1/23

Parameters
Time = 230112140 0B
pH = 7.54
Temp = 21.0°C
Cond = 1187 us/cm
Turb = 0.85 NTU's
pH pre = 7.04-10.05 (17.7°C)
pH post = 7.03-10.01

Trip Blanks

Sample #	Analysis	Preserve	Container	Lot	Lab
230112 0710 B	VOA by 8260 LL	Ice (HCL)	(3) 40 ml vial	2641	ALS
—— 0711 B	NDMA LL	Ice	(1) L Amber	0100301	SRL

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	Lab
230112 1425 B	VOA by 8260 LL	Ice/HCL	(3) 40 ml vial	2641	ALS
—— 1426 B	" " (FB)	"	"	"	"
—— 1427 B	NDMA LL	Ice	(1) 1 L Amber	0100301	SRL
—— 1428 B	" " (DUP)	"	"	"	"
—— 1429 B	" " (FB)	"	"	"	"
—— 1451 B	SVOA - SIM	"	(1) 250 ml Amber	050922	ALS

Continued from page

Read and Understood By

[signature] 1-12-2023 B-222 [signature] 1-17-23

Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-12-2023 Page 1 of 1

Sample Location: JER-1-683

Pertinent Notes (if any) / Sample Number		# of Containers	Sample Matrix*	VOA	NOM LL						Charge Number
											XGMD
2301120710B	TB	3		X							
1425B		3		X							
1426B	FB	3		X							
0711B	TB	1			X						
1427B		1			X						
1428B	Dup	1			X						
1429B	FB	1			X						

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260_SIM							Charge Number
2301121451B	1	A	X							

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-12-2023 1630		[signature]	1-17-23 / 0810

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ________

WSTF 381C (05/2016)

ROJECT SER-2-504 FLUTe ENV-0020

Notebook No. D32 #128 B

Continued from page

...an Halvorsen & Tony Torrez present. Weather is Cloudy, windy and Cold. This ...one will be purged and sampled using a FLUTe system. Samples will be collected ...sing a dedicated discharge hose. Purge pressure set at 265 psi, Sample ...ressure at 244 psi. Flowmeter set at 3 psi, bubbler stable at 9 psi. 15 minute ...ecovery between purges. Minimum of 4 gallons purged prior to sampling. Carboy 1 in use.

Trip Blanks

...mple #	Analysis	Preserve	Container	LOT	LAB
230123 0710 B	VOA by 8260 LL	Ice/HCl	(3) 40 ml Vial	2649	ALS
— 0711 B	NDMA LL	Ice	(1) 1L Amber	010030l	SRI

...e-Sample Parameters

...H = 8.89
...mp = 18.4
...ND = 1029
...B = 0.35

Transducer

N/A

Meter ID

PH/COND = 61
TURB = 21
" STD = 10.12
" 20G = 10.17
" LOT = 21094
" Exp = 1/23

...rameters

...me = 2301231415 B
... = 8.96
...mp = 15.2°C
...nd = 1024 us/cm
...B 0.20 ntu's
...re = 7.03-10.04 (15.8°C)
Post = 7.03-10.02

SAMPLES

...mple #	Analysis	Preserve	Container	LOT	LAB
2301231416 B	VOA by 8260 LL	Ice/HCl	(3) 40 ml Vial	2649	ALS
— 1417 B	" " (FB)	"	"	"	"
— 1455 B	NDMA LL	Ice	(1) 1L Amber	100301	SRI
— 1456 B	" " (FB)	"	"	"	"
— 1457 B	SVOA - SIM	"	(2) 250 ml Amber		ALS

Continued from page

Read and Understood By

Signed 1-23-2023 Date

B-224

Signed Lori Munch 1-24-23 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-23-2023 | Page 1 of 1

Sample Location: SE2-2-504

Sample Number	Notes	# of Containers	Sample Matrix*	VOA	NDMA LL	SVOA-SIM					Charge Number
Pertinent Notes (if any)											XGMD
2301230710B	TB	3	A	X							
— 1416B		3		X							
— 1417B	FB	3		X							
— 0711B	TB	1			X						
— 1455		1			X						
— 1456	FB	1			X						
— 1457		1				X					

Sample Location:

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number
Pertinent Notes (if any)										

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-23-2023 1630			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT JER-2-584 FLUTe ENV-0020

Continued from page

Dan Halvorsen & Tony Torrez present. Weather is cloudy, windy and cold. This zone will be purged and sampled using a FLUTe system. Samples will be collected using a dedicated discharge hose. Purge pressure set at 265 psi and sample pressure set at 244 psi. Flowmeter set at 3psi, bubbler stable at 9 psi. 15 minute recovery between purges. Minimum of 4 gallons purged prior to sampling. Cartop (5) in use.

Pre-Sample Parameters	Transducer	Meter ID
PH = 8.23	N/A	PH/Cond = 61
Temp = 16.3		Turb = 21
Cond = 1024		" STD = 10.12
Turb = 1.51		" RDG = 10.17
		" Lot = 21096
		" Exp = 1/23

Parameters

Time ~~230123~~ = 2301231432B
PH = 8.17
Temp = 16.2°C
Cond = 1019 us/cm
Turb = 1.40 ntu's
PH pre = 7.03-10.05 (15.6°C)
PH post = 7.01-10.02

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	Lab
2301231434B	VOA by 8260 LL	Ice/HCl	(3) 40 ml VIAL	2645	ALS
— 1435 B	" " (FB)	"	"	"	"
— 1515 B	NDMA LL	Ice	(1) 1L Amber	100301	SRI
— 1516 B	" " FB	"	"	"	"
— 1517 B	SVOC SIM	"	(1) 250 ml Amber		ALS
— 1518 B	" " (Dup)	"	"		"

Continued from page

Read and Understood By

Signed [signature] Date 1-23-2023 B-226 Signed [signature] Date 1-24-23

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-23-2023 Page 1 of 1

Sample Location: JER-2-584

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOC	VDMA CC	500R-SIM					Charge Number XGMD
230123 1434 B	3	A	X							
1435 B	3		X							
1515 B	1			X						
1516 B	1			X						
1517 B	1				X					
1518 B	1				X					

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-23-2023 1630			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT JER-2-684 FLUTe ENV-0020

Notebook No. D32 #128 B

Continued from page

Dan Halvorsen & Tony Torrez present. Weather is cloudy and cold. This zone will be purged and sampled using a FLUTe system. Samples will be collected using a dedicated discharge hose. Purge pressure set at 265 psi, sample pressure at 244 psi. Flowmeter set at 3psi, bubbler stable at 9 psi. 15 minute recovery between purges. Minimum of 4 gallons purged prior to sampling. Carboy B1 in use.

Pre-Sample Parameters

pH =
Temp =
Cond =
Turb =

Transducer

psi =
Temp = } N/A
Depth = needs update

Meter ID

PH/COND = 61
TURB = 21
STD = 10.12
RDG = 10.14
LOT ~~[illegible]~~ 210966
Exp = 1/23

Parameters

Time = 2301241435B
pH = 8.07
Temp = 17.0°C
Cond = 1037 us/cm
Turb = 1.15 ntu's
Pre = 7.03-10.05 (16.1°C)
Post = 7.01-10.03

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	Lab
2301241450B	Voa by 8260 LL	Ice/HCl	(3) 40 ml vial	2649	ALS
—1451 B	" " (FB)	"	"	"	"
—1452 B	NDMA LL	Ice	(1) 1L Amber	100301	SRL
—1453 B	" " (FB)	"	"	"	"
—1454 B	Sucra-SIM	"	(1) 250 ml Amber		DLS

Blind control

Sample #	Analysis	Preserve	Container	Lot	Lab
2301241455B	NDMA LL	Ice	(1) 1L Amber	23mm/158A	SRL

Continued from page

Read and Understood By

Signed 1-24-2023 Date

Signed 1-25-23 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-24-2023 Page 1 of 1

Sample Location: JER-2-684

Sample Number	# of Containers	Sample Matrix*	VOA	UDMH LL	SVOA-SIM				Charge Number: X GMD
2301241450 B	3	A	X						
——1451 B FB	3		X						
——1452 B	1			X					
——1453 B FB	1			X					
——1455 B BC	1			X					
——1454 B	1				X				

Pertinent Notes (if any)

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-24-2023 1545		[signature]	1-25-23 / 0915

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT JP. 1.424 WJIENU0053

AI MONTES & BOB TFS PRESENT. WEATHER IS COLD & BREEZY. WELL WILL BE PURGED USING A DEDICATED BLADDER PUMP. SAMPLE WILL BE COLLECTED USING A NEW TEFLON TUBE. PARAMETERS WILL BE MONITORED W/A INSITU AQUA TROLL. CARBOY G-3

CALIBRATIONS
DO - 100% SATURATED AIR @ 641 mm/Hg
PH - W/ INSITU BUFFER 4,7,10
COND - W/ 1413 uS/cm STD
TURB - W/ INSITU TURB STD

INITIAL DTW - NA
TDW - 2 gal

PARAMETERS	TEMP °C	COND uS/cm	PH	ORP	DO	TURB NTU	DTW ft
230118 1010 A	18.64	986.76	7.79	122.7	5.30	0.59	NA
——— 1015 A	18.73	985.60	7.80	122.8	5.31	0.63	"
——— 1020 A	18.78	985.80	7.81	122.8	5.26	0.71	"

SAMPLES

SAMPLE #	ANALYSIS	PRESERV	CONTAINER	LOT #	LAB
230118 1025 A	LL 8260	ICE. HCL	3-40 mL VIALS	26491	ALS
——— 1026 A	" (FB)	"	"	"	"
——— 1027 A	NDMA DMN 520.607	ICE	1LT AMBER	010030 H	SRI
——— 1028 A	LL NDMA	"	"	"	"
——— 1029 A	LL NDMA (FB)	"	"	"	"

Continued from page NA

Read and Understood By

Signed [signature] Date 1.18.23

Signed [signature] Date 1-19-23

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1·18·23 Page 1 of 1

Sample Location: JP.1·424

Sample Number	Pertinent Notes (if any)	# of Containers	Sample Matrix*	LL 8260	607	LL NDMA				Charge Number
230118 1025A		3	A	X						
——— 1026A	FB	3		X	X					
——— 1027A		1			X					
——— 1028A		1				X				
——— 1029A	FB	1				X				

Sample Location:

Sample Number	Pertinent Notes (if any)	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	1·18·23 11 am	[signature]	1-19-23 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT JP.2.447 WI: ENV.0053

Notebook No. D32#126A

Continued from page NA

Al Minter & Bob Tutt present. Weather is cold & windy. Well will be purged using a dedicated bladder pump - samples will be taken with a new teflon tube. Parameters will be taken with an insitu aquatroll.

CALIBRATIONS

DO - 100% SAT AIR @ 641 mm/Hg

PH - W/ INSITU BUFFER 4.7.10

COND - W/ 1413 uS/cm STD

TURB - W/ INSITU TURB STD

INITIAL DTW - NA

1 DW - ~5 gal

PARAMETERS	TEMP (°C)	COND uS/cm	PH	ORP	DO	TURB NTU	DTW
230118 1500	19.31	1010.9	7.59	173.2	6.23	0.98	NA
—— 1505	19.33	1009.1	7.59	173.6	6.25	0.79	"
—— 1510	19.28	1010.7	7.59	173.2	6.18	0.87	"

SAMPLES

SAMPLE #	ANALYSIS	PRESERV	CONTAINER	LOT#	LAB
230118 1520A	LL8260	ICE HCl	3-40ml VIALS	26491	ALS
—— 1521A	" (FB)	"	"	"	"
—— 1522A	LL NAMA	ICE	1LT AMBER	01003014	SRL
—— 1523A	" (FB)	"	"	"	"

Continued from page NA

Signed [signature] Date 1.19.23

Read and Understood By

Signed [signature] Date 1-19-23

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1.18.23 | Page 1 of 1

Sample Location: JP.2.447			Analytical Requirement							
Pertinent Notes (if any) Sample Number	# of Containers	Sample Matrix*	LL8260	LL NDMA						Charge Number
230118 1520A	3	A	X							
—— 1521 A (FB)	3	A	X							
—— 1522 A	1	A		X						
—— 1523A (FB)	1	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]	1.18.23 4PM		[signature]	1-19-23 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

Notebook No. D32 #126 A 71

Continued from page NA

PROJECT JP-3-509 WJI ENV0053

M. Garcia & B. Tufts Present. Weather is cold & windy. This well will be purged using a dedicated bladder pump. Samples will be taken using a teflon discharge tube. Parameters taken using Insitu Aquatroll 500. carboy - G5

Aquatroll calibrations

DO - 100% saturated air @ 641 mm/Hg

PH - Insitu Buffers 4.7.10

Cond - 1413 us/cm STD

Turb - Insitu Turb STD

Initial DTW - NA

IDW - 2.0 gal

Parameters	Temp (°C)	Cond (us/cm)	PH	ORP	DO	Turb (NTU)	DTW (FT)
2301230955A	19.61	1114	7.66	106	5.34	.58	NA MG 2020
—— 1000A	19.68	1108	7.68	102	5.10	.51	"
—— 1005A	19.72	1110	7.65	109	5.12	.56	"

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
230123 1010A	8260LL	Ice/HCL	(3) 40 mL vials	260491	ALS
—— 1011A	" (FB)	"	"	"	ALS
—— 1012A	607	Ice	(1) 1L Amber	01003911	SRI
—— 1013A	LLNDMA	"	"	"	SRI
—— 1014A	" (FB)	"	"	"	SRI
—— 1015A	T. Metals	Ice/HNO3	(2) 125 mL Poly	220725	ALS
—— 1016A	" (DUP)	"	"	"	ALS
—— 1017A	Anions/ALK	Ice/Zero H.S	"	NA	ALS
—— 1018A	TDS	Ice	(1) ~~125mL Poly~~ 250mL Poly	012020-2AA0	ALS
—— 1019A	Perchlorate	Ice/1/3 HS	"	NA	ALS
—— 1020A	NO^2/NO^3	Ice/H^2SO^4	(1) 250 mL Poly	220919	ALS

Continued from page

Read and Understood By

Matt Garcia 1/23/23

Signed Date

Tom U Munch 1-24-23

Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/23/23 Page 1 of 1

Sample Location: JP-3-509

Sample Number	# of Containers	Sample Matrix*	8260LL	607	LLNDMA	T. Metals				Charge Number
Pertinent Notes (if any)										
2301231010A	3	A	X							XGMD
——1011A (FB)	3	↓	X							↓
——1012A	1	↓		X						↓
——1013A	1	↓			X					↓
——1014A (FB)	1	↓			X					↓
——1015A	2	↓				X				↓
——1016A (DUP)	2	↓				X				↓

Sample Location: JP-3-509

Sample Number	# of Containers	Sample Matrix*	Anions/ALK	TDS	Perchlorate	NO^2/NO^3				Charge Number
Pertinent Notes (if any)										
2301231017A	2	A	X							XGMD
——1018A	1	↓		X						↓
——1019A	1	↓			X					↓
——1020A	1	↓				X				↓

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Matt Garza	1/23/23 1110hrs			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

PROJECT JP-3-689 WJI ENV0053

Notebook No. D32 #126 4

Continued from page NA

M. Garcia & B. Tufts present. Weather is cold & windy. This well will be purged using a dedicated bladder pump. Samples will be collected using a teflon discharge tube. Parameters taken using insitu Aquatroll 500. Carboy - G5

Initial DTW 20.20
IDW - 2.5gal

AquaTroll cal.
DO - 100% saturated air @ 641 mm/HG
PH - Insitu Buffers 4,7,10
Cond - 1413 us/cm STD.
Turb - Insitu Turb STD.

Parameters	Temp °C	cond us/cm	PH	ORP	DO mg/L	Turb NTU	DTW FT
2301231415A	20.13	1113	7.72	110	4.99	1.15	20.20
—— 1420A	20.17	1120	7.70	111	5.05	.97	"
—— 1425A	20.22	1115	7.66	110	4.94	.99	"

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2301231430A	8260LL	Ice/HCL	(3) 40ML Vials	26491	ALS
—— 1431A	" (FB)	"	"	"	"
—— 1432A	607	Ice	(1) 1L Amber	01003014	SRL
—— 1433A	" (MS)	"	"	"	"
—— 1434A	LLNDMA	"	"	"	"
—— 1435A	" (FB)	"	"	"	"
—— 1436A	T. Metals	Ice/HNO3	(2) 125ML Poly	220725	ALS
—— 1437A	Anions/ALK	Ice/zero H.S	"	NA	"
—— 1438A	TDS	Ice	(1) 250ML Poly	012020-2AAO	"
—— 1439A	Perchlorate	Ice/1/3 H.S.	(1) 125ML Poly	NA	"
—— 1440A	NO2/NO3	Ice/H2SO4	(1) 250ML Poly	220919	"

Continued from page

Signed [signature] Date 1/23/23

Read and Understood By [signature] 1-24-23

Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/23/23 Page 1 of 1

Sample Location: JP-3-689

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260LL	607	LL NDMA	T. Metals				Charge Number
2301231430A	3	A	X							XGMD
——1431A (FB)	3	↓	X							↓
——1432A	1	↓		X						↓
——1433A (MS)	1	↓		X						↓
——1434A	1	↓			X					↓
——1435A (FB)	1	↓			X					↓
——1436A	2	↓				X				↓

Sample Location: JP-3-689

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Anions/ALK	TDS	Perchlorate	NO2/NO3				Charge Number
2301231437A	2	A	X							XGMD
——1438A	1	↓		X						↓
——1439A	1	↓			X					↓
——1440A	1	↓				X				↓

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Matt Ga[illegible]	1/23/23 1500hrs			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

Tim Moore and Mark Gallegos present. This well will Be purged for one minute then it will Be sampled from a dedicated sampling port. Calboy "Plane front"

Parameters		Meter ID	Buffers	LOT#	Exp
Time	230126 0918	Ph/cond-#7	7	120A44	8/23
Ph	7.63	Turb #8	10	41107E30	1/23
Temp	17.2°C	STD-60.1 NTU			
Cond	1106 uS/cm	RDG 60.2 NTU			
Turb	1.89 NTU	LOT# 210966			
Ph pre	7.02-10.00 (9.86)	Exp 1/31/23			
Ph post	7.10/10.01				

* well extremely aerated.

Samples

Sample#	Analysis	Pres	LOT#	LAB	CONT
230126 0925	VOA by 8260	ICE + HCl	2680-3	ALS	(3) 40ml Vial
—— 0926	" (FB)	"	"	"	"
—— 0927	NDMA/DMN by 607	ICE	10030114	SwRI	(1) L+amber
—— 0928	LCNDMA	"	"	"	"
—— 0929	" (Dup)	"	"	"	"
—— 0930	" (FB)	"	"	"	"

Read and Understood By

Signed [signature] Date 26 Jan 23

Signed [signature] Date 1-26-23

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-26-23 Page 1 of 1

Sample Location: PFE-4A

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOA 8260	LL-VOA 8260LL	NDMA/DMN/BROMACIL 607	LOW LEVEL NDMA	TOTAL METALS	ANIONS/ALK	TDS SM2540C	XGMD Charge Number
230126 0925	3	A	X							
—— 0926 (FB)	3	A	X							
—— 0927	1	A			X					
—— 0928	1	A				X				
—— 0929 (Dup)	1	A				X				
—— 0930 (FB)	1	A				X				

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	PERCHLORATE 6850	NO_2/NO_3 353.2						XGMD Charge Number

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	1-26-23 (0945)	[signature]	1-26-23 / 1000

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT PFE-5 XGMD WJ: ENU-0082

Notebook No. PFTS #17

Continued from page N/A

...n Moore and Frank Gallegos present. This well will be pulsed for one minute, then it will be sampled from a dedicated sampling port. Calibray

Parameters		Meter ID		Buffers	Lot #	Exp
Time	230119 1004	Ph/cond	#7	7	1202A44	8/23
Ph	7.97	Turb	#8	10	4107E30	1/23
Temp	22.4°c	" STD	60.1 NTU			
cond	979 us/cm	" RDG	59.8 NTU			
Turb	0.42 NTU	" Lot #	210966			
Ph pre	7.00-10.02 (9.21)	" Exp	1/31/23			
Ph post						

Samples

Sample #	Analysis	Pres	Lot #	LAB	Cont
230119 1010	VOA by 8260	ICE & HCl	2680-3	AS	(3) 40 mL vial
" 1011	" (FB)	"	"	"	"
" 1012	NOMA/BNN/B by 607	ICE	01003014SWRI	(1) L t amber	

Continued from page N/A

Read and Understood By

Signed 19 JAN 2023 Date

Signed 1-20-23 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-19-23

Sample Location: PFE-5

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOA 8260	LL-VOA 8260LL	NDMA/DMN/BROMACIL 607	LOW LEVEL NDMA	TOTAL METALS	ANIONS/ALK	TDS SM2540C	Charge Number XGMD
230119,1010	3	A	✓							..
—— 1011 (FB)	3	A	X							..
—— 1012	1	A			X					..

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	PERCHLORATE 6850	NO_2/NO_3 353.2						Charge Number XGMD

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	1-19-23 (1030)	[signature]	1-20-23 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

XGMD

Notebook No. PFLS#11

PROJECT PFE-7 WSC ENO-0082

Continued from page N/A

Tim Moore and Frank Gallegos present. This well will Be Purged for one minute, then it will Be sampled using a dedicated sampling port. Carboy Plume front

Parameters		Meter ID	Buffers	Lot #	Exp
Time	2301260847	Ph/cond - #7	7	120A44	8/23
pH	7.28	Turb - #8	10	4107E30	1/23
Temp	20.7°C	STD - 60.1 NTU			
Cond	1080 us/cm	RDG 59.8 NTU			
Turb	0.48 NTU	Lot # 210966			
Ph pre	7.00-10.00 (17.9°C)	Exp 1/31/23			
Ph Post	7.10-10.04				

* well extremely aerated

Samples

Sample #	Analysis	pres	Lot #	LAB	CONT
2301260852	VOA by 8260	ice & HCl	2680-3	ALS	(3) 40 mL Vials
0853	" (Dup)	"	"		
0854	" (FB)	"	"		
0855	NDMA/DMN by GC/MS	ice	01003014	SwRI	(1) L amber
0856	LL NDMA	"	"	"	"
0857	" (FB)	"	"	"	"

Continued from page N/A

Signed 1-26-23 Date

Read and Understood By

Signed 1-26-23 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-26-23 Page 1 of 1

Sample Location: PFE-7

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOA 8260	LL-VOA 8260LL	NDMA/DMN/ BROMACIL 607	LOW LEVEL NDMA	TOTAL METALS	ANIONS/ALK	TDS SM2540C	XGMD Charge Number
2301260852	3	A	X							
0853 (Dup)	3	A	X							
0854 (FB)	3	A	X							
0855	1	A			X					
0856	1	A				X				
0857 (FB)	1	A				X				

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	PERCHLORATE 6850	NO_2/NO_3 353.2						XGMD Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-26-23 (0945)		[signature]	1-26-23 / 1000

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT PL-1-486 WJI ENV-0053 1/24/23

Robert Burrows & Craig Del Ferraro present. Weather is cloudy, breezy, & cold. This well will be purged using a dedicated bladder pump. Samples will be collected using a teflon discharge hose. Water quality parameters will be monitored using an In-Situ Aqua Troll 500. Carboy GQ in use

Calibrations
DO sensor - calibrated in 100% saturation.
Cond. sensor - calibrated using 1413us/cm std. solution.
PH sensor - calibrated using 4, 7, & 10 buffers.
Turb. sensor - calibrated in 20 NTU std.

Trip blanks - Water purification system

Sample	Analysis	Preservative	Container	Lot	Lab
2301240840C	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
——— 0841C	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI

Parameters (time)	temp (°C)	cond (us/cm)	DO	ORP	PH	Turb (NTU's)	DTW (ft.)
1) 230124 1025C	18.43	951.88	7.36	141.3	8.03	1.40	487.60
2) ——— 1028C	18.39	949.46	7.12	140.4	8.02	1.33	487.60
3) ——— 1031C	18.32	943.70	6.87	139.6	7.99	1.16	487.60

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
230124 1035C	VOA by 8260 LL	ice / HCL	(3) 40ml vials	2649-1	ALS
——— 1036C	" (Dupl.)	"	"	"	"
——— 1037C	" (FB)	"	"	"	"
——— 1038C	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI
——— 1039C	" (FB)	"	"	"	"

Initial DTW - 487.43 ft. Total gallons purged - 1.5

Read and Understood By

Craig Del Ferraro 1/24/23 [signature] 1-25-23
Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/24/23 Page 1 of 1

Sample Location: PL-1-486

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
2301240840C (TB)	3	A	✓							XGMD
——— 0841C (TB)	1	A		✓						"
——— 1035C	3	A	✓							"
——— 1036C (Dupl)	3	A	✓							"
——— 1037C (FB)	3	A	✓							"
——— 1038C	1	A		✓						"
——— 1039C (FB)	1	A		✓						"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	1/24/23/1110hrs.		[signature]	1-25-23 / 0915

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ________

Continued from page N/A

PROJECT PL-6-545 WJIENV-0020 1/23/23

Robert Burrows & Craig Del Ferraro present. Weather is cloudy, cold, & windy. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe #4951. Surface checks performed on probe prior to sampling.

30 Min. Equipment blanks – Carboy G3

Sample	Analysis	Preservative	Container	Lot	Lab
2301231430Y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
——1431Y	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI

Initial Parameters	Final	Meter ID
Time - 2301231505Y	Time - 2301231555Y	pH/cond - 91
PH - 8.72	PH - 8.62	Turb - 6
Temp - 20.2°C	Temp - 19.8°C	" std - 4.25
Cond - 1093us/cm	Cond - 1080us/cm	" rdg - 4.30
Turb - 0.87 NTU's	Turb - 0.71 NTU's	" lot - 210966
pH pre - 7.17/10.14 (11.3°C)	pH pre - 7.18/10.15 (10.8°C)	" Exp - 1/31/23
pH post - 7.16/10.14	pH post - 7.16/10.14	
DTW - 471.21ft.	DTW - 471.33ft.	
Atmos - 12.11 psia	Atmos - 12.13 psia	
	IDW - ½ gal.	

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2301231530Y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
——1531Y	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI

Runs	1)	2)	3)
	45.65	45.68	45.69
	55.38	55.41	55.46
	55.36	55.41	55.48
	45.62	45.67	45.68

Continued from page N/A

Read and Understood By

Craig Del Ferraro 1/23/23 [signature] 1-24-23

Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/23/23 Page 1 of 1

Sample Location: PL-6-545

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
2301231430Y (EB)	3	A	✓							XGMD
——— 1431Y (EB)	1	A		✓						"
——— 1530Y	3	A	✓							"
——— 1531Y	1	A		✓						"

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Fierro	1/23/23 / 1620 hrs.			

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

PROJECT PL-6-725 WJI ENV-0020 1/17/23

Notebook No. D64#130(Y)
Continued from page N/A

Dan Halvorsen & Craig Del Ferraro present. Weather is cloudy, rainy, & cool. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe #1539 Surface checks performed on probe prior to sampling.

Trip blanks - Water purification system

Sample	Analysis	Preservative	Container	Lot	Lab
230117 0800Y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
—— 0801Y	Low Level/NDMA	ice	(1) 1L Amber	0100301H	SRI

30 Min. Equipment blanks - Carboy G1

Sample	Analysis	Preservative	Container	Lot	Lab
230117 1020Y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
—— 1021Y	Low Level/NDMA	ice	(1) 1L Amber	0100301H	SRI

Initial Parameters	Final	Meter ID
Time - 2301171330Y	Time - 2301171417Y	pH/cond - 91
PH - 8.43	PH - 8.50	Turb - 6
Temp - 19.7°C	Temp - 19.5°C	" Std - 4.25
Cond - 976 us/cm	Cond - 986 us/cm	" rdg - 4.33
Turb - 1.91 NTU's	Turb - 1.50 NTU's	" lot - 210966
pH pre - 7.18/10.22 (9.1°c)	pH pre - 7.16/10.21 (8.8°c)	" Exp - 1/31/23
pH post - 7.18/10.23	pH post - 7.15/10.22	
DTW - 471.12 ft.	DTW - 471.21 ft.	
Atmos - 12.16 psia	Atmos - 12.15 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
230117 1415Y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
—— 1416Y	Low Level/NDMA	ice	(1) 1L Amber	0100301H	SRI

Runs 1) 124.18, 134.01, 133.99, 124.17

2) 124.12, 133.93, 133.87, 124.16

* Sampling crew encountered several mechanical issues with both Westbay trucks. This caused several delays throughout the day along with weather (rain) delays as well.

Continued from page N/A

Read and Understood By

Craig Del Ferraro Signed 1/17/23 Date

[signature] Signed 1-18-23 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/17/23 Page 1 of 1

Sample Location: PL-6-725

Sample Number	# of Containers	Sample Matrix*	8260LL	LLNDMA						Charge Number
2301170800Y (TB)	3	A	✓							XGMD
——0801Y (TB)	1	A		✓						"
——1020Y (EB)	3	A	✓							"
——1021Y (EB)	1	A		✓						"
——1415Y	3	A	✓							"
——1416Y	1	A		✓						"

Pertinent Notes (if any)

Sample Location:

Analytical Requirement

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Turco	1/17/23 / 1450hrs.		[signature]	1-18-23 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT PL-6-915 WJI ENV-0020 1/11/23

Continued from page N/A

Bob Tufts & Craig Del Ferraro present. Weather is cloudy, cool, & breezy. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe #1539. Surface checks performed on probe prior to sampling.

Trip blanks - Water purification system

Sample	Analysis	Preservative	Container	Lot	Lab
2301110850Y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
—— 0851Y	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI

30 Min. Equipment blanks - Carboy G1

Sample	Analysis	Preservative	Container	Lot	Lab
2301111300Y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
—— 1301Y	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI

Initial Parameters	Final	Meter ID
Time - 2301111345Y	Time - 2301111541Y	pH/cond - 91
PH - 8.92	PH - 8.94	Turb - 6
Temp - 21.2°C	Temp - 21.0°C	" std - 4.25
Cond - 1042us/cm	Cond - 1034us/cm	" rdg - 4.30
Turb - 3.55 NTU's	Turb - 2.94 NTU's	" lot - 210966
pH pre - 7.09/10.12 (17.9°c)	pH pre - 7.12/10.10 (17.4°c)	" Exp - 1/31/23
pH post - 7.10/10.15	pH post - 7.13/10.08	
DTW - 470.83 ft.	DTW - 471.12 ft.	
Atmos - 12.39 psia	Atmos - 12.42 psia	
	IDW - ½ gal.	

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2301111410Y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
—— 1411Y	607/Bromacil	ice	(1) 1L Amber	0100301H	SRI
—— 1435Y	Low Level NDMA	"	"	"	"
—— 1436Y	" (Dupl.)	"	"	"	"
—— 1505Y	Total Metals	ice/HNO_3	(1) 250ml poly's	22-07-25	ALS
—— 1540Y	" (Dupl.)	"	"	"	"

Runs	1)	2)	3)	4)	5)
	207.72	207.62	207.57	207.51	207.44
	217.24	217.24	217.20	217.24	217.22
	217.24	217.24	217.20	217.21	217.24
	207.69	207.56	207.60	207.53	207.39

Continued from page N/A

Read and Understood By

Craig Del Ferraro 1/11/23 [signature] 1-12-23

Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/11/23 Page 1 of 1

Sample Location: PL-6-915

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOA by 8260LL	607	LL NDMA					Charge Number
2301110850Y (TB)	3	A	✓							XGMD
——0851Y (TB)	1	A			✓					"
——1300Y (EB)	3	A	✓							"
——1301Y (EB)	1	A			✓					"
——1410Y	3	A	✓							"
——1411Y	1	A		✓						"
——1435Y	1	A			✓					"

Sample Location: PL-6-915

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	LL NDMA	Total Metals						Charge Number
2301111436Y (Dupl.)	1	A	✓							XGMD
——1505Y	2	A		✓						"
——1540Y (Dupl.)	2	A		✓						"

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	1/11/23/1615hrs.		[signature]	1-12-23 /0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ________

PROJECT PL-10-484 WJI ENV-0020 1/3/23

Notebook No. D64#130(Y)
Continued from page N/A

Bob Tufts & Craig Del Ferraro present. Weather is cloudy, cold, & windy. This zone will be sampled using 2 steam cleaned & triple rinsed, stainless steel sample tubes. Gen. in use. Probe #2213. Surface checks performed on probe prior to sampling.

Trip blanks - Water purification system

Sample	Analysis	Preservative	Container	Lot	Lab
2301031100Y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
——1101Y	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI

30 Min. Equipment Blanks - Carboy G1

Sample	Analysis	Preservative	Container	Lot	Lab
2301031400Y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
——1401Y	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI

Initial Parameters	Final	Meter ID
Time - 2301031440Y	Time - 2301031541Y	pH/cond - 91
PH - 8.65	PH - 8.72	Turb - 6
Temp - 19.0°C	Temp - 19.2°C	" std - 4.25
Cond - 1239 us/cm	Cond - 1230 us/cm	" rdg - 4.28
Turb - 1.56 NTU's	Turb - 1.27 NTU's	" lot - 210966
pH pre - 7.13/10.16 (10.4°C)	pH pre - 7.10/10.17 (11.1°C)	" Exp - 1/31/23
pH post - 7.14/10.17	pH post - 7.09/10.15	
DTW - 465.60 ft.	DTW - 465.72 ft.	
Atmos - 12.06 psia	Atmos - 12.08 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2301031510Y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
——1511Y	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI
——1540Y	1,4 Dioxane by 8270D	"	(1) 250ml amb.	050922-16J	ALS

Runs	1)	2)	3)
	23.24	23.19	23.19
	19.90	19.88	19.84
	19.85	19.91	19.83
	23.20	23.21	23.16

Continued from page

Read and Understood By

Craig Del Ferraro 1/3/23 [signature] 1-4-23

Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/3/23 | Page 1 of 1

Sample Location: PL-10-484

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260 LL	LLNDMA	Dioxane				Charge Number
2301031100Y (TB)	3	A	✓						XGMD
——1101Y (TB)	1	A		✓					"
——1400Y (EB)	3	A	✓						"
——1401Y (EB)	1	A		✓					"
——1510Y	3	A	✓						"
——1511Y	1	A		✓					"
——1540Y	1	A			✓				"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	1/3/23 / 1620hrs.		[signature]	1-4-23 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT PL-10-592 WJI ENV-0020 1/4/23

Bob Tufts & Craig Del Ferraro present. Weather is clear & cold. This zone will be sampled using 2 ~~steam~~ CD triple rinsed, stainless steel sample tubes. Gen. in use. Probe#2213. Surface checks performed on probe prior to sampling.

30 Min Equipment blanks - Carboy G1

Sample	Analysis	Preservative	Container	Lot	Lab
2301041300y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
——— 1301y	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI
——— 1302y	1,4 Dioxane by 8270D	"	(1) 250ml amb.	050922-1GJ	ALS

Initial Parameters	Final	Meter ID
Time - 2301041340y	Time - 2301041418y	pH/Cond - 91
PH - 8.63	PH - 8.55	Turb - 6
Temp - 21.3°c	Temp - 21.1°c	" std - 4.25
Cond - 1244us/cm	Cond - 1254us/cm	" rdg - 4.24
Turb - 1.75NTU's	Turb - 1.45NTU's	" lot - 210966
pH pre - 7.10/10.13 (16.5°c)	pH pre - 7.08/10.10 (18.2°c)	" Exp - 1/31/23
pH post - 7.08/10.13	pH post - 7.05/10.12	
DTW - 465.72ft.	DTW - 465.85ft.	Buffers Lot Exp
Atmos - 12.14psia	Atmos - 12.10psia	7 1202A44 8/23
	IDW - 1/2 gal.	10 4107E30 1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2301041415y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
——— 1416y	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI
——— 1417y	1,4 Dioxane by 8270D	"	(1) 250ml amb.	050922-1GJ	ALS

Runs	1)	2)
	70.10	69.98
	66.27	66.32
	66.24	66.28
	70.01	69.89

Continued from page N/A

Read and Understood By

Craig Del Ferraro 1/4/23 — Signed / Date

[signature] 1-5-23 — Signed / Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/4/23 | Page 1 of 1

Sample Location: PL-10-592

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA	Dioxane					Charge Number
2301041300Y (EB)	3	A	✓							XGMD
1301Y (EB)	1	A		✓						"
1302Y (EB)	1	A			✓					"
1415Y	3	A	✓							"
1416Y	1	A		✓						"
1417Y	~~2~~ 1	A			✓					"

Pertinent Notes (if any)

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	1/4/23 / 1510 hrs.		[signature]	1-5-23 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

0 ROJECT PL-6-1195 WJI ENV-0020 1/5/23

Notebook No. D64 #130(y)

Continued from page N/A

Bob Tufts & Craig DelFerraro present. Weather is clear & cold. This zone will be ampled using 5 steam cleaned & triple rinsed, stainless steel sample tubes. Gen. use. Probe #4951. Surface checks performed on probe prior to sampling.

Trip blanks - Water purification system

Sample	Analysis	Preservative	Container	Lot	Lab
2301050915Y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
—— 0916Y	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI

30 Min. Equipment blanks - Carboy G1

Sample	Analysis	Preservative	Container	Lot	Lab
230105 1250Y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
—— 1251Y	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI
—— 1252Y	Total Metals	ice/HNO_3	(2) 125ml poly's	22-07-25	ALS

Initial Parameters	Final	Meter ID
Time - 230105/1410Y	Time - 2301101354Y	pH/cond - 91
pH - 8.52	pH - 8.31	Turb - 6
Temp - 23.2°C	Temp - 22.2°C	" std - 4.25
Cond - 1984us/cm	Cond - 1995us/cm	" rdg - 4.22
Turb - 7.67 NTU's	Turb - 4.67 NTU's	" lot - 210966
pH pre - 7.07/10.10 (19.4°C)	pH pre - 7.04/10.07 (19.8°C)	" Exp - 1/31/23
pH post - 7.08/10.13	pH post - 7.06/10.11	
DTW - 470.93ft.	DTW - 470.70ft.	
Atmos - 12.14psia	Atmos - 12.16psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
230105 1440Y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
—— 1441Y	607/Bromacil	ice	(1) 1L Amber	0100301H	SRI
—— ~~1442Y~~ CD	Low Level NDMA	"	"	"	"
230110 1100Y	Total Metals	ice/HNO_3	(2) 125ml poly's	22-07-25	ALS
—— 1101Y					
—— 1350Y	Anions/Alk.	ice	CD "	N/A	"
—— 1351Y	TDS by SM2540C	"	(1) ~~1~~ 250ml poly	083021-2AA6	"
—— 1352Y	Perchlorate by 6850	"	(1) 125ml poly	N/A	"

Continued ~~from page N/A~~ CD on page 21

Read and Understood By

Craig Del Ferraro — Signed — 1/10/23 — Date

B-256

[signature] — Signed — 1-11-23 — Date

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
~~230105~~ CD 230110 1353Y	NO_2/NO_3 by 353.2	ice/H_2SO_4	(1) 250ml poly	22-09-19	ALS

Runs
1) 330.50
337.28
337.26
330.44

2) ~~30~~ CD
330.38
337.37
337.31
330.29

3) 328.75
337.39
run canceled due to com. failure.

4) 328.68
337.76
336.33
328.72
run canceled

* Two sets of EB's required due to volume of water needed.

* Sampling event resumed on 1/10 after O-rings on connectors (and various other small parts) were replaced.

5) 330.64
338.16
338.17
330.60

6) 330.39
338.16
338.19
330.33

Continued from page N/A

Craig Del Ferro
Signed
1/10/23
Date

B-257

Read and Understood By
[signature]
Signed
1-11-23
Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/5/23

Page 1 of 2

Sample Location: PL-6-1195

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	8260LL	607	LL NDMA	Total Metals				Charge Number
2301050915Y (TB)	3	A	✓							XGMD
—— 0916Y (TB)	1	A			✓					"
—— 1250Y (EB)	3	A	✓							"
—— 1251Y (EB)	1	A			✓					"
—— 1252Y (EB)	2	A				✓				"
—— 1440Y	3	A	✓							"
—— 1441Y	1	A		✓						"

Sample Location:

Pertinent Notes (if any)

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	1/5/23 / 1640hrs.		[signature]	1-6-23 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/10/23 —

Sample Location: PL-6-1195

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	LL NDMA	Total Metals	Anions/Alk.	TDS	Perchlorate	NO_2/NO_3		Charge Number
2301101100Y	1	A	✓							XGMD
—— 1101Y	2	A		✓						"
—— 1350Y	2	A			✓					"
—— 1351Y	1	A				✓				"
—— 1352Y	1	A					✓			"
—— 1353Y	1	A						✓		"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	1/10/23 / 1625 hrs.		[signature]	1-11-23 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

PROJECT Pl. 6. 1335 Resample Event

Notebook No. D64 # 131X

Continued from page

Marcus Avalos & Robert Burrows present. Weather is breezy & warm. This zone will be sampled using 5 stainless steel, steam cleaned, triple rinsed sample tubes. Gen in use. System checks performed on probe #1534 prior to sampling. Carboy G-1

30-Min Equipment Blanks

Sample #	Analysis	Preserve	Container	lot	lab.
2303101100X	Low Level NDMA	Ice	(1) 1L Amber	0100301H	SRI

Initial Parameters		Final
Time	2303101148X	2303101320X
PH	7.07	6.98
Temp	22.8°C	24.1°C
Cond	2.23 ms/cm	2.18 ms/cm
Turb	16.2 NTU	25.0 NTU
PH pre	6.96/10.03 (18.8°C)	6.95/10.04
PH post	6.99/10.05	6.99/10.03
DTW	479.50'	479.98'
Atmos	12.53 psia	12.49 psia
		Final TDW - 0.5 gal

Meter ID

PH/Cond	12
Turb	#21
" STD	10.53 NTU
" Reading	9.62 NTU
" Lot	210966
" Exp	3/31/23

Buffers	lot	Exp
7	1202A44	8/23
10	CC7S7922	7/24

Samples

Sample #	Analysis	Preserve	Container	lot	lab
2303101230X	Low Level NDMA	Ice	(1) 1L Amber	0100301H	SRI
—1231X	" (Dup)	"	"	"	"

Runs			
	1) 388.70	2) 388.27	3) 387.86
	398.20	398.28	398.25
	398.23	398.21	398.23
	388.72	388.31	387.83

Continued from page

Read and Understood By

MA [signature] 3/10/23 Lori W Munch 3-13-23

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 3/10/23 Page 1 of 1

Sample Location: Pl. 6. 1335

Sample Number	# of Containers	Sample Matrix*	LowlevelNDMA							Charge Number
2303101100X (EB)	1	A	X							YGMD
1230X	1		X							
1231X	1		X							

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	3/10/23@1335		[signature]	3-13-23 / 0845

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT ST-7-453 FLUTe ENV-0020

Continued from page

Don Halvorsen & Tony Torrez present. Weather is clear and cold. This zone will be purged and sampled using a FLUTe System. Samples will be collected using a dedicated discharge hose. Purge pressure set at 228 psi, sample pressure at 207 psi. Flowmeter set at 3 psi, bubbler stable at 8 psi. 15 minute recovery between purges. minimum of 4 gallons purged prior to sampling. Carboy 63 in use.

Pre. sample Parameters	Transducer	meter ID
PH = 8.47	N/A	PH/COND = 92
Temp = 20.4		TURB = 7
COND = 1211		STD = 50.3
TURB. = 1.10		RDG = 50.6
		LOT = 210966
		Exp = 1/23

Trip Blanks

Sample #	Analysis	Preserve	Container	LOT	LAB
230109 0710 B	voa by 8260 LL	Ice/Hcl	(3) 40ml vial		ALS
—— 0711 B	NDMA LL	Ice	(1) 1L Amber		SRL

Parameters

Time = 230109/1500 B

PH = 8.40

Temp = 20.5 °C

COND = 1207 us/cm

TURB = 1.05 ntu's

PHPre = 7.02-10.03 (17.6 °C)

PHPost - 7.03-10.03

SAMPLES

Sample #	Analysis	Preserve	Container	LOT	LAB
230109 1530 B	Voa by 8260 LL	Ice/Hcl	(3) 40ml vial		ALS
—— 1531 B	" " (FB)	"	"		"
—— 1532 B	NDMA LL	Ice	(1) 1L amber		SRL
—— 1533 B	" FB	"	"		"

Continued from page

Read and Understood By

Signed 1-9-2023 Date

Signed Don W. Munch 1-10-23 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-9-2023 Page 1 of 1

Sample Location: ST-7-453			Analytical Requirement							
Pertinent Notes (if any)	# of Containers	Sample Matrix*	VOC	VOMALL						XGND
Sample Number										Charge Number
2301090710 B TB	3	A	P							
1530 B	3		P							
1531 B FB	3		P							
0711 B TB	1			P						
1532 B	1			P						
1533 B FB	1			P						

Sample Location:			Analytical Requirement							
Pertinent Notes (if any)	# of Containers	Sample Matrix*								
Sample Number										Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-9-2023 1630		[signature]	1-10-23 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

Notebook No. D32 # 129 B
Continued from page ________

OJECT SJ-7-544 FLUTe ENV-0020

an Halvorsen & Tony Torrez present. Weather is clear and cold. This zone
.ill be purged and sampled using a FLUTe system. Samples will be collected
sing a dedicated discharge hose. Purge pressure set at 228 psi, sample
ressure at 207 psi. Flowmeter set at 3psi, bubbler stable at 8psi. 15
inute recovery between purges. Minimum of 4 gallons purged ~~between~~ prior to
mpling. Carboy G3 in use.

re-Sample Parameters
H = 7.90
mp = 19.3
ond = 1176
rb = 0.96

Transducer
N/A

Meter ID
PH/Cond = 92
Turb = 7
" STD = 50.3
" RDG = 50.7
" LOT = 210966
" Exp = 1/23

arameters
ime = 230109 1510 B
H = 7.84
emp = 19.4°C
ond = 1169 us/cm
urb = 0.81 ntu's
HPre = 7.04-10.03 (17.5°C)
HPost = 7.03-10.02

SAMPLES

ample #	Analysis	Preserve	Container	Lot	Lab
230109 1548 B	VOA by 8260 LL	Ice/HCl	(3) 40 ml Vial		AS
— 1549 B	" " (FB)	"	"		"
— 1550 B	NDMA LL	Ice	(2) 1L Amber		SGS
— 1551 B	" " (FB)	"	"		"

Continued from page

Read and Understood By

Signed 1-9-2023 Date

B-264

Signed 1-10-23 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-9-2023 Page 1 of 1

Sample Location: ST-7-544			Analytical Requirement							
Pertinent Notes (if any)	# of Containers	Sample Matrix*	VOC	NOMA 4						XGMO
Sample Number										Charge Number
230109 1548 B	3	A	X							
1549 B FB	3		X							
1550 B	1			X						
1551 B FB	1			X						

Sample Location:			Analytical Requirement							
Pertinent Notes (if any)	# of Containers	Sample Matrix*								
Sample Number										Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-9-2023 1630		[signature]	1-10-23 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ________

Dan Halvorsen + Tony Jorrez present. Weather is Partly Cloudy and Cold. This zone will be purged and sampled using a FLUTe system. Samples will be collected using a dedicated discharge hose. Purge pressure set at 228 psi, sample pressure at 207 psi. Flowmeter set at 3psi, bubbler stable at 8psi. 15 minute recovery between purges. minimum of 4 gallons purged prior to sampling. Carboy G3 in use.

Pre-sample Parameters	Transducer	Meter ID
PH = 7.82	N/A	PH/COND = 92
TEMP = 21.4°C		TURB = 7
COND = 1050		" STD = 50.3
TURB = 0.55		" RDG = 50.7
		" LOT = 210966
		" Exp = 1/23

Trip Blanks

Sample #	Analysis	Preserve	Container	Lot	Lab
230110 0715 B	NDMA LL	Ice	(1) 1L Amber		SRI

Parameters

Time = 230110 1330 B
PH = 7.97
Temp = 21.5°C
COND = 1046 us/cm
TURB = 0.45 NTU's
PH Post = 7.03 - 10.04 (18.2°C)
PH Pre = 7.02 - 10.02

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	Lab
230110 1355 B	VOA by 8260 LL	Ice/HCl	(3) 40 ml Vial		ALS
— 1356 B	" " (FB)	"	"		"
— 1357 B	NDMA LL	Ice	(1) 1L Amber		SRI
— 1358 B	" " (FB)	"	"		"

Read and Understood By

Signed 1-10-2023 Date B-266 Signed 1-11-23 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: ~~ST-7-779~~ 1-10-2023 Page 1 of 1

Sample Location: ST-7-779			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOC	NDMA LL						Charge Number: XGMD
2301101355 B	3	A	✓							
— 1356 B FB	3	|	✓							
— 0710 B TB	~~3~~ 1	|		✓						
— 1357 B	1	|		✓						
— 1358 B FB	1	|		✓						

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]	1-10-2023 1440		[signature]	1-11-23 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

Notebook No. D32 # 128 B

OJECT ST-7-970 FLUTe ENV-0020

Continued from page

..n Halvorsen & Tony Torrez present. Weather is partly cloudy and cold. This ..one will be purged and sampled using a FLUTe system. Samples will be collected ..sing a dedicated discharge hose. Purge pressure set at 228 psi, sample pressure 207 psi. flowmeter set at 3psi, bubbler stable at 8psi. 15 minute recovery ..tween purges. Minimum of 4 gallons purged prior to sampling. Carboy G3 used.

..-Sample Parameters

..	= 8.06
..p	= 19.2
..D	= 8.60
..B	= 0.71

Transducer

N/A

Meter ID

PH/COND	= 92
TURB	= 7
" STD	= 50.3
" RDG	= 50.7
" LOT	= 210966
" EXP	= 1/23

..rameters

..me	= 230110 1338 B
..	= 7.99
..p	= 19.3° C
..D	= 852 us/cm
..B	= 0.64 ntu's
Pre	= 7.03-10.04 (18.1°C)
Post	= 7.02-10.03

SAMPLES

..mple #	Analysis	Preserve	Container	Lot	LAB
230110 1407 B	VOA by 8260 LL	Ice/HCl	(3) 40 ml Vial		ALS
— 1408 B	" " (FB)	"	"		"
— 1409 B	NDMA LL	Ice	(1) 1L amber		SRI
— 1410 B	" " (FB)	"	"		"

Continued from page

Read and Understood By

Signed 1-10-2023 Date

B-268

Signed 1-11-23 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-10-2023 Page 1 of 1

Sample Location: ST-7-970

Sample Number	# of Containers	Sample Matrix*	VOC	VOMA LL						Charge Number
										XGMD
230110 1407 B	3	A	X							
1408 B FB	3		X							
1409 B	1			X						
1410 B FB	1			X						

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-10-2023 1440		[signature]	1-11-23 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

ROJECT WW-5-459 FLUTe WJI ENV-0020 1/18/23

Notebook No. D32 #128 (8)

Continued from page N/A

an Halvorsen & Craig Del Ferraro present. Weather is clear, cold, and windy. This one will be purged and sampled using a FLUTe system. Samples will be collected sing a dedicated discharge hose. Purge pressure set @ 224 psi, sample pressure et @ 203 psi, flow meter set @ 3 psi, and bubbler stable @ 7 psi. There ill be a 15 minute recovery time between purges. Minimum of 4 gallons ill be purged prior to sampling. Carboy G1 in use.

e-sample parameters
H - 8.52
emp - 17.3 °c
ond - 1043 us/cm
urb - 0.51 NTU's

Transducer
pressure - 38.02 psi
temp - 24.21 °c
depth - 87.70 ft.

Meter ID
pH/Cond - 61
Turb - Q1
" Std - 10.12 NTU's
" rdg - 10.22 NTU's
" lot - 210966
" Exp - 1/31/23

arameters
ime - 230118 1435B
H - 8.38
emp - 17.6 °c
ond - 1052 us/cm
urb - 0.45 NTU's
Hpre - 7.16/10.19 (10.7 °c)
Hpost - 7.13/10.18

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

ample	Analysis	Preservative	Container	Lot	Lab
230118 1440B	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
—— 1441B	" (FB)	"	"	"	"
—— 1520B	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI
—— 1521B	" (FB)	"	"	"	"

The first 350 ml of water collected just prior to sampling was discarded.

DW - 4.5 gallons

Continued from page N/A

Craig Del Ferraro
Signed

1/18/23
Date

Read and Understood By

B-270

[signature]
Signed

1-19-23
Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/18/23 Page 1 of 1

Sample Location: WW-5-459

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA					Charge Number
2301181440B	3	A	✓						XGMD
—— 1441B (FB)	3	A	✓						"
—— 1520B	1	A		✓					"
—— 1521B (FB)	1	A		✓					"

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	1/18/23 / 1600 hrs.		[signature]	1-19-23 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

Dan Halvorsen & Craig Del Ferraro present. Weather is clear, cold, and windy. This zone will be purged and sampled using a FLUTe system. Samples will be collected using a dedicated discharge hose. Purge pressure set @ 224, sample pressure set @ 203psi, flow meter set @ 3psi, and bubbler stable @ 7psi. There will be a 15 minute recovery time between purges. A minimum of 4 gallons will be purged prior to sampling. The first 350ml of water collected just prior to sample collection will be discarded. Carboy G1 in use.

Pre-sample parameters
PH - 8.46
Temp - 16.9°c
Cond - 1018us/cm
Turb - 0.44NTU's

Transducer
pressure - 38.02psi
temp - 24.21°c
depth - 87.70ft.

Meter ID
pH/cond - 61
Turb - 21
" std - 10.21NTU's
" rdg - 10.22NTU's
" lot - 210966
" Exp - 1/31/23

Parameters
Time - 230118 14558
PH - 8.53
Temp - 17.0°c
Cond - 1009us/cm
Turb - 0.36NTU's
pH pre - 7.14/10.20 (11.0°c)
pH post - 7.15/10.19

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
230118 1500B	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
——— 1501B	*" (MS)*	"	"	"	"
——— 1502B	" (FB)	"	"	"	"
——— 1535B	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI
——— 1536B	" (FB)	"	"	"	"

IDW - 4.5 gallons

Continued from page N/A

Read and Understood By

Craig Del Ferraro 1/18/23 [signature] 1-19-23

Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/18/23 Page 1 of 1

Sample Location: WW-5-579			Analytical Requirement							
Pertinent Notes (if any)										
Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
2301181500B	3	A	✓							XGMD
1501B (MS)	3	A	✓							"
1502B (FB)	3	A	✓							"
1535B	1	A		✓						"
1536B (FB)	1	A		✓						"

Sample Location:			Analytical Requirement							
Pertinent Notes (if any)										
Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelFerro	1/18/23/1600hrs.		[signature]	1-19-23 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

WSTF 381C (05/2016)

Continued from page N/A

an Halvorsen & Craig Del Ferraro present. Weather is clear & cool. This zone will be purged nd sampled using a FLUTe system. Samples will be collected using a dedicated ischarge hose. Purge pressure set @ 224psi, sample pressure set @ 203, flow meter et @ 3psi, and bubbler stable @ 7psi. There will be a 15 minute recovery time etween purges. A minimum of 4 gallons will be purged prior to sample collection. he first 350ml of water collected just prior to sampling will be discarded. arboy G1 in use.

Trip blanks - Water purification system

Sample	Analysis	Preservative	Container	Lot	Lab
230119 0740B	VOA by 8260LL	ice / HCL	(3) 40ml vials	2649-1	ALS
——— 0741B	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI

Pre-sample parameters
pH - 8.70
temp - 17.2°C
cond - ~~0.3~~ 963us/cm
turb - 0.37 NTU's

Transducer
pressure - 38.02 psia
temp - 24.21°c
depth - 87.70ft.

Meter ID
pH/cond - 61
Turb - 21
" std - 10.12 NTU's
" rdg - 10.18 NTU's
" lot - 210966
" Exp - 1/31/23

Parameters
Time - 230119 1410B
pH - 8.59
temp - 17.7°C
cond - 971us/cm
turb - 0.30 NTU's
pH pre - 7.13/10.10 (16.0°c)
pH post - 7.11/10.08

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
230119 1415B	VOA by 8260LL	ice / HCL	(3) 40ml vials	2649-1	ALS
——— 1416B	" (FB)	"	"	"	"
——— 1417B	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI
——— 1418B	" (Dupl.)	"	"	"	"
——— 1419B	" (FB)	"	"	"	"

EDW = 4.5 gallons

Continued from page N/A

Read and Understood By

Craig Del Ferraro 1/19/23 — Signed / Date

[signature] 1-20-23 — Signed / Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/19/23 | Page 1 of 1

Sample Location: WW-5-809

Sample Number	# of Containers	Sample Matrix*	8260LL	LLNDMA					Charge Number
2301190740B (TB)	3	A	✓						XGMD
—— 0741B (TB)	1	A		✓					"
—— 1415B	3	A	✓						"
—— 1416B (FB)	3	A	✓						"
—— 1417B	1	A		✓					"
—— 1418B (Dupl.)	1	A		✓					"
—— 1419B (FB)	1	A		✓					"

Pertinent Notes (if any):

Sample Location:

Sample Number	# of Containers	Sample Matrix*							Charge Number

Pertinent Notes (if any):

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DeAlterio	1/19/23 / 1550hrs.		[signature]	1-20-23 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT WW-5-909 FLUTe w/I ENV-0020 1/19/23
Continued from page N/A

Dan Halvorsen & Craig Del Ferraro present. Weather is clear & cool. this zone will be purged and sampled using a FLUTe system. Samples will be collected using a dedicated discharge hose. Purge pressure set @ 224 psi, sample pressure set @ 203 psi, flow meter set @ 3 psi, and bubbler stable @ 7 psi. there will be a 15 minute recovery time between purges. A minimum of 4 gallons will be purged prior to sampling. the first 350 ml of water collected just prior to sampling will be discarded. Carboy G1 in use.

Pre-sample parameters
PH - 8.49
Temp - 17.8°c
Cond - 1278 us/cm
Turb - 0.42 NTU's

Transducer
pressure - 38.02 psi
temp - 24.21°c
depth - 87.70 ft.

Meter ID
pH/Cond - ~~94~~ 60 61
Turb - 21
" std - 10.~~21~~ 12 NTU's
" rdg - 10.18 NTU's
" lot - 210966
" Exp - 1/31/23

Parameters
Time - 2301191434B
PH - 8.44
Temp - 17.3°c
Cond - 1265 us/cm
Turb - 0.36 NTU's
pH pre - 7.12/10.08 (16.3°c)
pH post - 7.13/10.06

Buffers	Lot	Exp
7	1202A44	8/23
10	4107E30	1/23

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2301191435B	VOA by 8260LL	ice/HCL	(3) 40ml vials	2649-1	ALS
——— 1436B	" (FB)	"	"	"	"
——— 1437B	Low Level NDMA	ice	(1) 1L Amber	0100301H	SRI
——— 1438B	" (FB)	"	"	"	"

IDW - 4.5 gallons

Continued from page N/A

Read and Understood By

Craig Del Ferraro 1/19/23 [signature] 1-20-23
Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/19/23 Page 1 of 1

Sample Location: WW-5-909

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
230119 1435B	3	A	✓							XGMD
——— 1436B (FB)	3	A	✓							"
——— 1437B	1	A		✓						"
——— 1438B (FB)	1	A		✓						"

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number

Pertinent Notes (if any)

Analytical Requirement

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelFerro	1/19/23 / 1550 hrs.		[illegible signature]	1-20-23 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

Appendix C
Chemical Analytical Program
(Internal QA reports)

National Aeronautics and Space Administration

Quality Assurance Report for White Sands Test Facility Groundwater Monitoring Data

November 2022

NM8800019434

Report Submitted: April 10, 2023

Report Prepared by:
Carlyn A. Tufts
Environmental Scientist
Navarro Research and Engineering, Inc.

1.0 Introduction

The WSTF Groundwater Monitoring Plan (GMP) requires the preparation of a periodic report to assess the quality of groundwater analytical data reported. The monthly Quality Assurance Report (QAR) prepared and reviewed by responsible environmental contractor data management personnel provides the following information:

- A summary of notable anomalies and a follow-up on previous anomalies, if necessary.
- A summary of notable data quality issues by analytical method, if any.
- A list of the sample events for which groundwater samples were collected in November 2022.
- The quantity and type of quality control samples collected or prepared in November 2022.
- Quality control sample percentages in annual period immediately preceding and during November 2022.
- Definitions of data qualifiers used in WSTF analytical data reporting.
- The quantity and type of data qualifiers applied to individual analytical results.
- A list of quality assurance narratives for the month arranged by analytical method.
- A summary table of detections in equipment blank, field blank, and trip blank samples.

2.0 Data Quality

2.1 Notable Anomalies Identified in Previous Quality Assurance Reports

There were no notable anomalies requiring follow-up associated with previous QARs.

2.2 Notable Anomalies

Because of a 41.2 pg/L detection of 2,3,7,8-TCDD in SW-846 Method 8290A sample 2211010939A collected from BLM-3-182 on 11/1/2022, resampling was conducted 12/15/2022. The sample collected 12/15/2022 was lost due to an error at the analytical laboratory. BLM-3-182 was sampled again on 1/24/2023 for analysis by SW-846 Method 8290A. The 2,3,7,8-TCDD result for resample 2301241350C was non-detect with a 3.14 pg/L detection limit.

3.0 Data Tables

Table 1 summarizes the groundwater sample events initiated in November 2022. This report is based on data quality issues related to the sample events listed in Table 1. Tables 2 through 8 contain information related to the sample events identified in Table 1. As specified by the GMP, specific quality control samples are utilized to assess the quality of analytical data. Table 2 presents the quantity of quality control samples collected for each analytical method. Table 3 compares the quality control sample percentages collected to the requirements in the GMP. When data quality criteria are not met, data qualifiers are applied to the data. Definitions of data qualifiers used for WSTF chemical analytical data are listed in Table 4. Table 5 and Table 6 present the total number of individual result records and summarize the quantity of field and laboratory data qualifiers assigned to individual analyte result records in the WSTF analytical database. Table 7 provides all quality assurance narratives associated with the sample events in Table 1. Narratives associated with qualified data are identified by **bold text** in Table 7. Table 8 provides a summary of all detections in WSTF blank samples.

Table 1 – Sample Events for November 2022

Well ID	Event Date
BLM-3-182	11/1/2022
BLM-8-418	11/1/2022
ST-5-485	11/1/2022
ST-5-655	11/1/2022
BLM-24-565	11/2/2022
BLM-17-493	11/3/2022
BLM-36-610	11/3/2022
BLM-36-860	11/3/2022
BLM-36-350	11/4/2022
BLM-36-800	11/4/2022
BLM-26-404	11/7/2022
BLM-32-543	11/7/2022
BLM-32-571	11/7/2022
BLM-32-632	11/7/2022
BLM-38-480	11/7/2022
BLM-38-620	11/7/2022

Well ID	Event Date
BW-5-295	11/7/2022
200-I-795	11/8/2022
PL-7-560	11/8/2022
WW-4-419	11/8/2022
WW-4-589	11/8/2022
200-I-490	11/9/2022
200-I-675	11/9/2022
ST-1-473	11/9/2022
WW-4-848	11/9/2022
WW-4-948	11/9/2022
200-I-185	11/10/2022
200-I-300	11/10/2022
200-I-375	11/10/2022
B650-EFF-1	11/10/2022
B650-INF-1	11/10/2022
B655-EFF-2	11/10/2022

Well ID	Event Date
B655-INF-2	11/10/2022
PL-12-570	11/10/2022
PL-12-800	11/10/2022
100-D-176	11/14/2022
MPE-1	11/14/2022
MPE-9	11/14/2022
BLM-22-570	11/15/2022
BLM-2-630	11/15/2022
MPE-10	11/15/2022
MPE-11	11/15/2022
NASA 6	11/16/2022
ST-1-541	11/16/2022
ST-1-630	11/16/2022
ST-4-589	11/16/2022
400-C-143	11/17/2022

Table 2 – Quantity of Quality Control Samples

Method	Samples	Field Blanks	Equip Blanks	Trip Blanks	Blind Controls	Duplicates	Matrix Spikes
Nitrate plus Nitrite as N by EPA Method 353.2	**8**	0	0	0	0	0	0
Nitrosamines by EPA Method 607	**30**	0	**1**	0	**1**	**3**	**1**
Perchlorate by SW-846 Method 6850	**5**	0	0	0	0	0	0
Organics by SW-846 Method 8015M	**2**	0	0	0	0	0	0
Pesticides by SW-846 Method 8081	**2**	0	0	0	0	0	0
PCBs by SW-846 Method 8082	**2**	0	0	0	0	0	0
Herbicides by SW-846 Method 8151	**2**	0	0	0	0	0	0
Volatile Organics by SW-846 Method 8260C	**29**	**19**	**10**	**4**	**1**	**4**	0
Low Level Volatile Organics by SW-846 Method 8260C	**18**	**13**	**5**	**4**	0	0	**1**
Semi-Volatile Organics by SW-846 Method 8270D	**7**	0	0	0	0	0	0
Dioxins/Furans by SW-846 Method 8290	**4**	0	0	0	0	0	0
Cyanide by SW-846 Method 9012B	**2**	0	0	0	0	0	0
Sulfide by SW-846 Method 9034	**2**	0	0	0	0	0	0
Phenolics by SW-846 Method 9066	**2**	0	0	0	0	0	0
Anions by Various EPA Methods	**5**	0	0	0	0	0	0
Total Metals by Various SW-846 Methods	**14**	**1**	**2**	0	**1**	**2**	0
Nitrosamines by Low-Level Method	**21**	**16**	**5**	**7**	**1**	**2**	**1**
Total Dissolved Solids by Standard Method 2540C	**7**	0	0	0	0	0	0

Table 3 – Quality Control Sample Percentages

Quality Control Requirement	Requirement %	Samp. Qty. since 12/1/2021	QC Qty. since 12/1/2021	QC % since 12/1/2021	Sample Quantity November 2022	QC Quantity November 2022	QC % November 2022
VOA Duplicates	10	530	55	**10**	47	4	9
VOA Matrix Spikes	2	530	12	**2**	47	1	2

Quality Control Requirement	Requirement %	Samp. Qty. since 12/1/2021	QC Qty. since 12/1/2021	QC % since 12/1/2021	Sample Quantity November 2022	QC Quantity November 2022	QC % November 2022
607 Duplicates	10	304	32	**11**	30	3	10
607 Matrix Spikes	2	304	9	**3**	30	1	3
607 Equipment Blanks	2	304	9	**3**	30	1	3
607 Field Blanks	2	304	8	**3**	30	0	0
NDMA_LL Duplicates	10	321	35	**11**	21	2	10
NDMA_LL Matrix Spikes	2	321	11	**3**	21	1	5
Metals Duplicates	10	213	24	**11**	14	2	14
Metals Matrix Spikes	2	213	7	**3**	14	0	0
Metals Equipment Blanks	5	213	11	**5**	14	2	14
Metals Field Blanks	5	213	10	**5**	14	1	7

Quality Control Requirement	Requirement %	Sample Events since 12/1/2021	QC Qty. since 12/1/2021	QC % since 12/1/2021	Sample Events November 2022	QC Quantity November 2022	QC % November 2022
VOA Equipment Blanks and Field Blanks	*Should approach 100%*	530	530	**100%**	47	47	100%
Low Level Nitrosamine Equipment Blanks and Field Blanks	*Should approach 100%*	319	319	**100%**	21	21	100%

Quality Control Requirement	Requirement %	Shipments since 12/1/2021	TB Qty. since 12/1/2021	TB % since 12/1/2021	Shipments in November 2022	TB Quantity November 2022	QC % November 2022
VOA Trip Blank (per shipment)	*Should approach 100%*	105	105	**100%**	9	9	100%
Low Level Nitrosamine Trip Blank (per shipment)	*Should approach 100%*	103	103	**100%**	8	8	100%

Table 4 – 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.

Qualifier	Definition
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 5 – Quantity of Field Based Data Qualifiers Assigned to Individual Result Records

Method	Total Result Records	"FB"	"EB"	"TB"	"Q"	"QD"	"SP"	"R"
Nitrate plus Nitrite as N by EPA Method 353.2	**8**	0	0	0	0	0	0	0
Nitrosamines by EPA Method 607	**99**	0	0	0	0	0	**1**	0
Perchlorate by SW-846 Method 6850	**5**	0	0	0	0	0	0	0
Organics by SW-846 Method 8015M	**2**	0	0	0	0	0	0	0
Pesticides by SW-846 Method 8081	**42**	0	0	0	0	0	0	0
PCBs by SW-846 Method 8082	**14**	0	0	0	0	0	0	0
Herbicides by SW-846 Method 8151	**12**	0	0	0	0	0	0	0
Volatile Organics by SW-846 Method 8260C	**2162**	**1**	0	0	**4**	0	0	0
Low Level Volatile Organics by SW-846 Method 8260C	**1172**	0	0	**1**	0	0	**1**	0
Semi-Volatile Organics by SW-846 Method 8270D	**1069**	0	0	0	0	0	0	0
Dioxins/Furans by SW-846 Method 8290	**75**	0	0	0	0	0	0	0
Cyanide by SW-846 Method 9012B	**2**	0	0	0	0	0	0	0
Sulfide by SW-846 Method 9034	**2**	0	0	0	0	0	0	0
Phenolics by SW-846 Method 9066	**2**	0	0	0	0	0	0	0
Anions by Various EPA Methods	**20**	0	0	0	0	0	0	0
Total Metals by Various SW-846 Methods	**432**	0	0	0	0	0	0	0
Nitrosamines by Low-Level Method	**46**	**10**	**4**	**5**	0	0	0	0
Total Dissolved Solids by Standard Method 2540C	**7**	0	0	0	0	0	0	0

Table 6 – Quantity of Laboratory based Data Qualifiers Assigned to Individual Result Records

Method	Total Result Records	"*"	"A"	"AD"	"G"	"RB"	"T"	"D"	"i"	"J"
Nitrate plus Nitrite as N by EPA Method 353.2	**8**	0	0	0	0	0	0	0	0	0
Nitrosamines by EPA Method 607	**99**	0	0	0	0	0	0	**2**	0	**4**
Perchlorate by SW-846 Method 6850	**5**	0	0	0	0	0	0	0	0	**2**
Organics by SW-846 Method 8015M	**2**	0	0	0	0	0	0	0	0	0
Pesticides by SW-846 Method 8081	**42**	0	0	0	0	0	0	0	0	0
PCBs by SW-846 Method 8082	**14**	0	0	0	0	0	0	0	0	0
Herbicides by SW-846 Method 8151	**12**	0	0	0	0	0	0	0	0	0
Volatile Organics by SW-846 Method 8260C	**2162**	0	**19**	0	0	0	0	0	0	**40**
Low Level Volatile Organics by SW-846 Method 8260C	**1172**	0	**23**	0	0	0	0	0	0	**7**
Semi-Volatile Organics by SW-846 Method 8270D	**1069**	**236**	**6**	0	0	0	**218**	0	0	0
Dioxins/Furans by SW-846 Method 8290	**75**	**2**	0	0	0	**4**	0	0	0	**6**
Cyanide by SW-846 Method 9012B	**2**	**1**	0	0	0	0	0	0	0	0
Sulfide by SW-846 Method 9034	**2**	0	0	0	0	0	0	0	0	0

Method	Total Result Records	"*"	"A"	"AD"	"G"	"RB"	"T"	"D"	"i"	"J"
Phenolics by SW-846 Method 9066	**2**	0	0	0	0	0	0	0	0	0
Anions by Various EPA Methods	**20**	0	0	0	0	0	0	0	0	0
Total Metals by Various SW-846 Methods	**432**	0	0	0	0	**7**	0	0	0	**84**
Nitrosamines by Low-Level Method	**46**	0	0	0	0	**12**	0	0	0	**4**
Total Dissolved Solids by Standard Method 2540C	**7**	0	0	0	0	0	0	0	0	0

Table 7 – Quality Assurance Narratives

Well ID	Event Date	SW-846 Method 8260C QA Narratives
BLM-38-480	**11/7/2022**	**For Low Level SW-846 Method 8260C, 2-propanol (11 ug/L) was detected below the reporting limit and silane, methoxytrimethyl- (12.0 ug/L) and silanol, trimethyl- (5.3 ug/L) were tentatively identified by a GC/MS library search in the trip blank (2211070910Y). Affected data are appropriately qualified.**
PL-7-560	**11/8/2022**	**For Low Level SW-846 Method 8260C, matrix spike recoveries for sample 2211081031Y for vinyl chloride (73%) was outside laboratory control limits (74-159%). Affected data are appropriately qualified.**
BLM-22-570	**11/15/2022**	**For Low Level SW-846 Method 8260C, silane, methoxytrimethyl- (5.8 ug/L) was tentatively identified by a GC/MS library search in sample 2211151510A.**
BLM-38-480	**11/7/2022**	**For Low Level SW-846 Method 8260C, silane, methoxytrimethyl- (6.3 ug/L) was tentatively identified by a GC/MS library search in sample 2211071325Y.**
BLM-32-543	11/7/2022	For Low Level SW-846 Method 8260C, sulfur dioxide (1.28 ug/L) and silane, methoxytrimethyl- (2.90 ug/L) were tentatively identified by a GC/MS library search in the method blank for analytical batch 785182. No groundwater data are affected by this method blank contamination.
BLM-32-571	11/7/2022	For Low Level SW-846 Method 8260C, sulfur dioxide (1.28 ug/L) and silane, methoxytrimethyl- (2.90 ug/L) were tentatively identified by a GC/MS library search in the method blank for analytical batch 785182. No groundwater data are affected by this method blank contamination.
BLM-32-632	11/7/2022	For Low Level SW-846 Method 8260C, sulfur dioxide (1.28 ug/L) and silane, methoxytrimethyl- (2.90 ug/L) were tentatively identified by a GC/MS library search in the method blank for analytical batch 785182. No groundwater data are affected by this method blank contamination.
BLM-38-480	**11/7/2022**	**For Low Level SW-846 Method 8260C, sulfur dioxide (1.28 ug/L) and silane, methoxytrimethyl- (2.90 ug/L) were tentatively identified by a GC/MS library search in the method blank for analytical batch 785182. Affected data are appropriately qualified.**
BLM-38-620	11/7/2022	For Low Level SW-846 Method 8260C, sulfur dioxide (1.28 ug/L) and silane, methoxytrimethyl- (2.90 ug/L) were tentatively identified by a GC/MS library search in the method blank for analytical batch 785182. No groundwater data are affected by this method blank contamination.
PL-7-560	11/8/2022	For Low Level SW-846 Method 8260C, sulfur dioxide (1.28 ug/L) and silane, methoxytrimethyl- (2.90 ug/L) were tentatively identified by a GC/MS library search in the method blank for analytical batch 785182. No groundwater data are affected by this method blank contamination.
BLM-32-543	**11/7/2022**	**For Low Level SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is the result of a standard discrepancy; we are working with the vendor to correct the issue. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.**
BLM-32-571	**11/7/2022**	**For Low Level SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated**

Well ID	Event Date	SW-846 Method 8260C QA Narratives
		with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is the result of a standard discrepancy; we are working with the vendor to correct the issue. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.
BLM-32-632	11/7/2022	For Low Level SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is the result of a standard discrepancy; we are working with the vendor to correct the issue. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.
BLM-38-480	11/7/2022	For Low Level SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is the result of a standard discrepancy; we are working with the vendor to correct the issue. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.
BLM-38-620	11/7/2022	For Low Level SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is the result of a standard discrepancy; we are working with the vendor to correct the issue. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.
BLM-8-418	11/1/2022	For Low Level SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one analyte. There were no detections of the analyte in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is the result of a standard discrepancy; we are working with the vendors to correct the issue. The analyte is flagged in the LCS Summary. Affected data are appropriately qualified.
PL-7-560	11/8/2022	For Low Level SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is the result of a standard discrepancy; we are working with the vendor to correct the issue. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.
ST-5-485	11/1/2022	For Low Level SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one analyte. There were no detections of the analyte in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is the result of a standard discrepancy; we are working with the vendors to correct the issue. The analyte is flagged in the LCS Summary. Affected data are appropriately qualified.
ST-5-655	11/1/2022	For Low Level SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one analyte. There were no detections of the analyte in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is the result of a standard discrepancy; we are working with the vendors to correct the issue. The analyte is flagged in the LCS Summary. Affected data are appropriately qualified.
WW-4-589	11/8/2022	For Low Level SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated

Well ID	Event Date	SW-846 Method 8260C QA Narratives
		with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is the result of a standard discrepancy; we are working with the vendors to correct the issue. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.
WW-4-848	**11/9/2022**	**For Low Level SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is the result of a standard discrepancy; we are working with the vendors to correct the issue. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.**
WW-4-948	**11/9/2022**	**For Low Level SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is the result of a standard discrepancy; we are working with the vendors to correct the issue. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.**
B650-EFF-1	11/10/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
B655-EFF-2	11/10/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-22-570	11/15/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-24-565	11/2/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-32-543	11/7/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-32-571	11/7/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-32-632	11/7/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-38-480	11/7/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-38-620	11/7/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
BLM-8-418	11/1/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PL-7-560	11/8/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-4-589	11/16/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-5-485	11/1/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-5-655	11/1/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
WW-4-589	11/8/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
WW-4-848	11/9/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
WW-4-948	11/9/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-24-565	11/2/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
WW-4-589	11/8/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
BLM-24-565	11/2/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
B650-EFF-1	11/10/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
B655-EFF-2	11/10/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
BLM-22-570	11/15/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
BLM-24-565	11/2/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
BLM-24-565	11/2/2022	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
BLM-32-543	11/7/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
BLM-32-571	11/7/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
BLM-32-632	11/7/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
BLM-38-480	11/7/2022	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
BLM-38-620	11/7/2022	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
BLM-8-418	11/1/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
PL-7-560	11/8/2022	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
PL-7-560	11/8/2022	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
ST-4-589	11/16/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
ST-5-485	11/1/2022	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
ST-5-655	11/1/2022	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
WW-4-419	11/8/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
WW-4-589	11/8/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
WW-4-848	11/9/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
WW-4-848	11/9/2022	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
WW-4-948	11/9/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
200-I-300	**11/10/2022**	**For SW-846 Method 8260C in blind control sample (2211101125Y), the percent recoveries for 1,1,2-trichloro-1,2,2-trifluoroethane (130%), trichloroethene (150%), tetrachloroethene (130%), and trichlorofluoromethane (135%) were outside of the standard limits (75-125%). Affected data are appropriately qualified.**
ST-1-541	**11/16/2022**	**For SW-846 Method 8260C, 2-propanol (16 ug/L) was detected below the reporting limit and silane, methoxytrimethyl- (7.1 ug/L) was tentatively identified by a GC/MS library search in the field blank (2211161031A). Affected data are appropriately qualified.**
200-I-185	11/10/2022	For SW-846 Method 8260C, 2-propanol (3.6 ug/L) was detected in the equipment blank (2211101345Y) below the reporting limit. No groundwater data are affected by this equipment blank contamination.
200-I-490	11/9/2022	For SW-846 Method 8260C, 2-propanol (9.5 ug/L) was detected below the reporting limit and silanol, trimethyl- (5.2 ug/L) was tentatively identified by a GC/MS library search in the equipment blank (2211091300Y). No groundwater data are affected by this equipment blank contamination.
BLM-36-350	11/4/2022	For SW-846 Method 8260C, field duplicate samples 2211041130Y and 2211041131Y the relative percent difference for 1,1,2-trichloro-1,2,2-trifluoroethane was 22.8%. Upper acceptance limit for relative percent difference is 25%.
BLM-36-350	11/4/2022	For SW-846 Method 8260C, field duplicate samples 2211041130Y and 2211041131Y the relative percent difference for trichloroethene (TCE) was 1.6%. Upper acceptance limit for relative percent difference is 25%.
BLM-36-350	11/4/2022	For SW-846 Method 8260C, field duplicate samples 2211041130Y and 2211041131Y the relative percent difference for trichlorofluoromethane (CFC 11) was 24.0%. Upper acceptance limit for relative percent difference is 25%.
BLM-36-350	11/4/2022	For SW-846 Method 8260C, field duplicate samples 2211041130Y and 2211041131Y the relative percent difference for tetrachloroethene (PCE) was 3.3%. Upper acceptance limit for relative percent difference is 25%.
BLM-36-350	11/4/2022	For SW-846 Method 8260C, field duplicate samples 2211041130Y and 2211041131Y the relative percent difference for 1,2-dichloro-1,1,2-trifluoroethane (CFC 123a) was 16.5%. Upper acceptance limit for relative percent difference is 25%.
BLM-36-350	11/4/2022	For SW-846 Method 8260C, field duplicate samples 2211041130Y and 2211041131Y the relative percent difference for dichlorofluoromethane (CFC 21) was 0.0%. Upper acceptance limit for relative percent difference is 25%.
B650-INF-1	11/10/2022	For SW-846 Method 8260C, field duplicate samples 2211100830 and 2211100831 the relative percent difference for trichloroethene (TCE) was 3.0%. Upper acceptance limit for relative percent difference is 25%.
PL-12-800	11/10/2022	For SW-846 Method 8260C, field duplicate samples 2211101425C and 2211101426C the relative percent difference for trichloroethene (TCE) was 1.9%. Upper acceptance limit for relative percent difference is 25%.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
PL-12-800	11/10/2022	For SW-846 Method 8260C, field duplicate samples 2211101425C and 2211101426C the relative percent difference for trichlorofluoromethane (CFC 11) was 4.5%. Upper acceptance limit for relative percent difference is 25%.
PL-12-800	11/10/2022	For SW-846 Method 8260C, field duplicate samples 2211101425C and 2211101426C the relative percent difference for 1,1,2-trichloro-1,2,2-trifluoroethane was 3.0%. Upper acceptance limit for relative percent difference is 25%.
100-D-176	11/14/2022	For SW-846 Method 8260C, field duplicate samples 2211140930A and 2211140932A the relative percent difference for 1,1,2-trichloro-1,2,2-trifluoroethane was 0.0%. Upper acceptance limit for relative percent difference is 25%.
100-D-176	11/14/2022	For SW-846 Method 8260C, field duplicate samples 2211140930A and 2211140932A the relative percent difference for trichloroethene (TCE) was 0.0%. Upper acceptance limit for relative percent difference is 25%.
200-I-490	**11/9/2022**	**For SW-846 Method 8260C, one unknown compound (6.5 ug/L) was tentatively identified by a GC/MS library search in sample 2211091400Y.**
200-I-795	**11/8/2022**	**For SW-846 Method 8260C, silane, methoxytrimethyl- (18 ug/L) and silane, fluorotrimethyl- (28 ug/L) were tentatively identified by a GC/MS library search in sample 2211081520Y.**
BLM-26-404	**11/7/2022**	**For SW-846 Method 8260C, silane, methoxytrimethyl- (5 ug/L) was tentatively identified by a GC/MS library search in sample 2211071450C.**
ST-1-541	**11/16/2022**	**For SW-846 Method 8260C, silane, methoxytrimethyl- (7.7 ug/L) and silane, fluorotrimethyl- (5.5 ug/L) were tentatively identified by a GC/MS library search in sample 2211161030A.**
PL-12-570	**11/10/2022**	**For SW-846 Method 8260C, silane, methoxytrimethyl- (8.6 ug/L) and one unknown compound were tentatively identified by a GC/MS library search in sample 2211100902C.**
100-D-176	**11/14/2022**	**For SW-846 Method 8260C, silane, methoxytrimethyl- (9.3 ug/L) and silane, fluorotrimethyl- (8 ug/L) were tentatively identified by a GC/MS library search in sample 2211140930A.**
NASA 6	**11/16/2022**	**For SW-846 Method 8260C, silane, methoxytrimethyl- (9.5 ug/L) and silane, fluorotrimethyl- (7.2 ug/L) were tentatively identified by a GC/MS library search in sample 2211161012B.**
PL-12-800	**11/10/2022**	**For SW-846 Method 8260C, silane, methoxytrimethyl- (9.5 ug/L), silane, fluorotrimethyl- (6.6 ug/L), and silanol, trimethyl- (5.8 ug/L) were tentatively identified by a GC/MS library search in sample 2211101425C.**
200-I-795	**11/8/2022**	**For SW-846 Method 8260C, sulfur dioxide (1.28 ug/L) and silane, methoxytrimethyl- (2.90 ug/L) were tentatively identified by a GC/MS library search in the method blank for analytical batch 785182. Affected data are appropriately qualified.**
BLM-26-404	**11/7/2022**	**For SW-846 Method 8260C, sulfur dioxide (1.28 ug/L) and silane, methoxytrimethyl- (2.90 ug/L) were tentatively identified by a GC/MS library search in the method blank for analytical batch 785182. Affected data are appropriately qualified.**
BW-5-295	11/7/2022	For SW-846 Method 8260C, sulfur dioxide (1.28 ug/L) and silane, methoxytrimethyl- (2.90 ug/L) were tentatively identified by a GC/MS library search in the method blank for analytical batch 785182. No groundwater data are affected by this method blank contamination.
200-I-795	**11/8/2022**	**For SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is the result of a standard discrepancy; we are working with the vendor to correct the issue. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.**
BLM-17-493	**11/3/2022**	**For SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is due to a standard**

Well ID	Event Date	SW-846 Method 8260C QA Narratives
		discrepancy; we are working with the vendor to correct the issue. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.
BLM-26-404	11/7/2022	For SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is the result of a standard discrepancy; we are working with the vendor to correct the issue. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.
BLM-3-182	11/1/2022	For SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one analyte. There were no detections of the analyte in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is the result of a standard discrepancy; we are working with the vendors to correct the issue. The analyte is flagged in the LCS Summary. Affected data are appropriately qualified.
BLM-36-350	11/4/2022	For SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is due to a standard discrepancy; we are working with the vendor to correct the issue. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.
BLM-36-350	11/4/2022	For SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is the result of a standard discrepancy; we are working with the vendors to correct the issue. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.
BLM-36-610	11/3/2022	For SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is due to a standard discrepancy; we are working with the vendor to correct the issue. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.
BLM-36-800	11/4/2022	For SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is due to a standard discrepancy; we are working with the vendor to correct the issue. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.
BLM-36-860	11/3/2022	For SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is due to a standard discrepancy; we are working with the vendor to correct the issue. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.
BW-5-295	11/7/2022	For SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is the result of a

Well ID	Event Date	SW-846 Method 8260C QA Narratives
		standard discrepancy; we are working with the vendor to correct the issue. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.
WW-4-419	**11/8/2022**	**For SW-846 Method 8260C, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples was not performed because the low recovery is the result of a standard discrepancy; we are working with the vendors to correct the issue. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.**
100-D-176	11/14/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
200-I-185	11/10/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
200-I-300	11/10/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
200-I-375	11/10/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
200-I-490	11/9/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
200-I-675	11/9/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
200-I-795	11/8/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
400-C-143	11/17/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
B650-INF-1	11/10/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
B655-INF-2	11/10/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-2-630	11/15/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-26-404	11/7/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s)

Well ID	Event Date	SW-846 Method 8260C QA Narratives
		above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-3-182	11/1/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-36-350	11/4/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BW-5-295	11/7/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
MPE-1	11/14/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
MPE-10	11/15/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
MPE-11	11/15/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
MPE-9	11/14/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
NASA 6	11/16/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PL-12-570	11/10/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PL-12-800	11/10/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-1-473	11/9/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-1-541	11/16/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-1-630	11/16/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
WW-4-419	11/8/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
200-I-375	11/10/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
200-I-490	11/9/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
200-I-675	11/9/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
BLM-3-182	11/1/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
BLM-36-350	11/4/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
ST-1-473	11/9/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
WW-4-419	11/8/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
200-I-185	11/10/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
200-I-300	11/10/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
200-I-375	11/10/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
400-C-143	11/17/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
B650-INF-1	11/10/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
B655-INF-2	11/10/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-3-182	11/1/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
NASA 6	11/16/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-12-570	11/10/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-12-800	11/10/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-1-541	11/16/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-1-630	11/16/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
200-I-300	11/10/2022	For SW-846 Method 8260C, there were no detections in the equipment blank.
200-I-375	11/10/2022	For SW-846 Method 8260C, there were no detections in the equipment blank.
200-I-675	11/9/2022	For SW-846 Method 8260C, there were no detections in the equipment blank.
200-I-795	11/8/2022	For SW-846 Method 8260C, there were no detections in the equipment blank.
BLM-36-350	11/4/2022	For SW-846 Method 8260C, there were no detections in the equipment blank.
BLM-36-610	11/3/2022	For SW-846 Method 8260C, there were no detections in the equipment blank.
BLM-36-800	11/4/2022	For SW-846 Method 8260C, there were no detections in the equipment blank.
BLM-36-860	11/3/2022	For SW-846 Method 8260C, there were no detections in the equipment blank.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
100-D-176	11/14/2022	For SW-846 Method 8260C, there were no detections in the field blank.
400-C-143	11/17/2022	For SW-846 Method 8260C, there were no detections in the field blank.
B650-INF-1	11/10/2022	For SW-846 Method 8260C, there were no detections in the field blank.
B655-INF-2	11/10/2022	For SW-846 Method 8260C, there were no detections in the field blank.
BLM-17-493	11/3/2022	For SW-846 Method 8260C, there were no detections in the field blank.
BLM-2-630	11/15/2022	For SW-846 Method 8260C, there were no detections in the field blank.
BLM-26-404	11/7/2022	For SW-846 Method 8260C, there were no detections in the field blank.
BLM-3-182	11/1/2022	For SW-846 Method 8260C, there were no detections in the field blank.
BW-5-295	11/7/2022	For SW-846 Method 8260C, there were no detections in the field blank.
MPE-1	11/14/2022	For SW-846 Method 8260C, there were no detections in the field blank.
MPE-10	11/15/2022	For SW-846 Method 8260C, there were no detections in the field blank.
MPE-11	11/15/2022	For SW-846 Method 8260C, there were no detections in the field blank.
MPE-9	11/14/2022	For SW-846 Method 8260C, there were no detections in the field blank.
NASA 6	11/16/2022	For SW-846 Method 8260C, there were no detections in the field blank.
PL-12-570	11/10/2022	For SW-846 Method 8260C, there were no detections in the field blank.
PL-12-800	11/10/2022	For SW-846 Method 8260C, there were no detections in the field blank.
ST-1-473	11/9/2022	For SW-846 Method 8260C, there were no detections in the field blank.
ST-1-630	11/16/2022	For SW-846 Method 8260C, there were no detections in the field blank.
100-D-176	11/14/2022	For SW-846 Method 8260C, there were no detections in the trip blank.
BLM-2-630	11/15/2022	For SW-846 Method 8260C, there were no detections in the trip blank.
PL-12-570	11/10/2022	For SW-846 Method 8260C, there were no detections in the trip blank.
ST-1-541	11/16/2022	For SW-846 Method 8260C, there were no detections in the trip blank.
200-I-675	**11/9/2022**	**For SW-846 Method 8260C, two unknown compounds were tentatively identified by a GC/MS library search in sample 2211090955Y.**

Well ID	Event Date	Modified EPA Method 607 QA Narratives
200-I-300	11/10/2022	For Modified EPA Method 607 in blind control sample (2211101126Y), all recoveries were within standard limits.
NASA 6	**11/16/2022**	**For Modified EPA Method 607, concentrations of NDMA and DMN in sample 2211161013B exceeded calibration range. Sample extract was diluted 10-fold and reanalyzed.**
BLM-36-350	11/4/2022	For Modified EPA Method 607, field duplicate samples 2211041132Y and 2211041155Y the relative percent difference for N-nitrosodimethylamine was 4.4%. Upper acceptance limit for relative percent difference is 25%.
BLM-36-350	11/4/2022	For Modified EPA Method 607, field duplicate samples 2211041132Y and 2211041155Y the relative percent difference for N-nitrodimethylamine was 5.4%. Upper acceptance limit for relative percent difference is 25%.
BLM-36-350	11/4/2022	For Modified EPA Method 607, field duplicate samples 2211041132Y and 2211041155Y the relative percent difference for bromacil was 2.9%. Upper acceptance limit for relative percent difference is 25%.
MPE-9	11/14/2022	For Modified EPA Method 607, field duplicate samples 2211141350 and 2211141351 the relative percent difference for bromacil was 0.0%. Upper acceptance limit for relative percent difference is 25%.
MPE-9	11/14/2022	For Modified EPA Method 607, field duplicate samples 2211141350 and 2211141351 the relative percent difference for N-nitrodimethylamine was 2.3%. Upper acceptance limit for relative percent difference is 25%.
MPE-9	11/14/2022	For Modified EPA Method 607, field duplicate samples 2211141350 and 2211141351 the relative percent difference for N-nitrosodimethylamine was 2.0%. Upper acceptance limit for relative percent difference is 25%.

Well ID	Event Date	Modified EPA Method 607 QA Narratives
ST-1-630	11/16/2022	For Modified EPA Method 607, field duplicate samples 2211161532A and 2211161533A the relative percent difference for N-nitrosodimethylamine was 0.0%. Upper acceptance limit for relative percent difference is 25%.
ST-1-630	11/16/2022	For Modified EPA Method 607, field duplicate samples 2211161532A and 2211161533A the relative percent difference for N-nitrodimethylamine was 0.0%. Upper acceptance limit for relative percent difference is 25%.
BLM-24-565	**11/2/2022**	**For Modified EPA Method 607, matrix spike recoveries for sample 2211021336A for bromacil (16%) were outside laboratory control limits (40-190%). Affected data are appropriately qualified.**
200-I-375	11/10/2022	For Modified EPA Method 607, there were no detections in the equipment blank.

Well ID	Event Date	Low-Level Nitrosamine Method QA Narratives
BLM-2-630	11/15/2022	For Low Level Nitrosamine Method in blind control sample (2211151110A), all recoveries were within standard limits.
BLM-32-632	11/7/2022	For Low Level Nitrosamine Method, matrix spike recoveries for samples 2211071605B and 2211071606B were within laboratory control limits.
BLM-24-565	**11/2/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.35 ng/L) was detected in the trip blank (2211021251A) below the reporting limit. Affected data are appropriately qualified.**
BLM-32-632	**11/7/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.36 ng/L) was detected in the field blank (2211071607B) below the reporting limit. Affected data are appropriately qualified.**
WW-4-848	**11/9/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.36 ng/L) was detected in the field blank (2211091421B) below the reporting limit. Affected data are appropriately qualified.**
BLM-32-571	**11/7/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.38 ng/L) was detected in the field blank (2211071453B) below the reporting limit. Affected data are appropriately qualified.**
BLM-2-630	**11/15/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.39 ng/L) was detected in the field blank (2211151035A) below the reporting limit. Affected data are appropriately qualified.**
BLM-8-418	**11/1/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.43 ng/L) was detected in the field blank (2211011511A) below the reporting limit. Affected data are appropriately qualified.**
ST-5-655	**11/1/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.43 ng/L) was detected in the equipment blank (2211010946Y) below the reporting limit. Affected data are appropriately qualified.**
WW-4-419	**11/8/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.43 ng/L) was detected in the field blank (2211081436B) below the reporting limit. Affected data are appropriately qualified.**
BLM-24-565	**11/2/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.47 ng/L) was detected in the field blank (2211021338A) below the reporting limit. Affected data are appropriately qualified.**
ST-4-589	**11/16/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.47 ng/L) was detected in the trip blank (2211170700C) below the reporting limit. Affected data are appropriately qualified.**
BLM-2-630	**11/15/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.57 ng/L) was detected in the trip blank (2211150731A). Affected data are appropriately qualified.**
BLM-32-543	**11/7/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.60 ng/L) was detected in method blank PB22L10CM1. Affected data are appropriately qualified.**
BLM-32-571	**11/7/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.60 ng/L) was detected in method blank PB22L10CM1. Affected data are appropriately qualified.**
BLM-32-632	**11/7/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.60 ng/L) was detected in method blank PB22L10CM1. Affected data are appropriately qualified.**

Well ID	Event Date	Low-Level Nitrosamine Method QA Narratives
BLM-38-480	**11/7/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.60 ng/L) was detected in method blank PB22L10CM1. Affected data are appropriately qualified.**
BLM-38-620	**11/7/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.60 ng/L) was detected in method blank PB22L10CM1. Affected data are appropriately qualified.**
PL-7-560	**11/8/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.60 ng/L) was detected in method blank PB22L10CM1. Affected data are appropriately qualified.**
WW-4-419	**11/8/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.60 ng/L) was detected in method blank PB22L10CM1. Affected data are appropriately qualified.**
WW-4-589	**11/8/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.60 ng/L) was detected in method blank PB22L10CM1. Affected data are appropriately qualified.**
BLM-24-565	**11/2/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.65 ng/L) was detected in method blank PB22L07CM1. Affected data are appropriately qualified.**
BLM-8-418	**11/1/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.65 ng/L) was detected in method blank PB22L07CM1. Affected data are appropriately qualified.**
ST-5-485	**11/1/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.65 ng/L) was detected in method blank PB22L07CM1. Affected data are appropriately qualified.**
ST-5-655	**11/1/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.65 ng/L) was detected in method blank PB22L07CM1. Affected data are appropriately qualified.**
BLM-22-570	**11/15/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.68 ng/L) was detected in the field blank (2211151513A). Affected data are appropriately qualified.**
BLM-38-620	**11/7/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.77 ng/L) was detected in the equipment blank (2211071431Y). Affected data are appropriately qualified.**
ST-5-485	**11/1/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.79 ng/L) was detected in the equipment blank (2211011351Y). Affected data are appropriately qualified.**
BLM-32-543	**11/7/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.92 ng/L) was detected in the field blank (2211071413B). Affected data are appropriately qualified.**
BLM-38-480	**11/7/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (1.03 ng/L) was detected in the trip blank (2211070911Y). Affected data are appropriately qualified.**
BLM-38-480	**11/7/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (1.46 ng/L) and N-nitrodimethylamine (0.39 ng/L) were detected in the equipment blank (2211071001Y) below the reporting limit for N-nitrodimethylamine only. Affected data are appropriately qualified.**
BLM-2-630	11/15/2022	For Low Level Nitrosamine Method, relative percent differences (RPD) for duplicate samples 2211151033A and 2211151034A were within control limits or below the calculable range.
PL-12-570	11/10/2022	For Low Level Nitrosamine Method, relative percent differences (RPD) for duplicate samples 2211100904C and 2211100905C were within control limits or below the calculable range.
BLM-24-565	11/2/2022	For Low Level Nitrosamine Method, the recovery of N-nitrodimethylamine (134%) in the laboratory fortified blank (LFB22L07CM1) was outside laboratory control limits (70-130%). No groundwater data are affected by this QC issue.
BLM-8-418	11/1/2022	For Low Level Nitrosamine Method, the recovery of N-nitrodimethylamine (134%) in the laboratory fortified blank (LFB22L07CM1) was outside laboratory control limits (70-130%). No groundwater data are affected by this QC issue.
ST-5-485	11/1/2022	For Low Level Nitrosamine Method, the recovery of N-nitrodimethylamine (134%) in the laboratory fortified blank (LFB22L07CM1) was outside laboratory control limits (70-130%). No groundwater data are affected by this QC issue.
ST-5-655	11/1/2022	For Low Level Nitrosamine Method, the recovery of N-nitrodimethylamine (134%) in the laboratory fortified blank (LFB22L07CM1) was outside laboratory control limits (70-130%). No groundwater data are affected by this QC issue.
B650-EFF-1	11/10/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
B655-EFF-2	11/10/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
PL-12-570	11/10/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
PL-12-570	11/10/2022	For Low Level Nitrosamine Method, there were no detections in the trip blank.
PL-12-800	11/10/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.

Well ID	Event Date	Low-Level Nitrosamine Method QA Narratives
PL-7-560	11/8/2022	For Low Level Nitrosamine Method, there were no detections in the equipment blank.
PL-7-560	11/8/2022	For Low Level Nitrosamine Method, there were no detections in the trip blank.
ST-4-589	11/16/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
WW-4-589	11/8/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
WW-4-848	11/9/2022	For Low Level Nitrosamine Method, there were no detections in the trip blank.
WW-4-948	11/9/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
ST-4-589	11/16/2022	For Low Level Nitrosamine Method, trip blank was collected after sampling event and covers offsite shipping trip only.

Well ID	Event Date	SW-846 Method 8270D QA Narratives
100-D-176	**11/14/2022**	**For SW-846 Method 8270D, 1H-benzotriazole, 4-methyl- (12 ug/L) was tentatively identified by a GC/MS library search in sample 2211140935A.**
WW-4-589	**11/8/2022**	**For SW-846 Method 8270D, benzenesulfonamide, N-butyl- (110 ug/L), toluene (15 ug/L), benzene, chloro- (5.7 ug/L), and four unknown compounds were tentatively identified by a GC/MS library search in sample 2211081548B.**
WW-4-848	**11/9/2022**	**For SW-846 Method 8270D, benzenesulfonamide, N-butyl- (21 ug/L) was tentatively identified by a GC/MS library search in sample 2211091518B for analytical batch 410097.**
WW-4-419	**11/8/2022**	**For SW-846 Method 8270D, benzenesulfonamide, N-butyl- (240 ug/L), 1,3,5-cycloheptatriene (14 ug/L), benzene, chloro- (4.1 ug/L), and four unknown compounds were tentatively identified by a GC/MS library search in sample 2211081520B.**
WW-4-948	**11/9/2022**	**For SW-846 Method 8270D, benzenesulfonamide, N-butyl- (29 ug/L) was tentatively identified by a GC/MS library search in sample 2211091600B for analytical batch 410097.**
WW-4-848	**11/9/2022**	**For SW-846 Method 8270D, benzenesulfonamide, N-butyl- (31 ug/L) and two unknown compounds were tentatively identified by a GC/MS library search in sample 2211091518B for analytical batch 410832.**
400-C-143	**11/17/2022**	**For SW-846 Method 8270D, diethyl phthalate (2.4 ug/L) was detected below the reporting limit and two unknown compounds were tentatively identified by a GC/MS library search in the method blank for analytical batch 410324. Affected data are appropriately qualified.**
100-D-176	11/14/2022	For SW-846 Method 8270D, methylene chloride (5.4 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 410241. No groundwater data are affected by this method blank contamination.
WW-4-848	**11/9/2022**	**For SW-846 Method 8270D, one unknown compound (11 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 410832. Affected data are appropriately qualified.**
WW-4-948	11/9/2022	For SW-846 Method 8270D, one unknown compound (11 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 410832. No groundwater data are affected by this method blank contamination.
WW-4-848	**11/9/2022**	**For SW-846 Method 8270D, the analysis of one or more samples was initially attempted within holding time but was not useable due to an analytical system or QC failure. Efforts were made to reanalyze the sample(s) as soon as possible after the analytical system was back in control. However, the reanalysis of the sample(s) was performed past the recommended holding time. The results from the reanalysis are reported. The data are qualified to indicate the holding time exceedance.**
WW-4-948	**11/9/2022**	**For SW-846 Method 8270D, the analysis of one or more samples was initially attempted within holding time but was not useable due to an analytical system or QC failure. Efforts were made to reanalyze the sample(s) as soon as possible after the analytical system was back in control. However, the reanalysis of the sample(s) was performed past the recommended holding time. The results from the reanalysis are reported. The data are qualified to indicate the holding time exceedance.**
WW-4-419	11/8/2022	For SW-846 Method 8270D, the control limit was exceeded for one or more surrogates in the Continuing Calibration Verification (CCV). The surrogates were within acceptance limits for the associated field samples. The data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8270D QA Narratives
WW-4-589	11/8/2022	For SW-846 Method 8270D, the control limit was exceeded for one or more surrogates in the Continuing Calibration Verification (CCV). The surrogates were within acceptance limits for the associated field samples. The data quality was not significantly affected and no further corrective action was taken.
400-C-143	11/17/2022	For SW-846 Method 8270D, the control limits were exceeded for one or more surrogates in one or more QC samples associated with samples in this report. The associated recoveries of target compounds were in control, indicating the analysis was in control. The surrogate outlier is flagged accordingly. No further corrective action was appropriate.
WW-4-848	11/9/2022	For SW-846 Method 8270D, the control limits were exceeded for one or more surrogates in the sample(s). Since the exceedance may indicate a potential bias in the analytical batch, all associated field samples were re-extracted and reanalyzed.
WW-4-948	11/9/2022	For SW-846 Method 8270D, the control limits were exceeded for one or more surrogates in the sample(s). Since the exceedance may indicate a potential bias in the analytical batch, all associated field samples were re-extracted and reanalyzed.
100-D-176	**11/14/2022**	**For SW-846 Method 8270D, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples could not be performed because insufficient sample remained for testing. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.**
BLM-3-182	**11/1/2022**	**For SW-846 Method 8270D, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.**
WW-4-848	**11/9/2022**	**For SW-846 Method 8270D, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.**
WW-4-848	**11/9/2022**	**For SW-846 Method 8270D, the lower control limit for the spike recovery of the Duplicate Laboratory Control Sample (LCSD) was exceeded for one or more analyte. The Laboratory Control Sample (LCS) passed limits. There were no detections of the analyte(s) in the associated field samples. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.**
WW-4-948	**11/9/2022**	**For SW-846 Method 8270D, the lower control limit for the spike recovery of the Duplicate Laboratory Control Sample (LCSD) was exceeded for one or more analyte. The Laboratory Control Sample (LCS) passed limits. There were no detections of the analyte(s) in the associated field samples. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.**
WW-4-948	**11/9/2022**	**For SW-846 Method 8270D, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.**
100-D-176	11/14/2022	For SW-846 Method 8270D, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
400-C-143	11/17/2022	For SW-846 Method 8270D, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8270D QA Narratives
BLM-3-182	11/1/2022	For SW-846 Method 8270D, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
100-D-176	11/14/2022	For SW-846 Method 8270D, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
400-C-143	11/17/2022	For SW-846 Method 8270D, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
WW-4-419	11/8/2022	For SW-846 Method 8270D, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
WW-4-589	11/8/2022	For SW-846 Method 8270D, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
WW-4-848	11/9/2022	For SW-846 Method 8270D, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
WW-4-848	11/9/2022	For SW-846 Method 8270D, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
WW-4-948	11/9/2022	For SW-846 Method 8270D, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
100-D-176	11/14/2022	For SW-846 Method 8270D, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
400-C-143	11/17/2022	For SW-846 Method 8270D, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-3-182	11/1/2022	For SW-846 Method 8270D, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8270D QA Narratives
WW-4-419	11/8/2022	For SW-846 Method 8270D, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
WW-4-589	11/8/2022	For SW-846 Method 8270D, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
WW-4-948	**11/9/2022**	**For SW-846 Method 8270D, three unknown compounds were tentatively identified by a GC/MS library search in sample 2211091600B for analytical batch 410832.**
400-C-143	**11/17/2022**	**For SW-846 Method 8270D, three unknown compounds were tentatively identified by a GC/MS library search in sample 2211170923C.**

Well ID	Event Date	Total Metals QA Narratives
200-I-300	11/10/2022	For Total Metals, blind control sample (2211101127Y) was prepared at a concentration below the reporting limits for boron and iron. The results for these metals are not qualified based on this control.
200-I-300	11/10/2022	For Total Metals, calcium (0.3 mg/L), magnesium (0.1 mg/L), and strontium (0.04 mg/L) were detected in the equipment blank (2211100936Y) below the reporting limit. No groundwater data are affected by this equipment blank contamination.
200-I-490	11/9/2022	For Total Metals, calcium (0.7 mg/L), magnesium (0.2 mg/L), and strontium (0.08 mg/L) were detected in the equipment blank (2211091301Y) below the reporting limit. No groundwater data are affected by this equipment blank contamination.
NASA 6	11/16/2022	For Total Metals, cobalt (0.0009 mg/L) was detected in the field blank (2211161011B) below the reporting limit. No groundwater data are affected by this field blank contamination.
BLM-3-182	**11/1/2022**	**For Total Metals, cobalt (0.001 mg/L) was detected in the method blank for analytical batch 409623 below the reporting limit. Affected data are appropriately qualified.**
BLM-17-493	11/3/2022	For Total Metals, field duplicate samples 2211030933A and 2211030934A the relative percent difference for strontium was 1.3%. Upper acceptance limit for relative percent difference is 25%.
BLM-17-493	11/3/2022	For Total Metals, field duplicate samples 2211030933A and 2211030934A the relative percent difference for sodium was 1.2%. Upper acceptance limit for relative percent difference is 25%.
BLM-17-493	11/3/2022	For Total Metals, field duplicate samples 2211030933A and 2211030934A the relative percent difference for magnesium was 1.0%. Upper acceptance limit for relative percent difference is 25%.
BLM-17-493	11/3/2022	For Total Metals, field duplicate samples 2211030933A and 2211030934A the relative percent difference for chromium was 1.9%. Upper acceptance limit for relative percent difference is 25%.
BLM-17-493	11/3/2022	For Total Metals, field duplicate samples 2211030933A and 2211030934A the relative percent difference for calcium was 0.9%. Upper acceptance limit for relative percent difference is 25%.
BLM-17-493	11/3/2022	For Total Metals, field duplicate samples 2211030933A and 2211030934A the relative percent difference for iron was 1.9%. Upper acceptance limit for relative percent difference is 25%.
BLM-17-493	11/3/2022	For Total Metals, field duplicate samples 2211030933A and 2211030934A the relative percent difference for nickel was 0.9%. Upper acceptance limit for relative percent difference is 25%.
ST-1-541	11/16/2022	For Total Metals, field duplicate samples 2211161033A and 2211161034A the relative percent difference for strontium was 0.4%. Upper acceptance limit for relative percent difference is 25%.
ST-1-541	11/16/2022	For Total Metals, field duplicate samples 2211161033A and 2211161034A the relative percent difference for sodium was 0.3%. Upper acceptance limit for relative percent difference is 25%.

Well ID	Event Date	Total Metals QA Narratives
ST-1-541	11/16/2022	For Total Metals, field duplicate samples 2211161033A and 2211161034A the relative percent difference for magnesium was 0.4%. Upper acceptance limit for relative percent difference is 25%.
ST-1-541	11/16/2022	For Total Metals, field duplicate samples 2211161033A and 2211161034A the relative percent difference for calcium was 0.8%. Upper acceptance limit for relative percent difference is 25%.
400-C-143	11/17/2022	For Total Metals, iron (0.08 mg/L) was detected in the method blank for analytical batch 410340 below the reporting limit. No groundwater data are affected by this method blank contamination.
BLM-2-630	**11/15/2022**	**For Total Metals, iron (0.08 mg/L) was detected in the method blank for analytical batch 410340 below the reporting limit. Affected data are appropriately qualified.**
NASA 6	**11/16/2022**	**For Total Metals, iron (0.08 mg/L) was detected in the method blank for analytical batch 410340 below the reporting limit. Affected data are appropriately qualified.**
ST-1-541	**11/16/2022**	**For Total Metals, iron (0.08 mg/L) was detected in the method blank for analytical batch 410340 below the reporting limit. Affected data are appropriately qualified.**
200-I-300	**11/10/2022**	**For Total Metals, iron (0.12 mg/L) was detected in the method blank for analytical batch 410464 below the reporting limit. Affected data are appropriately qualified.**
200-I-375	**11/10/2022**	**For Total Metals, iron (0.12 mg/L) was detected in the method blank for analytical batch 410464 below the reporting limit. Affected data are appropriately qualified.**

Well ID	Event Date	Miscellaneous QA Narratives
400-C-143	11/17/2022	For SW-846 Method 8081B, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV) on one detector. All recoveries were acceptable on the secondary detector. Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
400-C-143	11/17/2022	For SW-846 Method 8081B, the RPD between the LCS and the LCSD was greater than the RPD limit. The percent recovery limit was met for both the LCS and the LCSD. No groundwater data are qualified based on this RPD exceedance.
400-C-143	11/17/2022	For SW-846 Method 8081B, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-3-182	11/1/2022	For SW-846 Method 8081B, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
400-C-143	11/17/2022	For SW-846 Method 8082A, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
400-C-143	11/17/2022	For SW-846 Method 8151A, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-3-182	11/1/2022	For SW-846 Method 8290A, due to high detection of 2,3,7,8-TCDD (41.2 pg/L) in sample 2211010939A, resampling was conducted 12/15/2022. The 12/15/2022 sample was lost due to an error at the analytical laboratory and final resampling was conducted 1/24/2023.

Well ID	Event Date	Miscellaneous QA Narratives
400-C-143	**11/17/2022**	**For SW-846 Method 8290A, OCDD (0.811 pg/L), 1,2,3,4,6,7,8-HpCDD (0.235 pg/L), and total hepta-dioxins (0.235 pg/L) were detected in the method blank WBLANK_22NOV22 below the reporting limit. Affected data are appropriately qualified.**
BLM-3-182	**11/1/2022**	**For SW-846 Method 8290A, OCDD (1.86 pg/L) was detected in the method blank WBLANK_08NOV22 below the reporting limit. Affected data are appropriately qualified.**
BLM-3-182	**11/1/2022**	**For SW-846 Method 9012, for sample 2211010943A the pH was <9 when tested immediately prior to testing, indicating that chemical preservation was not added or was inadequate to meet the preservation requirement. Affected data are appropriately qualified.**

Table 8 – WSTF Blank Sample Detections

Well ID	Event Date	Comment	Analysis	Sample Type	CAS No.	Analyte	Result	Units	QA flag
ST-1-541	11/16/2022	Carboy G1	8260	VOA-FB	67-63-0	2-Propanol	16	ug/L	J FB
BLM-38-480	11/7/2022	Carboy G3	8260_LL	VOA-TB	1825-61-2	Silane, methoxytrimethyl-	12	ug/L	TIC RB TB
BLM-38-480	11/7/2022	Carboy G3	8260_LL	VOA-TB	67-63-0	2-Propanol	11	ug/L	J TB
200-I-490	11/9/2022	Carboy G3	8260	VOA-EB	67-63-0	2-Propanol	9.5	ug/L	J EB
ST-1-541	11/16/2022	Carboy G1	8260	VOA-FB	1825-61-2	Silane, methoxytrimethyl-	7.1	ug/L	TIC FB
BLM-38-480	11/7/2022	Carboy G3	8260_LL	VOA-TB	1066-40-6	Silanol, trimethyl-	5.3	ug/L	TIC TB
200-I-490	11/9/2022	Carboy G3	8260	VOA-EB	1066-40-6	Silanol, trimethyl-	5.2	ug/L	TIC EB
200-I-185	11/10/2022	Carboy G1	8260	VOA-EB	67-63-0	2-Propanol	3.6	ug/L	J EB
BLM-38-480	11/7/2022	Carboy G3	NDMA_LL	NDMA_LL-EB	62-75-9	N-Nitrosodimethylamine	1.46	ng/L	RB TB EB
BLM-38-480	11/7/2022	Carboy G3	NDMA_LL	NDMA_LL-TB	62-75-9	N-Nitrosodimethylamine	1.03	ng/L	RB TB EB
BLM-32-543	11/7/2022	Carboy G1	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.92	ng/L	RB FB
ST-5-485	11/1/2022	Carboy G1	NDMA_LL	NDMA_LL-EB	62-75-9	N-Nitrosodimethylamine	0.79	ng/L	RB EB
BLM-38-620	11/7/2022	Carboy G3	NDMA_LL	NDMA_LL-EB	62-75-9	N-Nitrosodimethylamine	0.77	ng/L	RB EB
200-I-490	11/9/2022	Carboy G3	METALS	METALS-EB	7440-70-2	Calcium, Total	0.7	mg/L	J EB
BLM-22-570	11/15/2022	Carboy G1	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.68	ng/L	FB
BLM-2-630	11/15/2022	Carboy G1	NDMA_LL	NDMA_LL-TB	62-75-9	N-Nitrosodimethylamine	0.57	ng/L	TB FB
ST-4-589	11/16/2022		NDMA_LL	NDMA_LL-TB	62-75-9	N-Nitrosodimethylamine	0.47	ng/L	J TB
BLM-24-565	11/2/2022	Carboy G3	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.47	ng/L	J RB TB FB
BLM-8-418	11/1/2022	Carboy G3	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.43	ng/L	J RB FB
ST-5-655	11/1/2022	Carboy G1	NDMA_LL	NDMA_LL-EB	62-75-9	N-Nitrosodimethylamine	0.43	ng/L	J RB EB
WW-4-419	11/8/2022	Carboy G1	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.43	ng/L	J RB FB
BLM-2-630	11/15/2022	Carboy G1	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.39	ng/L	J TB FB
BLM-38-480	11/7/2022	Carboy G3	NDMA_LL	NDMA_LL-EB	4164-28-7	N-Nitrodimethylamine	0.39	ng/L	J EB
BLM-32-571	11/7/2022	Carboy G1	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.38	ng/L	J RB FB
WW-4-848	11/9/2022	Carboy G1	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.36	ng/L	J FB
BLM-32-632	11/7/2022	Carboy G1	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.36	ng/L	J RB FB
BLM-24-565	11/2/2022	Carboy G3	NDMA_LL	NDMA_LL-TB	62-75-9	N-Nitrosodimethylamine	0.35	ng/L	J RB TB FB
200-I-300	11/10/2022	Carboy G1	METALS	METALS-EB	7440-70-2	Calcium, Total	0.3	mg/L	J EB
200-I-490	11/9/2022	Carboy G3	METALS	METALS-EB	7439-95-4	Magnesium, Total	0.2	mg/L	J EB
200-I-300	11/10/2022	Carboy G1	METALS	METALS-EB	7439-95-4	Magnesium, Total	0.1	mg/L	J EB
200-I-490	11/9/2022	Carboy G3	METALS	METALS-EB	7440-24-6	Strontium, Total	0.08	mg/L	J EB
200-I-300	11/10/2022	Carboy G1	METALS	METALS-EB	7440-24-6	Strontium, Total	0.04	mg/L	J EB
NASA 6	11/16/2022	Carboy G3	METALS	METALS-FB	7440-48-4	Cobalt, Total	0.0009	mg/L	J FB

National Aeronautics and Space Administration

Quality Assurance Report for White Sands Test Facility Groundwater Monitoring Data

December 2022

NM8800019434

Report Submitted: April 10, 2023

Report Prepared by:
Carlyn A. Tufts
Environmental Scientist
Navarro Research and Engineering, Inc.

1.0 Introduction

The WSTF Groundwater Monitoring Plan (GMP) requires the preparation of a periodic report to assess the quality of groundwater analytical data reported. The monthly Quality Assurance Report (QAR) prepared and reviewed by responsible environmental contractor data management personnel provides the following information:

- A summary of notable anomalies and a follow-up on previous anomalies, if necessary.
- A summary of notable data quality issues by analytical method, if any.
- A list of the sample events for which groundwater samples were collected in December 2022.
- The quantity and type of quality control samples collected or prepared in December 2022.
- Quality control sample percentages in annual period immediately preceding and during December 2022.
- Definitions of data qualifiers used in WSTF analytical data reporting.
- The quantity and type of data qualifiers applied to individual analytical results.
- A list of quality assurance narratives for the month arranged by analytical method.
- A summary table of detections in equipment blank, field blank, and trip blank samples.

2.0 Data Quality

2.1 Notable Anomalies Identified in Previous Quality Assurance Reports

There were no notable anomalies requiring follow-up associated with previous QARs.

2.2 Notable Anomalies

There were no notable anomalies in the groundwater data associated with the December 2022 QAR.

3.0 Data Tables

Table 1 summarizes the groundwater sample events initiated in December 2022. This report is based on data quality issues related to the sample events listed in Table 1. Tables 2 through 8 contain information related to the sample events identified in Table 1. As specified by the GMP, specific quality control samples are utilized to assess the quality of analytical data. Table 2 presents the quantity of quality control samples collected for each analytical method. Table 3 compares the quality control sample percentages collected to the requirements in the GMP. When data quality criteria are not met, data qualifiers are applied to the data. Definitions of data qualifiers used for WSTF chemical analytical data are listed in Table 4. Table 5 and Table 6 present the total number of individual result records and summarize the quantity of field and laboratory data qualifiers assigned to individual analyte result records in the WSTF analytical database. Table 7 provides all quality assurance narratives associated with the sample events in Table 1. Narratives associated with qualified data are identified by **bold text** in Table 7. Table 8 provides a summary of all detections in WSTF blank samples.

Table 1 – Sample Events for December 2022

Well ID	Event Date	Well ID	Event Date	Well ID	Event Date
200-G-420	12/1/2022	200-G-340	12/5/2022	PL-11-710	12/6/2022
200-G-495	12/1/2022	BLM-7-509	12/5/2022	PL-11-820	12/6/2022
ST-4-481	12/1/2022	PL-11-470	12/5/2022	PL-11-980	12/6/2022
ST-4-690	12/1/2022	PL-11-530	12/5/2022	WW-2-489	12/6/2022
200-G-220	12/5/2022	WW-1-452	12/5/2022	WW-2-664	12/6/2022

Well ID	Event Date
200-G-175	12/7/2022
ST-3-486	12/7/2022
ST-6-528	12/7/2022
ST-6-568	12/7/2022
B655-EFF-2	12/8/2022
B655-INF-2	12/8/2022
ST-3-666	12/8/2022
ST-3-735	12/8/2022
ST-6-678	12/8/2022

Well ID	Event Date
ST-6-824	12/8/2022
ST-6-970	12/8/2022
B650-EFF-1	12/9/2022
B650-INF-1	12/9/2022
BLM-27-270	12/12/2022
PL-2-504	12/12/2022
PL-4-464	12/12/2022
WW-3-569	12/12/2022
700-B-510	12/13/2022

Well ID	Event Date
BLM-42-569	12/13/2022
BLM-42-709	12/13/2022
BW-7-211	12/13/2022
WW-3-469	12/13/2022
PL-8-455	12/14/2022
PL-8-605	12/14/2022
ST-3-586	12/15/2022

Table 2 – Quantity of Quality Control Samples

Method	Samples	Field Blanks	Equip Blanks	Trip Blanks	Blind Controls	Duplicates	Matrix Spikes
Nitrate plus Nitrite as N by EPA Method 353.2	**3**	0	0	0	0	0	0
Nitrosamines by EPA Method 607	**17**	0	0	0	**1**	**2**	0
Perchlorate by SW-846 Method 6850	**3**	0	0	0	0	0	0
Volatile Organics by SW-846 Method 8260C	**16**	**11**	**5**	**1**	**1**	**4**	0
Low Level Volatile Organics by SW-846 Method 8260C	**24**	**20**	**4**	**6**	0	0	**1**
Semi-Volatile Organics by SW-846 Method 8270D	**8**	**1**	0	0	0	**1**	**1**
Anions by Various EPA Methods	**3**	0	0	0	0	0	0
Total Metals by Various SW-846 Methods	**8**	**1**	**1**	0	**1**	**1**	0
Nitrosamines by Low-Level Method	**25**	**21**	**4**	**8**	**1**	**3**	**1**
Total Dissolved Solids by Standard Method 2540C	**3**	0	0	0	0	0	0

Table 3 – Quality Control Sample Percentages

Quality Control Requirement	Requirement %	Samp. Qty. since 1/1/2022	QC Qty. since 1/1/2022	QC % since 1/1/2022	Sample Quantity December 2022	QC Quantity December 2022	QC % December 2022
VOA Duplicates	10	527	55	**10**	40	4	10
VOA Matrix Spikes	2	527	12	**2**	40	1	2
607 Duplicates	10	302	31	**10**	17	2	12
607 Matrix Spikes	2	302	9	**3**	17	0	0
607 Equipment Blanks	2	302	9	**3**	17	0	0
607 Field Blanks	2	302	8	**3**	17	0	0
NDMA_LL Duplicates	10	320	35	**11**	25	3	12
NDMA_LL Matrix Spikes	2	320	11	**3**	25	1	4
Metals Duplicates	10	212	24	**11**	8	1	12
Metals Matrix Spikes	2	212	7	**3**	8	0	0
Metals Equipment Blanks	5	212	11	**5**	8	1	12
Metals Field Blanks	5	212	11	**5**	8	1	12

Quality Control Requirement	Requirement %	Sample Events since 1/1/2022	QC Qty. since 1/1/2022	QC % since 1/1/2022	Sample Events December 2022	QC Quantity December 2022	QC % December 2022
VOA Equipment Blanks and Field Blanks	*Should approach 100%*	527	527	**100%**	40	40	100%
Low Level Nitrosamine Equipment Blanks and Field Blanks	*Should approach 100%*	318	318	**100%**	25	25	100%

Quality Control Requirement	Requirement %	Shipments since 1/1/2022	TB Qty. since 1/1/2022	TB % since 1/1/2022	Shipments in December 2022	TB Quantity December 2022	QC % December 2022
VOA Trip Blank (per shipment)	*Should approach 100%*	105	105	**100%**	7	7	100%
Low Level Nitrosamine Trip Blank (per shipment)	*Should approach 100%*	103	103	**100%**	8	8	100%

Table 4 – 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 5 – Quantity of Field Based Data Qualifiers Assigned to Individual Result Records

Method	Total Result Records	"FB"	"EB"	"TB"	"Q"	"QD"	"SP"	"R"
Nitrate plus Nitrite as N by EPA Method 353.2	**3**	0	0	0	0	0	0	0
Nitrosamines by EPA Method 607	**57**	0	0	0	**1**	0	0	0
Perchlorate by SW-846 Method 6850	**3**	0	0	0	0	0	0	0
Volatile Organics by SW-846 Method 8260C	**1307**	0	0	0	**8**	**2**	0	0

Method	Total Result Records	"FB"	"EB"	"TB"	"Q"	"QD"	"SP"	"R"
Low Level Volatile Organics by SW-846 Method 8260C	**1634**	0	0	0	0	0	0	0
Semi-Volatile Organics by SW-846 Method 8270D	**11**	**2**	0	0	0	0	0	0
Anions by Various EPA Methods	**12**	0	0	0	0	0	0	0
Total Metals by Various SW-846 Methods	**243**	0	**1**	0	0	0	0	0
Nitrosamines by Low-Level Method	**56**	**8**	**5**	**1**	**2**	0	0	0
Total Dissolved Solids by Standard Method 2540C	**3**	0	0	0	0	0	0	0

Table 6 – Quantity of Laboratory based Data Qualifiers Assigned to Individual Result Records

Method	Total Result Records	"*"	"A"	"AD"	"G"	"RB"	"T"	"D"	"i"	"J"
Nitrate plus Nitrite as N by EPA Method 353.2	**3**	0	0	0	0	0	0	0	0	0
Nitrosamines by EPA Method 607	**57**	0	0	0	0	0	0	0	0	**2**
Perchlorate by SW-846 Method 6850	**3**	0	0	0	0	0	0	0	0	0
Volatile Organics by SW-846 Method 8260C	**1307**	0	0	0	0	0	**2**	0	0	**10**
Low Level Volatile Organics by SW-846 Method 8260C	**1634**	0	0	0	0	0	**65**	0	0	**6**
Semi-Volatile Organics by SW-846 Method 8270D	**11**	0	0	0	0	0	**2**	0	0	**1**
Anions by Various EPA Methods	**12**	0	0	0	0	0	0	0	0	0
Total Metals by Various SW-846 Methods	**243**	0	0	0	0	**2**	0	0	0	**50**
Nitrosamines by Low-Level Method	**56**	0	0	0	0	**9**	0	0	0	**11**
Total Dissolved Solids by Standard Method 2540C	**3**	0	0	0	0	0	0	0	0	0

Table 7 – Quality Assurance Narratives

Well ID	Event Date	SW-846 Method 8260C QA Narratives
ST-4-690	12/1/2022	For Low Level SW-846 Method 8260C, 2-butanone (MEK) (0.91 ug/L) was detected in the field blank (2212011411A) below the reporting limit. No groundwater data are affected by this field blank contamination.
ST-6-678	**12/8/2022**	**For Low Level SW-846 Method 8260C, for sample 2212081430B the analysis was initially performed within the recommended holding time. Reanalysis due to surrogate failure was required. The reanalysis was performed past the recommended holding time. Both sets of data are reported. Affected data are appropriately qualified.**
BLM-42-709	12/13/2022	For Low Level SW-846 Method 8260C, matrix spike recoveries for sample 2212131442A were within laboratory control limits.
WW-3-469	**12/13/2022**	**For Low Level SW-846 Method 8260C, silane, fluorotrimethyl- (7.1 ug/L) was tentatively identified by a GC/MS library search in sample 2212131320Y.**
ST-4-481	**12/1/2022**	**For Low Level SW-846 Method 8260C, silane, fluorotrimethyl- (7.7 ug/L) was tentatively identified by a GC/MS library search in sample 2212011025A.**
PL-11-980	**12/6/2022**	**For Low Level SW-846 Method 8260C, silane, methoxytrimethyl- (8 ug/L) was tentatively identified by a GC/MS library search in sample 2212061436B.**
ST-6-824	**12/8/2022**	**For Low Level SW-846 Method 8260C, silane, methoxytrimethyl- (9.3 ug/L) was tentatively identified by a GC/MS library search in sample 2212081448B.**
WW-2-664	**12/6/2022**	**For Low Level SW-846 Method 8260C, silane, methoxytrimethyl- (9.5 ug/L) and one unknown compound (11 ug/L) were tentatively identified by a GC/MS library search in sample 2212061535C.**
PL-11-470	**12/5/2022**	**For Low Level SW-846 Method 8260C, sulfur dioxide (5.3 ug/L) and silane, methoxytrimethyl- (6.1 ug/L) were tentatively identified by a GC/MS library search in the field blank (2212051411B). Affected data are appropriately qualified.**

Well ID	Event Date	SW-846 Method 8260C QA Narratives
WW-1-452	12/5/2022	For Low Level SW-846 Method 8260C, sulfur dioxide (5.3 ug/L) was tentatively identified by a GC/MS library search in the field blank (2212051531C). No groundwater data are affected by this field blank contamination.
PL-11-470	**12/5/2022**	**For Low Level SW-846 Method 8260C, sulfur dioxide (5.8 ug/L) was tentatively identified by a GC/MS library search in sample 2212051410B.**
BLM-7-509	**12/5/2022**	**For Low Level SW-846 Method 8260C, sulfur dioxide (6.6 ug/L) was tentatively identified by a GC/MS library search in sample 2212050925C.**
BLM-7-509	**12/5/2022**	**For Low Level SW-846 Method 8260C, sulfur dioxide (7.4 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 787845. Affected data are appropriately qualified.**
PL-11-470	**12/5/2022**	**For Low Level SW-846 Method 8260C, sulfur dioxide (7.4 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 787845. Affected data are appropriately qualified.**
PL-11-530	12/5/2022	For Low Level SW-846 Method 8260C, sulfur dioxide (7.4 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 787845. No groundwater data are affected by this method blank contamination.
WW-1-452	12/5/2022	For Low Level SW-846 Method 8260C, sulfur dioxide (7.4 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 787845. No groundwater data are affected by this method blank contamination.
BLM-7-509	**12/5/2022**	**For Low Level SW-846 Method 8260C, sulfur dioxide (7.7 ug/L) and silane, methoxytrimethyl- (5.2 ug/L) were tentatively identified by a GC/MS library search in the field blank (2212050926C). Affected data are appropriately qualified.**
BLM-7-509	**12/5/2022**	**For Low Level SW-846 Method 8260C, sulfur dioxide (8.2 ug/L) was tentatively identified by a GC/MS library search in the trip blank (2212050700C). Affected data are appropriately qualified.**
B650-EFF-1	12/9/2022	For Low Level SW-846 Method 8260C, the control limits were exceeded for one or more surrogates. A reanalysis was not performed because of holding time constraints and the samples had no positive detections. No further corrective action was possible. Affected surrogate results are appropriately qualified.
ST-6-824	12/8/2022	For Low Level SW-846 Method 8260C, the control limits were exceeded for one or more surrogates in field blank 2212081449B. A reanalysis was not performed because of holding time constraints and the samples had no positive detections. No further corrective action was possible. No groundwater data are affected by this control limit exceedance.
ST-6-970	12/8/2022	For Low Level SW-846 Method 8260C, the control limits were exceeded for one or more surrogates. A reanalysis was not performed because of holding time constraints and the samples had no positive detections. No further corrective action was possible. Affected surrogate results are appropriately qualified.
BLM-7-509	12/5/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PL-11-470	12/5/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PL-11-530	12/5/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-4-481	12/1/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-4-690	12/1/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of

Well ID	Event Date	SW-846 Method 8260C QA Narratives
		the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-6-678	12/8/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
WW-1-452	12/5/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-42-569	12/13/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
BLM-42-709	12/13/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
PL-8-455	12/14/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
PL-8-605	12/14/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
ST-4-481	12/1/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
ST-4-690	12/1/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
ST-6-678	12/8/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
WW-3-469	12/13/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
WW-3-569	12/12/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
B650-EFF-1	12/9/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
B655-EFF-2	12/8/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-42-569	12/13/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-42-709	12/13/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-8-455	12/14/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-8-605	12/14/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-4-481	12/1/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-4-690	12/1/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-6-678	12/8/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-6-824	12/8/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-6-970	12/8/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
WW-3-469	12/13/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
WW-3-569	12/12/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
B650-EFF-1	12/9/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
BLM-42-569	12/13/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
BLM-42-709	12/13/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
PL-11-530	12/5/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
PL-11-710	12/6/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
PL-11-820	12/6/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
PL-11-980	12/6/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
PL-8-455	12/14/2022	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
PL-8-605	12/14/2022	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
PL-8-605	12/14/2022	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
ST-4-481	12/1/2022	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
ST-4-481	12/1/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
ST-6-528	12/7/2022	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
ST-6-528	12/7/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
ST-6-568	12/7/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
ST-6-678	12/8/2022	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
ST-6-678	12/8/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
ST-6-824	12/8/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
ST-6-970	12/8/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
WW-2-489	12/6/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
WW-2-489	12/6/2022	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
WW-2-664	12/6/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
WW-3-469	12/13/2022	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
WW-3-569	12/12/2022	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
ST-6-678	12/8/2022	For Low Level SW-946 Method 8260C, for trip blank 2212080700B the control limits were exceeded for one or more surrogates. A reanalysis was not performed because of holding time constraints and the samples had no positive detections. No further corrective action was possible.
BLM-27-270	**12/12/2022**	**For SW-846 Method 8260C in blind control sample (2212121030C), the percent recoveries for 1,1,2-trichloro-1,2,2-trifluoroethane (196%), trichloroethene (198%), tetrachloroethene (192%), and trichlorofluoromethane (220%) were outside of the standard limits (75-125%). Additionally, 1,1-dichloroethene (0.3 ug/L) was detected below the reporting limit but none was added. Affected data are appropriately qualified.**
200-G-175	**12/7/2022**	**For SW-846 Method 8260C, field duplicate samples 2212071349Y and 2212071352Y the relative percent difference for trichlorofluoromethane (CFC 11) was 27.2%. This value is outside the upper acceptance limit for relative percent difference of 25%.**
B655-INF-2	12/8/2022	For SW-846 Method 8260C, field duplicate samples 2212081025 and 2212081026 the relative percent difference for 1,1,2-trichloro-1,2,2-trifluoroethane was 0.0%. Upper acceptance limit for relative percent difference is 25%.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
B655-INF-2	12/8/2022	For SW-846 Method 8260C, field duplicate samples 2212081025 and 2212081026 the relative percent difference for tetrachloroethene (PCE) was 3.4%. Upper acceptance limit for relative percent difference is 25%.
B655-INF-2	12/8/2022	For SW-846 Method 8260C, field duplicate samples 2212081025 and 2212081026 the relative percent difference for trichlorofluoromethane (CFC 11) was 8.7%. Upper acceptance limit for relative percent difference is 25%.
B655-INF-2	12/8/2022	For SW-846 Method 8260C, field duplicate samples 2212081025 and 2212081026 the relative percent difference for trichloroethene (TCE) was 5.0%. Upper acceptance limit for relative percent difference is 25%.
BLM-27-270	12/12/2022	For SW-846 Method 8260C, field duplicate samples 2212120935C and 2212120936C the relative percent difference for 1,1,2-trichloro-1,2,2-trifluoroethane was 11.1%. Upper acceptance limit for relative percent difference is 25%.
BLM-27-270	12/12/2022	For SW-846 Method 8260C, field duplicate samples 2212120935C and 2212120936C the relative percent difference for trichlorofluoromethane (CFC 11) was 4.9%. Upper acceptance limit for relative percent difference is 25%.
BLM-27-270	12/12/2022	For SW-846 Method 8260C, field duplicate samples 2212120935C and 2212120936C the relative percent difference for 1,2-dichloro-1,1,2-trifluoroethane (CFC 123a) was 3.9%. Upper acceptance limit for relative percent difference is 25%.
BLM-27-270	12/12/2022	For SW-846 Method 8260C, field duplicate samples 2212120935C and 2212120936C the relative percent difference for dichlorofluoromethane (CFC 21) was 6.3%. Upper acceptance limit for relative percent difference is 25%.
ST-3-586	12/15/2022	For SW-846 Method 8260C, field duplicate samples 2212151008C and 2212151009C the relative percent difference for 1,1,2-trichloro-1,2,2-trifluoroethane was 0.0%. Upper acceptance limit for relative percent difference is 25%.
ST-3-586	12/15/2022	For SW-846 Method 8260C, field duplicate samples 2212151008C and 2212151009C the relative percent difference for trichlorofluoromethane (CFC 11) was 4.5%. Upper acceptance limit for relative percent difference is 25%.
ST-3-586	12/15/2022	For SW-846 Method 8260C, field duplicate samples 2212151008C and 2212151009C the relative percent difference for trichloroethene (TCE) was 8.7%. Upper acceptance limit for relative percent difference is 25%.
200-G-175	**12/7/2022**	**For SW-846 Method 8260C, silane, fluorotrimethyl- (13 ug/L) and silane, methoxytrimethyl- (14 ug/L) were tentatively identified by a GC/MS library search in sample 2212071349Y.**
BW-7-211	**12/13/2022**	**For SW-846 Method 8260C, silane, fluorotrimethyl- (5.4 ug/L) was tentatively identified by a GC/MS library search in sample 2212130826C.**
200-G-340	**12/5/2022**	**For SW-846 Method 8260C, silane, fluorotrimethyl- (7.3 ug/L) was tentatively identified by a GC/MS library search in sample 2212051304Y.**
PL-4-464	**12/12/2022**	**For SW-846 Method 8260C, silane, fluorotrimethyl- (7.5 ug/L) was tentatively identified by a GC/MS library search in sample 2212120925B.**
200-G-420	12/1/2022	For SW-846 Method 8260C, silane, methoxytrimethyl- (5.2 ug/L) was tentatively identified by a GC/MS library search in the equipment blank (2212011400Y). No groundwater data are affected by this equipment blank contamination.
200-G-495	12/1/2022	For SW-846 Method 8260C, sulfur dioxide (6 ug/L) was tentatively identified by a GC/MS library search in the equipment blank (2212010940Y). No groundwater data are affected by this equipment blank contamination.
200-G-495	12/1/2022	For SW-846 Method 8260C, sulfur dioxide (7.4 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 787845. No groundwater data are affected by this method blank contamination.
B655-INF-2	**12/8/2022**	**For SW-846 Method 8260C, the analysis was initially performed within the recommended holding time. Reanalysis at a dilution was required. The reanalysis was performed past the recommended holding time. Affected data are appropriately qualified.**
200-G-220	12/5/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
200-G-340	12/5/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
200-G-495	12/1/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
700-B-510	12/13/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
B650-INF-1	12/9/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
B655-INF-2	12/8/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-27-270	12/12/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BW-7-211	12/13/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PL-2-504	12/12/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PL-4-464	12/12/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-3-666	12/8/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-3-735	12/8/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
700-B-510	12/13/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
B650-INF-1	12/9/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
B655-INF-2	12/8/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
BLM-27-270	12/12/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
BW-7-211	12/13/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
PL-2-504	12/12/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
PL-4-464	12/12/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
ST-3-586	12/15/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
ST-3-666	12/8/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
ST-3-735	12/8/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
B650-INF-1	12/9/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
B655-INF-2	12/8/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-27-270	12/12/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
ST-3-586	12/15/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-3-666	12/8/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-3-735	12/8/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
200-G-175	12/7/2022	For SW-846 Method 8260C, there were no detections in the equipment blank.
200-G-220	12/5/2022	For SW-846 Method 8260C, there were no detections in the equipment blank.
200-G-340	12/5/2022	For SW-846 Method 8260C, there were no detections in the equipment blank.
700-B-510	12/13/2022	For SW-846 Method 8260C, there were no detections in the field blank.
B650-INF-1	12/9/2022	For SW-846 Method 8260C, there were no detections in the field blank.
B655-EFF-2	12/8/2022	For SW-846 Method 8260C, there were no detections in the field blank.
B655-INF-2	12/8/2022	For SW-846 Method 8260C, there were no detections in the field blank.
BLM-27-270	12/12/2022	For SW-846 Method 8260C, there were no detections in the field blank.
BW-7-211	12/13/2022	For SW-846 Method 8260C, there were no detections in the field blank.
PL-2-504	12/12/2022	For SW-846 Method 8260C, there were no detections in the field blank.
PL-4-464	12/12/2022	For SW-846 Method 8260C, there were no detections in the field blank.
ST-3-486	12/7/2022	For SW-846 Method 8260C, there were no detections in the field blank.
ST-3-586	12/15/2022	For SW-846 Method 8260C, there were no detections in the field blank.
ST-3-666	12/8/2022	For SW-846 Method 8260C, there were no detections in the field blank.
ST-3-735	12/8/2022	For SW-846 Method 8260C, there were no detections in the field blank.
PL-4-464	12/12/2022	For SW-846 Method 8260C, there were no detections in the trip blank.
PL-2-504	**12/12/2022**	**For SW-846 Method 8260C, two unknown compounds were tentatively identified by a GC/MS library search in sample 2212121410A.**

Well ID	Event Date	Modified EPA Method 607 QA Narratives
BLM-27-270	**12/12/2022**	**For Modified EPA Method 607 in blind control sample (2212121031C), the percent recovery for N-nitrosodimethylamine (0%) was outside of the standard limits (13-109%). Affected data are appropriately qualified.**
ST-3-666	12/8/2022	For Modified EPA Method 607, field duplicate samples 2212081002C and 2212081003C the relative percent difference for N-nitrosodimethylamine was 0.0%. Upper acceptance limit for relative percent difference is 25%.
B655-INF-2	12/8/2022	For Modified EPA Method 607, field duplicate samples 2212081028 and 2212081029 the relative percent difference for bromacil was 2.9%. Upper acceptance limit for relative percent difference is 25%.
B655-INF-2	12/8/2022	For Modified EPA Method 607, field duplicate samples 2212081028 and 2212081029 the relative percent difference for N-nitrodimethylamine was 2.0%. Upper acceptance limit for relative percent difference is 25%.
B655-INF-2	12/8/2022	For Modified EPA Method 607, field duplicate samples 2212081028 and 2212081029 the relative percent difference for N-nitrosodimethylamine was 3.1%. Upper acceptance limit for relative percent difference is 25%.

Well ID	Event Date	Low-Level Nitrosamine Method QA Narratives
ST-6-568	**12/7/2022**	**For Low Level Nitrosamine Method in blind control sample (2212071530B), the percent recovery for N-nitrosodimethylamine (199.6%) was outside of the standard limits (70.0-130.0%). Additionally, N-nitrodimethylamine (1.34 ng/L) was detected but none was added. Affected data are appropriately qualified.**
PL-8-605	12/14/2022	For Low Level Nitrosamine Method, due to a chain of custody error results are reported for equipment blank 2212141045Y. The correct sample number is 2212141046Y.
WW-2-489	12/6/2022	For Low Level Nitrosamine Method, for field blank 2212060953C the recovery of the internal standard NDMA-d6 (4.65%) was outside laboratory control limits (10-100%). The sample could not be re-extracted due to lack of reserve. The signal to noise ratio for these samples were well above the minimum of 3 (the lowest signal was > 890) allowing for detection of native NDMA above the MDL. No additional corrective action was required.
PL-4-464	12/12/2022	For Low Level Nitrosamine Method, matrix spike recoveries for sample 2212120928B and 2212120929B were within laboratory control limits.
PL-4-464	**12/12/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.38 ng/L) was detected in the trip blank (2212120731B) below the reporting limit. Affected data are appropriately qualified.**
WW-1-452	**12/5/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.38 ng/L) was detected in the field blank (2212051533C) below the reporting limit. Affected data are appropriately qualified.**
PL-11-470	**12/5/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.44 ng/L) was detected in the field blank (2212051413B) below the reporting limit. Affected data are appropriately qualified.**
PL-4-464	**12/12/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.44 ng/L) was detected in the field blank (2212120930B) below the reporting limit. Affected data are appropriately qualified.**
ST-4-690	12/1/2022	For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.46 ng/L) was detected in the field blank (2212011413A) below the reporting limit. No groundwater data are affected by this field blank contamination.
ST-6-678	**12/8/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.46 ng/L) was detected in the field blank (2212081536B) below the reporting limit. Affected data are appropriately qualified.**
B650-EFF-1	**12/9/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.47 ng/L) was detected in method blank PB22M15HE1 below the reporting limit. Affected data are appropriately qualified.**
B655-EFF-2	**12/8/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.47 ng/L) was detected in method blank PB22M15HE1 below the reporting limit. Affected data are appropriately qualified.**
PL-4-464	**12/12/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.47 ng/L) was detected in method blank PB22M15HE1 below the reporting limit. Affected data are appropriately qualified.**
ST-6-678	**12/8/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.47 ng/L) was detected in method blank PB22M15HE1 below the reporting limit. Affected data are appropriately qualified.**
ST-6-824	**12/8/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.47 ng/L) was detected in method blank PB22M15HE1 below the reporting limit. Affected data are appropriately qualified.**
ST-6-970	**12/8/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.47 ng/L) was detected in method blank PB22M15HE1 below the reporting limit. Affected data are appropriately qualified.**
WW-3-569	**12/12/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.47 ng/L) was detected in method blank PB22M15HE1 below the reporting limit. Affected data are appropriately qualified.**
PL-8-455	**12/14/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.5 ng/L) was detected in the equipment blank (2212141454Y). Affected data are appropriately qualified.**

Well ID	Event Date	Low-Level Nitrosamine Method QA Narratives
WW-3-469	**12/13/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.53 ng/L) was detected in the equipment blank (2212131046Y). Affected data are appropriately qualified.**
B650-EFF-1	**12/9/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.62 ng/L) was detected in the field blank (2212090539) . Affected data are appropriately qualified.**
ST-6-970	**12/8/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.66 ng/L) was detected in the field blank (2212081513B). Affected data are appropriately qualified.**
ST-6-824	**12/8/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.82 ng/L) was detected in the field blank (2212081451B). Affected data are appropriately qualified.**
WW-3-569	**12/12/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.82 ng/L) was detected in the equipment blank (2212120931Y). Affected data are appropriately qualified.**
PL-8-605	**12/14/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (2.02 ng/L) was detected in the equipment blank (2212141046Y). Affected data are appropriately qualified.**
PL-11-710	12/6/2022	For Low Level Nitrosamine Method, relative percent differences (RPD) for duplicate samples 2212061403B and 2212061404B were within control limits or below the calculable range.
ST-6-678	12/8/2022	For Low Level Nitrosamine Method, relative percent differences (RPD) for duplicate samples 2212081432B and 2212081535B were within control limits or below the calculable range.
WW-3-569	12/12/2022	For Low Level Nitrosamine Method, relative percent differences (RPD) for duplicate samples 2212121316Y and 2212121317Y were within control limits or below the calculable range.
B655-EFF-2	12/8/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
BLM-42-569	12/13/2022	For Low Level Nitrosamine Method, there were no detections in the trip blank.
BLM-42-569	12/13/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
BLM-42-709	12/13/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
BLM-7-509	12/5/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
BLM-7-509	12/5/2022	For Low Level Nitrosamine Method, there were no detections in the trip blank.
PL-11-530	12/5/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
PL-11-710	12/6/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
PL-11-820	12/6/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
PL-11-980	12/6/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
PL-8-605	12/14/2022	For Low Level Nitrosamine Method, there were no detections in the trip blank.
ST-4-481	12/1/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
ST-4-481	12/1/2022	For Low Level Nitrosamine Method, there were no detections in the trip blank.
ST-6-528	12/7/2022	For Low Level Nitrosamine Method, there were no detections in the trip blank.
ST-6-528	12/7/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
ST-6-568	12/7/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
ST-6-678	12/8/2022	For Low Level Nitrosamine Method, there were no detections in the trip blank.
WW-2-489	12/6/2022	For Low Level Nitrosamine Method, there were no detections in the trip blank.
WW-2-489	12/6/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
WW-2-664	12/6/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.

Well ID	Event Date	SW-846 Method 8270D QA Narratives
PL-11-530	**12/5/2022**	**For SW-846 Method 8270D, 1,4-dioxane (2.1 ug/L) was detected in the field blank (2212051435B). Affected data are appropriately qualified.**
ST-6-678	12/8/2022	For SW-846 Method 8270D, field duplicate samples 2212081537B and 2212081538B the relative percent difference for 1,4-dioxane was 9.5%. Upper acceptance limit for relative percent difference is 25%.
PL-8-605	12/14/2022	For SW-846 Method 8270D, matrix spike recoveries for sample 2212141408Y were within laboratory control limits.
PL-8-605	12/14/2022	For SW-846 Method 8270D, the control limits were exceeded for one or more surrogates due to suspected matrix interferences. Affected surrogate results are appropriately qualified.

Well ID	Event Date	SW-846 Method 8270D QA Narratives
PL-11-530	**12/5/2022**	**For SW-846 Method 8270D, the extraction of sample 2212051434B was initially performed within holding time, but was re-extracted due to a QC failure. Efforts were made to re-extract the samples as soon as possible. The re-extraction was performed past the recommended holding time. The data are flagged to indicate the holding time exceedance.**
PL-8-605	**12/14/2022**	**For SW-846 Method 8270D, the extraction of sample 2212141407Y was initially performed within holding time, but was re-extracted due to a QC failure. Efforts were made to re-extract the samples as soon as possible. The re-extraction was performed past the recommended holding time. The data are flagged to indicate the holding time exceedance.**

Well ID	Event Date	Total Metals QA Narratives
BLM-27-270	12/12/2022	For Total Metals, blind control sample (2212121032C) was prepared at a concentration below the reporting limits for iron. The results for these metals are not qualified based on this control.
700-B-510	12/13/2022	For Total Metals, field duplicate samples 2212131547C and 2212131548C the relative percent difference for sodium was 0.5%. Upper acceptance limit for relative percent difference is 25%.
700-B-510	12/13/2022	For Total Metals, field duplicate samples 2212131547C and 2212131548C the relative percent difference for calcium was 0.9%. Upper acceptance limit for relative percent difference is 25%.
700-B-510	12/13/2022	For Total Metals, field duplicate samples 2212131547C and 2212131548C the relative percent difference for strontium was 1.1%. Upper acceptance limit for relative percent difference is 25%.
700-B-510	12/13/2022	For Total Metals, field duplicate samples 2212131547C and 2212131548C the relative percent difference for magnesium was 0.0%. Upper acceptance limit for relative percent difference is 25%.
200-G-220	**12/5/2022**	**For Total Metals, magnesium (0.07 mg/L), sodium (0.3 mg/L), strontium (0.02 mg/L), and vanadium (0.0007 mg/L) were detected in the equipment blank (2212051435Y) below the reporting limit. Affected data are appropriately qualified.**
200-G-420	12/1/2022	For Total Metals, sodium (0.3 mg/L) and vanadium (0.001 mg/L) were detected in the method blank for analytical batch 411237 below the reporting limit. No groundwater data are affected by this method blank contamination.
200-G-495	12/1/2022	For Total Metals, sodium (0.3 mg/L) and vanadium (0.001 mg/L) were detected in the method blank for analytical batch 411237 below the reporting limit. No groundwater data are affected by this method blank contamination.
200-G-340	12/5/2022	For Total Metals, sodium (0.3 mg/L) was detected in the field blank (2212051342Y) below the reporting limit. No groundwater data are affected by this field blank contamination.
200-G-220	**12/5/2022**	**For Total Metals, sodium (0.3 mg/L), and vanadium (0.001 mg/L) were detected in the method blank for analytical batch 411237 below the reporting limit. Affected data are appropriately qualified.**
200-G-340	**12/5/2022**	**For Total Metals, sodium (0.3 mg/L), and vanadium (0.001 mg/L) were detected in the method blank for analytical batch 411237 below the reporting limit. Affected data are appropriately qualified.**
200-G-220	12/5/2022	For Total Metals, the Contract Required Detection Limit Standard (CRDL) recovery was above the required limit for sodium. The CRDL concentration was less than ten times the concentration in the associated samples or less than the Method Reporting Limit (MRL). Contamination is deemed insignificant relative to the reported samples and the data are reported with no further corrective action required.
200-G-340	12/5/2022	For Total Metals, the Contract Required Detection Limit Standard (CRDL) recovery was above the required limit for sodium. The CRDL concentration was less than ten times the concentration in the associated samples or less than the Method Reporting Limit (MRL). Contamination is deemed insignificant relative to the reported samples and the data are reported with no further corrective action required.

Table 8 – WSTF Blank Sample Detections

Well ID	Event Date	Comment	Analysis	Sample Type	CAS No.	Analyte	Result	Units	QA flag
BLM-7-509	12/5/2022	Carboy G2	8260_LL	VOA-TB	7446-09-5	Sulfur Dioxide	8.2	ug/L	TIC RB TB FB
BLM-7-509	12/5/2022	Carboy G2	8260_LL	VOA-FB	7446-09-5	Sulfur Dioxide	7.7	ug/L	TIC RB TB FB
PL-11-470	12/5/2022	Carboy G5	8260_LL	VOA-FB	1825-61-2	Silane, methoxytrimethyl-	6.1	ug/L	TIC FB
200-G-495	12/1/2022	Carboy G1	8260	VOA-EB	7446-09-5	Sulfur Dioxide	6	ug/L	TIC RB EB
WW-1-452	12/5/2022	Carboy G2	8260_LL	VOA-FB	7446-09-5	Sulfur Dioxide	5.3	ug/L	TIC RB FB
PL-11-470	12/5/2022	Carboy G5	8260_LL	VOA-FB	7446-09-5	Sulfur Dioxide	5.3	ug/L	TIC RB FB
200-G-420	12/1/2022	Carboy G1	8260	VOA-EB	1825-61-2	Silane, methoxytrimethyl-	5.2	ug/L	TIC EB
BLM-7-509	12/5/2022	Carboy G2	8260_LL	VOA-FB	1825-61-2	Silane, methoxytrimethyl-	5.2	ug/L	TIC FB
PL-11-530	12/5/2022	Carboy G5	8270	SVOA_SIM-FB	123-91-1	1,4-Dioxane	2.1	ug/L	FB
PL-8-605	12/14/2022	Carboy G1	NDMA_LL	NDMA_LL-EB	62-75-9	N-Nitrosodimethylamine	2.02	ng/L	EB
ST-6-824	12/8/2022	Carboy G5	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.92	ng/L	RB FB
ST-4-690	12/1/2022	Carboy G3	8260_LL	VOA-FB	78-93-3	2-Butanone (MEK)	0.91	ug/L	J FB
WW-3-569	12/12/2022	Carboy	NDMA_LL	NDMA_LL-EB	62-75-9	N-Nitrosodimethylamine	0.82	ng/L	RB EB
ST-6-970	12/8/2022	Carboy G5	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.66	ng/L	RB FB
B650-EFF-1	12/9/2022	Carboy	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.62	ng/L	RB FB
WW-3-469	12/13/2022		NDMA_LL	NDMA_LL-EB	62-75-9	N-Nitrosodimethylamine	0.53	ng/L	EB
PL-8-455	12/14/2022	Carboy G1	NDMA_LL	NDMA_LL-EB	62-75-9	N-Nitrosodimethylamine	0.5	ng/L	EB
ST-4-690	12/1/2022	Carboy G3	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.46	ng/L	J FB
ST-6-678	12/8/2022	Carboy G5	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.46	ng/L	J RB FB
PL-4-464	12/12/2022	Carboy G2	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.44	ng/L	J RB TB FB
PL-11-470	12/5/2022	Carboy G5	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.44	ng/L	J FB
PL-4-464	12/12/2022	Carboy G2	NDMA_LL	NDMA_LL-TB	62-75-9	N-Nitrosodimethylamine	0.38	ng/L	J RB TB FB
WW-1-452	12/5/2022	Carboy G2	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.38	ng/L	J FB
200-G-340	12/5/2022	Carboy G1	METALS	METALS-FB	7440-23-5	Sodium, Total	0.3	mg/L	J RB FB
200-G-220	12/5/2022	Carboy G1	METALS	METALS-EB	7440-23-5	Sodium, Total	0.3	mg/L	J RB EB
200-G-220	12/5/2022	Carboy G1	METALS	METALS-EB	7439-95-4	Magnesium, Total	0.07	mg/L	J EB
200-G-220	12/5/2022	Carboy G1	METALS	METALS-EB	7440-24-6	Strontium, Total	0.02	mg/L	J EB
200-G-220	12/5/2022	Carboy G1	METALS	METALS-EB	7440-62-2	Vanadium, Total	0.0007	mg/L	J RB EB

National Aeronautics and Space Administration

Quality Assurance Report for White Sands Test Facility Groundwater Monitoring Data

January 2023

NM8800019434

Report Submitted: April 10, 2023

Report Prepared by:
Carlyn A. Tufts
Environmental Scientist
Navarro Research and Engineering, Inc.

1.0 Introduction

The WSTF Groundwater Monitoring Plan (GMP) requires the preparation of a periodic report to assess the quality of groundwater analytical data reported. The monthly Quality Assurance Report (QAR) prepared and reviewed by responsible environmental contractor data management personnel provides the following information:

- A summary of notable anomalies and a follow-up on previous anomalies, if necessary.
- A summary of notable data quality issues by analytical method, if any.
- A list of the sample events for which groundwater samples were collected in January 2023.
- The quantity and type of quality control samples collected or prepared in January 2023.
- Quality control sample percentages in annual period immediately preceding and during January 2023.
- Definitions of data qualifiers used in WSTF analytical data reporting.
- The quantity and type of data qualifiers applied to individual analytical results.
- A list of quality assurance narratives for the month arranged by analytical method.
- A summary table of detections in equipment blank, field blank, and trip blank samples.

2.0 Data Quality

2.1 Notable Anomalies Identified in Previous Quality Assurance Reports

There were no notable anomalies requiring follow-up associated with previous QARs.

2.2 Notable Anomalies

There were no notable anomalies in the groundwater data associated with the January 2023 QAR.

3.0 Data Tables

Table 1 summarizes the groundwater sample events initiated in January 2023. This report is based on data quality issues related to the sample events listed in Table 1. Tables 2 through 8 contain information related to the sample events identified in Table 1. As specified by the GMP, specific quality control samples are utilized to assess the quality of analytical data. Table 2 presents the quantity of quality control samples collected for each analytical method. Table 3 compares the quality control sample percentages collected to the requirements in the GMP. When data quality criteria are not met, data qualifiers are applied to the data. Definitions of data qualifiers used for WSTF chemical analytical data are listed in Table 4. Table 5 and Table 6 present the total number of individual result records and summarize the quantity of field and laboratory data qualifiers assigned to individual analyte result records in the WSTF analytical database. Table 7 provides all quality assurance narratives associated with the sample events in Table 1. Narratives associated with qualified data are identified by **bold text** in Table 7. Table 8 provides a summary of all detections in WSTF blank samples.

Table 1 – Sample Events for January 2023

Well ID	Event Date	Well ID	Event Date	Well ID	Event Date
BLM-10-517	1/3/2023	BLM-15-305	1/9/2023	ST-7-779	1/10/2023
PL-10-484	1/3/2023	BLM-17-550	1/9/2023	ST-7-970	1/10/2023
PL-10-592	1/4/2023	ST-7-453	1/9/2023	JER-1-483	1/11/2023
BLM-6-488	1/5/2023	ST-7-544	1/9/2023	JER-1-563	1/11/2023
PL-6-1195	1/5/2023	PL-6-1335	1/10/2023	PL-6-915	1/11/2023

Well ID	Event Date
JER-1-683	1/12/2023
400-A-151	1/17/2023
BLM-18-430	1/17/2023
PL-6-725	1/17/2023
JP-1-424	1/18/2023
JP-2-447	1/18/2023
WW-5-459	1/18/2023
WW-5-579	1/18/2023
B650-EFF-1	1/19/2023
B650-INF-1	1/19/2023

Well ID	Event Date
B655-EFF-2	1/19/2023
B655-INF-2	1/19/2023
PFE-5	1/19/2023
WW-5-809	1/19/2023
WW-5-909	1/19/2023
JER-2-504	1/23/2023
JER-2-584	1/23/2023
JP-3-509	1/23/2023
JP-3-689	1/23/2023
PL-6-545	1/23/2023

Well ID	Event Date
100-F-358	1/24/2023
100-G-223	1/24/2023
JER-2-684	1/24/2023
PL-1-486	1/24/2023
300-F-175	1/25/2023
600-G-138	1/25/2023
PFE-4A	1/26/2023
PFE-7	1/26/2023

Table 2 – Quantity of Quality Control Samples

Method	Samples	Field Blanks	Equip Blanks	Trip Blanks	Blind Controls	Duplicates	Matrix Spikes
Chloride by EPA Method 300.0	**1**	0	0	0	0	0	0
Nitrate plus Nitrite as N by EPA Method 353.2	**14**	0	0	0	0	0	0
Nitrosamines by EPA Method 607	**22**	**1**	0	0	**1**	**2**	**1**
Perchlorate by SW-846 Method 6850	**14**	0	0	0	0	0	0
Organics by SW-846 Method 8015M	**2**	0	0	0	0	0	0
Pesticides by SW-846 Method 8081	**3**	0	0	0	0	0	0
PCBs by SW-846 Method 8082	**3**	0	0	0	0	0	0
Herbicides by SW-846 Method 8151	**3**	0	0	0	0	0	0
Volatile Organics by SW-846 Method 8260C	**11**	**11**	0	0	**1**	**4**	0
Low Level Volatile Organics by SW-846 Method 8260C	**32**	**25**	**7**	**10**	0	**1**	**1**
Semi-Volatile Organics by SW-846 Method 8270D	**15**	**1**	**1**	0	0	**1**	0
Dioxins/Furans by SW-846 Method 8290	**3**	0	0	0	0	0	0
Cyanide by SW-846 Method 9012B	**3**	0	0	0	0	0	0
Sulfide by SW-846 Method 9034	**3**	0	0	0	0	0	0
Phenolics by SW-846 Method 9066	**3**	0	0	0	0	0	0
Anions by Various EPA Methods	**14**	0	0	0	0	0	0
Total Metals by Various SW-846 Methods	**17**	**1**	**1**	0	**1**	**2**	0
Nitrosamines by Low-Level Method	**36**	**28**	**8**	**11**	**1**	**5**	0
Total Dissolved Solids by Standard Method 2540C	**14**	0	0	0	0	0	0

Table 3 – Quality Control Sample Percentages

Quality Control Requirement	Requirement %	Samp. Qty. since 2/1/2022	QC Qty. since 2/1/2022	QC % since 2/1/2022	Sample Quantity January 2023	QC Quantity January 2023	QC % January 2023
VOA Duplicates	10	524	56	**11**	43	5	12
VOA Matrix Spikes	2	524	12	**2**	43	1	2
607 Duplicates	10	304	30	**10**	22	2	9
607 Matrix Spikes	2	304	10	**3**	22	1	5
607 Equipment Blanks	2	304	8	**3**	22	0	0
607 Field Blanks	2	304	8	**3**	22	1	5
NDMA_LL Duplicates	10	322	36	**11**	36	5	14
NDMA_LL Matrix Spikes	2	322	10	**3**	36	0	0

Quality Control Requirement	Requirement %	Samp. Qty. since 2/1/2022	QC Qty. since 2/1/2022	QC % since 2/1/2022	Sample Quantity January 2023	QC Quantity January 2023	QC % January 2023
Metals Duplicates	10	212	24	**11**	17	2	12
Metals Matrix Spikes	2	212	6	**3**	17	0	0
Metals Equipment Blanks	5	212	11	**5**	17	1	6
Metals Field Blanks	5	212	11	**5**	17	1	6

Quality Control Requirement	Requirement %	Sample Events since 2/1/2022	QC Qty. since 2/1/2022	QC % since 2/1/2022	Sample Events January 2023	QC Quantity January 2023	QC % January 2023
VOA Equipment Blanks and Field Blanks	*Should approach 100%*	524	524	**100%**	43	43	100%
Low Level Nitrosamine Equipment Blanks and Field Blanks	*Should approach 100%*	319	319	**100%**	35	35	100%

Quality Control Requirement	Requirement %	Shipments since 2/1/2022	TB Qty. since 2/1/2022	TB % since 2/1/2022	Shipments in January 2023	TB Quantity January 2023	QC % January 2023
VOA Trip Blank (per shipment)	*Should approach 100%*	108	107[1]	**99%**	11	10[1]	91%
Low Level Nitrosamine Trip Blank (per shipment)	*Should approach 100%*	104	104	**100%**	11	11	100%

[1] Due to a scheduling and shipping oversight, 1/12/2023 VOA shipment did not include a trip blank.

Table 4 – 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 5 – Quantity of Field Based Data Qualifiers Assigned to Individual Result Records

Method	Total Result Records	"FB"	"EB"	"TB"	"Q"	"QD"	"SP"	"R"
Chloride by EPA Method 300.0	**1**	0	0	0	0	0	0	0
Nitrate plus Nitrite as N by EPA Method 353.2	**14**	0	0	0	0	0	0	0
Nitrosamines by EPA Method 607	**72**	0	0	0	0	0	0	0
Perchlorate by SW-846 Method 6850	**14**	0	0	0	0	0	0	0
Organics by SW-846 Method 8015M	**2**	0	0	0	0	0	0	0
Pesticides by SW-846 Method 8081	**63**	0	0	0	0	0	0	0
PCBs by SW-846 Method 8082	**21**	0	0	0	0	0	0	0
Herbicides by SW-846 Method 8151	**18**	0	0	0	0	0	0	0
Volatile Organics by SW-846 Method 8260C	**982**	0	0	0	**6**	0	0	0
Low Level Volatile Organics by SW-846 Method 8260C	**2153**	0	0	0	0	0	0	0
Semi-Volatile Organics by SW-846 Method 8270D	**491**	0	0	0	0	0	0	0
Dioxins/Furans by SW-846 Method 8290	**75**	0	0	0	0	0	0	0
Cyanide by SW-846 Method 9012B	**3**	0	0	0	0	0	0	0
Sulfide by SW-846 Method 9034	**3**	0	0	0	0	0	0	0
Phenolics by SW-846 Method 9066	**3**	0	0	0	0	0	0	0
Anions by Various EPA Methods	**56**	0	0	0	0	0	0	0
Total Metals by Various SW-846 Methods	**513**	0	**1**	0	**1**	0	0	0
Nitrosamines by Low-Level Method	**78**	**10**	**10**	**2**	**1**	**2**	0	0
Total Dissolved Solids by Standard Method 2540C	**14**	0	0	0	0	0	0	0

Table 6 – Quantity of Laboratory based Data Qualifiers Assigned to Individual Result Records

Method	Total Result Records	"*"	"A"	"AD"	"G"	"RB"	"T"	"D"	"i"	"J"
Chloride by EPA Method 300.0	**1**	0	0	0	0	0	0	0	0	0
Nitrate plus Nitrite as N by EPA Method 353.2	**14**	0	0	0	0	0	0	0	0	**1**
Nitrosamines by EPA Method 607	**72**	0	0	0	0	0	0	**2**	0	**4**
Perchlorate by SW-846 Method 6850	**14**	0	0	0	0	0	0	0	0	**3**
Organics by SW-846 Method 8015M	**2**	0	0	0	0	0	0	0	0	0
Pesticides by SW-846 Method 8081	**63**	0	0	0	0	0	0	0	0	0
PCBs by SW-846 Method 8082	**21**	0	0	0	0	0	0	0	0	0
Herbicides by SW-846 Method 8151	**18**	0	0	0	0	0	0	0	0	0
Volatile Organics by SW-846 Method 8260C	**982**	0	0	0	0	0	0	0	0	**15**
Low Level Volatile Organics by SW-846 Method 8260C	**2153**	0	0	0	0	0	0	0	0	**8**
Semi-Volatile Organics by SW-846 Method 8270D	**491**	0	**9**	0	0	0	**18**	0	0	0
Dioxins/Furans by SW-846 Method 8290	**75**	0	0	0	0	0	0	0	0	0
Cyanide by SW-846 Method 9012B	**3**	0	0	0	0	0	0	0	0	0
Sulfide by SW-846 Method 9034	**3**	**1**	0	0	0	0	0	0	0	0
Phenolics by SW-846 Method 9066	**3**	0	0	0	0	0	0	0	0	0
Anions by Various EPA Methods	**56**	0	0	0	0	0	0	0	**1**	**1**
Total Metals by Various SW-846 Methods	**513**	0	0	0	0	**3**	0	0	0	**111**
Nitrosamines by Low-Level Method	**78**	**2**	0	0	0	**4**	0	0	0	**6**
Total Dissolved Solids by Standard Method 2540C	**14**	0	0	0	0	0	0	0	0	0

Table 7 – Quality Assurance Narratives

Well ID	Event Date	SW-846 Method 8260C QA Narratives
JER-1-483	**1/11/2023**	**For Low Level SW-846 Method 8260C, 1,4-dioxane, 2,5-dimethyl- (6.4 ug/L) was tentatively identified by a GC/MS library search in sample 2301111536B.**
WW-5-579	1/18/2023	For Low Level SW-846 Method 8260C, matrix spike recoveries for sample 2301181501B were within laboratory control limits.
300-F-175	1/25/2023	For Low Level SW-846 Method 8260C, one unknown compound (10 ug/L) was tentatively identified by a GC/MS library search in the trip blank (2301250720C). No groundwater data are affected by this trip blank contamination.
JER-1-683	**1/12/2023**	**For Low Level SW-846 Method 8260C, one unknown compound (13 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 791829. Affected data are appropriately qualified.**
JER-1-563	**1/11/2023**	**For Low Level SW-846 Method 8260C, one unknown compound (5.3 ug/L) was tentatively identified by a GC/MS library search in sample 2301111555B.**
JER-2-504	1/23/2023	For Low Level SW-846 Method 8260C, one unknown compound (6.4 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 792658. No groundwater data are affected by this method blank contamination.
JER-2-584	1/23/2023	For Low Level SW-846 Method 8260C, one unknown compound (6.4 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 792658. No groundwater data are affected by this method blank contamination.
JP-3-509	1/23/2023	For Low Level SW-846 Method 8260C, one unknown compound (6.4 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 792658. No groundwater data are affected by this method blank contamination.
JP-3-689	1/23/2023	For Low Level SW-846 Method 8260C, one unknown compound (6.4 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 792658. No groundwater data are affected by this method blank contamination.
PL-6-545	1/23/2023	For Low Level SW-846 Method 8260C, one unknown compound (6.4 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 792658. No groundwater data are affected by this method blank contamination.
JER-1-683	**1/12/2023**	**For Low Level SW-846 Method 8260C, one unknown compound (6.6 ug/L) was tentatively identified by a GC/MS library search in the field blank (2301121426B). Affected data are appropriately qualified.**
300-F-175	**1/25/2023**	**For Low Level SW-846 Method 8260C, one unknown compound (7.4 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 793256. Affected data are appropriately qualified.**
PL-1-486	1/24/2023	For Low Level SW-846 Method 8260C, relative percent differences (RPD) for duplicate samples 2301241035C and 2301241036C were within control limits or below the calculable range.
JER-2-584	**1/23/2023**	**For Low Level SW-846 Method 8260C, silane, fluorotrimethyl- (12 ug/L) was tentatively identified by a GC/MS library search in sample 2301231434B.**
JP-1-424	1/18/2023	For Low Level SW-846 Method 8260C, silane, methoxytrimethyl (6.5 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 792268. No groundwater data are affected by this method blank contamination.
JP-2-447	1/18/2023	For Low Level SW-846 Method 8260C, silane, methoxytrimethyl (6.5 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 792268. No groundwater data are affected by this method blank contamination.
PL-6-725	1/17/2023	For Low Level SW-846 Method 8260C, silane, methoxytrimethyl (6.5 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 792268. No groundwater data are affected by this method blank contamination.
WW-5-459	1/18/2023	For Low Level SW-846 Method 8260C, silane, methoxytrimethyl (6.5 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 792268. No groundwater data are affected by this method blank contamination.
WW-5-579	1/18/2023	For Low Level SW-846 Method 8260C, silane, methoxytrimethyl (6.5 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 792268. No groundwater data are affected by this method blank contamination.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
WW-5-459	1/18/2023	For Low Level SW-846 Method 8260C, silane, methoxytrimethyl- (6.6 ug/L) was tentatively identified by a GC/MS library search in the field blank (2301181441B). No groundwater data are affected by this field blank contamination.
PL-6-1195	**1/5/2023**	**For Low Level SW-846 Method 8260C, silane, methoxytrimethyl- (6.8 ug/L) was tentatively identified by a GC/MS library search in sample 2301051440Y.**
PL-6-725	1/17/2023	For Low Level SW-846 Method 8260C, silane, methoxytrimethyl- (7.9 ug/L) was tentatively identified by a GC/MS library search in the equipment blank (2301171020Y). No groundwater data are affected by this equipment blank contamination.
JER-1-683	**1/12/2023**	**For Low Level SW-846 Method 8260C, silane, methoxytrimethyl- (8.9 ug/L), 1,4-dioxane, 2,5-dimethyl- (12 ug/L), and one unknown compound (12 ug/L) were tentatively identified by a GC/MS library search in sample 2301121425B.**
300-F-175	**1/25/2023**	**For Low Level SW-846 Method 8260C, sulfur dioxide (11 ug/L) was tentatively identified by a GC/MS library search in sample 2301250945C.**
PL-6-1195	1/5/2023	For Low Level SW-846 Method 8260C, sulfur dioxide (6.1 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 790928. No groundwater data are affected by this method blank contamination.
300-F-175	**1/25/2023**	**For Low Level SW-846 Method 8260C, sulfur dioxide (8.0 ug/L) and one unknown compound (6.3 ug/L) were tentatively identified by a GC/MS library search in the field blank (2301250946C). Affected data are appropriately qualified.**
JER-1-683	**1/12/2023**	**For Low Level SW-846 Method 8260C, sulfur dioxide (8.4 ug/L) was tentatively identified by a GC/MS library search in the trip blank (2301120710B). Affected data are appropriately qualified.**
100-F-358	1/24/2023	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
100-G-223	1/24/2023	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
300-F-175	1/25/2023	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
B650-EFF-1	1/19/2023	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
B655-EFF-2	1/19/2023	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-10-517	1/3/2023	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
JER-1-683	1/12/2023	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
JER-2-684	1/24/2023	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
JP-1-424	1/18/2023	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
JP-2-447	1/18/2023	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PL-10-484	1/3/2023	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PL-10-592	1/4/2023	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PL-1-486	1/24/2023	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PL-6-725	1/17/2023	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
WW-5-459	1/18/2023	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
WW-5-579	1/18/2023	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
WW-5-809	1/19/2023	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
WW-5-909	1/19/2023	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
100-F-358	1/24/2023	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
100-G-223	1/24/2023	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
BLM-10-517	1/3/2023	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
JER-1-483	1/11/2023	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
JER-1-563	1/11/2023	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
JER-1-683	1/12/2023	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
JER-2-684	1/24/2023	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
PL-10-484	1/3/2023	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
PL-10-592	1/4/2023	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
PL-1-486	1/24/2023	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
PL-6-1335	1/10/2023	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
PL-6-915	1/11/2023	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
ST-7-453	1/9/2023	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
ST-7-544	1/9/2023	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
ST-7-779	1/10/2023	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
ST-7-970	1/10/2023	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
100-F-358	1/24/2023	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
100-G-223	1/24/2023	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
300-F-175	1/25/2023	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
B650-EFF-1	1/19/2023	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
B655-EFF-2	1/19/2023	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-10-517	1/3/2023	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
JER-1-483	1/11/2023	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
JER-1-563	1/11/2023	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
JER-1-683	1/12/2023	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
JER-2-684	1/24/2023	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-10-484	1/3/2023	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-10-592	1/4/2023	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-1-486	1/24/2023	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-6-1335	1/10/2023	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-6-915	1/11/2023	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-7-453	1/9/2023	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-7-544	1/9/2023	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-7-779	1/10/2023	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-7-970	1/10/2023	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
WW-5-809	1/19/2023	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
WW-5-909	1/19/2023	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
100-F-358	1/24/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
100-G-223	1/24/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
B650-EFF-1	1/19/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
B655-EFF-2	1/19/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
BLM-10-517	1/3/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
JER-1-483	1/11/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
JER-1-563	1/11/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
JER-2-504	1/23/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
JER-2-504	1/23/2023	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
JER-2-584	1/23/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
JER-2-684	1/24/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
JP-1-424	1/18/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
JP-2-447	1/18/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
JP-3-509	1/23/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
JP-3-689	1/23/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
PL-10-484	1/3/2023	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
PL-10-484	1/3/2023	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
PL-10-592	1/4/2023	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
PL-1-486	1/24/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
PL-1-486	1/24/2023	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
PL-6-1195	1/5/2023	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
PL-6-1195	1/5/2023	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
PL-6-1335	1/10/2023	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
PL-6-545	1/23/2023	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
PL-6-725	1/17/2023	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
PL-6-915	1/11/2023	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
PL-6-915	1/11/2023	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
ST-7-453	1/9/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
ST-7-453	1/9/2023	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
ST-7-544	1/9/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
ST-7-779	1/10/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
ST-7-970	1/10/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
WW-5-579	1/18/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
WW-5-809	1/19/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
WW-5-809	1/19/2023	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
WW-5-909	1/19/2023	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
BLM-18-430	**1/17/2023**	**For SW-846 Method 8260C in blind control sample (2301171105A), the percent recoveries for 1,1,2-trichloro-1,2,2-trifluoroethane (135%), trichloroethene (130%), and trichlorofluoromethane (130%) were outside of the standard limits (75-125%). Affected data are appropriately qualified.**

Well ID	Event Date	SW-846 Method 8260C QA Narratives
BLM-18-430	1/17/2023	For SW-846 Method 8260C, field duplicate samples 2301170950A and 2301170951A the relative percent difference for 1,1,2-trichloro-1,2,2-trifluoroethane was 14.6%. Upper acceptance limit for relative percent difference is 25%.
BLM-18-430	1/17/2023	For SW-846 Method 8260C, field duplicate samples 2301170950A and 2301170951A the relative percent difference for trichlorofluoromethane (CFC 11) was 15.4%. Upper acceptance limit for relative percent difference is 25%.
BLM-18-430	1/17/2023	For SW-846 Method 8260C, field duplicate samples 2301170950A and 2301170951A the relative percent difference for trichloroethene (TCE) was 14.3%. Upper acceptance limit for relative percent difference is 25%.
400-A-151	1/17/2023	For SW-846 Method 8260C, field duplicate samples 2301171435A and 2301171436A the relative percent difference for trichlorofluoromethane (CFC 11) was 0.0%. Upper acceptance limit for relative percent difference is 25%.
400-A-151	1/17/2023	For SW-846 Method 8260C, field duplicate samples 2301171435A and 2301171436A the relative percent difference for 1,1,2-trichloro-1,2,2-trifluoroethane was 1.1%. Upper acceptance limit for relative percent difference is 25%.
400-A-151	1/17/2023	For SW-846 Method 8260C, field duplicate samples 2301171435A and 2301171436A the relative percent difference for dichlorofluoromethane (CFC 21) was 2.2%. Upper acceptance limit for relative percent difference is 25%.
400-A-151	1/17/2023	For SW-846 Method 8260C, field duplicate samples 2301171435A and 2301171436A the relative percent difference for 1,2-dichloro-1,1,2-trifluoroethane (CFC 123a) was 0.0%. Upper acceptance limit for relative percent difference is 25%.
B650-INF-1	1/19/2023	For SW-846 Method 8260C, field duplicate samples 2301190800 and 2301190801 the relative percent difference for trichloroethene (TCE) was 16.9%. Upper acceptance limit for relative percent difference is 25%.
PFE-7	1/26/2023	For SW-846 Method 8260C, field duplicate samples 2301260852 and 2301260853 the relative percent difference for trichloroethene (TCE) was 3.7%. Upper acceptance limit for relative percent difference is 25%.
PFE-7	1/26/2023	For SW-846 Method 8260C, field duplicate samples 2301260852 and 2301260853 the relative percent difference for trichlorofluoromethane (CFC 11) was 3.5%. Upper acceptance limit for relative percent difference is 25%.
PFE-7	1/26/2023	For SW-846 Method 8260C, field duplicate samples 2301260852 and 2301260853 the relative percent difference for 1,1,2-trichloro-1,2,2-trifluoroethane was 6.7%. Upper acceptance limit for relative percent difference is 25%.
600-G-138	**1/25/2023**	**For SW-846 Method 8260C, one unknown compound (5.2 ug/L) was tentatively identified by a GC/MS library search in sample 2301251300A.**
PFE-7	**1/26/2023**	**For SW-846 Method 8260C, one unknown compound (5.6 ug/L) was tentatively identified by a GC/MS library search in the field blank (2301260854). Affected data are appropriately qualified.**
PFE-4A	**1/26/2023**	**For SW-846 Method 8260C, one unknown compound (5.7 ug/L) was tentatively identified by a GC/MS library search in sample 2301260925.**
600-G-138	**1/25/2023**	**For SW-846 Method 8260C, one unknown compound (5.8 ug/L) was tentatively identified by a GC/MS library search in the field blank (2301251301A). Affected data are appropriately qualified.**
PFE-4A	**1/26/2023**	**For SW-846 Method 8260C, one unknown compound (5.8 ug/L) was tentatively identified by a GC/MS library search in the field blank (2301260926). Affected data are appropriately qualified.**
600-G-138	**1/25/2023**	**For SW-846 Method 8260C, one unknown compound (7.4 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 793256. Affected data are appropriately qualified.**
PFE-4A	**1/26/2023**	**For SW-846 Method 8260C, one unknown compound (7.4 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 793256. Affected data are appropriately qualified.**
PFE-7	**1/26/2023**	**For SW-846 Method 8260C, one unknown compound (7.4 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 793256. Affected data are appropriately qualified.**

Well ID	Event Date	SW-846 Method 8260C QA Narratives
400-A-151	**1/17/2023**	**For SW-846 Method 8260C, silane, methoxytrimethyl- (11 ug/L) and silane, fluorotrimethyl- (5.7 ug/L) were tentatively identified by a GC/MS library search in sample 2301171435A.**
400-A-151	**1/17/2023**	**For SW-846 Method 8260C, silane, methoxytrimethyl (11 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 792439. Affected data are appropriately qualified.**
BLM-6-488	1/5/2023	For SW-846 Method 8260C, silane, methoxytrimethyl- (17 ug/L) was tentatively identified by a GC/MS library search in the field blank (2301051001C). No groundwater data are affected by this field blank contamination.
BLM-18-430	1/17/2023	For SW-846 Method 8260C, silane, methoxytrimethyl (6.5 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 792268. No groundwater data are affected by this method blank contamination.
BLM-6-488	1/5/2023	For SW-846 Method 8260C, sulfur dioxide (6.1 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 790928. No groundwater data are affected by this method blank contamination.
PFE-7	**1/26/2023**	**For SW-846 Method 8260C, sulfur dioxide (6.5 ug/L) and one unknown compound (5.9 ug/L) and (6.3 ug/L) were tentatively identified by a GC/MS library search in sample 2301260852 and duplicate sample 2301260853.**
400-A-151	1/17/2023	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
600-G-138	1/25/2023	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
B650-INF-1	1/19/2023	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
B655-INF-2	1/19/2023	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-18-430	1/17/2023	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PFE-4A	1/26/2023	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PFE-5	1/19/2023	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PFE-7	1/26/2023	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
B655-INF-2	1/19/2023	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
BLM-15-305	1/9/2023	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
BLM-17-550	1/9/2023	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
PFE-5	1/19/2023	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
400-A-151	1/17/2023	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
600-G-138	1/25/2023	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
B650-INF-1	1/19/2023	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
B655-INF-2	1/19/2023	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-15-305	1/9/2023	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-17-550	1/9/2023	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PFE-4A	1/26/2023	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PFE-5	1/19/2023	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
PFE-7	1/26/2023	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
400-A-151	1/17/2023	For SW-846 Method 8260C, there were no detections in the field blank.
B650-INF-1	1/19/2023	For SW-846 Method 8260C, there were no detections in the field blank.
B655-INF-2	1/19/2023	For SW-846 Method 8260C, there were no detections in the field blank.
BLM-15-305	1/9/2023	For SW-846 Method 8260C, there were no detections in the field blank.
BLM-17-550	1/9/2023	For SW-846 Method 8260C, there were no detections in the field blank.
BLM-18-430	1/17/2023	For SW-846 Method 8260C, there were no detections in the field blank.
PFE-5	1/19/2023	For SW-846 Method 8260C, there were no detections in the field blank.

Well ID	Event Date	Modified EPA Method 607 QA Narratives
BLM-18-430	1/17/2023	For Modified EPA Method 607 in blind control sample (2301171106A), all recoveries were within standard limits.
BLM-17-550	1/9/2023	For Modified EPA Method 607, field duplicate samples 2301091022A and 2301091023A the relative percent difference for bromacil was 3.0%. Upper acceptance limit for relative percent difference is 25%.
BLM-17-550	1/9/2023	For Modified EPA Method 607, field duplicate samples 2301091022A and 2301091023A the relative percent difference for N-nitrodimethylamine was 0.0%. Upper acceptance limit for relative percent difference is 25%.
BLM-17-550	1/9/2023	For Modified EPA Method 607, field duplicate samples 2301091022A and 2301091023A the relative percent difference for N-nitrosodimethylamine was 4.1%. Upper acceptance limit for relative percent difference is 25%.
JP-3-689	1/23/2023	For Modified EPA Method 607, matrix spike recoveries for sample 2301231433A were within laboratory control limits.
BLM-18-430	1/17/2023	For Modified EPA Method 607, relative percent differences (RPD) for duplicate samples 2301170953A and 2301170954A were within control limits or below the calculable range.
100-G-223	1/24/2023	For Modified EPA Method 607, there were no detections in the field blank.

Well ID	Event Date	Low-Level Nitrosamine Method QA Narratives
JER-2-684	**1/24/2023**	**For Low Level Nitrosamine Method in blind control sample (2301241455B), the percent recovery for N-nitrosodimethylamine (222.9%) was outside of the standard limits (70.0-130.0%). Additionally, N-nitrodimethylamine (6.49 ng/L) was detected but none was added. Affected data are appropriately qualified.**
ST-7-779	1/10/2023	For Low Level Nitrosamine Method, due to a chain of custody error results were incorrectly reported as 2301100710B for the trip blank.The correct sample number is 2301100715B.
PL-6-915	1/11/2023	For Low Level Nitrosamine Method, field duplicate samples 2301111435Y and 2301111436Y the relative percent difference for N-Nitrosodimethylamine was 18.2%. Upper acceptance limit for relative percent difference is 25%.
JER-1-683	1/12/2023	For Low Level Nitrosamine Method, field duplicate samples 2301121427B and 2301121428B the relative percent difference for N-nitrosodimethylamine was 6.8%. Upper acceptance limit for relative percent difference is 25%.
WW-5-809	**1/19/2023**	**For Low Level Nitrosamine Method, field duplicate samples 2301191417B and 2301191418B the relative percent difference for N-nitrosodimethylamine was 60.1%. This value is outside the upper acceptance limit for relative percent difference of 25%.**
PFE-4A	1/26/2023	For Low Level Nitrosamine Method, field duplicate samples 2301260928 and 2301260929 the relative percent difference for N-nitrodimethylamine was 21.0%. Upper acceptance limit for relative percent difference is 25%.

Well ID	Event Date	Low-Level Nitrosamine Method QA Narratives
PFE-4A	1/26/2023	For Low Level Nitrosamine Method, field duplicate samples 2301260928 and 2301260929 the relative percent difference for N-nitrosodimethylamine was 6.2%. Upper acceptance limit for relative percent difference is 25%.
JER-1-483	**1/11/2023**	**For Low Level Nitrosamine Method, for field blank 2301111539B the recovery of the internal standard NDMA-d6 (8.76%) was outside laboratory control limits (10-100%). Additionally, method blank PB23A19HE1 recoveries of internal standards NDMA-d6 (4.98%) and DMN-d6 (7.17%) were outside laboratory control limits (10-100%). Re-extraction of the samples was not possible due to a lack of reserve. However, since the signal to noise exceeded the minimum of 3 (lowest signal >245 in method blank PB23A19HE1), the laboratory concluded that sufficient signal strength was seen in the above mentioned samples for the detection of native NDMA. Native NDMA was detected above the MDL in method blank PB23A19HE1. The samples were deemed valid and no further corrective action was required by the lab. Associated groundwater data are qualified with an asterisk (*).**
JER-1-563	**1/11/2023**	**For Low Level Nitrosamine Method, for field blank 2301111558B the recovery of the internal standard NDMA-d6 (8.88%) was outside laboratory control limits (10-100%). Additionally, method blank PB23A19HE1 recoveries of internal standards NDMA-d6 (4.98%) and DMN-d6 (7.17%) were outside laboratory control limits (10-100%). Re-extraction of the samples was not possible due to a lack of reserve. However, since the signal to noise exceeded the minimum of 3 (lowest signal >245 in method blank PB23A19HE1), the laboratory concluded that sufficient signal strength was seen in the above mentioned samples for the detection of native NDMA. Native NDMA was detected above the MDL in method blank PB23A19HE1. The samples were deemed valid and no further corrective action was required by the lab. Associated groundwater data are qualified with an asterisk (*).**
ST-7-544	**1/9/2023**	**For Low Level Nitrosamine Method, for sample 2301091550B the recovery of the internal standard NDMA-d6 (6.33%) was outside laboratory control limits (10-100%). The sample could not be re-extracted due to lack of reserve. The signal to noise ratio for this sample was well above the minimum of 3 (the lowest signal was > 185) allowing for detection of native NDMA above the MDL. No additional corrective action was required. Associated groundwater data are qualified with an asterisk (*).**
PL-6-545	**1/23/2023**	**For Low Level Nitrosamine Method, for sample 2301231531Y the recovery of the internal standard NDMA-d6 (4.80%) was outside laboratory control limits (10-100%). The sample could not be re-extracted due to lack of reserve. The signal to noise ratio for these samples were well above the minimum of 3 (the lowest signal was > 263) allowing for detection of native NDMA above the MDL. No additional corrective action was required. Affected data are qualified with an asterisk (*).**
WW-5-809	**1/19/2023**	**For Low Level Nitrosamine Method, for trip blank 2301190741B the recovery of the internal standard NDMA-d6 (8.27%) was outside laboratory control limits (10-100%). The sample could not be re-extracted due to lack of reserve. The signal to noise ratio for these samples were well above the minimum of 3 (the lowest signal was > 89) allowing for detection of native NDMA above the MDL. No additional corrective action was required. Affected data are qualified with an asterisk (*).**
300-F-175	1/25/2023	For Low Level Nitrosamine Method, for trip blank 2301250721C the recovery of the internal standard DMN-d6 (117%) was outside laboratory control limits (10-100%). High recovery has no negative impact to the data quality since the signal to noise is sufficient for detection of native DMN. No additional action was required by the lab.
PL-6-725	1/17/2023	For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.35 ng/L) was detected in the trip blank (2301170801Y) below the reporting limit. No groundwater data are affected by this trip blank contamination.
ST-7-779	**1/10/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.35 ng/l) was detected in the field blank (2301101358B) below the reporting limit. Affected data are appropriately qualified.**
300-F-175	**1/25/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.37 ng/L) was detected in the trip blank (2301250721C) below the reporting limit. Affected data are appropriately qualified.**

Well ID	Event Date	Low-Level Nitrosamine Method QA Narratives
B655-EFF-2	1/19/2023	For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.37 ng/L) was detected in the field blank (2301190856) below the reporting limit. No groundwater data are affected by this field blank contamination.
ST-7-970	**1/10/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.38 ng/L) was detected in the field blank (2301101410B) below the reporting limit. Affected data are appropriately qualified.**
JP-1-424	**1/18/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.39 ng/L) was detected in the field blank (2301181029A) below the reporting limit. Affected data are appropriately qualified.**
JP-3-509	1/23/2023	For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.39 ng/L) was detected in the field blank (2301231014A) below the reporting limit. No groundwater data are affected by this field blank contamination.
WW-5-909	1/19/2023	For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.39 ng/L) was detected in the field blank (2301191438B) below the reporting limit. No groundwater data are affected by this field blank contamination.
JER-2-504	**1/23/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.4 ng/L) was detected in the field blank (2301231456B) below the reporting limit. Affected data are appropriately qualified.**
ST-7-453	**1/9/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.4 ng/L) was detected in the field blank (2301091533B) below the reporting limit. Affected data are appropriately qualified.**
ST-7-544	**1/9/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.41 ng/L) and N-nitrodimethylamine (0.38 ng/L) were detected in the field blank (2301091551B) below the reporting limit. Affected data are appropriately qualified.**
JER-1-483	**1/11/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.48 ng/L) was detected in method blank PB2A19HE1 below the reporting limit. Affected data are appropriately qualified.**
JER-1-563	**1/11/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.48 ng/L) was detected in method blank PB2A19HE1 below the reporting limit. Affected data are appropriately qualified.**
JER-1-683	**1/12/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.48 ng/L) was detected in method blank PB2A19HE1 below the reporting limit. Affected data are appropriately qualified.**
B650-EFF-1	**1/19/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.53 ng/L) was detected in the field blank (2301190751). Affected data are appropriately qualified.**
PL-10-592	**1/4/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.54 ng/L) was detected in the equipment blank (2301041301Y). Affected data are appropriately qualified.**
BLM-6-488	**1/5/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.56 ng/L) was detected in the field blank (2301051005C). Affected data are appropriately qualified.**
PFE-4A	1/26/2023	For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.56 ng/L) was detected in the field blank (2301260930). No groundwater data are affected by this field blank contamination.
PL-10-484	**1/3/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.69 ng/L) was detected in the equipment blank (2301031401Y). Affected data are appropriately qualified.**
BLM-10-517	**1/3/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.73 ng/L) was detected in the field blank (2301031548C). Affected data are appropriately qualified.**
JER-2-504	**1/23/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (1.34 ng/L) was detected in the trip blank (2301230711B). Affected data are appropriately qualified.**
PL-6-1195	**1/5/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (1.34 ng/L) was detected in the equipment blank (2301051251Y). Affected data are appropriately qualified.**
PL-6-1335	**1/10/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (2.89 ng/L) and N-nitrodimethylamine (0.92 ng/L) were detected in the equipment blank (2301101431Y). Affected data are appropriately qualified.**
PL-6-915	**1/11/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (4.17 ng/L) and N-nitrodimethylamine (0.51 ng/L) were detected in the equipment blank (2301111301Y). Affected data are appropriately qualified.**

Well ID	Event Date	Low-Level Nitrosamine Method QA Narratives
PL-6-545	**1/23/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (4.53 ng/L) and N-nitrodimethylamine (0.58 ng/L) were detected in the equipment blank (2301231431Y). Affected data are appropriately qualified.**
JER-2-684	**1/24/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (4.55 ng/L) was detected in the field blank (2301241453B). Affected data are appropriately qualified.**
PL-6-725	**1/17/2023**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (6.45 ng/L) and N-nitrodimethylamine (0.82 ng/L) were detected in the equipment blank (2301171021Y). Affected data are appropriately qualified.**
100-F-358	1/24/2023	For Low Level Nitrosamine Method, there were no detections in the field blank.
100-G-223	1/24/2023	For Low Level Nitrosamine Method, there were no detections in the field blank.
300-F-175	1/25/2023	For Low Level Nitrosamine Method, there were no detections in the field blank.
JER-1-483	1/11/2023	For Low Level Nitrosamine Method, there were no detections in the field blank.
JER-1-563	1/11/2023	For Low Level Nitrosamine Method, there were no detections in the field blank.
JER-1-683	1/12/2023	For Low Level Nitrosamine Method, there were no detections in the field blank.
JER-1-683	1/12/2023	For Low Level Nitrosamine Method, there were no detections in the trip blank.
JER-2-584	1/23/2023	For Low Level Nitrosamine Method, there were no detections in the field blank.
JP-2-447	1/18/2023	For Low Level Nitrosamine Method, there were no detections in the field blank.
JP-3-689	1/23/2023	For Low Level Nitrosamine Method, there were no detections in the field blank.
PFE-7	1/26/2023	For Low Level Nitrosamine Method, there were no detections in the field blank.
PL-10-484	1/3/2023	For Low Level Nitrosamine Method, there were no detections in the trip blank.
PL-1-486	1/24/2023	For Low Level Nitrosamine Method, there were no detections in the field blank.
PL-1-486	1/24/2023	For Low Level Nitrosamine Method, there were no detections in the trip blank.
PL-6-1195	1/5/2023	For Low Level Nitrosamine Method, there were no detections in the trip blank.
PL-6-915	1/11/2023	For Low Level Nitrosamine Method, there were no detections in the trip blank.
ST-7-453	1/9/2023	For Low Level Nitrosamine Method, there were no detections in the trip blank.
ST-7-779	1/10/2023	For Low Level Nitrosamine Method, there were no detections in the trip blank.
WW-5-459	1/18/2023	For Low Level Nitrosamine Method, there were no detections in the field blank.
WW-5-579	1/18/2023	For Low Level Nitrosamine Method, there were no detections in the field blank.
WW-5-809	1/19/2023	For Low Level Nitrosamine Method, there were no detections in the field blank.
WW-5-809	1/19/2023	For Low Level Nitrosamine Method, there were no detections in the trip blank.

Well ID	Event Date	SW-846 Method 8270D QA Narratives
JER-1-683	1/12/2023	For SW-846 Method 8270D, 1.4-dioxane (0.059 ug/L) was detected in the method blank for analytical batch 413241. No groundwater data are affected by this method blank contamination.
JER-2-584	1/23/2023	For SW-846 Method 8270D, field duplicate samples 2301231517B and 2301231518B the relative percent difference for 1,4-dioxane was 6.1%. Upper acceptance limit for relative percent difference is 25%.
100-F-358	**1/24/2023**	**For SW-846 Method 8270D, sample 2301241025A was received with insufficient hold time remaining to complete the PAH analysis within the recommended limit. The analysis was performed as soon as possible after receipt by the laboratory. Affected data are qualified to indicate the holding time exceedance.**
100-G-223	**1/24/2023**	**For SW-846 Method 8270D, sample 2301241426A was received with insufficient hold time remaining to complete the PAH analysis within the recommended limit. The analysis was performed as soon as possible after receipt by the laboratory. Affected data are qualified to indicate the holding time exceedance.**
BLM-6-488	1/5/2023	For SW-846 Method 8270D, the control limits were exceeded for one or more surrogates in one or more QC samples associated with samples in this report. The associated recoveries of target compounds were in control, indicating the analysis was in control. The surrogate outlier is flagged accordingly. No further corrective action was appropriate.

Well ID	Event Date	SW-846 Method 8270D QA Narratives
BLM-6-488	**1/5/2023**	**For SW-846 Method 8270D, the lower control limit for the spike recovery of the Duplicate Laboratory Control Sample (LCSD) was exceeded for one or more analyte. The Laboratory Control Sample (LCS) passed limits. There were no detections of the analyte(s) in the associated field samples. The analytes affected are flagged in the LCS Summary. Affected data are appropriately qualified.**
100-F-358	1/24/2023	For SW-846 Method 8270D, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
100-G-223	1/24/2023	For SW-846 Method 8270D, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
BLM-6-488	1/5/2023	For SW-846 Method 8270D, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data are not significantly affected. No further corrective action was appropriate.
100-F-358	1/24/2023	For SW-846 Method 8270D, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
100-G-223	1/24/2023	For SW-846 Method 8270D, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
300-F-175	1/25/2023	For SW-846 Method 8270D, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-6-488	1/5/2023	For SW-846 Method 8270D, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-10-592	1/4/2023	For SW-846 Method 8270D, there were no detections in the equipment blank.
300-F-175	1/25/2023	For SW-846 Method 8270D, there were no detections in the field blank.
100-F-358	**1/24/2023**	**For SW-846 Method 8270D, toluene (16 ug/L), benzene,chloro- (5.8 ug/L), and two unknown compounds were tentatively identified by a GC/MS library search in the method blank for analytical batch 413876. Affected data are appropriately qualified.**
100-G-223	**1/24/2023**	**For SW-846 Method 8270D, toluene (16 ug/L), benzene,chloro- (5.8 ug/L), and two unknown compounds were tentatively identified by a GC/MS library search in sample 2301241426A.**
100-G-223	**1/24/2023**	**For SW-846 Method 8270D, toluene (16 ug/L), benzene,chloro- (5.8 ug/L), and two unknown compounds were tentatively identified by a GC/MS library search in the method blank for analytical batch 413876. Affected data are appropriately qualified.**
100-F-358	**1/24/2023**	**For SW-846 Method 8270D, toluene (22 ug/L), benzene,chloro- (8.1 ug/L), and two unknown compounds were tentatively identified by a GC/MS library search in sample 2301241025A.**

Well ID	Event Date	Total Metals QA Narratives
PL-6-915	1/11/2023	For Total Metals, field duplicate samples 2301111505Y and 2301111540Y the relative percent difference for strontium was 0.9%. Upper acceptance limit for relative percent difference is 25%.
PL-6-915	1/11/2023	For Total Metals, field duplicate samples 2301111505Y and 2301111540Y the relative percent difference for magnesium was 1.7%. Upper acceptance limit for relative percent difference is 25%.
PL-6-915	1/11/2023	For Total Metals, field duplicate samples 2301111505Y and 2301111540Y the relative percent difference for calcium was 1.6%. Upper acceptance limit for relative percent difference is 25%.
PL-6-915	1/11/2023	For Total Metals, field duplicate samples 2301111505Y and 2301111540Y the relative percent difference for sodium was 1.5%. Upper acceptance limit for relative percent difference is 25%.
JP-3-509	1/23/2023	For Total Metals, field duplicate samples 2301231015A and 2301231016A the relative percent difference for strontium was 0.4%. Upper acceptance limit for relative percent difference is 25%.
JP-3-509	1/23/2023	For Total Metals, field duplicate samples 2301231015A and 2301231016A the relative percent difference for calcium was 0.1%. Upper acceptance limit for relative percent difference is 25%.
JP-3-509	1/23/2023	For Total Metals, field duplicate samples 2301231015A and 2301231016A the relative percent difference for magnesium was 0.1%. Upper acceptance limit for relative percent difference is 25%.
JP-3-509	1/23/2023	For Total Metals, field duplicate samples 2301231015A and 2301231016A the relative percent difference for sodium was 0.2%. Upper acceptance limit for relative percent difference is 25%.
BLM-18-430	**1/17/2023**	**For Total Metals, for blind control sample (2301171107A) the percent recovery for selenium (73.3%) was outside of the standard limits (75.0-125.0%). Additionally, the control was prepared at a concentration below the reporting limits for iron and aluminum. Affected data are appropriately qualified.**
400-A-151	1/17/2023	For Total Metals, silver (0.0009 mg/L) was detected in the method blank for analytical batch 413559 below the reporting limit. No groundwater data are affected by this method blank contamination.
B655-EFF-2	**1/19/2023**	**For Total Metals, silver (0.0009 mg/L) was detected in the method blank for analytical batch 413559 below the reporting limit. Affected data are appropriately qualified.**
B655-INF-2	**1/19/2023**	**For Total Metals, silver (0.0009 mg/L) was detected in the method blank for analytical batch 413559 below the reporting limit. Affected data are appropriately qualified.**
BLM-18-430	**1/17/2023**	**For Total Metals, silver (0.0009 mg/L) was detected in the method blank for analytical batch 413559 below the reporting limit. Affected data are appropriately qualified.**
PL-6-1195	**1/5/2023**	**For Total Metals, strontium (0.003 mg/L), vanadium (0.0009 mg/L), and zinc (0.005 mg/L) were detected in the equipment blank (2301051252Y) below the reporting limit. Affected data are appropriately qualified.**
BLM-10-517	1/3/2023	For Total Metals, the upper control limit was exceeded for boron in the Contract Required Detection Limit Standard (CRDL). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-15-305	1/9/2023	For Total Metals, the upper control limit was exceeded for selenium in the CRDL. The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-17-550	1/9/2023	For Total Metals, the upper control limit was exceeded for selenium in the CRDL. The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-6-1195	1/5/2023	For Total Metals, the upper control limit was exceeded for selenium in the CRDL. The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-6-1335	1/10/2023	For Total Metals, the upper control limit was exceeded for selenium in the CRDL. The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method

Well ID	Event Date	Total Metals QA Narratives
		Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-6-915	1/11/2023	For Total Metals, the upper control limit was exceeded for selenium in the CRDL. The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
100-F-358	1/24/2023	For Total Metals, the upper control limit was exceeded for thallium in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
100-G-223	1/24/2023	For Total Metals, the upper control limit was exceeded for thallium in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
300-F-175	1/25/2023	For Total Metals, the upper control limit was exceeded for thallium in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
600-G-138	1/25/2023	For Total Metals, the upper control limit was exceeded for thallium in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
100-G-223	1/24/2023	For Total Metals, there were no detections in the field blank.

Well ID	Event Date	Miscellaneous QA Narratives
B655-INF-2	**1/19/2023**	**For EPA Method 300.0, for sample 2301190918 the Method Reporting Limit (MRL) for fluoride was elevated due to the matrix of the sample. Affected data are appropriately qualified.**
100-F-358	1/24/2023	For SW-846 Method 8081B, the RPD between the LCS and the LCSD was greater than the RPD limit. The percent recovery limit was met for both the LCS and the LCSD. No data are qualified based on this RPD exceedance.
100-G-223	1/24/2023	For SW-846 Method 8081B, the RPD between the LCS and the LCSD was greater than the RPD limit. The percent recovery limit was met for both the LCS and the LCSD. No data are qualified based on this RPD exceedance.
300-F-175	1/25/2023	For SW-846 Method 8082A, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
100-F-358	1/24/2023	For SW-846 Method 8151A, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
100-G-223	1/24/2023	For SW-846 Method 8151A, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
300-F-175	1/25/2023	For SW-846 Method 8151A, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s)

Well ID	Event Date	Miscellaneous QA Narratives
		above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
100-F-358	**1/24/2023**	**For SW-846 Method 9034, for sample 2301241038A the pH was <9 when tested immediately prior to testing, indicating that chemical preservation was not added or was inadequate to meet the preservation requirement for sulfide analysis. Affected data are qualified with an asterisk (*).**

Table 8 – WSTF Blank Sample Detections

Well ID	Event Date	Comment	Analysis	Sample Type	CAS No.	Analyte	Result	Units	QA flag
BLM-6-488	1/5/2023	Carboy G3	8260	VOA-FB	1825-61-2	Silane, methoxytrimethyl-	17	ug/L	TIC FB
300-F-175	1/25/2023	Carboy G1	8260_LL	VOA-TB	TIC	Unknown	10	ug/L	TIC RB TB
JER-1-683	1/12/2023	Carboy G3	8260_LL	VOA-TB	7446-09-5	Sulfur Dioxide	8.4	ug/L	TIC RB TB FB
300-F-175	1/25/2023	Carboy G1	8260_LL	VOA-FB	7446-09-5	Sulfur Dioxide	8	ug/L	TIC RB FB
PL-6-725	1/17/2023	Carboy G1	8260_LL	VOA-EB	1825-61-2	Silane, methoxytrimethyl-	7.9	ug/L	TIC RB EB
WW-5-459	1/18/2023	Carboy G1	8260_LL	VOA-FB	1825-61-2	Silane, methoxytrimethyl-	6.6	ug/L	TIC RB FB
JER-1-683	1/12/2023	Carboy G3	8260_LL	VOA-FB	TIC	Unknown	6.6	ug/L	TIC RB TB FB
PL-6-725	1/17/2023	Carboy G1	NDMA_LL	NDMA_LL-EB	62-75-9	N-Nitrosodimethylamine	6.45	ng/L	EB
300-F-175	1/25/2023	Carboy G1	8260_LL	VOA-FB	TIC	Unknown	6.3	ug/L	TIC FB
600-G-138	1/25/2023		8260	VOA-FB	TIC	Unknown	5.8	ug/L	TIC RB FB
PFE-4A	1/26/2023	Carboy PF1	8260	VOA-FB	TIC	Unknown	5.8	ug/L	TIC RB FB
PFE-7	1/26/2023	Carboy PF1	8260	VOA-FB	TIC	Unknown	5.6	ug/L	TIC FB
JER-2-684	1/24/2023	Carboy G1	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	4.55	ng/L	FB Q
PL-6-545	1/23/2023	Carboy G3	NDMA_LL	NDMA_LL-EB	62-75-9	N-Nitrosodimethylamine	4.53	ng/L	EB
PL-6-915	1/11/2023	Carboy G1	NDMA_LL	NDMA_LL-EB	62-75-9	N-Nitrosodimethylamine	4.17	ng/L	EB
PL-6-1335	1/10/2023	Carboy G1	NDMA_LL	NDMA_LL-EB	62-75-9	N-Nitrosodimethylamine	2.89	ng/L	EB
PL-6-1195	1/5/2023	Carboy G1	NDMA_LL	NDMA_LL-EB	62-75-9	N-Nitrosodimethylamine	1.34	ng/L	EB
JER-2-504	1/23/2023	Carboy G1	NDMA_LL	NDMA_LL-TB	62-75-9	N-Nitrosodimethylamine	1.34	ng/L	TB FB
PL-6-1335	1/10/2023	Carboy G1	NDMA_LL	NDMA_LL-EB	4164-28-7	N-Nitrodimethylamine	0.92	ng/L	EB
PL-6-725	1/17/2023	Carboy G1	NDMA_LL	NDMA_LL-EB	4164-28-7	N-Nitrodimethylamine	0.82	ng/L	EB
BLM-10-517	1/3/2023	Carboy G3	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.73	ng/L	FB
PL-10-484	1/3/2023	Carboy G1	NDMA_LL	NDMA_LL-EB	62-75-9	N-Nitrosodimethylamine	0.69	ng/L	EB
PL-6-545	1/23/2023	Carboy G3	NDMA_LL	NDMA_LL-EB	4164-28-7	N-Nitrodimethylamine	0.58	ng/L	EB
BLM-6-488	1/5/2023	Carboy G3	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.56	ng/L	FB
PFE-4A	1/26/2023	Carboy PF1	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.56	ng/L	FB
PL-10-592	1/4/2023	Carboy G1	NDMA_LL	NDMA_LL-EB	62-75-9	N-Nitrosodimethylamine	0.54	ng/L	EB
B650-EFF-1	1/19/2023	Carboy PF1	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.53	ng/L	FB
PL-6-915	1/11/2023	Carboy G1	NDMA_LL	NDMA_LL-EB	4164-28-7	N-Nitrodimethylamine	0.51	ng/L	EB
ST-7-544	1/9/2023	Carboy G3	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.41	ng/L	J FB
JER-2-504	1/23/2023	Carboy G1	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.4	ng/L	J TB FB
ST-7-453	1/9/2023	Carboy G3	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.4	ng/L	J FB
JP-1-424	1/18/2023	Carboy G3	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.39	ng/L	J FB
JP-3-509	1/23/2023	Carboy G5	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.39	ng/L	J FB
WW-5-909	1/19/2023	Carboy G1	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.39	ng/L	J FB
ST-7-544	1/9/2023	Carboy G3	NDMA_LL	NDMA_LL-FB	4164-28-7	N-Nitrodimethylamine	0.38	ng/L	J FB
ST-7-970	1/10/2023	Carboy G3	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.38	ng/L	J FB

Well ID	Event Date	Comment	Analysis	Sample Type	CAS No.	Analyte	Result	Units	QA flag
B655-EFF-2	1/19/2023	Carboy PF1	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.37	ng/L	J FB
300-F-175	1/25/2023	Carboy G1	NDMA_LL	NDMA_LL-TB	62-75-9	N-Nitrosodimethylamine	0.37	ng/L	J TB
ST-7-779	1/10/2023	Carboy G3	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.35	ng/L	J FB
PL-6-725	1/17/2023	Carboy G1	NDMA_LL	NDMA_LL-TB	62-75-9	N-Nitrosodimethylamine	0.35	ng/L	J TB EB
PL-6-1195	1/5/2023	Carboy G1	METALS	METALS-EB	7440-66-6	Zinc, Total	0.005	mg/L	J EB
PL-6-1195	1/5/2023	Carboy G1	METALS	METALS-EB	7440-24-6	Strontium, Total	0.003	mg/L	J EB
PL-6-1195	1/5/2023	Carboy G1	METALS	METALS-EB	7440-62-2	Vanadium, Total	0.0009	mg/L	J EB

Appendix D
Comparison to Cleanup Levels

Appendix D.1: Groundwater Monitoring Wells
Appendix D.2: PFTS
Appendix D.3: MPITS

Appendix D.1
Groundwater Monitoring Wells

Analytical Results for Groundwater Monitoring Wells that Exceed Clean Up Levels

CAS Number 62-75-9 **Analyte** N-Nitrosodimethylamine

Cleanup Level 0.0011 ug/L (1.1 ng/L) **Source** GMP

Well ID	Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
400-A-151	1/17/2023	607	2301171438A	N-Nitrosodimethylamine	7.6	µg/L	0.048	0.024	52	D
400-C-143	11/17/2022	607	2211170922C	N-Nitrosodimethylamine	2.21	µg/L	0.0095	0.0048	47	
BLM-15-305	1/9/2023	607	2301091452A	N-Nitrosodimethylamine	10.42	µg/L	0.094	0.047	47	D
BLM-17-493	11/3/2022	607	2211030932A	N-Nitrosodimethylamine	0.76	µg/L	0.0096	0.0048	44	
BLM-17-550	1/9/2023	607	2301091022A	N-Nitrosodimethylamine	0.5	µg/L	0.0095	0.0048	47	
BLM-17-550	1/9/2023	607	2301091023A	N-Nitrosodimethylamine	0.48	µg/L	0.0097	0.0049	47	
BLM-18-430	1/17/2023	607	2301170954A	N-Nitrosodimethylamine	0.02	µg/L	0.0094	0.0047	52	
BLM-18-430	1/17/2023	607	2301170953A	N-Nitrosodimethylamine	0.02	µg/L	0.0094	0.0047	52	
BLM-26-404	11/7/2022	607	2211071452C	N-Nitrosodimethylamine	0.14	µg/L	0.0094	0.0047	44	
BLM-27-270	12/12/2022	607	2212120938C	N-Nitrosodimethylamine	2.32	µg/L	0.0098	0.0049	47	Q
BLM-32-571	11/7/2022	NDMA_LL	2211071452B	N-Nitrosodimethylamine	1.61	ng/L	0.48	0.35		RB FB
BLM-36-350	11/4/2022	607	2211041132Y	N-Nitrosodimethylamine	0.44	µg/L	0.0098	0.0049	44	
BLM-36-350	11/4/2022	607	2211041155Y	N-Nitrosodimethylamine	0.46	µg/L	0.0095	0.0048	44	
BLM-6-488	1/5/2023	NDMA_LL	2301051004C	N-Nitrosodimethylamine	1.36	ng/L	0.48	0.35		FB
BW-5-295	11/7/2022	607	2211070952C	N-Nitrosodimethylamine	0.43	µg/L	0.0098	0.0049	44	
BW-7-211	12/13/2022	607	2212130828C	N-Nitrosodimethylamine	0.96	µg/L	0.0094	0.0047	47	
JER-1-683	1/12/2023	NDMA_LL	2301121427B	N-Nitrosodimethylamine	1.68	ng/L	0.49	0.35		RB
JER-1-683	1/12/2023	NDMA_LL	2301121428B	N-Nitrosodimethylamine	1.57	ng/L	0.49	0.35		RB
JER-2-504	1/23/2023	NDMA_LL	2301231455B	N-Nitrosodimethylamine	2.52	ng/L	0.48	0.35		TB FB
JER-2-584	1/23/2023	NDMA_LL	2301231515B	N-Nitrosodimethylamine	3.24	ng/L	0.48	0.35		
JER-2-684	1/24/2023	NDMA_LL	2301241452B	N-Nitrosodimethylamine	4.15	ng/L	0.49	0.36		FB Q
NASA 6	11/16/2022	607	2211161013B	N-Nitrosodimethylamine	6.49	µg/L	0.094	0.047	47	D
PL-10-484	1/3/2023	NDMA_LL	2301031511Y	N-Nitrosodimethylamine	1.81	ng/L	0.48	0.35		EB
PL-11-470	12/5/2022	NDMA_LL	2212051412B	N-Nitrosodimethylamine	1.4	ng/L	0.48	0.35		FB
PL-12-570	11/10/2022	NDMA_LL	2211100905C	N-Nitrosodimethylamine	1.14	ng/L	0.49	0.35		
PL-12-800	11/10/2022	NDMA_LL	2211101435C	N-Nitrosodimethylamine	1.74	ng/L	0.5	0.36		
PL-2-504	12/12/2022	607	2212121412A	N-Nitrosodimethylamine	0.02	µg/L	0.0095	0.0048	47	
PL-6-1195	1/5/2023	NDMA_LL	2301101100Y	N-Nitrosodimethylamine	5.18	ng/L	0.48	0.35		EB
PL-6-1335	1/10/2023	NDMA_LL	2301110935Y	N-Nitrosodimethylamine	44.03	ng/L	0.48	0.35		
PL-6-545	1/23/2023	NDMA_LL	2301231531Y	N-Nitrosodimethylamine	9.58	ng/L	0.48	0.35		* EB
PL-6-725	1/17/2023	NDMA_LL	2301171416Y	N-Nitrosodimethylamine	10.33	ng/L	0.48	0.35		EB
PL-6-915	1/11/2023	NDMA_LL	2301111435Y	N-Nitrosodimethylamine	1.25	ng/L	0.48	0.35		EB
PL-6-915	1/11/2023	NDMA_LL	2301111436Y	N-Nitrosodimethylamine	1.5	ng/L	0.48	0.35		EB
ST-1-473	11/9/2022	607	2211091442C	N-Nitrosodimethylamine	0.19	µg/L	0.01	0.005	44	

CAS Number **62-75-9** **Analyte** **N-Nitrosodimethylamine**

Cleanup Level **0.0011 ug/L (1.1 ng/L)** **Source** **GMP**

Well ID	Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
ST-1-541	11/16/2022	607	2211161032A	N-Nitrosodimethylamine	1.32	µg/L	0.0094	0.0047	47	
ST-1-630	11/16/2022	607	2211161533A	N-Nitrosodimethylamine	0.05	µg/L	0.0094	0.0047	47	
ST-1-630	11/16/2022	607	2211161532A	N-Nitrosodimethylamine	0.05	µg/L	0.0094	0.0047	47	
ST-3-486	12/7/2022	607	2212070932C	N-Nitrosodimethylamine	0.04	µg/L	0.0096	0.0048	47	
ST-3-586	12/15/2022	607	2212151011C	N-Nitrosodimethylamine	0.01	µg/L	0.01	0.005	47	
ST-3-666	12/8/2022	607	2212081002C	N-Nitrosodimethylamine	0.05	µg/L	0.0094	0.0047	47	
ST-3-666	12/8/2022	607	2212081003C	N-Nitrosodimethylamine	0.05	µg/L	0.0095	0.0048	47	
ST-3-735	12/8/2022	607	2212081402C	N-Nitrosodimethylamine	0.26	µg/L	0.0095	0.0048	47	
WW-4-419	11/8/2022	NDMA_LL	2211081435B	N-Nitrosodimethylamine	2.21	ng/L	0.47	0.34		RB FB
WW-5-459	1/18/2023	NDMA_LL	2301181520B	N-Nitrosodimethylamine	1.22	ng/L	0.47	0.34		
WW-5-579	1/18/2023	NDMA_LL	2301181535B	N-Nitrosodimethylamine	1.49	ng/L	0.48	0.35		
WW-5-809	1/19/2023	NDMA_LL	2301191418B	N-Nitrosodimethylamine	1.13	ng/L	0.47	0.34		QD
WW-5-809	1/19/2023	NDMA_LL	2301191417B	N-Nitrosodimethylamine	2.1	ng/L	0.47	0.34		QD
WW-5-909	1/19/2023	NDMA_LL	2301191437B	N-Nitrosodimethylamine	4.41	ng/L	0.47	0.34		

CAS Number **127-18-4** **Analyte** **Tetrachloroethene (PCE)**

Cleanup Level **5 ug/L** **Source** **GMP**

Well ID	Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
ST-1-541	11/16/2022	8260	2211161030A	Tetrachloroethene (PCE)	8.2	ug/L	1	0.21		

CAS Number 79-01-6 **Analyte Trichloroethene (TCE)**

Cleanup Level 4.9 ug/L **Source GMP**

Well ID	Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
200-I-185	11/10/2022	8260	2211101540Y	Trichloroethene (TCE)	14	ug/L	1	0.2		
200-I-300	11/10/2022	8260	2211101035Y	Trichloroethene (TCE)	30	ug/L	1	0.2		Q
600-G-138	1/25/2023	8260	2301251300A	Trichloroethene (TCE)	33	ug/L	1	0.2		
BLM-17-493	11/3/2022	8260	2211030930A	Trichloroethene (TCE)	53	ug/L	1	0.2		
BLM-17-550	1/9/2023	8260	2301091020A	Trichloroethene (TCE)	83	ug/L	1	0.2		
BLM-18-430	1/17/2023	8260	2301170950A	Trichloroethene (TCE)	15	ug/L	1	0.2		Q
BLM-18-430	1/17/2023	8260	2301170951A	Trichloroethene (TCE)	13	ug/L	1	0.2		Q
BLM-26-404	11/7/2022	8260	2211071450C	Trichloroethene (TCE)	21	ug/L	1	0.2		
BLM-3-182	11/1/2022	8260	2211010932A	Trichloroethene (TCE)	13	ug/L	1	0.2		
BLM-36-350	11/4/2022	8260	2211041130Y	Trichloroethene (TCE)	63	ug/L	1	0.2		
BLM-36-350	11/4/2022	8260	2211041131Y	Trichloroethene (TCE)	64	ug/L	1	0.2		
PL-12-800	11/10/2022	8260	2211101425C	Trichloroethene (TCE)	5.4	ug/L	1	0.2		
PL-12-800	11/10/2022	8260	2211101426C	Trichloroethene (TCE)	5.3	ug/L	1	0.2		
PL-2-504	12/12/2022	8260	2212121410A	Trichloroethene (TCE)	50	ug/L	1	0.2		
ST-1-473	11/9/2022	8260	2211091440C	Trichloroethene (TCE)	180	ug/L	1	0.2		
ST-1-541	11/16/2022	8260	2211161030A	Trichloroethene (TCE)	150	ug/L	1	0.2		
ST-1-630	11/16/2022	8260	2211161530A	Trichloroethene (TCE)	49	ug/L	1	0.2		
ST-3-586	12/15/2022	8260	2212151008C	Trichloroethene (TCE)	12	ug/L	1	0.2		
ST-3-586	12/15/2022	8260	2212151009C	Trichloroethene (TCE)	11	ug/L	1	0.2		
ST-3-666	12/8/2022	8260	2212081000C	Trichloroethene (TCE)	19	ug/L	1	0.2		
ST-3-735	12/8/2022	8260	2212081400C	Trichloroethene (TCE)	14	ug/L	1	0.2		

Appendix D.2
PFTS

Analytical Results for PFTS and PFE Wells that Exceed Clean Up Levels

CAS Number 62-75-9 **Analyte** N-Nitrosodimethylamine

Cleanup Level 0.0011 ug/L (1.1 ng/L) **Source** GMP

Well ID	Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
B650-INF-1	11/10/2022	607	2211100833	N-Nitrosodimethylamine	0.007	µg/L	0.01	0.005	45	J
B650-INF-1	1/19/2023	607	2301190803	N-Nitrosodimethylamine	0.009	µg/L	0.0097	0.0049	52	J
B650-INF-1	12/9/2022	607	2212090559	N-Nitrosodimethylamine	0.008	µg/L	0.0099	0.005	47	J
PFE-4A	1/26/2023	NDMA_LL	2301260929	N-Nitrosodimethylamine	13.05	ng/L	0.47	0.34		
PFE-4A	1/26/2023	NDMA_LL	2301260928	N-Nitrosodimethylamine	13.89	ng/L	0.48	0.35		
PFE-4A	1/26/2023	607	2301260927	N-Nitrosodimethylamine	0.008	µg/L	0.0096	0.0048	56	J
PFE-5	1/19/2023	607	2301191012	N-Nitrosodimethylamine	0.39	µg/L	0.0095	0.0048	52	
PFE-7	1/26/2023	NDMA_LL	2301260856	N-Nitrosodimethylamine	1.75	ng/L	0.49	0.36		

CAS Number **79-01-6** **Analyte** **Trichloroethene (TCE)**

Cleanup Level **4.9 ug/L** **Source** **GMP**

Well ID	Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
PFE-5	1/19/2023	8260	2301191010	Trichloroethene (TCE)	60	ug/L	1	0.2		
PFE-7	1/26/2023	8260	2301260852	Trichloroethene (TCE)	5.5	ug/L	1	0.2		
PFE-7	1/26/2023	8260	2301260853	Trichloroethene (TCE)	5.3	ug/L	1	0.2		

Appendix D.3
MPITS

Analytical Results for MPITS and MPE Wells that Exceed Clean Up Levels

CAS Number 62-75-9 **Analyte** N-Nitrosodimethylamine

Clean Up Level 0.0011 ug/L (1.1 ng/L) **Source** GMP

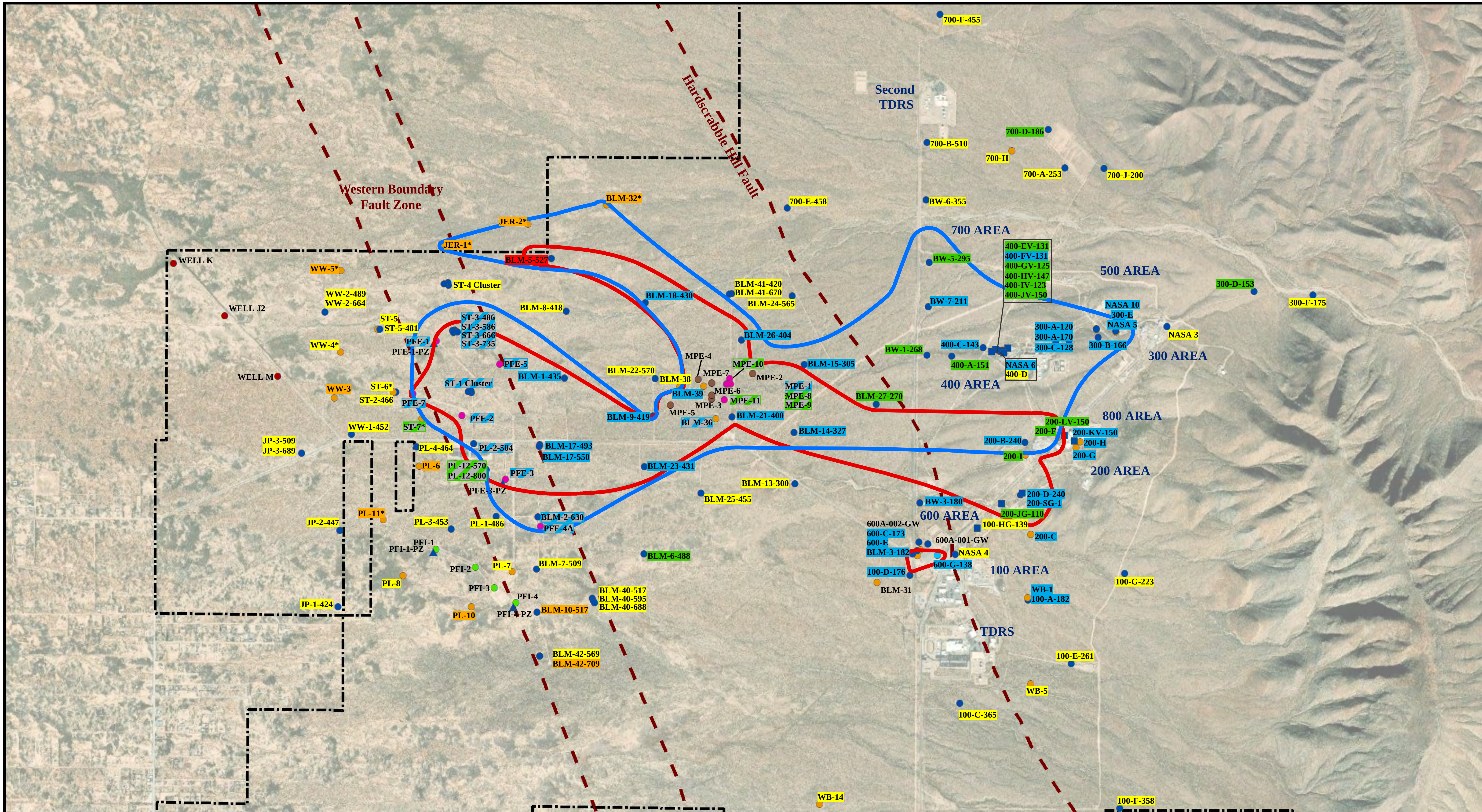
Well ID	Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
B655-INF-2	12/8/2022	607	2212081028	N-Nitrosodimethylamine	1.89	µg/L	0.0099	0.005	47	
B655-INF-2	12/8/2022	607	2212081029	N-Nitrosodimethylamine	1.95	µg/L	0.0098	0.0049	47	
B655-INF-2	1/19/2023	607	2301190916	N-Nitrosodimethylamine	3.02	µg/L	0.0094	0.0047	52	
B655-INF-2	11/10/2022	607	2211100918	N-Nitrosodimethylamine	2.16	µg/L	0.0094	0.0047	45	
MPE-1	11/14/2022	607	2211141333	N-Nitrosodimethylamine	2.79	µg/L	0.0096	0.0048	45	
MPE-10	11/15/2022	607	2211151303	N-Nitrosodimethylamine	3.02	µg/L	0.01	0.005	45	
MPE-11	11/15/2022	607	2211151245	N-Nitrosodimethylamine	0.13	µg/L	0.01	0.005	45	
MPE-9	11/14/2022	607	2211141351	N-Nitrosodimethylamine	3.54	µg/L	0.0095	0.0048	45	
MPE-9	11/14/2022	607	2211141350	N-Nitrosodimethylamine	3.47	µg/L	0.0094	0.0047	45	

CAS Number **79-01-6** **Analyte** **Trichloroethene (TCE)**

Clean Up Level **4.9 ug/L** **Source** **GMP**

Well ID	Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
B655-INF-2	12/8/2022	8260	2212081025	Trichloroethene (TCE)	58	ug/L	1	0.2		
B655-INF-2	12/8/2022	8260	2212081026	Trichloroethene (TCE)	61	ug/L	1	0.2		
B655-INF-2	1/19/2023	8260	2301190914	Trichloroethene (TCE)	79	ug/L	1	0.2		
B655-INF-2	11/10/2022	8260	2211100916	Trichloroethene (TCE)	51	ug/L	1	0.2		
MPE-1	11/14/2022	8260	2211141331	Trichloroethene (TCE)	76	ug/L	1	0.2		
MPE-10	11/15/2022	8260	2211151301	Trichloroethene (TCE)	71	ug/L	1	0.2		
MPE-11	11/15/2022	8260	2211151243	Trichloroethene (TCE)	5.1	ug/L	1	0.2		
MPE-9	11/14/2022	8260	2211141348	Trichloroethene (TCE)	99	ug/L	1	0.2		

Appendix E
Time Concentration Plots



Time Concentration Plot Interpretations for Fourth Quarter 2022

NASA Johnson Space Center
White Sands Test Facility Las Cruces, New Mexico

Coordinate System:
NAD 1983 HARN StatePlane New Mexico Central FIPS 3002 Feet

G:\Projects\environmental\PMR\2023\1stQuarter

Interpretations
- Non-Detect
- Fluctuating Low-Level NDMA Detections (≥1.1 ng/L)
- Natural Migration: No Overall Trend
- Natural Migration: Decreasing T-C
- Natural Migration: Increasing T-C
- Pumping-Related Migration: No Overall Trend
- Pumping-Related Migration: Decreasing T-C
- Pumping-Related Migration: Increasing T-C

Well Type
- Conventional Well
- Perched Well
- Multiport Well
- MSVGM Well
- Extraction Well
- Injection Well
- Piezometer
- Exploration Well
- Production Well
- * Multiport well with FLUTe sampling system.

Other
- NDMA Cleanup Level (1.1 ng/L)
- TCE Cleanup Level (4.9 ug/L)
- Fault
- WSTF Boundary

N W E S

1 inch = 2,500 feet
April 2023

0 1,250 2,500 5,000 Feet

Appendix E:

Reporting Period: 1Q/2023

Summary of Maximum Concentrations, Current Concentrations and T-C Plot Interpretations for WSTF Monitoring Well Network

Upgradient Well Group

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
100-F-358 Conv	2005	Non Detect	0.48 DL	2010	0.24 DL	2023	0.43 DL	2010	0.21 DL	2023	0.63 DL	2010	0.2 DL	2023	0.005 DL	NP	2012	0.004 DL	NP	2023	N/A		N/A	
100-G-223 Conv	2005	Non Detect	0.48 DL	2010	0.24 DL	2023	0.43 DL	2010	0.21 DL	2023	0.63 DL	2010	0.2 DL	2023	0.005 DL	NP	2012	0.004 DL	NP	2023	N/A		N/A	
300-F-175 Conv	2005	Non Detect	0.48 DL	2010	0.24 DL	2023	0.43 DL	2010	0.21 DL	2023	0.63 DL	2010	0.2 DL	2023	0.005 DL	NP	2016	0.004 DL	NP	2023	N/A		N/A	
NASA 3 Conv	1988	Non Detect	5.00 RL	1988	0.24 DL	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	N/A		N/A	

100/600 Area Well Group

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
100-C-365 Conv	1989	Non Detect	1.00 DL	2010	0.24 DL	2022	1.00 DL	2010	0.21 DL	2022	1.00 DL	2010	0.2 DL	2022	0.05 RL	NP	1992	0.004 DL	NP	2022	N/A		N/A	
100-D-176 Conv	1997	Natural Migration (Decreasing)	1.60 DL	2003	0.24 DL	2022	2.00 DL	1999	0.21 DL	2022	9.60	1999	3.50	2022	0.05 RL	NP	1997	0.005 DL	NP	2022	N/A		N/A	
100-HG-139 MSVGM	2011	Non Detect	0.79 J	2011	0.24 DL	2022	0.33 J	2015	0.21 DL	2022	10	2014	0.2 DL	2022	0.005 DL	NP	2020	0.004 DL	NP	2022	0.93 RB FB	2012	0.93 RB FB	2012
600-C-173 Conv	1988	Natural Migration (Decreasing)	5.00 RL	1988	0.24 DL	2022	2.50 RL	1996	0.21 DL	2022	9.00	1998	2.10	2022	0.1	NP	1988	0.004 DL	NP	2022	N/A		N/A	
600-E WestBay	1998	Natural Migration (Decreasing)	1.60 DL	2002	0.24 DL	2022	2.00 DL	1999	0.21 DL	2022	2.00 DL	1999	0.62 J	2022	0.005 DL	NP	2016	0.004 DL	NP	2022	N/A		N/A	
600-G-138 Conv	2011	Natural Migration (Decreasing)	5.10	2017	0.48 J	2023	0.3 DL	2018	0.21 DL	2023	130	2012	33	2023	0.1 DL	NP	2021	0.004 DL	NP	2022	0.96 RB FB	2012	0.96 RB FB	2012
BW-3-180 Conv	1988	Natural Migration (Decreasing)	10	1988	0.33 J	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	0.05 RL	NP	1997	0.005 DL	NP	2022	N/A		N/A	
NASA 4 Conv	1988	Non Detect	5.00 RL	1988	0.24 DL	2022	2.50 RL	1995	0.21 DL	2022	3.50	2009	0.2 DL	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	N/A		N/A	
WB-1 WestBay	1990	Natural Migration (Decreasing)	15	1996	0.24 DL	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.33 J	2022	0.05 RL	NP	1993	0.004 DL	NP	2022	N/A		N/A	

200 Area Well Group

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
200-B-240 Conv	1989	Natural Migration (Decreasing)	280	1996	90	2022	15 QD	1989	1.90	2022	290 QD	1989	47	2022	1.60	25	1993	0.3	44	2022	N/A		N/A	
200-C WestBay	1993	Natural Migration (Decreasing)	51	1996	12	2022	2.50 RL	1996	0.21 DL	2022	4.30	2003	1.90	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	N/A		N/A	
200-D-240 Conv	1988	Natural Migration (Decreasing)	240 QD	1995	53	2022	2.50 RL	1995	0.34 J	2022	110	1990	15	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	N/A		N/A	
200-F WestBay	1995	Natural Migration (No Overall Trend)	41	2005	4.70	2022	2.50 RL	1996	0.21 DL	2022	34	2009	21	2022	0.41 J A	1	2021	0.004 DL	NP	2022	N/A		N/A	
200-G WestBay	1995	Natural Migration (Decreasing)	55	1995	4.60 QD	2022	2.50 RL	1996	0.21 DL	2022	4.80	2004	1.70	2022	0.05 RL	NP	1997	0.005 DL	NP	2022	N/A		N/A	
200-H WestBay	1994	Natural Migration (Decreasing)	6.00	2003	1.00	2022	2.50 RL	1996	0.21 DL	2022	3.00 J	1997	0.2 DL	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	N/A		N/A	
200-I WestBay	1997	Natural Migration (No Overall Trend)	2.40 J	1999	0.36 J Q	2022	2.00 DL	1999	0.53 J	2022	35	2019	30 Q	2022	0.021 J	42	2006	0.004 DL	NP	2022	N/A		N/A	
200-JG-110 MSVGM	2012	Natural Migration (No Overall Trend)	17	2013	8.30	2022	2.20	2020	1.90	2022	25	2013	24	2022	0.005 DL	NP	2012	0.004 DL	NP	2022	0.93 J	2012	0.93 J	2012
200-KV-150 MSVGM	2015	Natural Migration (Decreasing)	90	2020	11	2022	0.3 DL	2015	0.21 DL	2022	22	2020	1.90	2022	0.005 DL	NP	2020	0.004 DL	NP	2022	N/A		N/A	
200-LV-150 Conv	2018	Natural Migration (No Overall Trend)	0.27 DL	2018	0.26 J	2022	0.3 DL	2018	0.21 DL	2022	0.89 J Q	2018	0.53 J	2022	0.004 DL	NP	2018	0.004 DL	NP	2022	N/A		N/A	
200-SG-1 MSVGM	2004	Natural Migration (Decreasing)	81	2008	8.80	2022	17	2007	4.30	2022	380	2007	100	2022	0.016 J	44	2008	0.004 DL	NP	2022	N/A		N/A	
BLM-3-182 Conv	1988	Natural Migration (Decreasing)	10	1988	0.24 DL	2022	2.50 RL	1995	0.21 DL	2022	41	1991	13	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	N/A		N/A	

300/400 Area Well Group

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
300-A-120 Conv	1988	Natural Migration (Decreasing)	4300 FB	1996	34	2022	2.50 RL	1996	0.21 DL	2022	2.50	2004	0.2 DL	2022	46	24	1990	2.50	43	2022	N/A		N/A	

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
300-A-170 Conv	1988	Natural Migration (Decreasing)	6000	1988	240	2022	2.50 RL	1996	0.21 DL	2022	7.00	1988	1.00 J	2022	48 QD	21	1995	3.30	47	2022	N/A		N/A	
300-B-166 Conv	1988	Natural Migration (Decreasing)	1600	1988	180	2022	2.50 RL	1996	0.21 DL	2022	8.00	1988	0.32 J	2022	14	39	1991	6.70	49	2022	N/A		N/A	
300-C-128 Conv	1988	Natural Migration (Decreasing)	3000	1988	380	2022	2.50 RL	1996	0.21 DL	2022	3.70 J	1996	2.20	2022	47	32	2000	7.60	41	2022	N/A		N/A	
300-D-153 Conv	1988	Natural Migration (No Overall Trend)	6.30	2013	2.90	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	N/A		N/A	
300-E WestBay	1995	Natural Migration (Decreasing)	180	1996	8.10	2022	2.50 RL	1996	0.21 DL	2022	9.30	1997	1.20	2022	49 A	1	2021	0.015 J	45	2022	N/A		N/A	
400-A-151 Conv	1989	Natural Migration (No Overall Trend)	450	1990	190	2023	2.50 RL	1996	0.21 DL	2023	2.50 RL	1996	0.78 J	2023	280	18	1991	15 D	52	2023	N/A		N/A	
400-C-143 Conv	1989	Natural Migration (Decreasing)	1600	1989	190	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	1.00	2022	93	15	1989	4.70	47	2022	N/A		N/A	
400-EV-131 MSVGM	2017	Natural Migration (No Overall Trend)	520	2017	350	2022	0.3 DL	2018	0.21 DL	2022	13	2017	1.20	2022	3.30	46	2020	2.00	40	2022	N/A		N/A	
400-FV-131 MSVGM	2017	Natural Migration (Decreasing)	290	2021	13	2022	0.3 DL	2018	0.21 DL	2022	1.90	2021	0.2 DL	2022	3.30	60	2020	0.93	41	2022	N/A		N/A	
400-GV-125 MSVGM	2017	Natural Migration (No Overall Trend)	320	2021	180	2022	0.3 DL	2018	0.21 DL	2022	1.80	2022	1.30	2022	5.70	44	2021	2.80	46	2022	N/A		N/A	
400-HV-147 MSVGM	2017	Natural Migration (No Overall Trend)	240	2021	130	2022	0.3 DL	2018	0.21 DL	2022	2.00	2017	0.51 J	2022	320 D	53	2021	320 D	41	2022	N/A		N/A	
400-IV-123 MSVGM	2017	Natural Migration (No Overall Trend)	430	2017	160	2022	0.93 J	2018	0.21 DL	2022	0.29 J	2021	0.2 DL	2022	0.041	87	2017	0.014 J	41	2022	N/A		N/A	
400-JV-150 MSVGM	2017	Natural Migration (No Overall Trend)	970	2021	540	2022	0.3 DL	2018	0.21 DL	2022	1.50	2017	0.65 J	2022	5.90	44	2021	4.80	40	2022	N/A		N/A	
BW-1-268 Conv	1989	Natural Migration (No Overall Trend)	1100	1989	230	2022	2.50 RL	1996	0.21 DL	2022	5.00	1989	1.60	2022	130	18	1991	8.20	43	2022	N/A		N/A	
BW-5-295 Conv	1989	Natural Migration (No Overall Trend)	360	1989	60	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.31 J	2022	1.90	49	1997	0.98	44	2022	N/A		N/A	

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
BW-7-211 Conv	1989	Natural Migration (Decreasing)	2400	1991	150	2022	2.50 RL	1995	0.21 DL	2022	13	1989	1.30	2022	17	34	1994	2.00	47	2022	N/A		N/A	
NASA 10 Conv	1988	Natural Migration (Decreasing)	250	1996	11	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	4.70	19	1996	0.093 QD	43	2022	N/A		N/A	
NASA 5 Conv	1988	Natural Migration (Decreasing)	350	1991	23 Q	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	13	19	1996	1.10	43	2022	N/A		N/A	
NASA 6 Conv	1988	Natural Migration (Decreasing)	1300	1996	74	2022	2.50 RL	1996	0.21 DL	2022	5.00	1990	0.63 J	2022	95	21	1996	14 D	47	2022	N/A		N/A	

Northern Boundary Well Group

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
700-A-253 Conv	1990	Non Detect	2.50 RL	1996	0.16 DL	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	0.05 RL	NP	1997	0.005 DL	NP	2022	N/A		N/A	
700-B-510 Conv	1990	Non Detect	2.50 RL	1995	0.24 DL	2022	2.50 RL	1995	0.21 DL	2022	2.50 RL	1995	0.2 DL	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	N/A		N/A	
700-D-186 Conv	1990	Natural Migration (No Overall Trend)	2.50 RL	1995	0.57 J	2022	2.50 RL	1995	0.21 DL	2022	2.50 RL	1995	0.44 J	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	N/A		N/A	
700-E-458 Conv	1990	Non Detect	2.50 RL	1996	0.24 DL	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	N/A		N/A	
700-F-455 Conv	1991	Non Detect	2.50 RL	1996	0.37 DL	2005	2.50 RL	1996	0.27 DL	2005	2.50 RL	1996	0.52 DL	2005	0.05 RL	NP	1997	0.005 DL	NP	2005	N/A		N/A	
700-H WestBay	1999	Non Detect	1.60 DL	2003	0.16 DL	2022	0.62 DL	2004	0.21 DL	2022	1.90 RB TB EB	2021	0.2 DL	2022	0.005 DL	NP	2013	0.004 DL	NP	2022	N/A		N/A	
700-J-200 Conv	1999	Non Detect	1.60 DL	2003	0.16 DL	2022	0.62 DL	2004	0.21 DL	2022	3.70	2005	0.2 J	2022	0.005 DL	NP	2017	0.004 DL	NP	2022	N/A		N/A	
BLM-24-565 Conv	1991	Non Detect	2.50 RL	1995	0.24 DL	2022	2.50 RL	1995	0.21 DL	2022	2.50 RL	1995	0.2 DL	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	N/A		N/A	
BLM-32 WestBay	1997	Fluctuating LL NDMA	1.60 DL	2002	0.24 DL	2022	2.00 DL	1999	0.21 DL	2022	2.00 DL	1999	0.2 DL	2022	0.016 J	36	2004	0.004 DL	NP	2022	21	2015	1.6 RB FB	2022
BLM-41-420 Conv	2013	Non Detect	0.27 DL	2018	0.24 DL	2022	0.3 DL	2013	0.21 DL	2022	1.00	2013	0.2 DL	2022	0.005 DL	NP	2015	0.004 DL	NP	2022	5.40	2017	5.40 FB	2015
BLM-41-670 Conv	2013	Non Detect	0.27 DL	2018	0.24 DL	2022	0.28 DL	2018	0.21 DL	2022	0.2 DL	2022	0.2 DL	2022	0.005 DL	NP	2013	0.004 DL	NP	2022	5.50 FB	2017	5.50 FB	2017

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
BW-6-355 Conv	1992	Non Detect	2.50 RL	1996	0.24 DL	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	0.32	37	2004	0.004 DL	NP	2022	N/A		N/A	
JER-1 WestBay	2004	Fluctuating LL NDMA	0.6 DL	2004	0.24 DL	2023	0.62 DL	2004	0.21 DL	2023	0.72	2011	0.2 DL	2023	0.014 J	41	2005	0.004 DL	NP	2022	360	2009	1.70 RB	2023
JER-2 WestBay	2004	Fluctuating LL NDMA	0.6 DL	2004	0.24 DL	2023	0.62 DL	2004	0.21 DL	2023	0.63 DL	2010	0.2 DL	2023	0.016 J	43	2005	0.004 DL	NP	2022	290 QD	2006	4.20 FB Q	2023

Southern Boundary Well Group

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
100-E-261 Conv	1989	Non Detect	2.50 RL	1996	0.24 DL	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	0.05 RL	NP	1996	0.004 DL	NP	2022	N/A		N/A	
BLM-13-300 Conv	1988	Non Detect	5.00 RL	1988	0.24 DL	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	N/A		N/A	
BLM-25-455 Conv	1991	Non Detect	2.50 RL	1996	0.24 DL	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	N/A		N/A	
BLM-40-517 Conv	2013	Non Detect	0.27 DL	2018	0.24 DL	2022	0.3 DL	2017	0.21 DL	2022	0.22 DL	2017	0.2 DL	2022	0.005 DL	NP	2018	0.004 DL	NP	2022	1.10	2017	1.10	2017
BLM-40-595 Conv	2013	Non Detect	0.27 DL	2018	0.24 DL	2022	0.28 DL	2018	0.21 DL	2022	0.2 DL	2022	0.2 DL	2022	0.005 DL	NP	2019	0.004 DL	NP	2022	0.67 FB	2014	0.67 FB	2014
BLM-40-688 Conv	2013	Non Detect	0.27 DL	2018	0.24 DL	2022	0.3 DL	2016	0.21 DL	2022	0.22 DL	2016	0.2 DL	2022	0.005 DL	NP	2015	0.004 DL	NP	2022	0.74	2016	0.74	2016
BLM-6-488 Conv	1990	Natural Migration (No Overall Trend)	3.10 J	1999	0.24 DL	2023	2.50 RL	1996	0.21 DL	2023	14	1999	2.20	2023	0.05 RL	NP	1997	0.004 DL	NP	2023	45 FB	2001	1.40 FB	2023
WB-14 WestBay	1992	Non Detect	2.50 RL	1996	0.24 DL	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.33 J	2022	0.05 RL	NP	1993	0.004 DL	NP	2022	N/A		N/A	
WB-5 WestBay	1990	Non Detect	2.50 RL	1996	0.24 DL	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	0.05 RL	NP	1991	0.005 DL	NP	2022	N/A		N/A	

MPCA Well Group

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
BLM-14-327 Conv	1990	Natural Migration (Decreasing)	230	1995	92	2022	9.20	2002	1.40	2022	180	1995	57	2022	1.20	18	2002	0.44	41	2022	N/A		N/A	
BLM-15-305 Conv	1989	Natural Migration (Decreasing)	770	1991	110	2023	2.50 RL	1996	0.21 DL	2023	22	1989	1.90	2023	150 A	8	1989	22 D	47	2023	N/A		N/A	

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
BLM-18-430 Conv	1989	Natural Migration (Decreasing)	120 QD	2005	21 Q	2023	2.50 RL	1996	0.52 J	2023	58	2009	15 Q	2023	0.15 QD	31	2009	0.038	52	2023	N/A		N/A	
BLM-21-400 Conv	1991	Natural Migration (Decreasing)	320	1996	34	2022	12	1995	0.85 J	2022	220	1991	18	2022	5.60	16	1995	0.85	40	2022	N/A		N/A	
BLM-22-570 Conv	1990	Non Detect	2.50 RL	1995	0.24 DL	2022	2.50 RL	1995	0.21 DL	2022	2.50 RL	1995	0.2 DL	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	N/A		N/A	
BLM-23-431 Conv	1990	Natural Migration (Decreasing)	240	1995	43 Q	2022	8.00	1991	1.80 Q	2022	240	1995	55 Q	2022	1.10	33	2006	0.46	46	2022	N/A		N/A	
BLM-26-404 Conv	1991	Natural Migration (Decreasing)	110	2008	65	2022	2.50 RL	1996	0.48 J	2022	28	2008	21	2022	1.20	50	1991	0.32	44	2022	N/A		N/A	
BLM-27-270 Conv	1991	Natural Migration (No Overall Trend)	500	2010	420 Q	2022	2.50 RL	1996	0.43 J Q	2022	2.50 RL	1996	1.40 Q	2022	13	41	2006	4.90 Q	47	2022	N/A		N/A	
BLM-36 WestBay	2000	Pumping Related Migration (Decreasing)	98	2011	42	2022	4.40	2011	3.10	2022	97	2008	64	2022	2.00	43	2007	1.00	44	2022	N/A		N/A	
BLM-38 WestBay	2000	Non Detect	1.60 DL	2003	0.24 DL	2022	0.62 DL	2004	0.21 DL	2022	0.7 DL	2003	0.2 DL	2022	0.024 J	33	2002	0.004 DL	NP	2022	N/A		N/A	
BLM-39 WestBay	2000	Natural Migration (Decreasing)	340	2005	100	2022	10	2007	6.50	2022	330 QD	2002	180	2022	9.70	19	2002	5.50	42	2022	N/A		N/A	
BLM-5-527 Conv	1988	Natural Migration (Incr easing)	23	2020	22	2022	2.50 RL	1996	0.84 J	2022	31	2022	31	2022	0.26	43	2022	0.23	44	2022	220 G	2017	220 G	2017
BLM-8-418 Conv	1988	Non Detect	2.50 RL	1996	0.24 J	2022	2.50 RL	1996	0.21 DL	2022	3.80 QD	2001	0.2 DL	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	N/A		N/A	
BLM-9-419 Conv	1989	Natural Migration (Decreasing)	320	1991	6.20	2022	12	1989	0.21 DL	2022	240	1989	3.00	2022	8.80	16	1995	0.004 DL	NP	2022	N/A		N/A	

Main Plume Well Group

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
BLM-1-435 Conv	1988	Natural Migration (Decreasing)	270	1991	45	2020	18	1988	2.40	2020	360	1988	62	2020	5.90	108	1997	1.30	68	2020	N/A		N/A	
BLM-17-493 Conv	1989	Natural Migration (Decreasing)	480	1989	50	2022	31	1989	2.40	2022	430	1989	53	2022	11 A Q	7	1989	1.70	44	2022	N/A		N/A	

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
BLM-17-550 Conv	1990	Natural Migration (Decreasing)	440	1991	91	2023	20	1990	3.30	2023	390	1991	83	2023	8.10	16	1995	1.10	47	2023	N/A		N/A	
BLM-2-630 Conv	1988	Pumping Related Migration (Decreasing)	470 QD	1988	0.24 DL	2022	8.00	1991	0.21 DL	2022	310 QD	1988	0.2 J	2022	1.30	31	2002	0.004 DL	NP	2022	N/A		N/A	
PL-1-486 Conv	1988	Non Detect	190	1996	0.25 J	2023	4.60	2004	0.21 DL	2023	180	2004	0.2 DL	2023	0.093	43	2005	0.004 DL	NP	2022	260 QD	2002	0.34 DL	2023
PL-2-504 Conv	1989	Pumping Related Migration (Decreasing)	230	1996	38	2022	2.50 RL	1996	0.83 J	2022	180	2004	50	2022	0.45 QD	58	2021	0.042	47	2022	300 G RB Q	2020	300 G RB Q	2020
ST-1-473 Conv	1989	Pumping Related Migration (Decreasing)	610	1996	110	2022	13	2010	3.10	2022	370	2005	180	2022	1.70	27	2009	0.43	44	2022	N/A		N/A	
ST-1-541 Conv	1992	Pumping Related Migration (Decreasing)	790	1995	160	2022	37	1995	8.20	2022	650	1995	150	2022	4.80 QD	37	2003	2.80	47	2022	N/A		N/A	
ST-1-630 Conv	1992	Pumping Related Migration (Decreasing)	410	2006	39	2022	19 QD	2007	2.30	2022	440	2000	49	2022	1.90	40	2019	0.11	47	2022	N/A		N/A	
ST-3-486	1991	Pumping Related Migration (Decreasing)	800	1996	18	2022	19	2003	0.21 DL	2022	690	1991	4.30	2022	4.40	45	2011	0.085	47	2022	N/A		N/A	
ST-3-586 Conv	1992	Pumping Related Migration (Decreasing)	640 T TB Q	1996	6.80	2022	15	2007	0.43 J	2022	320	2005	12	2022	3.80 QD	37	2003	0.021	47	2022	N/A		N/A	
ST-3-666 Conv	1992	Pumping Related Migration (Decreasing)	280	2009	12	2022	15	2009	0.65 J	2022	320	2009	19	2022	3.70	30	2006	0.11	47	2022	N/A		N/A	
ST-3-735 Conv	1992	Pumping Related Migration (Decreasing)	240	2005	8.00	2022	14	2007	0.21 DL	2022	320	2005	14	2022	7.80 QD	32	2009	0.55	47	2022	N/A		N/A	

Plume Front Well Group

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
BLM-10-517 Conv	1988	Natural Migration (No Overall Trend)	5.00 RL	1988	0.47 J	2023	2.50 RL	1996	0.21 DL	2023	4.40	2012	0.2 DL	2023	0.095 RL	NP	1988	0.004 DL	NP	2023	5.90	2020	0.64 FB	2023
BLM-7-509 Conv	1988	Non Detect	5.00 RL	1988	0.24 DL	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	0.09 J	32	1996	0.004 DL	NP	2022	0.76 FB	2018	0.45 J	2022
PL-3-453 Conv	1989	Non Detect	5.00 RL	1989	0.24 DL	2020	2.50 RL	1996	0.21 DL	2020	2.50 RL	1996	0.2 DL	2020	0.05 RL	NP	1997	0.004 DL	NP	2020	3.80 RB FB	2005	3.80 RB FB	2005
PL-4-464 Conv	1990	Non Detect	28	2005	0.27 J	2022	2.50 RL	1996	0.21 DL	2022	21	2005	0.2 DL	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	2.70 RB FB	2005	0.45 J RB TB FB	2022
PL-6 WestBay	1992	Fluctuating LL NDMA	4.10 J	1996	0.24 DL	2023	5.60	1996	0.21 DL	2023	4.90 J	1996	0.2 DL	2023	0.64	28	1999	0.004 DL	NP	2023	44	2023	44.03	2023
PL-7 WestBay	1993	Non Detect	2.50 RL	1996	0.24 DL	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	4.90	2021	0.5 RB	2022
ST-2-466 Conv	1989	Non Detect	2.50 RL	1995	0.24 DL	2022	2.50 RL	1995	0.21 DL	2022	2.50 RL	1995	0.2 DL	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	2.60 RB	2004	2.60 RB	2004
ST-4-481 Conv	1992	Non Detect	2.50 RL	1996	0.24 DL	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	1.80 FB	2012	0.5	2022
ST-4-589 Conv	1992	Non Detect	2.50 RL	1996	0.24 DL	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	1.10 RB Q	2008	0.4 J TB	2022
ST-4-690 Conv	1992	Non Detect	3.00 J	1998	0.24 DL	2022	2.50 RL	1995	0.21 DL	2022	10	1998	0.2 DL	2022	0.05 RL	NP	1997	0.005 DL	NP	2022	2.70	2008	0.35 DL	2022
ST-5 WestBay	1992	Non Detect	2.50 RL	1996	0.24 DL	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	7.20	2017	0.8 RB EB	2022
ST-5-481 Conv	1992	Non Detect	2.50 RL	1996	0.24 DL	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	0.05 RL	NP	1997	0.005 DL	NP	2022	0.7 FB	2002	0.7 FB	2002
ST-6 WestBay	1998	Non Detect	21 EB	2005	0.24 DL	2022	2.00 DL	1999	0.21 DL	2022	67	2004	0.26 J	2022	0.012	90	2017	0.004 DL	NP	2022	28 RB FB Q	2005	0.47 J RB FB	2022
ST-7 WestBay	1999	Pumping Related Migration (No Overall Trend)	1.70	2022	1.40	2023	0.62 DL	2004	0.21 DL	2023	1.90	2022	1.60	2023	0.005 DL	NP	2013	0.004 DL	NP	2022	3.80 FB	2002	0.5 FB	2023
WW-1-452 Conv	1988	Non Detect	5.00 RL	1988	0.24 DL	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	0.3 T	30	2006	0.004 DL	NP	2022	3.20 RB FB	2012	0.85 FB	2022

Sentinel Well Group

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
100-A-182 Conv	1989	Natural Migration (Decreasing)	5.00	1995	1.90	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	N/A		N/A	
400-D WestBay	1995	Non Detect	3.30 J EB	1996	0.24 DL	2022	3.50 J	1998	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	0.29	34	1996	0.004 DL	NP	2022	N/A		N/A	
BLM-42-569 Conv	2020	Non Detect	0.24 DL	2022	0.24 DL	2022	0.21 DL	2022	0.21 DL	2022	0.2 DL	2022	0.2 DL	2022	0.004 DL	NP	2021	0.004 DL	NP	2021	1.60 RB * TB FB	2021	0.41 J	2022
BLM-42-709 Conv	2020	Fluctuating LL NDMA	0.24 DL	2022	0.24 DL	2022	0.21 DL	2022	0.21 DL	2022	0.2 DL	2022	0.2 DL	2022	0.004 DL	NP	2020	0.004 DL	NP	2021	1.50 RB * FB	2021	1.10	2022
JP-1-424 Conv	1988	Non Detect	5.50	2001	0.24 DL	2023	2.50 RL	1996	0.21 DL	2023	2.50 RL	1996	0.2 DL	2023	0.061 J	36	1998	0.004 DL	NP	2023	15 RB QD	2004	0.5 FB	2023
JP-2-447 Conv	1988	Non Detect	2.50 RL	1996	0.24 DL	2023	2.50 RL	1996	0.21 DL	2023	4.50	2001	0.2 DL	2023	0.05 RL	NP	1997	0.004 DL	NP	2021	14	2000	0.34 DL	2023
JP-3-509 Conv	2013	Non Detect	0.27 DL	2019	0.24 DL	2023	0.28 DL	2019	0.21 DL	2023	0.2 DL	2023	0.2 DL	2023	0.004 DL	NP	2017	0.004 DL	NP	2023	0.85 * TB	2021	0.34 DL	2023
JP-3-689 Conv	2014	Non Detect	0.27 DL	2019	0.24 DL	2023	0.28 DL	2019	0.21 DL	2023	0.2 DL	2023	0.2 DL	2023	0.005 DL	NP	2014	0.004 DL	NP	2023	1.80 TB FB	2021	0.39 J	2023
PL-10 WestBay	2002	Fluctuating LL NDMA	1.60 DL	2003	0.24 DL	2023	0.62 DL	2004	0.21 DL	2023	0.62 DL	2004	0.2 DL	2023	0.005 DL	NP	2021	0.005 DL	NP	2021	6.10	2019	1.80 EB	2023
PL-11 FLUTe	2017	Fluctuating LL NDMA	0.45 J	2019	0.31 J	2022	0.28 DL	2018	0.21 DL	2022	0.25 J	2022	0.25 J	2022	0.005 DL	NP	2017	0.004 DL	NP	2022	5.90 SP	2019	1.40 FB	2022
PL-12-570 Conv	2020	Pumping Related Migration (No Overall Trend)	17	2020	4.20	2022	0.46 J	2020	0.21 DL	2022	20	2020	4.40	2022	0.004 DL	NP	2020	0.004 DL	NP	2022	3.60	2020	1.10	2022
PL-12-800 Conv	2020	Pumping Related Migration (No Overall Trend)	14	2020	4.50	2022	0.24 J	2021	0.21 DL	2022	17	2020	5.40	2022	0.004 DL	NP	2021	0.004 DL	NP	2022	4.60 FB	2021	1.70	2022
PL-8 WestBay	2000	Non Detect	1.60 DL	2002	0.24 DL	2022	0.62 DL	2004	0.21 DL	2022	0.7 DL	2003	0.2 DL	2022	0.005 DL	NP	2015	0.004 DL	NP	2022	12 FB	2002	0.56 EB	2022
WW-2-489 Conv	2013	Non Detect	0.27 DL	2018	0.24 DL	2022	0.28 DL	2018	0.21 DL	2022	0.2 DL	2022	0.2 DL	2022	0.005 DL	NP	2014	0.004 DL	NP	2021	0.41 J FB	2016	0.34 DL	2022
WW-2-664 Conv	2013	Non Detect	0.27 DL	2018	0.24 DL	2022	0.28 DL	2018	0.21 DL	2022	0.2 DL	2022	0.2 DL	2022	0.005 DL	NP	2014	0.004 DL	NP	2021	1.80 RB * FB	2021	0.34 DL	2022
WW-3 WestBay	2001	Fluctuating LL NDMA	1.60 DL	2002	0.24 DL	2022	0.62 DL	2004	0.21 DL	2022	0.7 DL	2003	0.2 DL	2022	0.012 J	40	2004	0.004 DL	NP	2021	95 RB *	2007	1.10 RB EB	2022

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
WW-4 WestBay	2001	Non Detect	1.60 DL	2002	0.24 DL	2022	0.62 DL	2004	0.21 DL	2022	0.7 DL	2003	0.2 DL	2022	0.005 DL	NP	2016	0.004 DL	NP	2022	35	2016	0.71	2022
WW-5 WestBay	2001	Fluctuating LL NDMA	1.60 DL	2003	0.24 DL	2023	0.62 DL	2004	0.21 DL	2023	0.62 DL	2004	0.2 DL	2023	0.005 DL	NP	2016	0.004 DL	NP	2022	6.50 *	2021	4.40	2023

Other Well Group

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
MPE-1 Conv*	1999	Pumping Related Migration (Decreasing)	560	2005	140	2022	8.70	2010	3.80	2022	180	2010	76	2022	25	30	2009	6.20	45	2022	N/A		N/A	
MPE-10 Conv*	2004	Pumping Related Migration (No Overall Trend)	150	2017	120	2022	3.50	2022	3.50	2022	71	2022	71	2022	8.50	40	2021	6.70	45	2022	N/A		N/A	
MPE-11 Conv*	2004	Pumping Related Migration (No Overall Trend)	65	2008	7.80	2022	1.60	2008	0.26 J	2022	41	2008	5.10	2022	1.60	40	2007	0.29	45	2022	N/A		N/A	
MPE-8 Conv*	2003	Pumping Related Migration (No Overall Trend)	200	2020	78	2022	4.20	2021	2.70	2022	88	2021	61	2022	6.50	40	2021	4.80	46	2022	N/A		N/A	
MPE-9 Conv*	2004	Pumping Related Migration (No Overall Trend)	250	2015	130	2022	5.60	2018	4.80	2022	130	2018	99	2022	13	35	2019	7.90	45	2022	N/A		N/A	
PFE-1 Conv*	2000	Pumping Related Migration (Decreasing)	110	2010	3.80	2021	4.80	2010	0.32 J	2021	140	2005	5.90	2021	0.39	36	2017	0.12	53	2021	N/A		N/A	
PFE-2 Conv*	2000	Pumping Related Migration (Decreasing)	170	2007	62	2022	7.60	2007	2.40	2022	220	2007	58	2022	0.39	38	2021	0.34	44	2022	N/A		N/A	
PFE-3 Conv*	1991	Pumping Related Migration (Decreasing)	290	2006	37	2021	18	2004	1.80	2021	340	2004	44	2021	3.90	18	1991	0.34	38	2021	N/A		N/A	
PFE-4A Conv*	2001	Pumping Related Migration (Decreasing)	190	2004	1.30	2023	8.40	2007	0.21 DL	2023	240	2004	1.70	2023	0.26	36	2010	0.014 J	56	2023	N/A		N/A	

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
PFE-7 Conv*	2001	Pumping Related Migration (Decreasing)	32	2004	5.80	2023	0.81 J	2004	0.21 J	2023	41	2004	5.50	2023	0.022	44	2004	0.004 DL	NP	2023	N/A		N/A	

Notes:

T-C plot interpretations are based on a review of all T-C plots for a given well. This table generalizes the historical maximum concentration and last concentrations for four of the primary VOCs in groundwater. Evaluation of the data in this table should be used in conjunction with T-C plots as the maximum and current values do not always accurately represent the overall T-C plot trend.

NDMA analytical results using two methods: 1) Method 607 (ug/L), extraction efficiency provided, the applicable detection limit is typically 0.004 to 0.005 ug/L; and 2) Low Level (ng/L), the applicable detection limit is 0.22 to 0.23 ng/L.

For wells with several maximum concentrations with the same value (typically the detection limit), the latest sampling event for which the detection limit applied was used for the sample year.

J = Concentration values between the detection limit and practical quantitation limit.

FB = Detected in field blank

EB = Detected in equipment blank

NP = NDMA Method 607 extraction efficiency not provided where the analytical result is non-detect (eg, 0.004DL or 0.05RL)

TB = Detected in trip blank

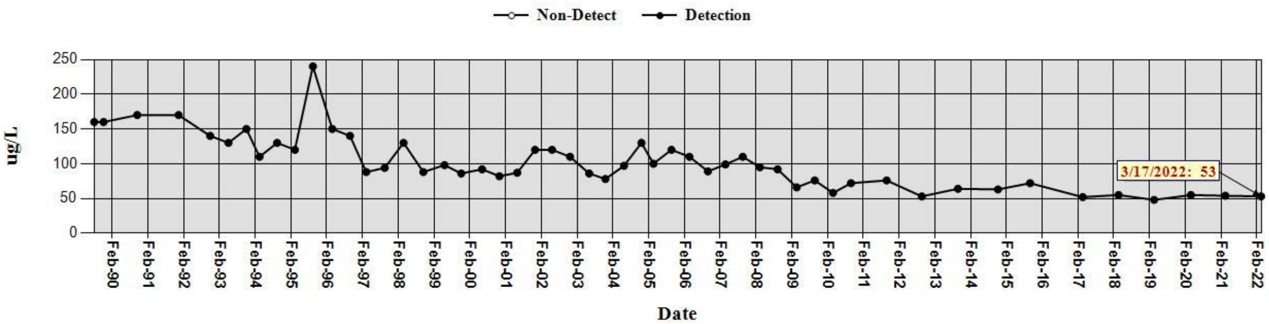
QD = duplicate error

RL = Concentration presents half of the reporting limit. The maximum reporting limits and most recent year it was used are reported in the table. Reporting limits can change over time, typically decreasing as analytical techniques improve.

DL = Maximum detection limit and most recent year they were used are reported in the table. Detection limits can change over time, typically decreasing as analytical techniques improve.

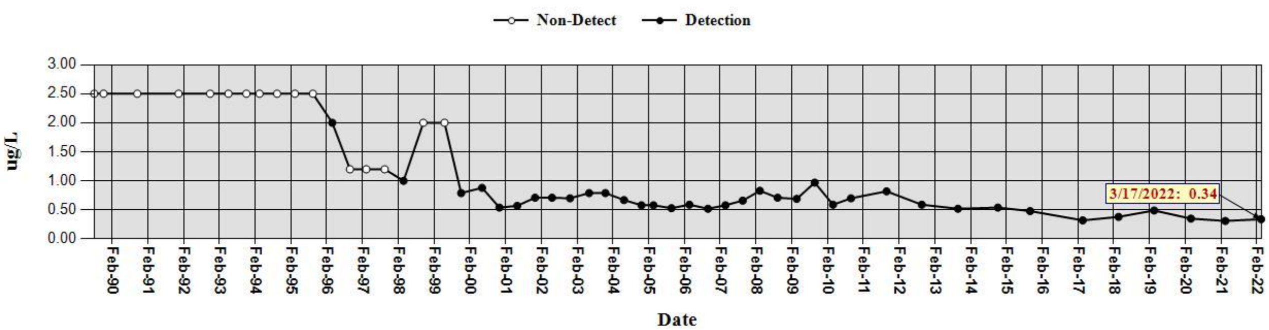
Well ID: 200-D-240
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



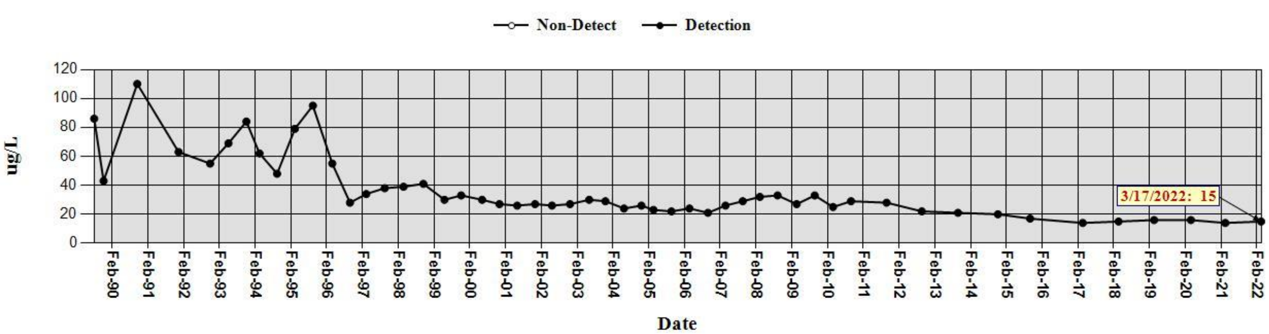
Well ID: 200-D-240
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



Well ID: 200-D-240
CAS RN: 79-01-6 Trichloroethene

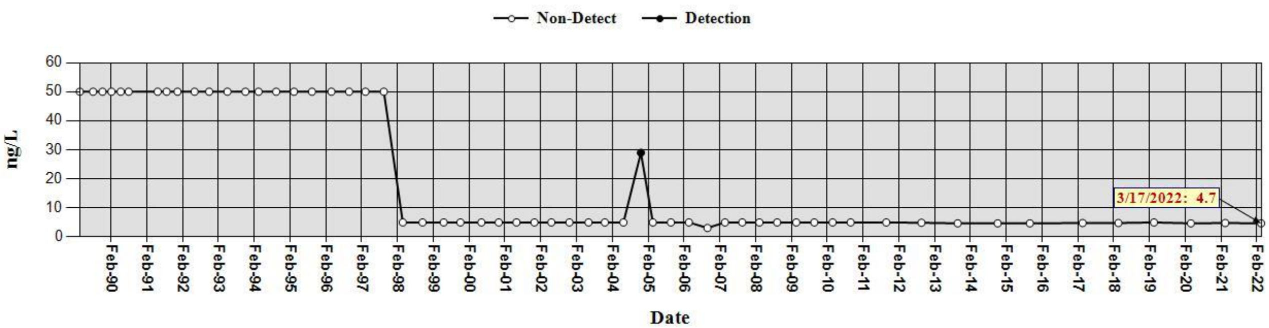
Analysis: 8260



Well ID: 200-D-240
CAS RN: 62-75-9 N-Nitrosodimethylamine

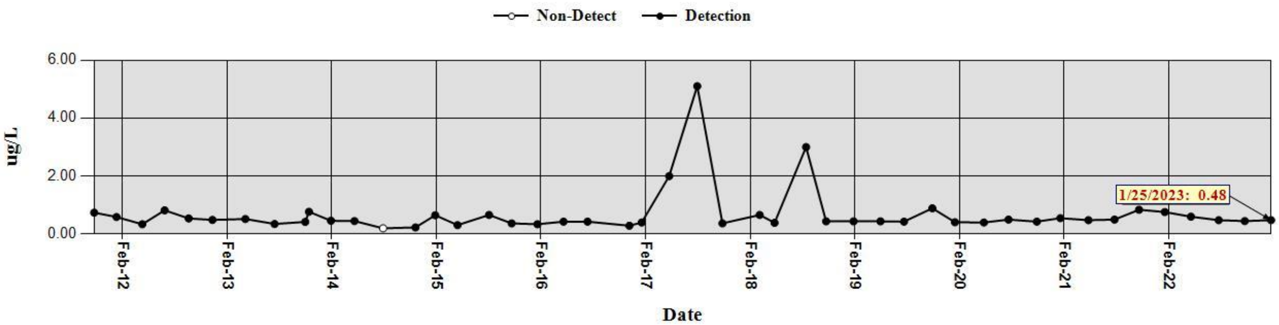
Analysis: 607

Results are Corrected for Extraction Efficiency



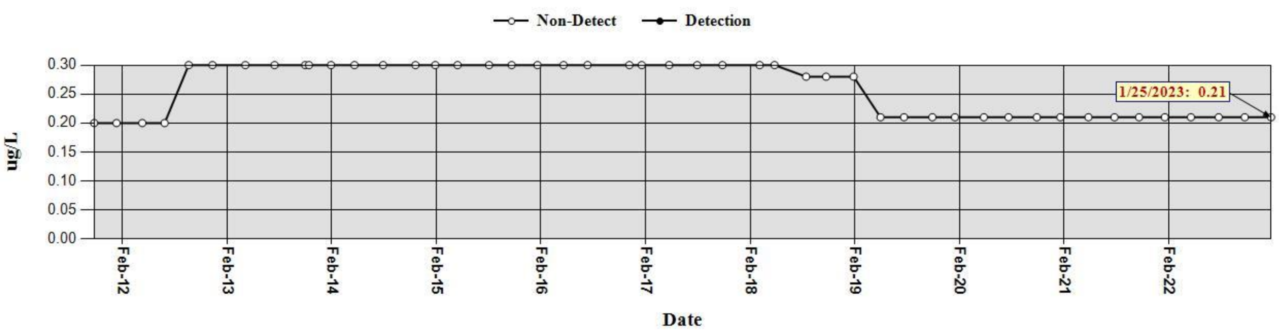
Well ID: 600-G-138
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



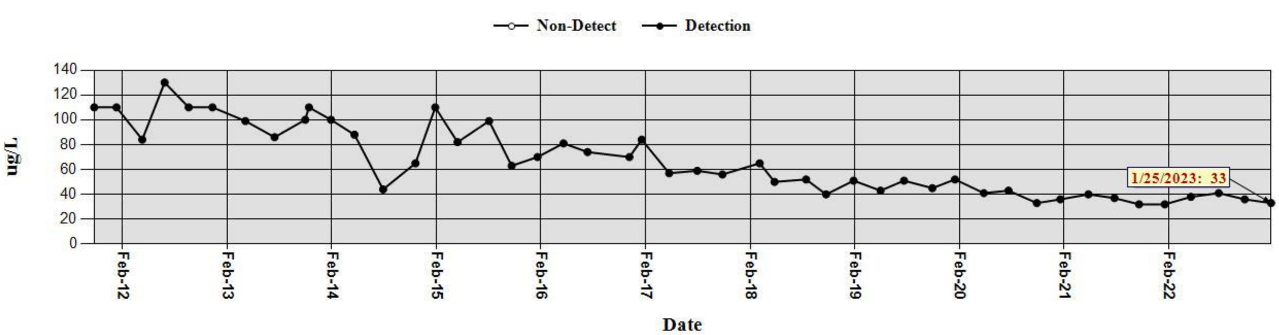
Well ID: 600-G-138
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



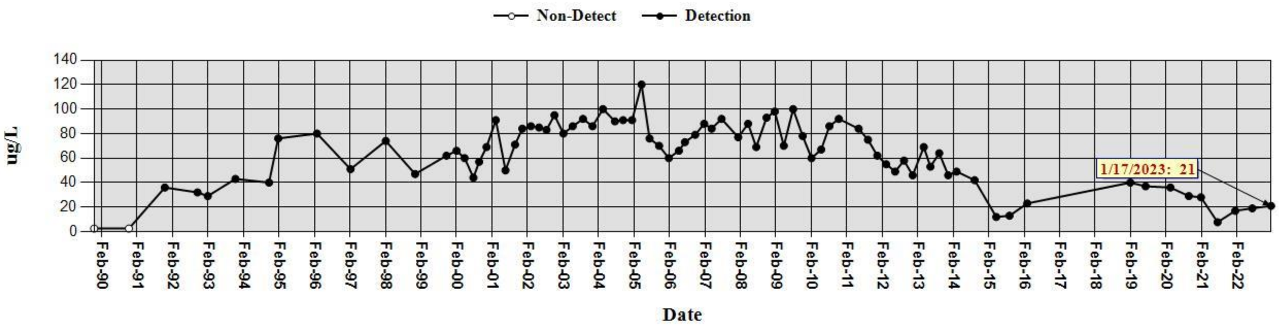
Well ID: 600-G-138
CAS RN: 79-01-6 Trichloroethene

Analysis: 8260



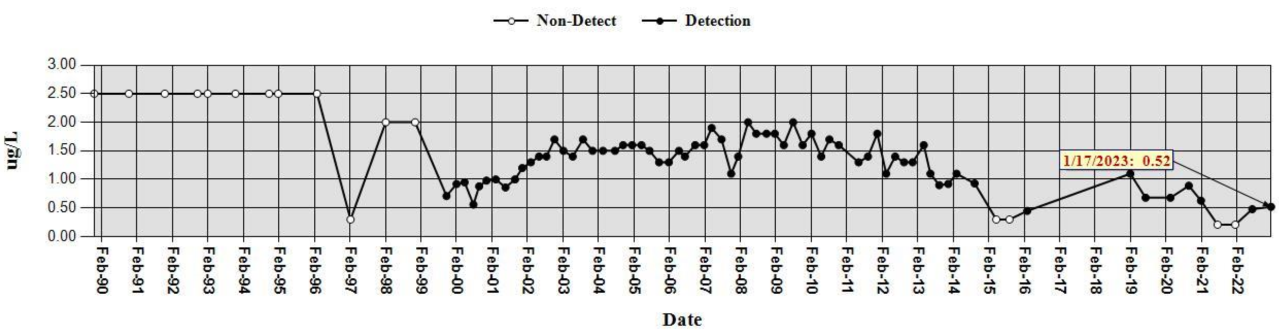
Well ID: BLM-18-430
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



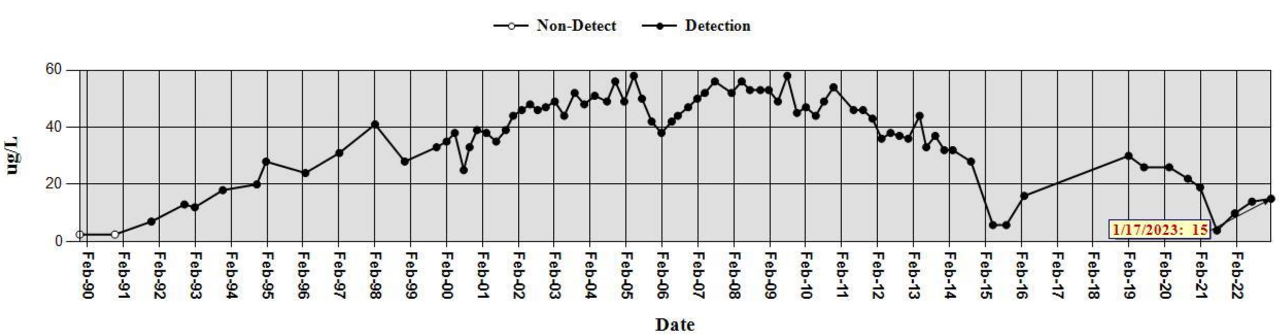
Well ID: BLM-18-430
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



Well ID: BLM-18-430
CAS RN: 79-01-6 Trichloroethene

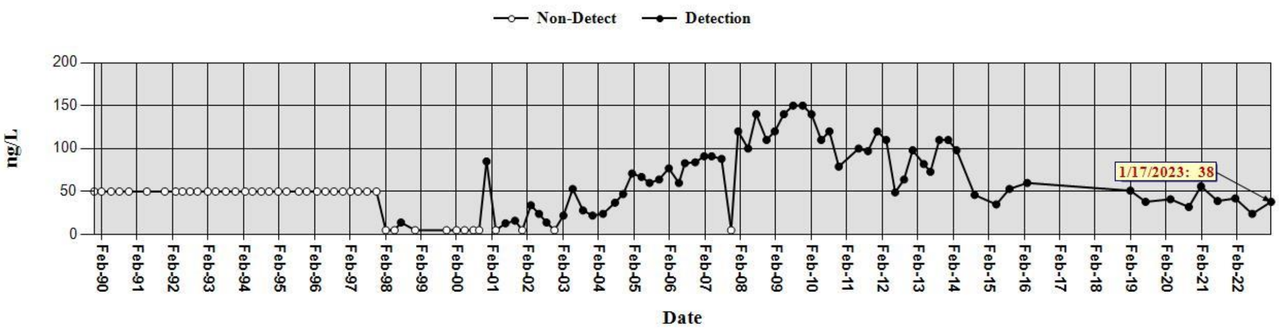
Analysis: 8260



Well ID: BLM-18-430
CAS RN: 62-75-9 N-Nitrosodimethylamine

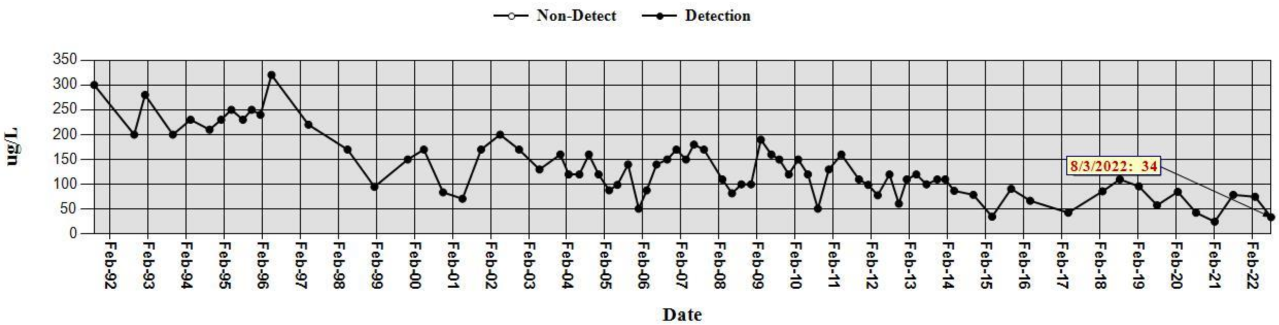
Analysis: 607

Results are Corrected for Extraction Efficiency



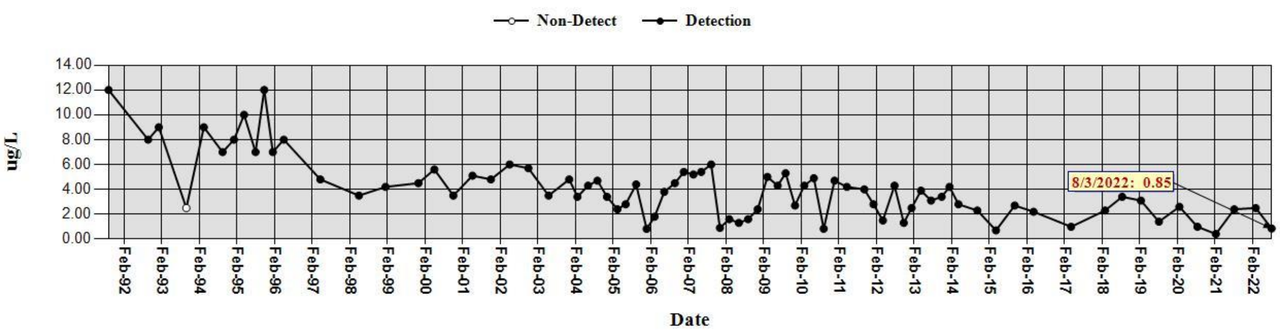
Well ID: BLM-21-400
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



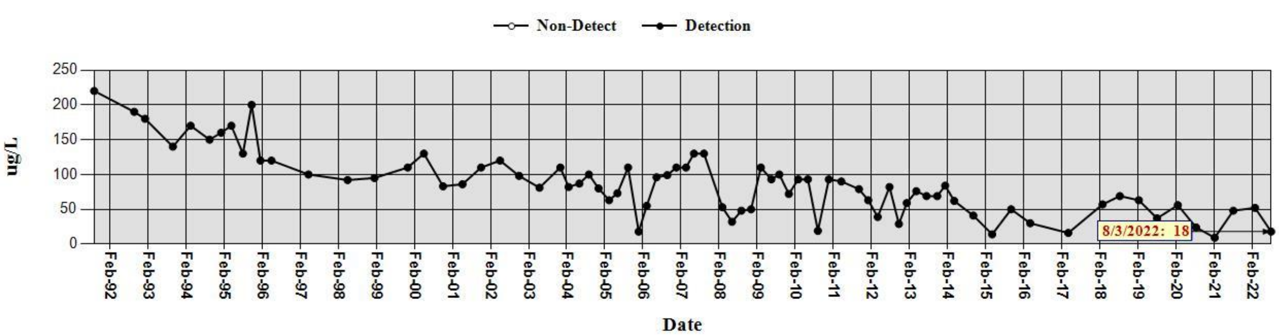
Well ID: BLM-21-400
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



Well ID: BLM-21-400
CAS RN: 79-01-6 Trichloroethene

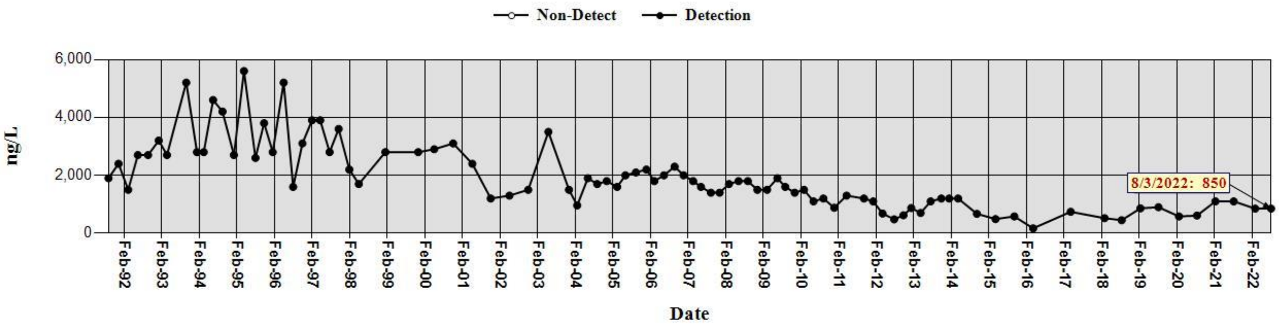
Analysis: 8260



Well ID: BLM-21-400
CAS RN: 62-75-9 N-Nitrosodimethylamine

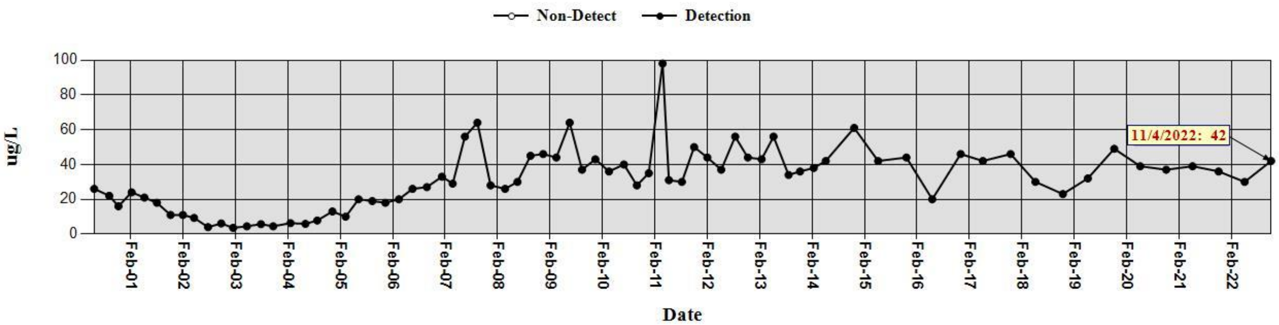
Analysis: 607

Results are Corrected for Extraction Efficiency



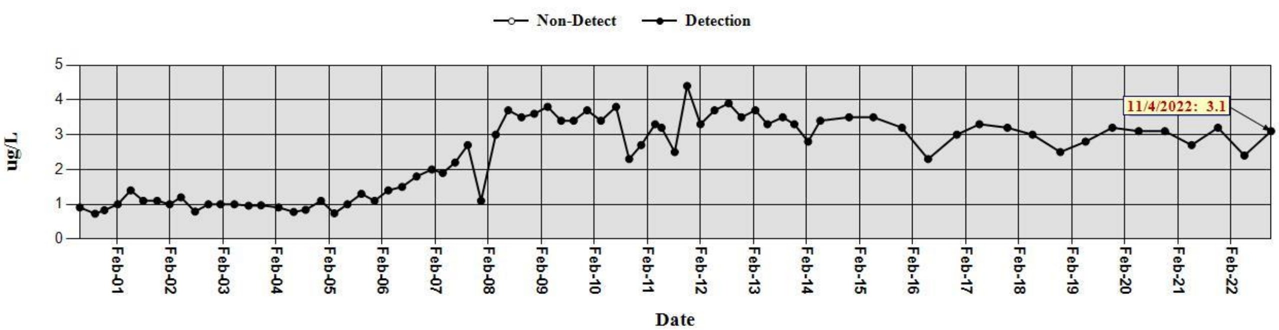
Well ID: BLM-36-350
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



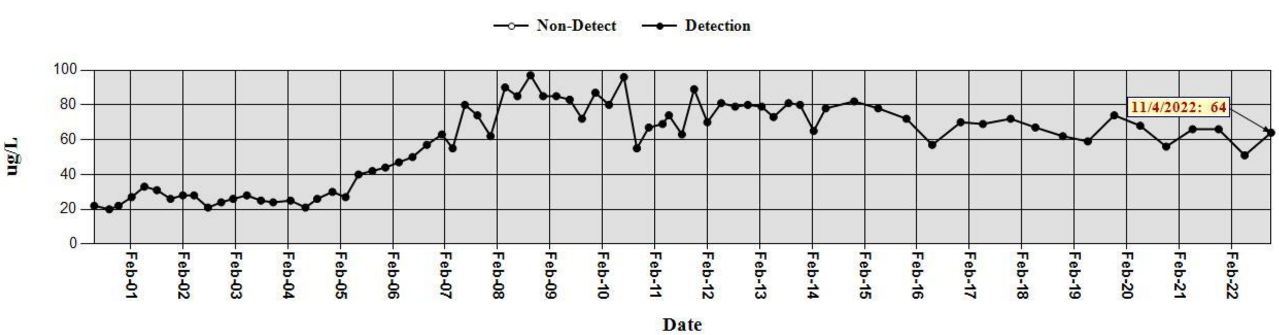
Well ID: BLM-36-350
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



Well ID: BLM-36-350
CAS RN: 79-01-6 Trichloroethene

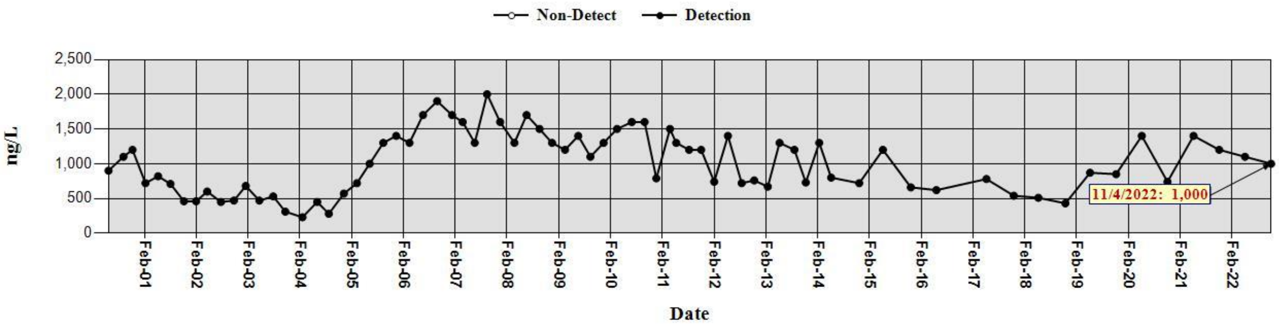
Analysis: 8260



Well ID: BLM-36-350
CAS RN: 62-75-9 N-Nitrosodimethylamine

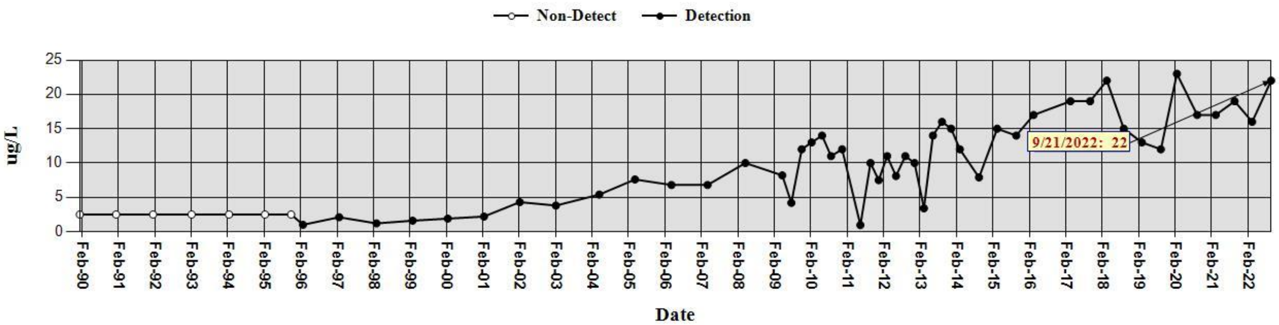
Analysis: 607

Results are Corrected for Extraction Efficiency



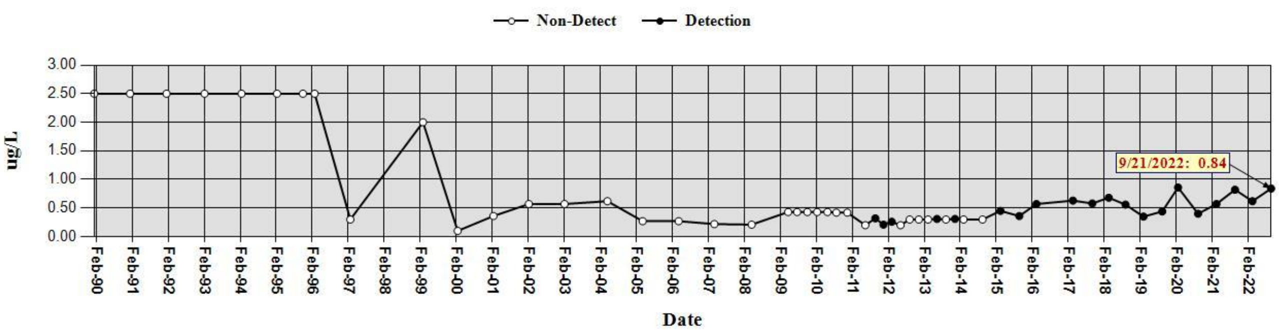
Well ID: BLM-5-527
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



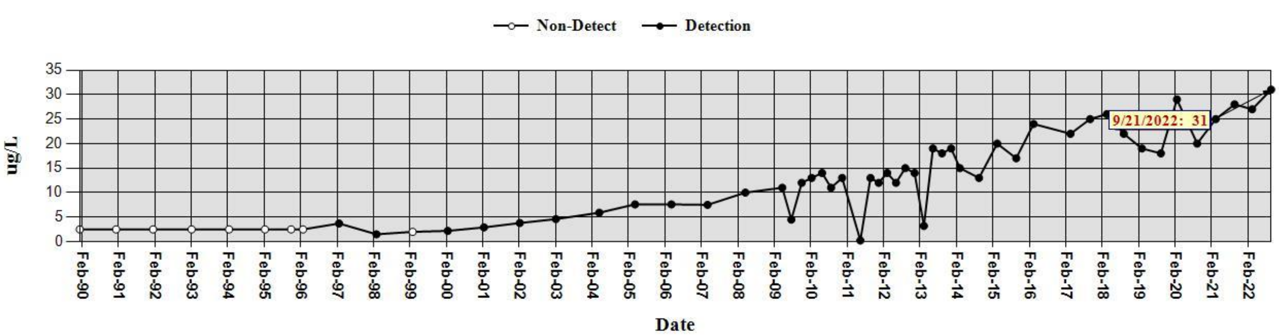
Well ID: BLM-5-527
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



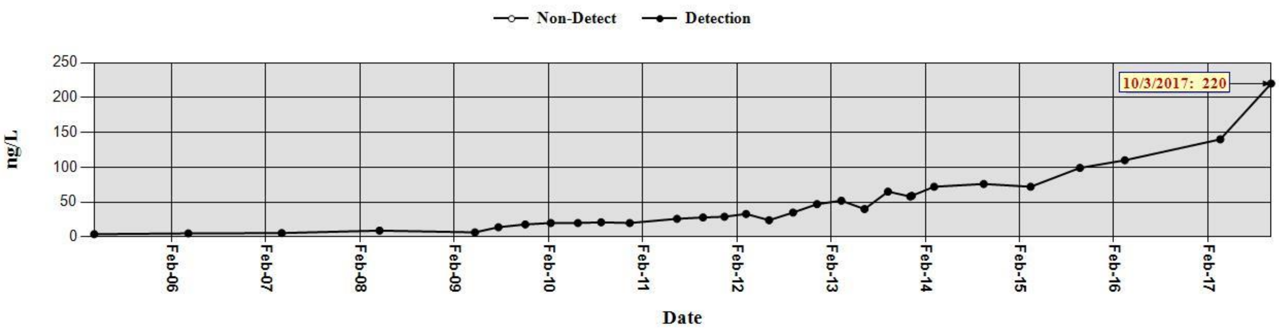
Well ID: BLM-5-527
CAS RN: 79-01-6 Trichloroethene

Analysis: 8260



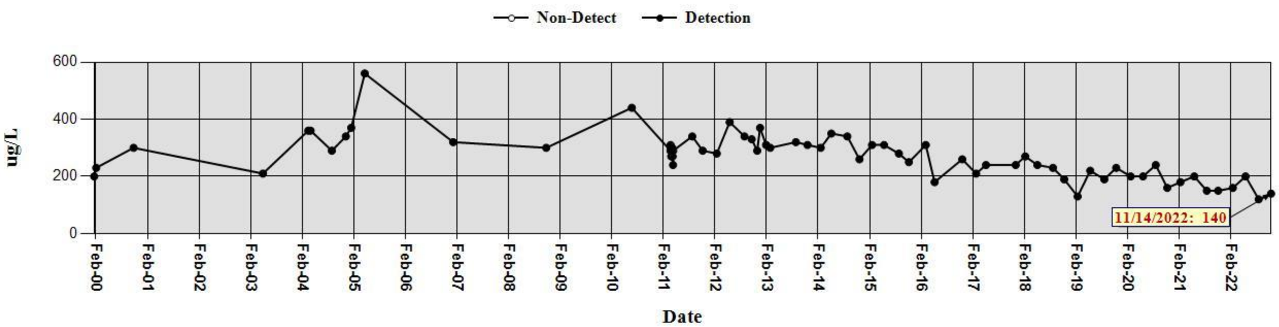
Well ID: BLM-5-527
CAS RN: 62-75-9 N-Nitrosodimethylamine

Analysis: NDMA_LL



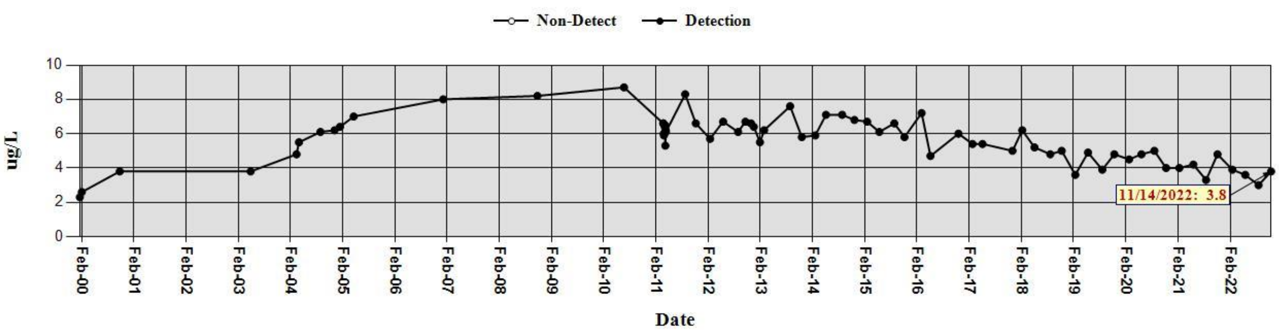
Well ID: MPE-1
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



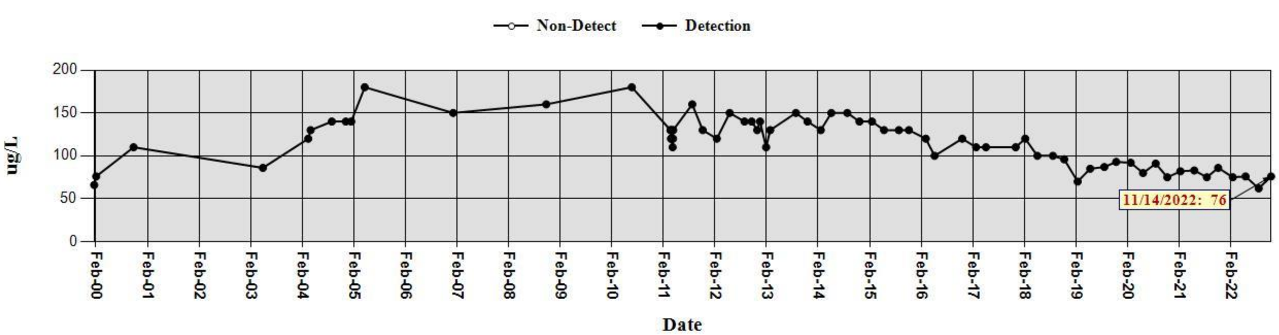
Well ID: MPE-1
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



Well ID: MPE-1
CAS RN: 79-01-6 Trichloroethene

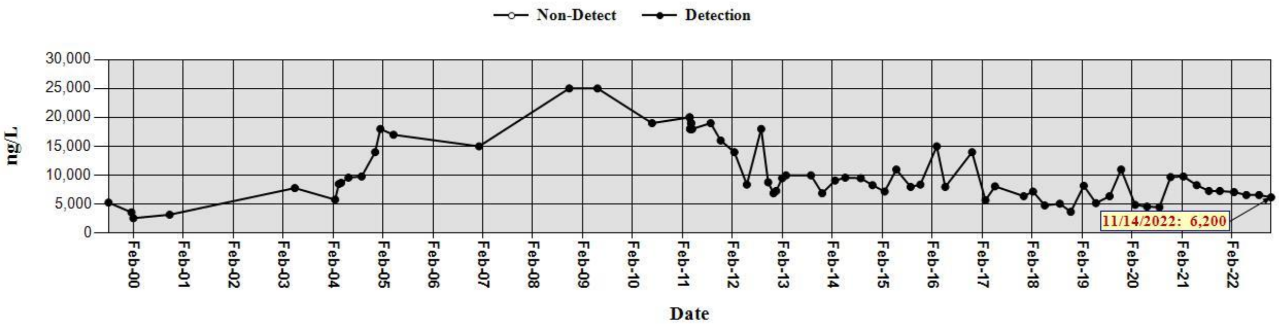
Analysis: 8260



Well ID: MPE-1
CAS RN: 62-75-9 N-Nitrosodimethylamine

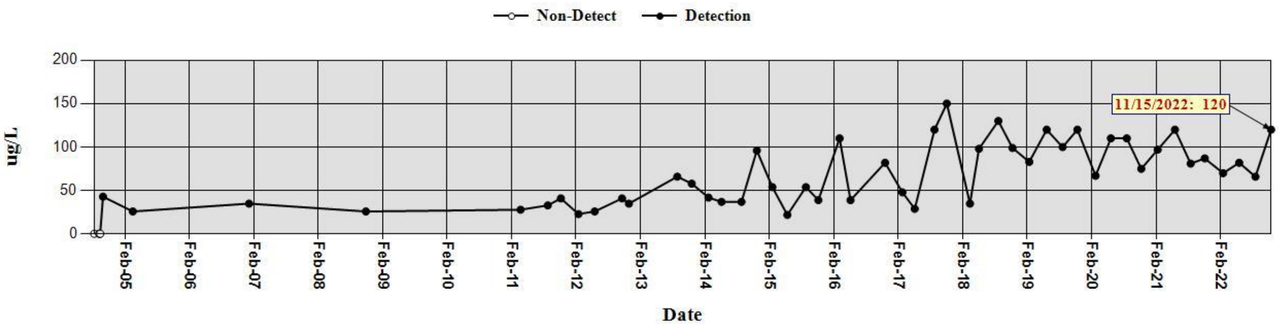
Analysis: 607

Results are Corrected for Extraction Efficiency



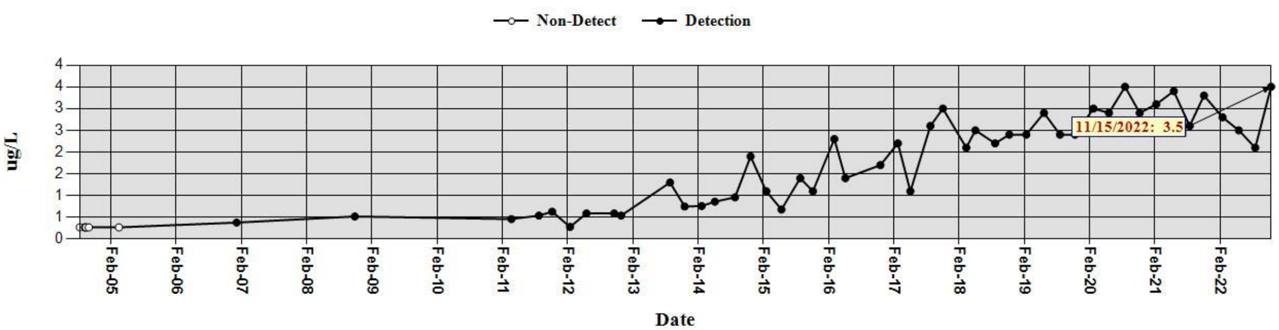
Well ID: MPE-10
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



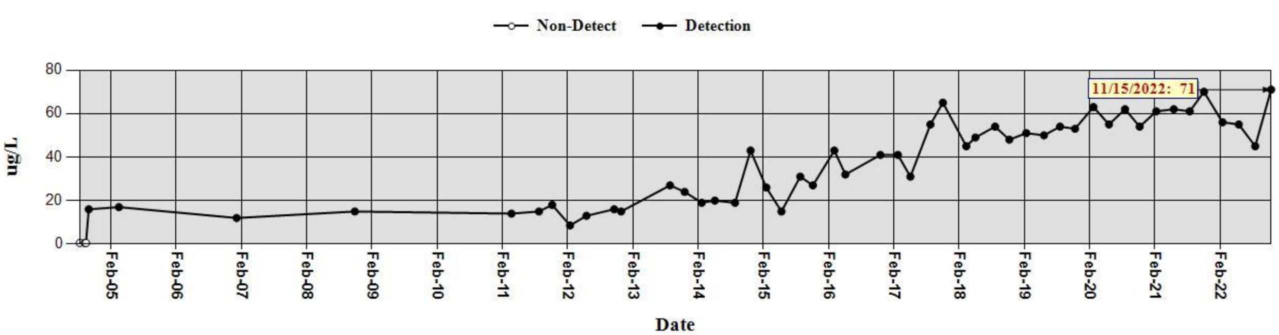
Well ID: MPE-10
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



Well ID: MPE-10
CAS RN: 79-01-6 Trichloroethene

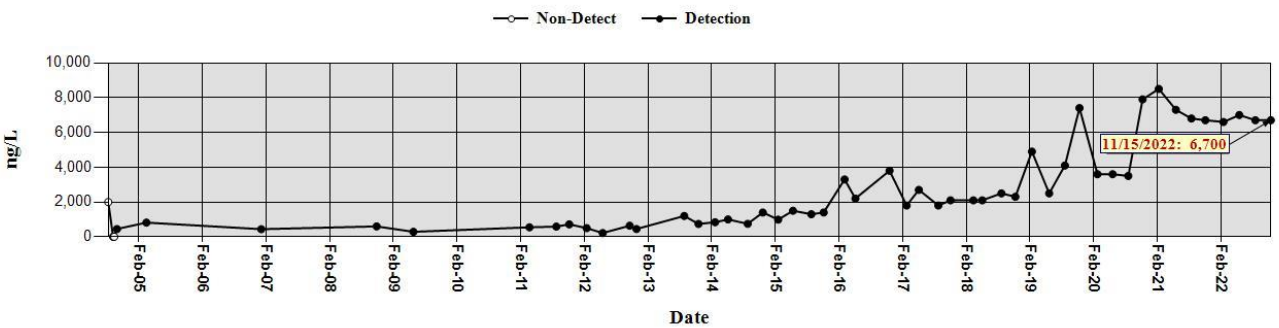
Analysis: 8260



Well ID: MPE-10
CAS RN: 62-75-9 N-Nitrosodimethylamine

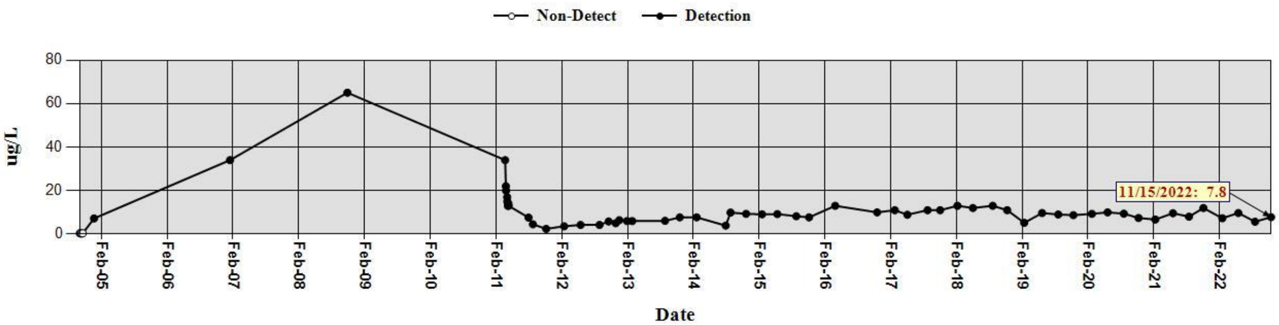
Analysis: 607

Results are Corrected for Extraction Efficiency



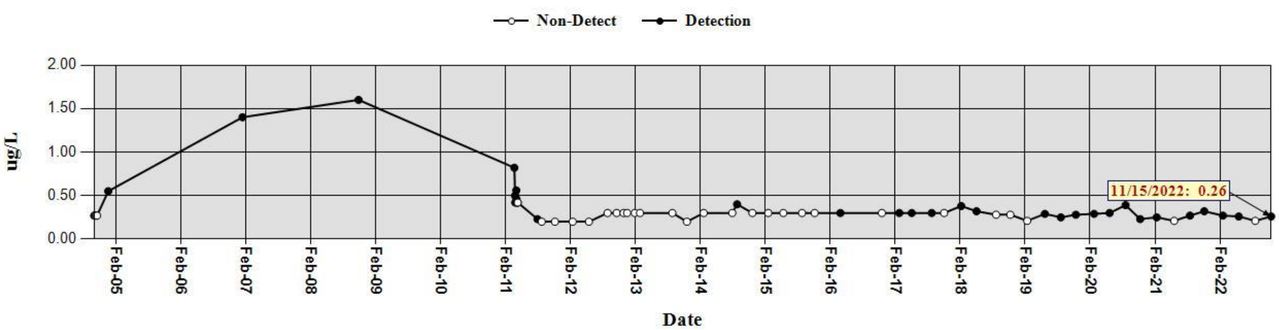
Well ID: MPE-11
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



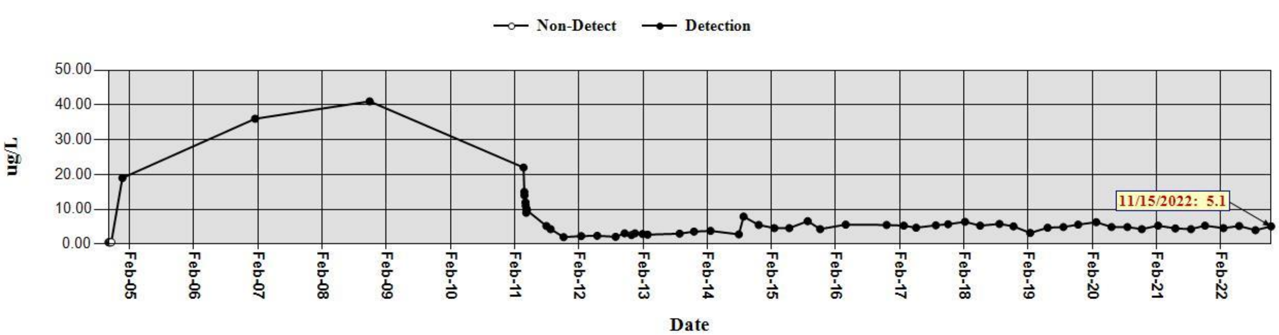
Well ID: MPE-11
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



Well ID: MPE-11
CAS RN: 79-01-6 Trichloroethene

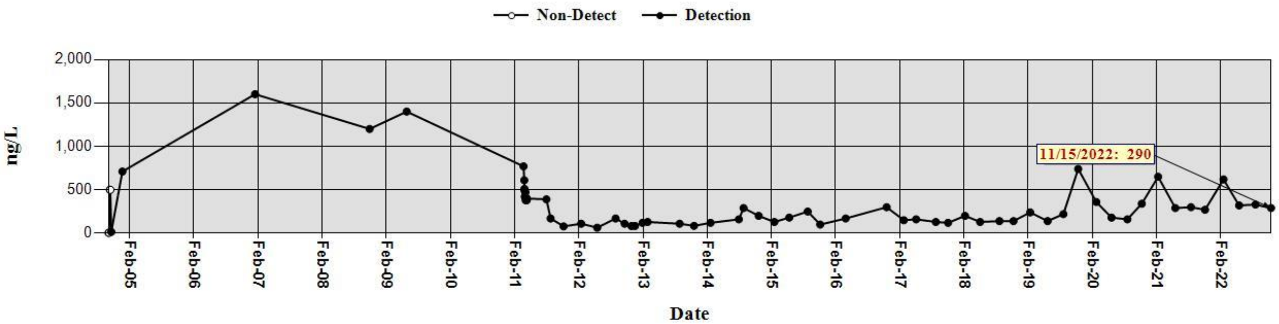
Analysis: 8260



Well ID: MPE-11
CAS RN: 62-75-9 N-Nitrosodimethylamine

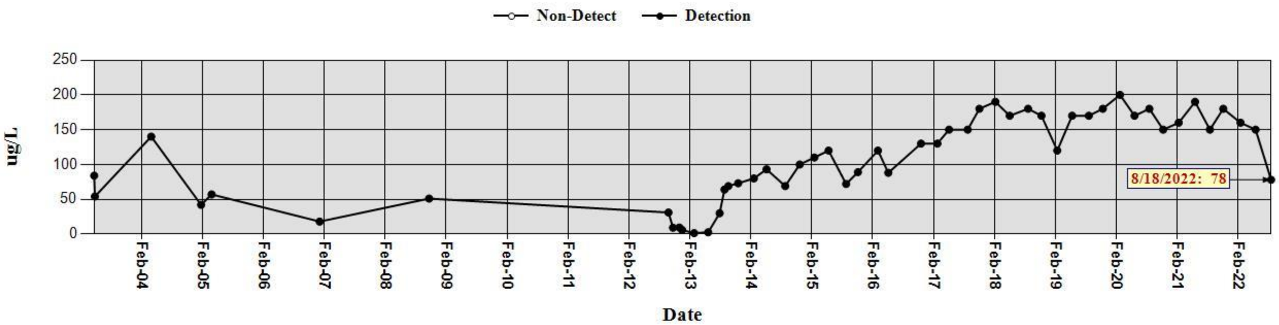
Analysis: 607

Results are Corrected for Extraction Efficiency



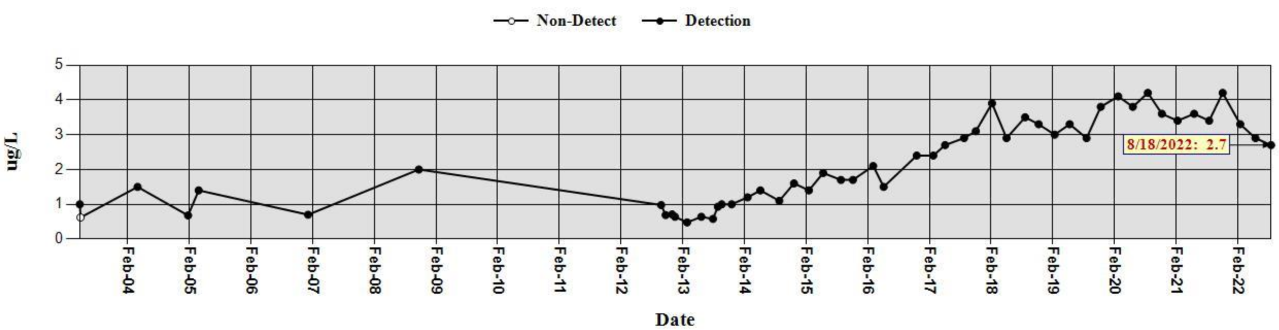
Well ID: MPE-8
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



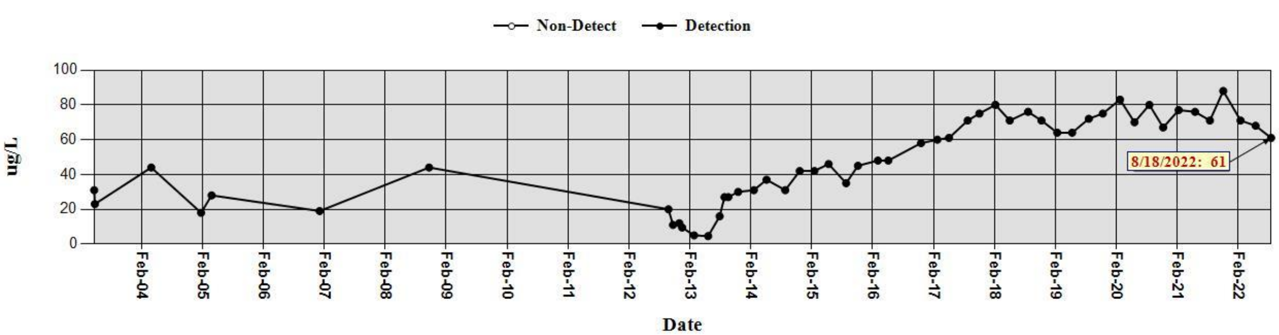
Well ID: MPE-8
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



Well ID: MPE-8
CAS RN: 79-01-6 Trichloroethene

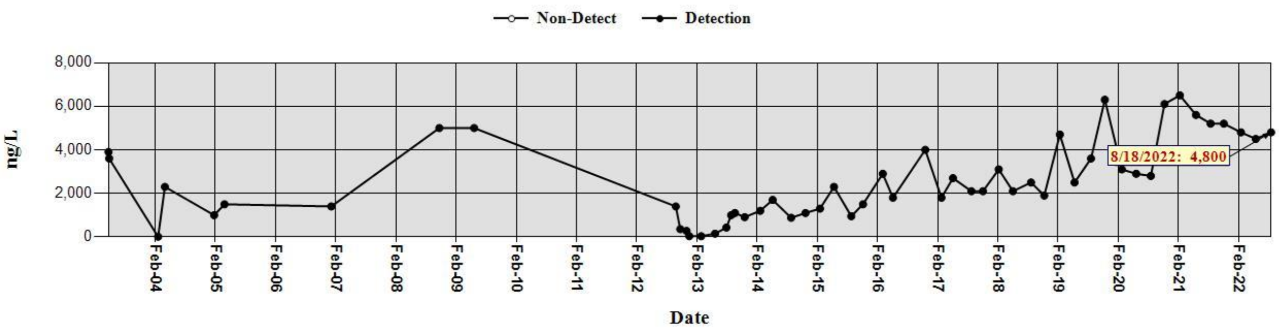
Analysis: 8260



Well ID: MPE-8
CAS RN: 62-75-9 N-Nitrosodimethylamine

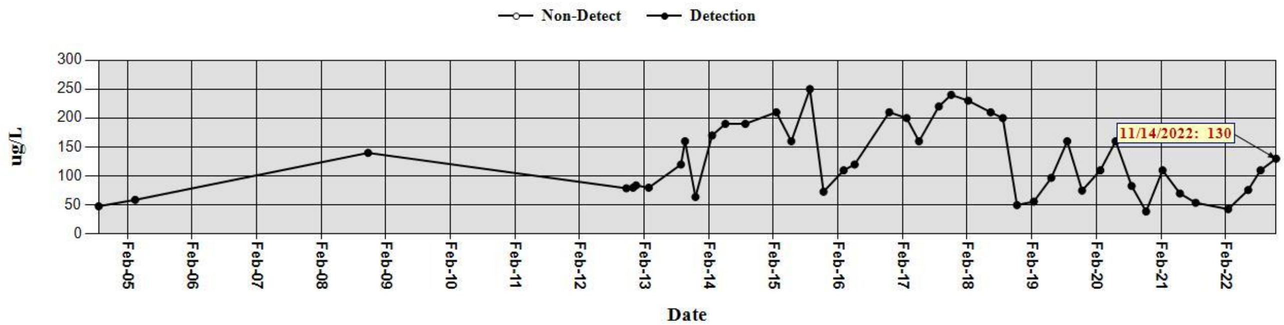
Analysis: 607

Results are Corrected for Extraction Efficiency



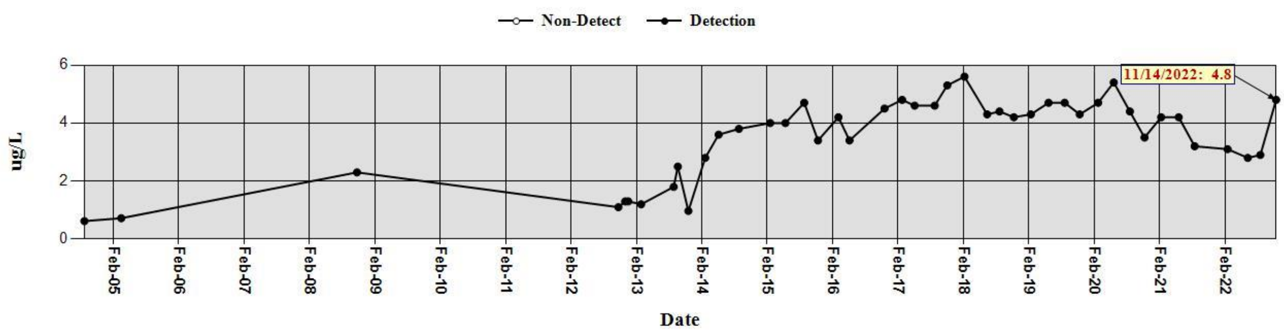
Well ID: MPE-9
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



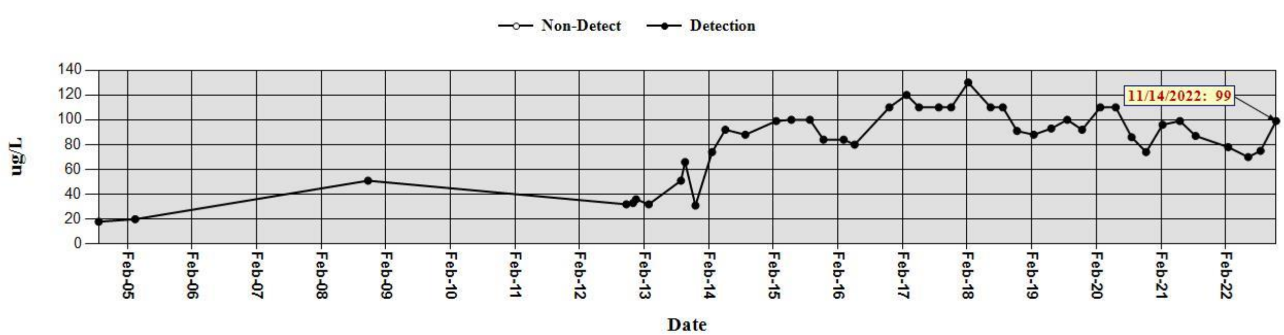
Well ID: MPE-9
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



Well ID: MPE-9
CAS RN: 79-01-6 Trichloroethene

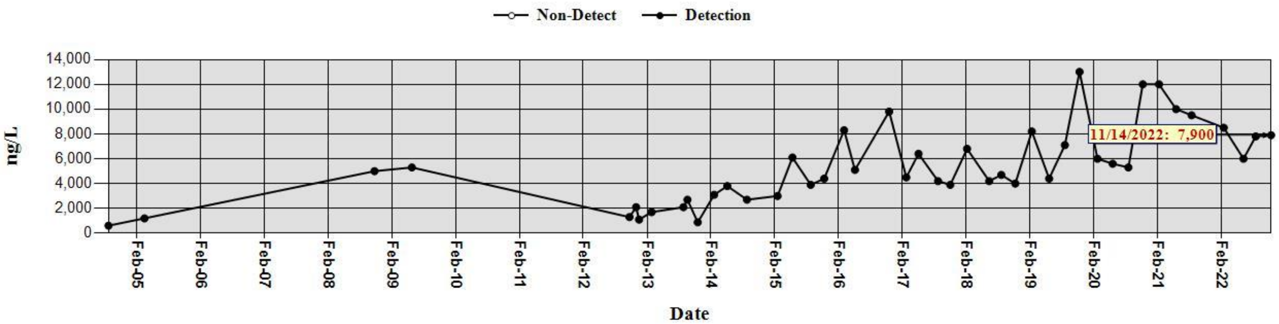
Analysis: 8260



Well ID: MPE-9
CAS RN: 62-75-9 N-Nitrosodimethylamine

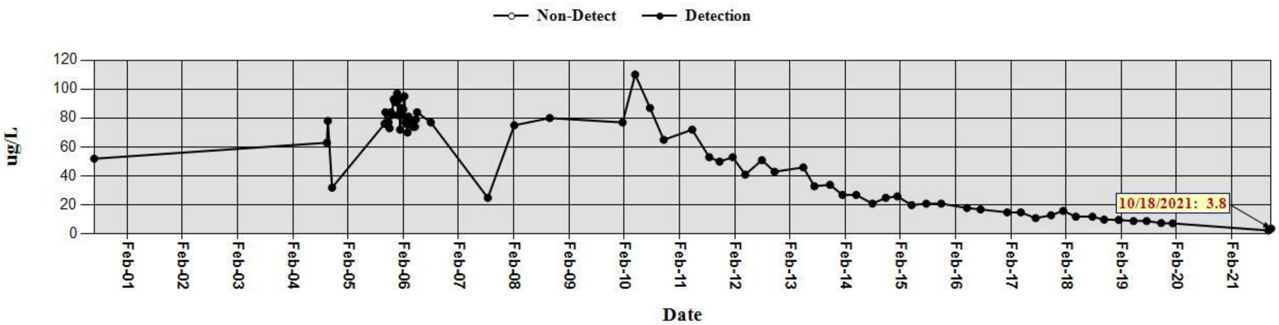
Analysis: 607

Results are Corrected for Extraction Efficiency



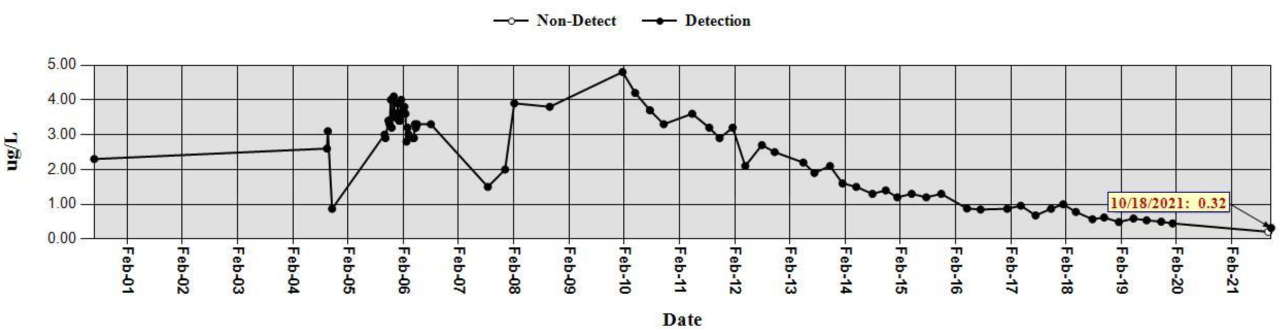
Well ID: PFE-1
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



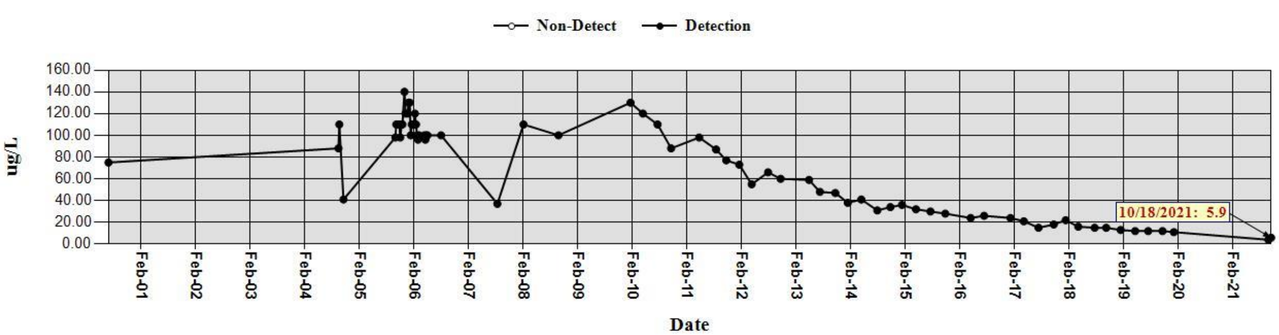
Well ID: PFE-1
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



Well ID: PFE-1
CAS RN: 79-01-6 Trichloroethene

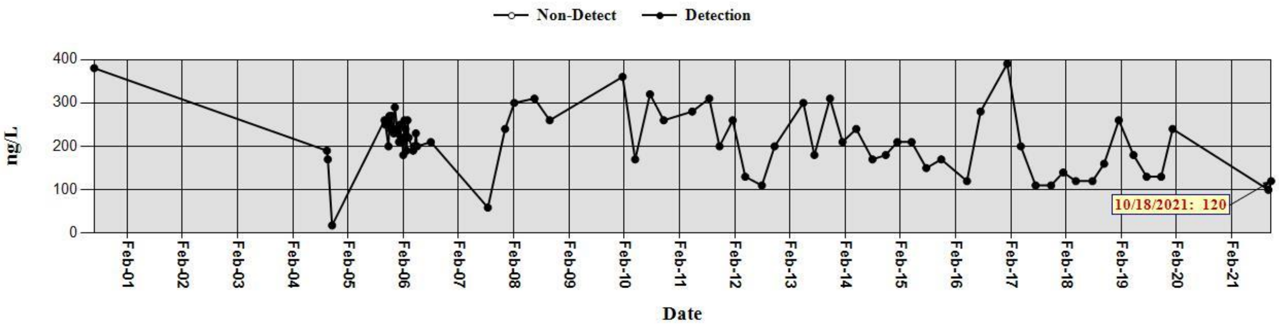
Analysis: 8260



Well ID: PFE-1
CAS RN: 62-75-9 N-Nitrosodimethylamine

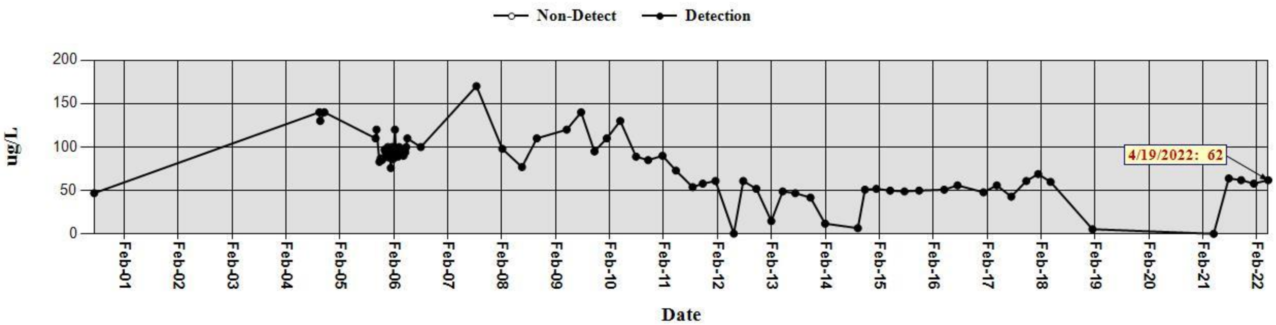
Analysis: 607

Results are Corrected for Extraction Efficiency



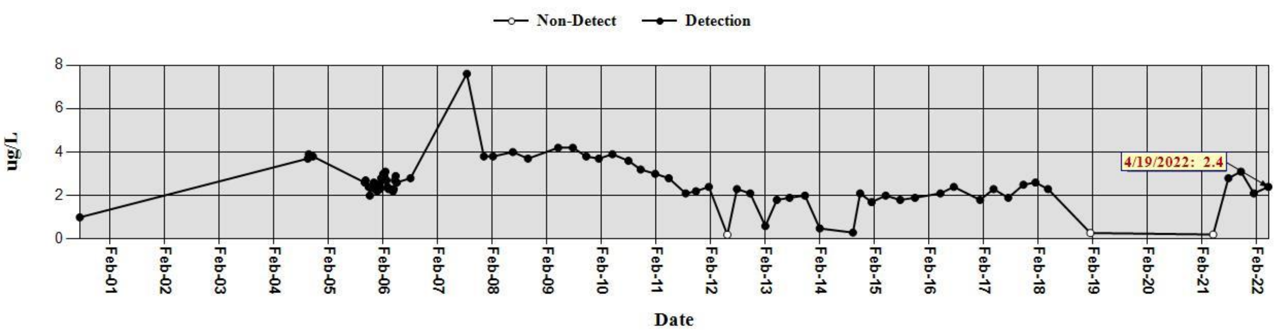
Well ID: PFE-2
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



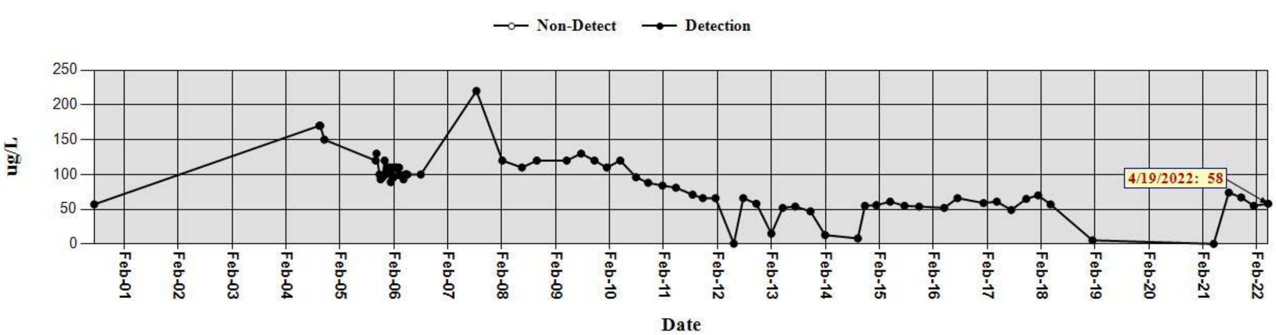
Well ID: PFE-2
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



Well ID: PFE-2
CAS RN: 79-01-6 Trichloroethene

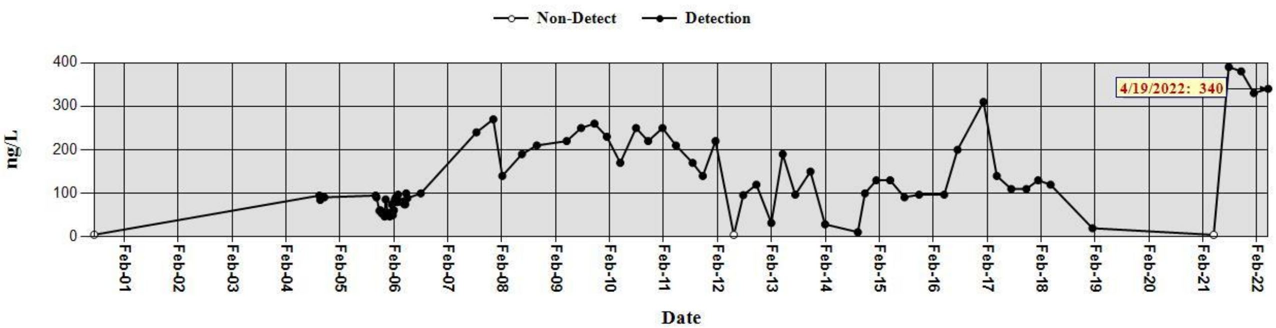
Analysis: 8260



Well ID: PFE-2
CAS RN: 62-75-9 N-Nitrosodimethylamine

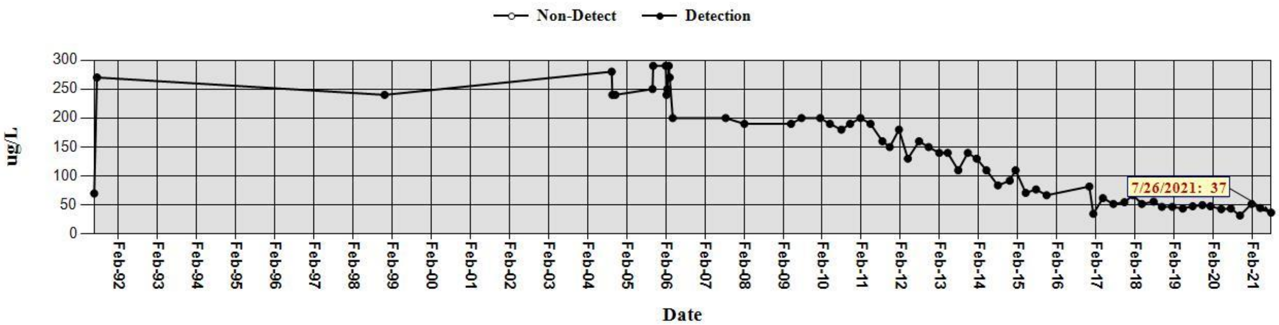
Analysis: 607

Results are Corrected for Extraction Efficiency



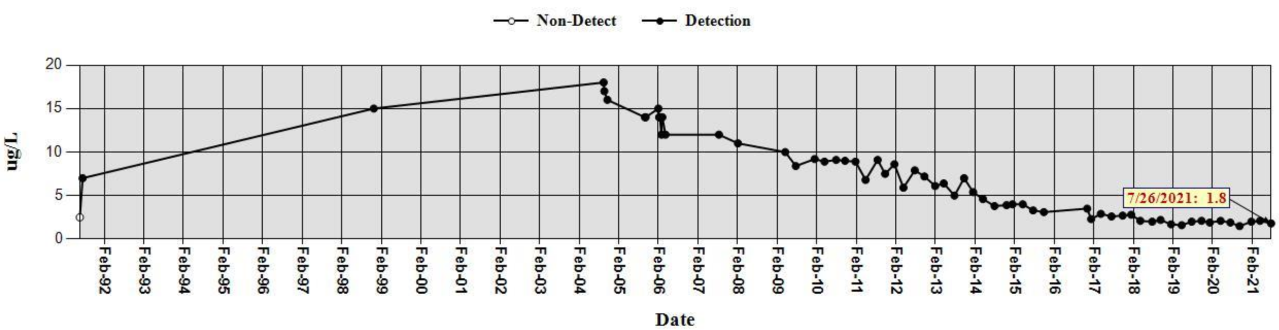
Well ID: PFE-3
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



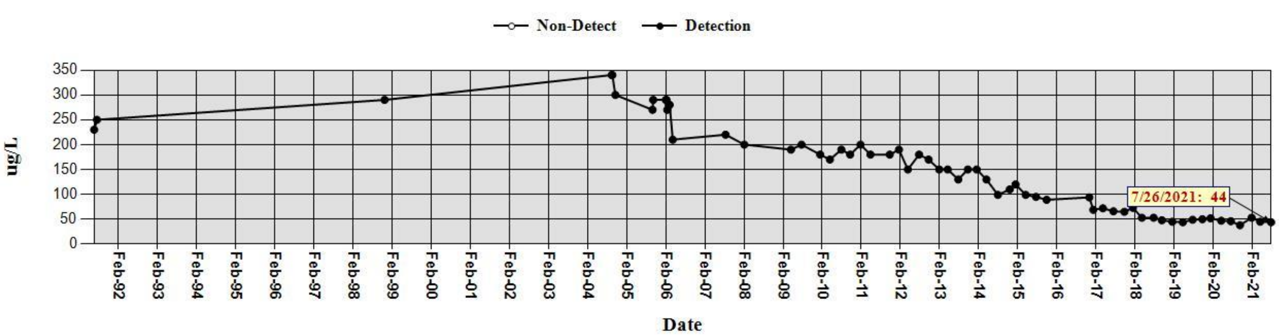
Well ID: PFE-3
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



Well ID: PFE-3
CAS RN: 79-01-6 Trichloroethene

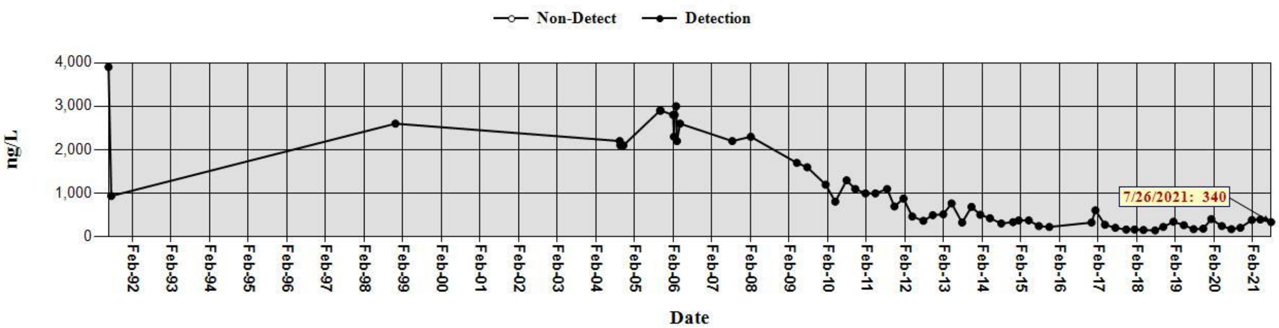
Analysis: 8260



Well ID: PFE-3
CAS RN: 62-75-9 N-Nitrosodimethylamine

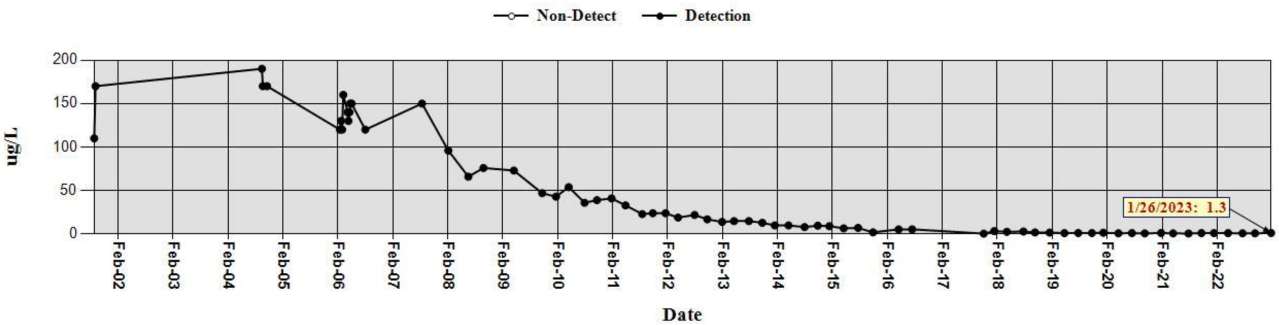
Analysis: 607

Results are Corrected for Extraction Efficiency



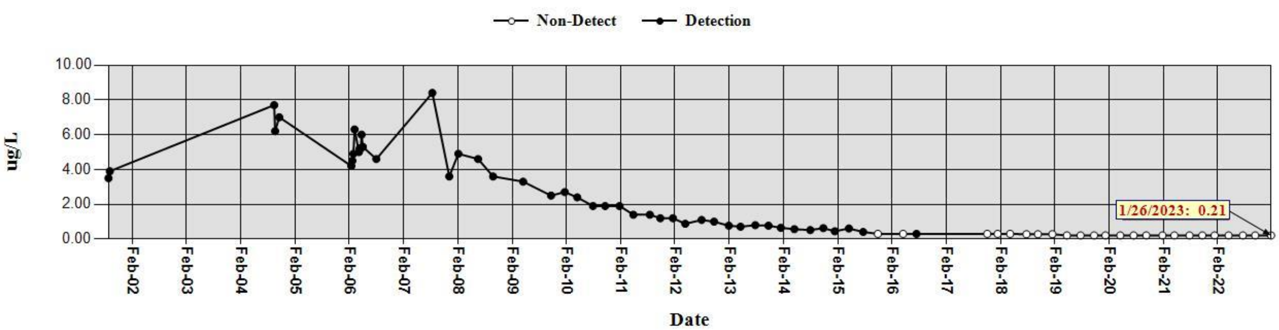
Well ID: PFE-4A
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



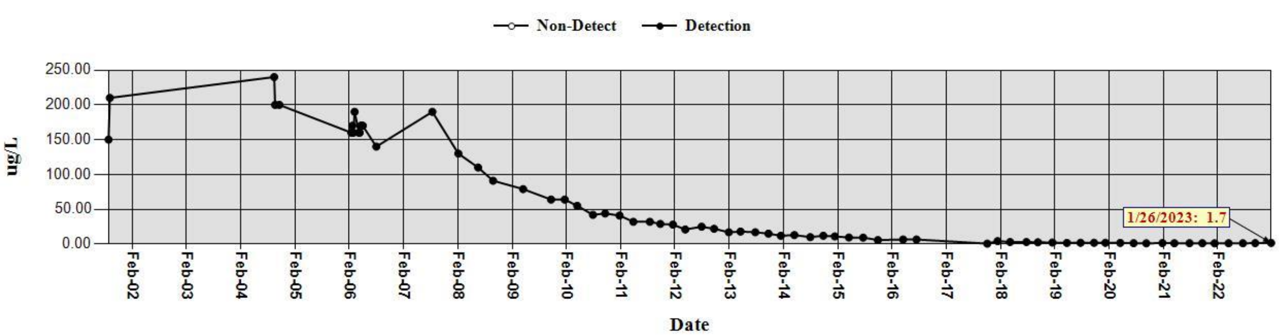
Well ID: PFE-4A
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



Well ID: PFE-4A
CAS RN: 79-01-6 Trichloroethene

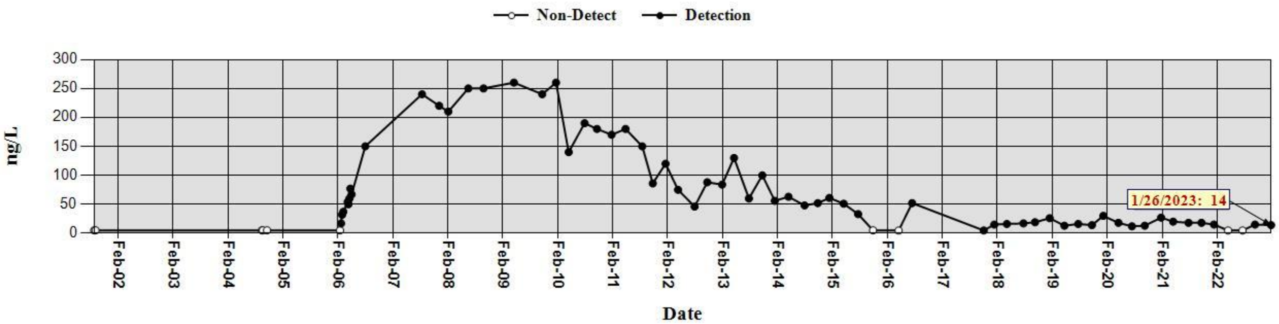
Analysis: 8260



Well ID: PFE-4A
CAS RN: 62-75-9 N-Nitrosodimethylamine

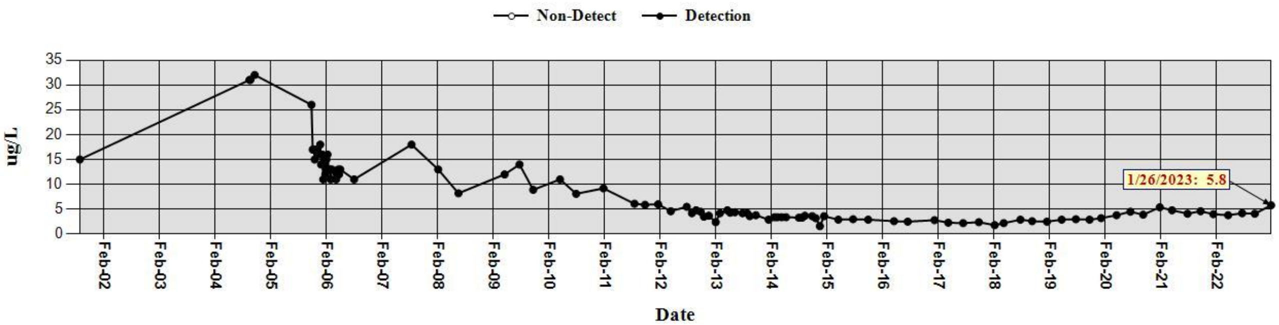
Analysis: 607

Results are Corrected for Extraction Efficiency



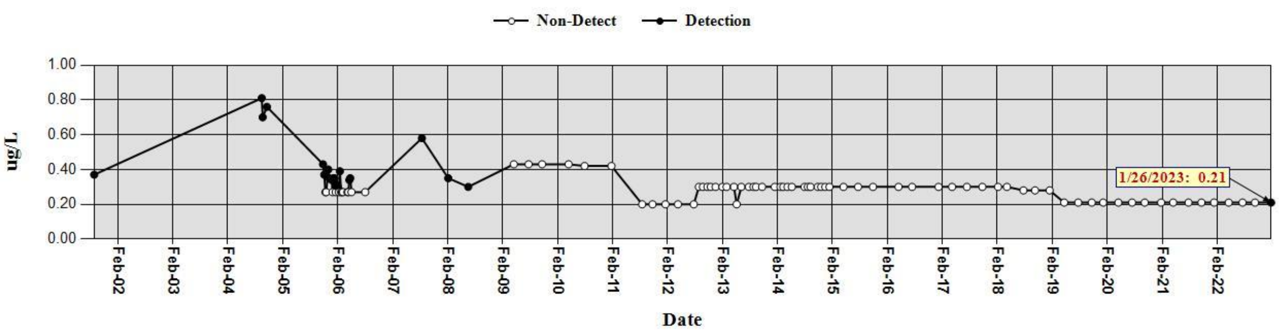
Well ID: PFE-7
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



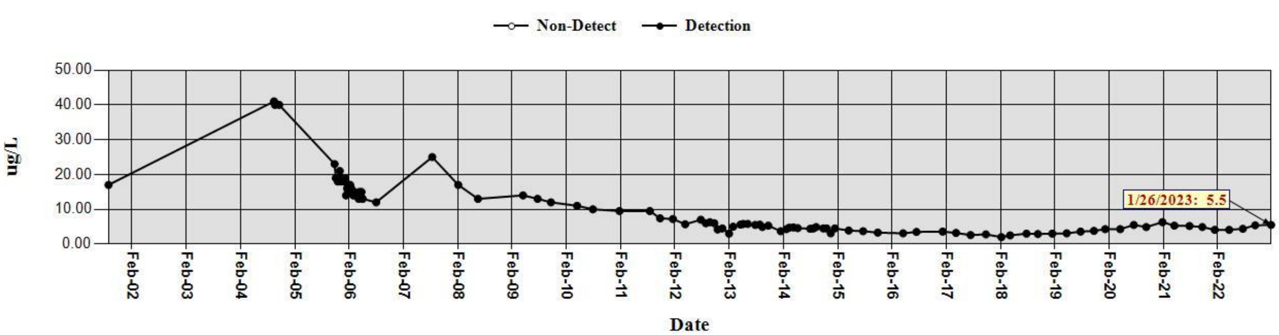
Well ID: PFE-7
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



Well ID: PFE-7
CAS RN: 79-01-6 Trichloroethene

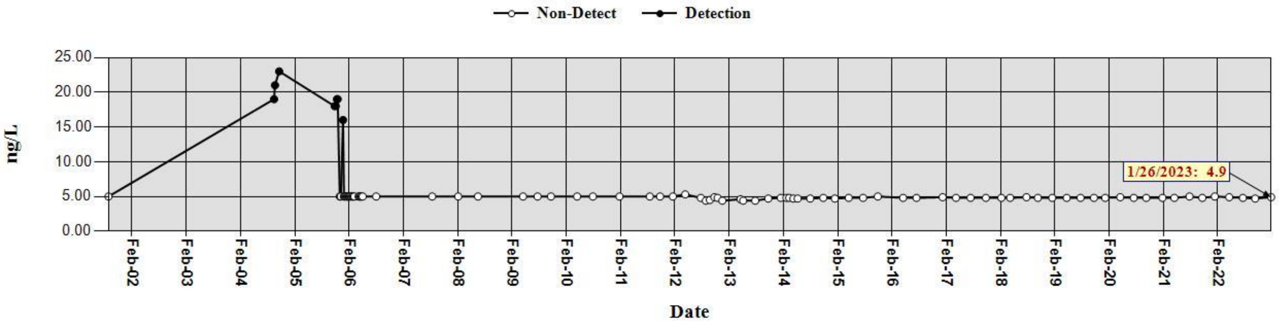
Analysis: 8260



Well ID: PFE-7
CAS RN: 62-75-9 N-Nitrosodimethylamine

Analysis: 607

Results are Corrected for Extraction Efficiency



Appendix F
Summary of Source Area Investigations

Appendix F Summary of Groundwater Monitoring Projects and Source Area Investigations

1.0 Groundwater Monitoring Well Abandonment, Installation, and Reconfiguration

1.1 Well Abandonment and Replacement

NASA performed significant fieldwork related to scheduled well abandonment or replacement projects in the first quarter of 2023.

1.1.1 Wells BLM-42 and PL-12

In 2019, NASA plugged and abandoned (P&A) wells BLM-37 and PL-5 in accordance with the *Work Plan for Abandonment of NASA WSTF Monitoring Well BLM-37 and Replacement with Monitoring Well BLM-42* (NASA, 2018a) and the *NASA WSTF Drilling Work Plan for Groundwater Monitoring Well PL-12* (NASA, 2017a). NASA replaced these wells with BLM-42 and PL-12, respectively. NASA submitted the *Well Completion Report for BLM-42* on May 4, 2020 (NASA, 2020e). NMED reviewed the report and issued an approval with modifications on May 6, 2021 (NMED, 2021l). NASA submitted a response to the approval with modifications of the BLM-42 well completion report on May 18, 2021 (NASA, 2021h). NASA also submitted the *Well Completion Report for Well PL-12* on May 4, 2020 (NASA, 2020f). NMED reviewed the report and issued an approval on May 6, 2021 (NMED, 2021k).

A comprehensive summary of activities and correspondence related to wells BLM-42 and PL-12 was provided in the *Periodic Monitoring Report – Third Quarter 2021* (NASA, 2021y).

1.1.2 Well BLM-28

NASA abandoned well BLM-28 in the first quarter of 2023 and continued planning the installation of replacement well 600C-001-GW. NASA submitted the *Abandonment Report for NASA Well BLM-28* on March 14, 2023 (NASA, 2023h). See also Section 1.4.1.

1.1.3 Well BLM-30

NASA abandoned well BLM-30 in the first quarter of 2023 and continued planning the installation of replacement well BLM-43. See also Section 1.4.2.

1.1.4 Well NASA 9

In June 2020, NASA attempted to remove the dedicated low-flow bladder pump from well NASA 9 to extend the tubing and lower the pump intake due to declining water levels. During removal activities, the tubing bundle separated from the pump, and the pump then dropped into the 5-foot (ft) well sump. During attempts to recover the pump using special fishing tools, NASA discovered that the inside of the 2-inch stainless-steel casing was obstructed with small roots just above and below the static water level. Numerous attempts to lock onto the top of the pump with the fishing tool were unsuccessful and the bladder pump could not be retrieved. On November 15, 2021, NMED approved the 2021 Groundwater Monitoring Plan (GMP) with a modification that directed NASA to submit a work plan for abandoning and replacing well NASA 9 (NMED, 2021q). NASA prepared and submitted the *Work Plan for Abandonment of NASA WSTF NASA 9 and Replacement with Monitoring Well 400-001-GW* on April 29, 2022 (NASA, 2022i). NMED approved the work plan on October 31, 2022 (NMED, 2022o). NASA abandoned well NASA 9 in the first quarter of 2023 and continued planning the installation of replacement well 400-001-GW at a future date.

1.2 Well Abandonment

NASA completed several well abandonment projects in the first quarter of 2023.

1.2.1 200-SG Wells

On September 13, 2018, NMED approved NASA's April 24, 2018 GMP update for 2018 (NMED, 2018a; NASA, 2018b) with modifications, one of which required NASA to provide additional information on wells 200-SG-2 and 200-SG-3 and provide the rationale for not including them in the sampling schedule. NASA's December 3, 2018 response provided the required information and indicated that NASA would evaluate wells 200-SG-2 and 200-SG-3 for potential future sampling (NASA, 2018d). In April 2019, NASA evaluated the performance of the two wells, and determined that the groundwater levels in each are inadequate to allow for the collection of representative samples. NASA also determined that the relatively low concentrations of WSTF COC in these wells are not representative of groundwater within the Gardner Spring Arroyo in which monitoring well 200-D-109 is installed.

In their January 25, 2021 *Approval with Modifications of the NASA Groundwater Monitoring Plan 2020 Update*, NMED directed NASA to prepare and submit a work plan for abandonment of monitoring wells 200-SG-2 and 200-SG-3 and installation of replacement wells, to be submitted for review no later than November 30, 2021 (NMED, 2021b). NASA submitted the *Well Plugging Plan of Operations for Multiport Soil Vapor Groundwater Monitoring Wells 200-SG-2 and 200-SG-3* for NMED review on November 30, 2021 (NASA, 2021aa). NMED approved the work plan on January 10, 2022 (NMED, 2022a).

NASA plugged and abandoned the groundwater monitoring components of these wells in the first quarter of 2023 and does not intend to replace these wells. NASA submitted the *Reconfiguration Report for NASA Wells 200-SG-2 and 200-SG-3* on March 21, 2023 (NASA, 2023j).

1.2.2 Additional Wells

In addition to wells 200-SG-2, 200-SG-3, BLM-28, BLM-30, and NASA 9, NASA abandoned seven other inactive wells in the first quarter of 2023. On September 7, 2022, NASA provided a copy of the plugging plan for well 400-C-118 to NMED while submitting the *Well Plugging Plan of Operations for NASA Wells NASA 9 and LRG-17519-POD4* (NASA, 2022m) to the New Mexico Office of the State Engineer. On September 20, 2022, NASA submitted the *Plugging and Abandonment of WSTF Wells 400-KV-142, 400-LV-125, BLM-2-482, NASA 8, PFE-4, and PFE-6* (NASA, 2022o), notifying NMED of the intent to plug and abandon six wells as indicated in plugging plans submitted to the New Mexico Office of the State Engineer. NASA submitted the *Abandonment Report for NASA Wells 400-C-118, 400-KV-142, 400-LV-125, BLM-2-482, and NASA 8* on March 30, 2023 (NASA, 2023k). NASA submitted the *Abandonment Report for PFE-4 and PFE-6* on March 9, 2023 (NASA, 2023g).

1.3 Well Installation

NASA performed well installation fieldwork and additional project planning in the first quarter of 2023.

1.3.1 New Well 600C-001-GW

On April 25, 2022, NMED (NMED, 2022g) approved NASA's August 31, 2021 *Work Plan for Drilling and Installation of Monitoring Well 600C-001-GW* (NASA, 2021u, pp1-2). NASA performed project planning activities during the first quarter of 2023.

1.3.2 New Wells 600A-003-GW and 600A-004-GW

As part of the ongoing investigation at the WSTF wastewater lagoons (NMED, 2022i), NASA installed two additional perched groundwater monitoring wells in the 600 Area. Wells 600A-003-GW and 600A-004-GW were installed during the first quarter 2023. Additional information on these wells will be provided in project-specific reports and future PMR.

1.4 Westbay Well Reconfiguration

Prior to calendar year 2020, NASA had reconfigured two Westbay wells (JP-3 and WW-2) to dual-zone dedicated low-flow bladder pumps and seven Westbay wells (BLM-32, JER-1, JER-2, ST-6, ST-7, WW-4, and WW-5) to multiport Water FLUTe sampling systems.

1.4.1 BLM-28

NASA submitted the *Well Reconfiguration Report for Well BLM-28 and Notice of Intent to Plug and Abandon* on May 4, 2020 (NASA, 2020i). On November 19, 2020, NMED provided requirements for abandonment and replacement of the well (NMED, 2020k). The requirements were that after complete evaluation of all available data and information, NASA would then either submit a work plan for a replacement monitoring well or formally notify NMED that BLM-28 will not be replaced no later than January 31, 2022.

Following NMED's direction from the November 19, 2020 response for reconfiguring BLM-28, NASA submitted a work plan for abandonment of well BLM-28 on April 29, 2021 (NASA, 2021g). NASA then determined that a replacement well is necessary and developed and submitted the *NASA WSTF Work Plan for Drilling and Installation of Monitoring Well 600B-001-GW* on August 31, 2021 (NASA, 2021t, p1). NMED approved the work plan with modifications on April 25, 2022 (NMED, 2022g). NASA abandoned well BLM-28 in the first quarter of 2023 and continued planning the installation of replacement well 600C-001-GW. NASA submitted the *Abandonment Report for NASA Well BLM-28* on March 14, 2023 (NASA, 2023h).

1.4.2 BLM-30

On November 5, 2020, NMED issued an approval with modifications (NMED, 2020i) of NASA's plan to P&A well BLM-30 and replace it with new well BLM-43. NMED directed NASA to perform geophysical logging and to provide a well completion report for BLM-43 no later than November 30, 2021. NASA submitted the *Response to Approval with Modifications Work Plan for Abandonment of NASA WSTF Well BLM-30 and Replacement with Monitoring Well BLM-43* on February 3, 2021 (NASA, 2021a) and corresponded with the New Mexico Office of the State Engineer (NASA, 2021d) on the plugging plan for well BLM-30 and application for a permit to drill well BLM-43 on March 15, 2021. On September 28, 2021, NASA submitted the *Request for Extension of Time for Submittal of the Completion Report for Monitoring Well BLM-30 Abandonment and Installation of Replacement Monitoring Well BLM-43* (NASA, 2021x). NMED approved the request on October 27, 2021, which extended the due date for submittal of the report to November 30, 2022 (NMED, 2021p). NASA submitted the *Request for Second Extension of Time for Submittal of the Completion Report for Monitoring Well BLM-30 Abandonment* *and Installation of Replacement Monitoring Well BLM-43* on April 26, 2022 (NASA, 2022f). NMED approved the request on June 6, 2022 (NMED, 2022g), extending the due date for submittal of the well completion report to April 28, 2023. NASA abandoned well BLM-30 in the first quarter of 2023 and continued planning the installation of replacement well BLM-43.

1.4.3 BW-4

NASA determined that the well BW-4 can be reconfigured for continued use and submitted a well reconfiguration work plan for well BW-4 on June 29, 2021 (NASA, 2021m, p5). NMED approved the work plan on January 28, 2022 (NMED, 2022b) with modifications and direction to submit a well reconfiguration report no later than March 30, 2023 and a revised work plan no later than March 11, 2022. NASA submitted the *Response to Approval with Modifications of NASA WSTF Well Reconfiguration Work Plan for Well BW-4* on March 8, 2022 (NASA, 2022c). NASA abandoned the lower portion of the borehole in January 2023 and continued planning for final reconfiguration of the well (sampling system acquisition and installation). NASA submitted the *Reconfiguration Report for NASA Well BW-4* on March 21, 2023 (NASA, 2023i).

1.4.4 Data Representativeness and Westbay Well Reconfiguration Plan

The FLUTe Data Representativeness investigation took the form of isolation and serial sampling of four zones of well WW-4 with the FLUTe liner removed. NASA completed the groundwater data representativeness evaluation performed at groundwater monitoring well WW-4 and submitted the *Groundwater Data Representativeness Phase 1: Water FLUTe Well Evaluation Abbreviated Investigation Report* to NMED on February 27, 2020 (NASA, 2020c, pp2-13). NMED reviewed the *Groundwater Data Representativeness Phase 1: Water FLUTe Well Evaluation Abbreviated Investigation Report* (2/27/2020) and on June 3, 2021 issued an Approval with Modifications (NMED, 2021m). This approval required a change to the investigation report indicating a need for an expanded investigation, and a subsequent work plan for the investigation. NASA submitted a response to the approval with modifications on August 17, 2021 (NASA, 2021s, p14). NASA followed that with submittal of the *Abbreviated Investigation Work Plan for Groundwater Data Representativeness, Phase 2: FLUTe Well Evaluation* on November 2, 2021 (NASA, 2021z). NMED approved the work plan on August 8, 2022 (NMED, 2022l). NASA has performed the required fieldwork and is developing the investigation report, which is due to NMED no later than April 28, 2023.

The Westbay Well Reconfiguration Plan required time extensions to allow NASA to evaluate data from FLUTe sampling systems currently in place at WSTF, in the form of data from Westbay wells converted to FLUTe, and from laboratory testing of the FLUTe sample components. Beginning in 2020, NMED approved an extension request to submit the well reconfiguration work plan no later than December 31, 2020 (NMED, 2020a). On November 30, 2020, NASA submitted a *Request for Fourth Extension of Time for Well Reconfiguration Work Plan* (NASA, 2020r). NMED approved the fourth extension request for submittal of the well reconfiguration work plan for wells PL-6, PL-7, PL-8, PL-10, ST-5, and WW-3 on January 25, 2021 (NMED, 2021a). NASA submitted the *Westbay Well Reconfiguration Work Plan for Wells PL-7, PL-8, PL-10, ST-5, and WW-3* to NMED on April 29, 2021 (NASA, 2021f, pp2-4). NMED continued reviewing the work plan in the fourth quarter of 2022.

2.0 Source Area Investigations

2.1 200 Area

At the start of 2020, NMED approved a request for extension on January 16, 2020 for NASA to respond to 12 comments and submit a revised investigation report by February 3, 2020 (NMED, 2020b). NASA developed the required responses to the 12 comments in NMED's June 5, *2019 Disapproval 200 Area* *and 600 Area Vapor Intrusion Assessment Report* (NMED, 2019b) and submitted the *NMED Disapproval Response for 200 Area and 600 Area Vapor Intrusion Assessment Report* on January 30, 2020 (NASA, 2020b). NMED disapproved the report on September 20, 2022 and directed NASA to address three multipart comments and submit a revised report no later than April 28, 2023 (NMED, 2022n). NASA continued addressing NMED's comments in the first quarter of 2023.

2.2 300 Area

Work in the 300 Area is primarily related to investigation and closure of the adjacent 400 Area. Prior to 2020, NASA's May 30, 2019 *300 Area Supplemental Abbreviated Drilling Work Plan* (NASA, 2019f) was the first document submitted. NMED disapproved the work plan on March 19, 2021 (NMED, 2021g) and directed NASA to address four comments and submit a revised work plan no later than July 30, 2021. NASA submitted the *Response to Disapproval of 300 Area Supplemental Abbreviated Drilling Work Plan* on July 14, 2021 (NASA, 2021o). NMED continued reviewing the work plan in the first quarter of 2023.

2.3 400 Area

Prior to 2020, NASA's last submittal for the 400 Area was the December 30, 2019 400 *Area Closure Investigation Report* (NASA, 2019q; revised). NMED disapproved report on March 19, 2021 (NMED, 2021h) and directed NASA to address 17 comments and submit a revised report no later than July 30, 2021. NASA submitted the *NASA WSTF 400 Area Closure Investigation Report – NMED Third Disapproval Response* on July 27, 2021 (NASA, 2021r, Response Table). NASA also submitted the *400 Area Supplemental Groundwater and Soil Vapor Monitoring Plan* on May 29, 2019 (NASA, 2019d) and the related *300 Area Supplemental Abbreviated Drilling Work Plan* (NASA, 2019f) for two additional multiport soil vapor and groundwater monitoring wells in the 300 Area. NMED disapproved the *400 Area Supplemental Groundwater and Soil Vapor Monitoring Plan* on March 15, 2021 (NMED, 2021f), and NMED directed NASA to address three comments and submit a revised monitoring plan no later than July 30, 2021. NASA submitted the *Response to Disapproval of 400 Area Supplemental Groundwater and Soil Vapor Monitoring Plan* on July 14, 2021 (NASA, 2021p, Response Table). NMED continued reviewing the plans in the first quarter of 2023.

2.4 600 Area Perched Groundwater Investigations

2.4.1 600 Area Perched Groundwater Extraction

NASA initiated extraction of perched groundwater from monitoring well 600-G-138 on April 19, 2013 in accordance with the NMED-approved *600 Area Perched Groundwater Extraction Pilot Test Work Plan* (NASA, 2012). NASA has continued to extract groundwater in accordance with the plan and submit annual status reports. NASA submitted the *600 Area Perched Groundwater Extraction Pilot Test Interim Status Report – Project Year 9* on April 26, 2022 (NASA, 2022e). NMED approved the report on January 6, 2023 (NMED, 2023a). During the first quarter of 2023, NASA began working on the interim status report for the tenth year of the project.

2.4.2 600 Area Perched Groundwater Investigation.

At the start of 2020, a 600 Area Perched Groundwater investigation and report was scheduled in accordance with the *Abbreviated Investigation Work Plan for 600 Area Perched Groundwater* (NASA, 2016b). This work plan was subsequently changed per NASA's August 7, 2019 *Request to Remove Electrical Resistivity Component of the 600 Area Perched Groundwater Geophysical Survey based on Geophysical Subcontractor Input Received during the Procurement Process* (NASA, 2019j) and NMED's August 23, 2019 approval (NMED, 2019e).

In 2019, a seismic reflection and reflection survey was completed in accordance with the AIWP and work scope modification (NASA, 2019o). NASA provided the *Synopsis of the Findings of the 600 Area Closure Geophysical Seismic Refraction Tomography and Reflection Surveys with Revised Soil Boring Locations Submitted for NMED Approval* on December 19, 2019 (NASA, 2019p). Because of an indeterminate review period for that status report and the start of drilling dependent on approval of the boring locations recommended therein, NASA had submitted a *Request for Extension of Time for Submittal of the 600 Area Perched Groundwater Investigation Report* on March 24, 2020 (NASA, 2020d). NMED approved the extension on July 1, 2020 to 150 days after NMED provides comments (NMED, 2020e).

On December 22, 2020, NMED issued its *Approval with Modifications 600 Area Closure Geophysical Survey Status Report* (NMED, 2020l) and established a due date for the 600 Area Perched Groundwater Investigation Report of December 31, 2021. On May 18, 2021, NASA provided the *Response to NMED Approval with Modifications for the 600 Area Closure Geophysical Survey Status Report – Comment 2 (Further Investigation)* (NASA, 2021i) in which NASA proposed a different approach for collection of geophysical data up- and down-gradient of the 600 Area Closure. The accuracy of the 600 Area geophysical survey would be assessed by comparing the actual bedrock depths from six NMED-approved perched groundwater investigation borings to the predicted depths from the geophysical survey before expanding the geophysical survey. NMED concurred with the approach on July 6, 2021 (NMED, 2021n). During the remainder of 2021, NASA performed planning and procurement activities in preparation for investigation fieldwork, which was initiated in January 2022 as described in Section 6.4.4 of the report.

NASA suspended extraction of perched groundwater from monitoring well 600-G-138 for much of January 2022 to reduce the impact on the perched groundwater aquifer and maximize the potential of locating perched groundwater during the perched groundwater investigation. NASA completed soil boring installation field activities for the perched groundwater investigation in accordance with NMED's *Approval with Modifications 600 Area Closure Geophysical Survey Status Report* (NMED, 2020m). The off-site subcontract drilling company installed all six soil borings between January 4 and January 27, 2022 in the vicinity of the 600 Area Closure to depths of approximately 145 to 180 feet bgs. The soil borings were located in potential bedrock lows identified using the geophysical seismic survey performed previously as part of the investigation. The soil borings transcended the alluvial overburden into the top of the andesite bedrock in search of perched groundwater on the alluvial-bedrock interface. NASA identified perched groundwater at one location adjacent to the north corner of the Closure and installed groundwater well 600A-001-GW. NASA also installed a conventional monitoring well 600A-002-GW downgradient to the west of the Closure in andesite bedrock. This boring encountered the deeper fractured bedrock aquifer at the projected total depth of the soil boring and was subsequently drilled deeper than the planned depth to facilitate installation of the groundwater monitoring well. The remaining four soil borings did not encounter perched groundwater and were plugged and abandoned in accordance with the NMED-approved work plan. NASA performed colloidal borescope evaluations at the two new wells 600A-001-GW and 600A-002-GW, existing perched groundwater monitoring well 600-G-138, and 12 other conventional wells in the fractured bedrock aquifer with significant locations relative to the evaluation of regional flow.

NASA developed new conventional monitoring wells 600A-001-GW and 600A-002-GW, and in May 2022, NASA performed initial sampling in accordance with the current NMED-approved Groundwater Monitoring Plan. NASA prepared and submitted the *Request for a "Contained-in" Determination for Contaminated Media Associated with the 600 Area Perched Groundwater Abbreviated Investigation Work Plan* on March 22, 2022 (NASA, 2022d). NMED approved the request and granted a "*no longer contained in determination*" on April 18, 2022 (NMED, 2022e). NASA prepared and submitted the *600 Area Perched Groundwater Investigation Report* on June 29, 2022 (NASA, 2022j) and provided the fee for review of the report on August 9, 2022 (NASA, 2022k). NASA shipped the soil cuttings generated from the drilling activities off-site on June 15, 2022 for disposal as solid waste. NASA suspended regularly scheduled sampling of wells 600A-001-GW and 600A-002-GW in December 2022 because of equipment failure. NASA obtained replacement sampling equipment in December 2022 for use in January 2023. Upon further evaluation, NASA determined that previous development of these wells using on-site equipment after colloidal borescope tests may have been inadequate. NASA is working to acquire the services of an off-site subcontractor to perform additional development at these wells prior to sampling. NASA will provide an update on well development progress in future reports to NMED.

2.5 SWMUs 2, 8, and 34 and Area of Concern (AOC) 51 (Wastewater Lagoons)

2.5.1 100 Area Lagoons

On May 29, 2019, NASA submitted the *NASA WSTF (White Sands Test Facility) 100 Area Wastewater Lagoons Closure (SWMU 2) Interim Status Report* (NASA, 2019e). NMED responded to that report on May 14, 2020 (NMED, 2020d) and informed NASA that comments would be incorporated into the SWMU 2 Investigation Report. NASA submitted the *NASA White Sands Test Facility (WSTF) 100 Area Wastewater Lagoons Closure (SWMU 2) Investigation Report on* August 3, 2020 (NASA, 2020j). NMED disapproved the report on July 5, 2022 (NMED, 2022j) and directed NASA to provide a revised report no later than January 31, 2023. NASA continued reviewing and addressing NMED comments in the first quarter of 2023.

After completing investigation fieldwork at the 200 Area lagoons in February 2023, NASA and the subcontracted drilling company moved drilling equipment to the 100 Area lagoons. In late February and March 2023, NASA completed the installation of all required soil borings at the 100 Area lagoons. The required soil samples were collected at each boring and submitted to the off-site laboratories for analysis. During the first quarter of 2023, NASA began reviewing chemical analytical data in preparation for revising the disapproved investigation reports. To provide sufficient time to complete data review and preparation of the revised investigation report, NASA submitted the *Request for Extension of Time for NASA White Sands Test Facility (WSTF) 100 Area Wastewater Lagoons Closure (SWMU 2) Investigation Report Response to Disapproval* on January 18, 2023 (NASA, 2023a).

2.5.2 200 Area Lagoons

NASA submitted the *NASA White Sands Test Facility (WSTF) 200 Area Wastewater Lagoons Closure (SWMU 8) Investigation Report* to NMED on November 25, 2019 (NASA, 2019n). NMED disapproved the report on June 6, 2022 (NMED, 2022h) and directed NASA to provide a revised report no later than December 30, 2022. NASA prepared and submitted the *Request for Extension of Time for NASA White Sands Test Facility (WSTF) 200 Area Wastewater Lagoons Closure (SWMU 8) Investigation Report (IR) Response to Disapproval* on December 8, 2022 (NASA, 2022q), requesting the due date for submittal of the revised report be extended to March 30, 2023. NASA continued reviewing and addressing NMED comments in the first quarter of 2023.

In February 2023, NASA and the subcontracted drilling company completed the nine soil borings at the 200 Area lagoons then decontaminated tooling and moved drilling equipment to the 100 Area lagoons. All samples were submitted to the off-site laboratories for analysis. During the first quarter of 2023, NASA began reviewing chemical analytical data in preparation for revising the disapproved investigation report. To provide sufficient time to complete data review and preparation of the revised investigation report, NASA submitted the *Request for Second Extension of Time for NASA White Sands Test Facility (WSTF) 200 Area Wastewater Lagoons Closure (SWMU 8) Investigation Report (IR) Response to Disapproval* on March 8, 2023 (NASA, 2023e).

2.5.3 600 Area Lagoons

NASA submitted the *NASA White Sands Test Facility (WSTF) 600 Area Wastewater Lagoons Closure (SWMU 34) Investigation Report* to NMED on November 26, 2019 (NASA, 20190). NMED disapproved the report on June 16, 2022 (NMED, 2022i). NASA prepared and submitted the *Request for Extension of Time for NASA White Sands Test Facility (WSTF) 600 Area Wastewater Lagoons Closure (SWMU 34) Investigation Report Response to Disapproval* on December 8, 2022 (NASA, 2022r), requesting the due date for submittal of the revised report be extended to March 30, 2023. NASA continued reviewing and addressing NMED comments in the first quarter of 2023.

In January 2023, NASA mobilized the subcontracted drilling company to WSTF and initiated the installation of soil borings and monitoring wells in accordance with the plan. NASA completed soil boring 600L-SB-28 at a location topographically and hydrogeologically downgradient from the 600 Area wastewater lagoons. NASA collected the required soil samples from the boring, which intercepted perched groundwater at approximately 151 feet below ground surface. NASA installed a groundwater monitoring well in the borehole and monitored groundwater as it recovered to approximately 145 feet below ground surface. In January and February 2023, NASA completed the installation and sampling of all required soil borings within the 600 Area wastewater lagoon. All samples were submitted to the off-site laboratories for analysis. During the first quarter of 2023, NASA began reviewing chemical analytical data in preparation for revising the disapproved investigation reports. To provide sufficient time to complete data review and preparation of the revised investigation report, NASA submitted the *Request for Second Extension of Time for NASA White Sands Test Facility (WSTF) 600 Area Wastewater Lagoons Closure (SWMU 34) Investigation Report Response to Disapproval* on March 8, 2023 (NASA, 2023f).

2.5.4 STGT Lagoons

In February 2020, NASA and a subcontracted drilling company completed installation of the five remaining soil borings at the STGT Wastewater Lagoons. NASA collected and managed samples of subsurface soil and shipped them to the off-site laboratories for analysis. This activity completed soil sampling described in the NMED-approved work plan. NASA conducted soil vapor sampling at the STGT Wastewater Lagoons in March 2020. This completed all investigation fieldwork described in the NMED-approved work plan. *NASA White Sands Test Facility (WSTF) STGT Wastewater Lagoons Closure (AOC 51) Investigation Report* on October 13, 2020 (NASA, 2020o, p42). NMED disapproved the report on July 25, 2022 (NMED, 2022k) and directed NASA to submit a revised report no later than February 28, 2023. NASA continued reviewing and addressing NMED comments in the first quarter of 2023.

After completing the drilling and soil sampling at the 100 Area lagoons in early March 2022, NASA and the subcontracted drilling company decontaminated all downhole drilling tools, moved operations to the STGT Area lagoons, and completed the seven soil borings for these lagoons. All drilling equipment and tooling were decontaminated, and the subcontracted drilling company demobilized from WSTF on March 23, 2023. The required soil samples were collected at each boring and submitted to the off-site laboratories for analysis. During the first quarter of 2023, NASA began reviewing chemical analytical data in preparation for revising the disapproved investigation reports. To provide sufficient time to complete data review and preparation of the revised investigation report, NASA submitted the *Request for Extension of Time for NASA White Sands Test Facility (WSTF) Second Tracking and Data Relay Satellite Ground Terminal (STGT) Wastewater Lagoons Closure (Area of Concern [AOC] 51) Investigation Report Response to Disapproval* on January 18, 2023 (NASA, 2023b).

2.6 SWMU 10 (200 Area Hazardous Waste Transmission Lines)

NASA provided the *Response to Disapproval of the NASA WSTF 200 Area HWTL (SWMU 10) Investigation Report* to NMED on July 30, 2019 (NASA, 2019i). On November 16, 2020, NMED disapproved the revised report (NMED, 2020j) and directed NASA to address 16 comments and perform resampling along the HWTL by August 30, 2021. On May 19, 2021, NASA requested that the due date for submittal of a revised report be extended from August 30, 2021 to November 30, 2021 (NASA, 2021k). NMED approved this extension on July 6, 2021 (NMED, 2021o). NASA completed the collection of replacement soil samples for the analysis of volatile organic compounds along the HWTL on August 31, 2021. NASA installed 12 soil vapor implants at the sampling locations nearest the 200 Area occupied buildings and collected soil vapor samples using 1-liter SUMMA canisters on September 23, 2021. Due to ongoing drilling and laboratory contractor backlog due to COVID, on September 14, 2021, NASA then requested a second extension to submit the revised IR by January 31, 2022 (NASA, 2021v). NMED approved the request on January 25, 2022 (NMED, 2022c), extending the due date for submittal of the report to February 28, 2022. During the first quarter of 2023, NMED continued reviewing the *Response* to *Second Disapproval of NASA WSTF 200 Area HWTL (SWMU 10) Investigation Report and Risk Assessment Report* (March 4, 2022) (NASA, 2022a) and the *Response to Second Disapproval of NASA WSTF 200 Area HWTL (SWMU 10) IR Risk Assessment Report* (March 4, 2022) (NASA, 2022b).

2.7 SWMU 16 (600 Area Bureau of Land Management [BLM] Off-Site Soil Pile)

Preliminary investigation fieldwork was performed at the 600 Area BLM Off-Site Soil Pile in November and December 2015. NASA submitted the *NASA WSTF SWMU 16 (600 Area BLM Off-Site Soil Pile) Investigation Report* on February 25, 2016 (NASA, 2016a). NMED disapproved three revisions of the report prior to 2020. NMED provided the *Approval with Modifications 600 Area Bureau of Land Management Off-Site Soil Pile (SWMU 16) Revised Investigation Report* on May 6, 2021 (NMED, 2021k). The Approval with Modifications required submittal of an Accelerated Corrective Measures work plan no later than September 30, 2021. NASA submitted the *Response to Approval with Modifications of NASA WSTF SWMU 16 (600 Area BLM Off-Site Soil Pile) Investigation Report* on July 20, 2021 (NASA, 2021q) and then submitted the *Accelerated Corrective Measures Work Plan for the NASA WSTF SWMU 16 (600 Area BLM Off-Site Soil Pile)* on September 28, 2021 (NASA, 2021w, p9). NMED approved the *Accelerated Corrective Measures Work Plan for the NASA WSTF SWMU 16 (600 Area BLM Off-Site Soil Pile)* with modifications on February 10, 2023 (NMED, 2023c). NASA is addressing NMED’s two comments and revising the work plan for submittal to NMED no later than May 31, 2023.

2.8 SWMUs 18–20 (700 Area High Energy Blast Facility, 800 Area Below Grade Storage Tank, and 800 Area Oxidizer Burner)

NMED reviewed the *Response to Disapproval of Revised SWMU 19 (800 Area Below Grade Storage Tank) Investigation Report* (NASA, 2019g) and issued the *Approval with Modifications Revised 800 Area Below Grade Storage Tank (SWMU 19) Investigation Report* on August 27, 2020 (NMED, 2020h).

2.9 SWMUs 21–27 (Septic Tanks)

NMED disapproved NASA’s July 23, 2019, *Response to Disapproval of NASA WSTF Septic Tanks (SWMUs 21-27) Investigation Report* (NASA, 2019h, the revised IR) on January 29, 2021 and directed NASA to address six comments no later than May 30, 2021 (NMED 2021c). NASA addressed the six comments and submitted the *Response to Second Disapproval of NASA White Sands Test Facility (WSTF) Septic Tanks (SWMUs 21–27) Investigation Report* on May 18, 2021 (NASA, 2021j, Response Table). NMED approved the revised *NASA White Sands Test Facility (WSTF) Septic Tanks (SWMUs 21-27)*

Investigation Report on March 16, 2023 (NMED, 2023d). NASA is addressing two comments and revising the report for submittal to NMED no later than June 16, 2023.

2.10 SWMUs 29-31 (Small Arms Firing Ranges)

Leading up to 2020, NASA completed additional fieldwork required to respond to NMED's February 21, 2019, *Second Disapproval of Small Arms Firing Ranges (SWMUs 29-31) Remedy Completion Report.* NMED (NMED, 2019a) approved NASA's October 28, 2019 request to extend the due date for submittal of the disapproval response and revised remedy completion report from December 31, 2019 to February 28, 2020 (NASA, 2019l). NASA determined that additional time was required to complete the planned human and ecological health risk assessment for the three SWMUs and submitted the *Second Request for Extension of Time for NASA WSTF Small Arms Firing Ranges (SWMUs 29-31) Response to Second Disapproval Remedy Completion Report* on January 29, 2020 (NASA, 2020a). NMED approved the request on March 21, 2020 (NMED, 2020c), extending the due date for submittal of the report from February 28, 2020 to April 24, 2020. NASA prepared the response to NMED's February 21, 2019 *Second Disapproval of Small Arms Firing Ranges (SWMUs 29–31) Remedy Completion Report* (March 30, 2018) and submitted the *Response to Second Disapproval Small Arms Firing Ranges (SWMUs 29-31) Remedy Completion Report and Risk Assessment Report* on August 3, 2020 (NASA, 2020k). NMED approved the reports on November 16, 2022 with modifications (NMED, 2022r) and directed NASA to address six comments and submit revised reports no later than January 31, 2023. NASA addressed NMED's comments and submitted the *Response to Approval w/Mods – Revised Small Arms Firing Range (SWMUs 29-31) RCR* on January 27, 2023 (NASA, 2023d). No additional work is planned at these units. NMED and NASA will evaluate their status after the RCRA Permit takes effect.

2.11 SWMU 33 (300 Area Test Stand 302 Cooling Water Pond)

Anticipating closure of Test Stand 302 apart from a full closure, NASA submitted the *300 Area Test Stand 302 Cooling Water Pond (SWMU 33) Investigation Work Plan (IWP) and Historical Information Summary (HIS)* (NASA, 2020k) on August 17, 2020. NMED disapproved the work plan on May 9, 2022 (NMED, 2022f). NMED directed NASA to address the comments and submit a revised work plan no later than September 15, 2022. NASA addressed NMED's 13 comments and submitted the *Response to Disapproval of NASA WSTF 300 Area Test Stand 302 Cooling Water Pond (SWMU 33) Investigation Work Plan (IWP) and Historical Information Summary (HIS)* on September 14, 2022 (NASA, 2022n). NMED continued reviewing the IWP and HIS in the first quarter of 2023.

2.12 SWMU 47 (500 Area Fuel Storage Area)

NASA submitted the 500 Area Fuel Storage (SWMU 47) Investigation Work Plan on September 26, 2018 (NASA, 2018c). NMED disapproved the work plan on August 8, 2019 (NMED, 2019d) and directed NASA to address 14 comments and submit a revised work plan by November 25, 2019. NASA submitted the *Response to Disapproval of 500 Area (SWMU 47) Investigation Work Plan* on November 21, 2019 (NASA, 2019m). NMED disapproved the revised work plan on March 19, 2021 and directed NASA to address five comments and submit a revised IWP no later than July 31, 2021 (NMED, 2021i). NASA addressed NMED's comments and submitted the *Response to Second Disapproval of 500 Area Fuel Storage (SWMU 47) Investigation Work Plan* on June 29, 2021 (NASA, 2021n, Response Table). NMED continued reviewing the revised work plan in the fourth quarter of 2022.

2.13 SWMU 49 (700 Area Landfill)

NASA submitted the *NASA White Sands Test Facility (WSTF) SWMU 49 (700 Area Landfill) Phase I Investigation Work Plan (IWP) and Historical Information Summary (HIS)* on December 28, 2017

(NASA, 2017b). NMED disapproved the work plan (NMED, 2018b) and directed NASA to address eight comments and submit a revised work plan by May 31, 2019. NASA submitted the *Response to NMED Disapproval SWMU 49 (700 Area Landfill) Phase I Investigation Work Plan and Historical Information Summary* on March 28, 2019 (NASA, 2019b). NMED approved the work plan with modification on June 6, 2019 (NMED, 2019c). The planned investigation includes Phase 1A and Phase 1B soil vapor sampling and surface geophysics. In November 2019 and December 2019, NASA deployed 159 passive soil vapor samplers and completed the Phase 1A soil vapor survey. NASA and the subcontracted geophysics firm performed the EMI and magnetic gradient field surveys between February 24 and 28, 2020.

Because of project delays created by the COVID-19 pandemic, NASA submitted a *Request for Extension of Time for Submittal of the SWMU 49 (700 Area Landfill) Phase I Investigation Report* on May 4, 2020 (NASA, 2020g). NMED approved the request on July 1, 2020 (NMED, 2020f), extending the date for submittal of the Phase 1 investigation report to March 31, 2021. Meanwhile, NASA completed procurement of the ground penetrating radar and passive seismic surveys as described in the NMED-approved landfill investigation work plan. Due to the ongoing pandemic, NASA submitted a *Second Request for Extension of Time for Submittal of the SWMU 49 (700 Area Landfill) Phase I Investigation Report* on February 3, 2021 (NASA, 2021b). NMED approved the request on March 15, 2021 (NMED, 2021e), extending the due date for submittal of the Phase 1 investigation report to April 29, 2022. NMED approved the *700 Area Landfill Closure (SWMU 49) Phase I Investigation Report* on February 10, 2023 (NMED, 2023b) and directed NASA to provide a Phase II work plan no later than October 31, 2023.

2.14 SWMU 50 (First TDRSS Diesel Release)

NASA submitted the *First Tracking Data Relay Satellite System (TDRSS) Diesel Release (SWMU 50) Investigation Report* on March 14, 2019 (NASA, 2019a). NMED disapproved the report on July 8, 2020 (NMED, 2020g) and directed NASA to address 17 NMED comments and submit a revised report no later than October 30, 2020. NASA submitted the *Response to Disapproval of First Tracking Data Relay Satellite System (TDRSS) Diesel Release (SWMU 50) Investigation Report and Risk Screen Evaluation Report* on November 9, 2020 (NASA, 2020p). NMED approved the reports on November 16, 2022 with modifications (NMED, 2022q) and directed NASA to address seven comments and submit revised reports no later than January 31, 2023. NASA addressed NMED's seven comments and submitted the *Response to Approval with Modification of First Tracking Data Relay Satellite System (TDRSS) Diesel Release (SWMU 50) Investigation Report* on January 26, 2023 (NASA, 2023c).

2.15 SWMU 52 (Second TDRSS UST)

On August 11, 2020, NASA discovered a diesel fuel leak in the area of the SWMU 52 Underground Storage Tank (UST), which is located north of WSTF at the White Sands Complex. NASA initiated a preliminary investigation and confirmed that the leak originated from a puncture in the return fuel line between emergency generator and the UST. NASA informed the NMED HWB of the release via email on August 13, 2020 and in writing in the August 17, 2020 *NASA White Sands Test Facility Hazardous Waste Operating Permit SWMU 52 Incident Notification* (NASA, 2020m). NASA submitted the *Second TDRSS Underground Storage Tank (SWMU 52) Release Assessment Report* to NMED HWB on February 18, 2021 (NASA, 2021c).

Parallel activities were performed with notifications and approvals provided to the NMED Petroleum Storage Tank Bureau (PSTB). During August and September 2020, White Sands Complex personnel coordinated corrective action for this release through the NMED PSTB. On September 21, 2020, NASA submitted the *NASA White Sands Test Facility Hazardous Waste Operating Permit SWMU 52 Incident Update* (NASA, 2020n. p7). The update summarized corrective action performed to date, including the removal of 32 yd^3 of diesel-contaminated soil from the area of the leak. NASA then submitted the *Second*

TDRSS UST Minimum Site Assessment Work Plan (NASA, 2020q) to the PSTB on November 18, 2020. The work plan described an investigation to determine the extent and magnitude of soil contamination caused by the diesel release. On February 4, 2021 (NMED PSTB, 2021), the NMED PSTB approved NASA's *Second TDRSS UST Minimum Site Assessment Work Plan* of November 18, 2020 (NASA, 2020r, pp3-6). NASA submitted the *Second TDRSS UST Minimum Site Assessment Report* to the NMED PSTB on June 25, 2021 (NASA, 2021l). The HWB was copied. The work conducted for the investigation and report had been under a PSTB-approved Minimum Site Investigation Work Plan (NMED, 2021d).

In December 2020, NASA completed shipping the remaining petroleum contaminated soil previously removed from the release location soil to the Valencia Regional Landfill and Recycling Facility for bioremediation and disposal. In total, approximately 214 yd^3 of contaminated soil was removed from the release area. NASA drilled five boreholes for characterization of the release from March 22 through March 26, 2021 in accordance with the work plan.

The NMED HWB disapproved the *Second TDRSS UST Minimum Site Assessment Report* on March 1, 2022 and directed NASA to address four NMED comments and submit a revised report no later than May 6, 2022 (NMED, 2022d). NASA submitted the *Response to Disapproval of NASA WSTF Second TDRSS Underground Storage Tank (SWMU 52) Release Assessment Report* on April 26, 2022 (NASA, 2022g). NMED approved the report with a modification on August 8, 2022 (NMED, 2022m). An additional submittal was not required.

2.16 SWMU 54 (500 Area Former Oxidizer Burner)

NASA identified the location of a former 500 Area oxidizer as a potential new SWMU. On October 16, 2019, NASA submitted the *Fifteen-Day Notification of a Newly Identified SWMU within the WSTF 500 Area* (NASA, 2019k). NMED acknowledged receipt of NASA's fifteen-day notification on November 13, 2019 (NMED, 2019f) and directed NASA to provide a Release Assessment Report no later than May 29, 2020. NASA researched historical information on the newly identified SWMU and submitted the *500 Area Newly Identified SMWU Release Assessment Report* on June 22, 2020 (NASA, 2020h, p4). NMED approved the report on December 20, 2021 and directed NASA to prepare and submit an investigation work plan for the unit no later than August 31, 2022 (NMED, 2021r). NASA completed preparation of the historical investigation summary and investigation work plan for the former oxidizer burner in the 500 Area. The unit will be identified as a SWMU in the Permit at an appropriate time. NASA submitted the *500 Area Former Oxidizer Burner (FOB) Investigation Work Plan (IWP) and Historical Information Summary (HIS)* on August 25, 2022 (NASA, 2022l). NASA submitted the *Notice of a Class 1 Permit Modification Request for the NASA White Sands Test Facility (WSTF) Hazardous Waste Permit No. NM8800019434* on October 4, 2022 (NASA, 2022p), which notified NMED of a modification to the Permit by adding the FOB as SWMU 54. On November 15, 2022 NMED notified NASA that the unit had been added to the Permit as SWMU 54 and that the change would be fully addressed in the upcoming Permit renewal (NMED, 2022p). The unit is identified as SWMU 54 in the 2023 RCRA Permit (NMED, 2023e).

3.0 References

NASA Johnson Space Center White Sands Test Facility. (2012, November 13). *600 Area Perched Groundwater Extraction Pilot Test Work Plan*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2016a, February 25). *NASA WSTF SWMU 16 (600 Area BLM Off-Site Soil Pile) Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2016b, June 28). *Abbreviated Investigation Work Plan for the 600 Area Perched Groundwater*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2017a, December 27). *NASA WSTF Drilling Work Plan for Groundwater Monitoring Well PL-12*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2017b, December 28). *NASA White Sands Test Facility (WSTF) SWMU 49 (700 Area Landfill) Phase I Investigation Work Plan (IWP) and Historical Information Summary (HIS*). Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2018a, January 30). *Work Plan for Abandonment of NASA WSTF Monitoring Well BLM-37 and Replacement with Monitoring Well BLM-42*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2018b, April 24). N*ASA WSTF Groundwater Monitoring Plan Update for 2018.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2018c, September 26*). 500 Area Fuel Storage (SWMU 47) Investigation Work Plan*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2018d, December 3). *Response to NMED Approval with Modifications WSTF 2018 Groundwater Monitoring Plan Correction*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2019a, March 14). *First Tracking Data Relay Satellite System (TDRSS) Diesel Release (SWMU 50) Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2019b, March 28). *Response to NMED Disapproval SWMU 49 (700 Area Landfill) Phase I Investigation Work Plan and Historical Information Summary*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2019d, May 29). *400 Area Supplemental Groundwater and Soil Vapor Monitoring Plan.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2019e, May 29). *NASA WSTF (White Sands Test Facility) 100 Area Wastewater Lagoons Closure (SWMU 2) Interim Status Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2019f, May 30*). 300 Area Supplemental Abbreviated Drilling Work Plan*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2019g, June 27). *Response to Disapproval of Revised SWMU 19 (800 Area Below Grade Storage Tank) Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2019h, July 23). *Response to Disapproval of NASA White Sands Test Facility (WSTF) Septic Tanks (SWMUs 21-27) Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2019i, July 30). *Response to Disapproval of the NASA WSTF 200 Area HWTL (SWMU 10) Investigation Report.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2019j, August 7). *Request to Remove Electrical Resistivity Component of the 600 Area Perched Groundwater Geophysical Survey based on Geophysical Subcontractor Input Received during the Procurement Process*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2019k, October 16). *Fifteen-Day Notification of a Newly Identified SWMU within the WSTF 500 Area*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2019l, October 28). *Request for Extension of Time for NASA WSTF Small Arms Firing Ranges (SWMUs 29 – 31) Response to Second Disapproval Remedy Completion Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2019m, November 21). *Response to Disapproval of 500 Area Fuel Storage (SWMU 47) Investigation Work Plan*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2019n, November 25). *NASA White Sands Test Facility (WSTF) 200 Area Wastewater Lagoons Closure (SWMU 8) Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2019o, November 26). *NASA White Sands Test Facility (WSTF) 600 Area Wastewater Lagoons Closure (SWMU 34) Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2019p, December 19). *Synopsis of the Findings of the 600 Area Closure Geophysical Seismic Refraction Tomography and Reflection Surveys with Revised Soil Boring Locations Submitted for NMED Approval. Las Cruces, NM*.

NASA Johnson Space Center White Sands Test Facility. (2019q, December 30). *NASA WSTF 400 Area Closure Investigation Report – NMED Second Disapproval Response*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2020a, January 29). *Second Request for Extension of Time for NASA WSTF Small Arms Firing Ranges (SWMUs 29 – 31) Response to Second Disapproval Remedy Completion Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2020b, January 30). *NMED Disapproval Response for 200 Area and 600 Area Vapor Intrusion Assessment Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2020c, February 27). *Groundwater Data Representativeness Phase 1: Water FLUTe Well Evaluation Abbreviated Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2020d, March 24). *Request for Extension of Time for Submittal of the 600 Area Perched Groundwater Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2020e, May 4). *NASA White Sands Test Facility (WSTF) Well Completion Report for BLM-42*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2020f, May 4). *NASA White Sands Test Facility (WSTF) Well Completion Report for PL-12*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2020g, May 4). *Request for Extension of Time for Submittal of the SWMU 49 (700 Area Landfill) Phase I Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2020h, May 4). *Well Reconfiguration Report for Well BLM-28 and Notice of Intent to Plug and Abandon*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2020i, June 22). *500 Area Newly Identified SWMU Release Assessment Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2020j, August 3*). NASA White Sands Test Facility (WSTF) 100 Area Wastewater Lagoons Closure (SWMU 2) Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2020k, August 3). *Response to Second Disapproval Small Arms Firing Ranges (SWMUs 29-31) Remedy Completion Report and Risk Assessment Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2020l, August 17). *NASA White Sands Test Facility (WSTF) 300 Area Test Stand 302 Cooling Water Pond (SWMU 33) Investigation Work Plan (IWP) and Historical Information Summary (HIS)*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2020m, August 17). *NASA White Sands Test Facility Hazardous Waste Operating Permit SWMU 52 Incident Notification*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2020n, September 21). *NASA White Sands Test Facility Hazardous Waste Operating Permit SWMU 52 Incident Update*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2020o, October 13). *NASA White Sands Test Facility (WSTF) STGT Wastewater Lagoons Closure (AOC 51) Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2020p, November 9). *Response to Disapproval of First Tracking Data Relay Satellite System (TDRSS) Diesel Release (SWMU 50) Investigation Report and Risk Screen Evaluation Report*. Las Cruces, NM.

NASA White Sands Complex. (2020q, November 18). *Second TDRSS UST Minimum Site Assessment Work Plan*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2020r, November 30). *Request for Fourth Extension of Time for Well Reconfiguration Work Plan*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021a, February 3). *Response to Approval with Modifications Work Plan for Abandonment of NASA WSTF Well BLM-30 and Replacement with Monitoring Well BLM-43*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021b, February 3). *Second Request for Extension of Time for Submittal of the SWMU 49 (700 Area Landfill) Phase I Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021c, February 18). *Second TDRSS Underground Storage Tank (SWMU 52) Release Assessment Report.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021d, March 15). *Application for Permit to Drill Monitoring Well (BLM-43) with No Consumptive Use of Water at NASA-JSC White Sands Test Facility.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021e, March 15). *Well Plugging Plan of Operations for NASA Well BLM-30.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021f, April 29). *NASA WSTF Westbay Well Reconfiguration Work Plan for Wells PL-7, PL-8, PL-10, ST-5, and WW-3.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021g, April 29). *Well Abandonment Work Plan for Well BLM-28.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021h, May 18). *Response to Approval with Modifications for NASA White Sands Test Facility (WSTF) Well Completion Report for BLM-42.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021i, May 18). *Response to NMED Approval with Modifications for the 600 Area Closure Geophysical Survey Status Report – Comment 2* (Further Investigation). Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021j, May 18). *Response to Second Disapproval of NASA White Sands Test Facility (WSTF) Septic Tanks (SWMUs 21–27) Investigation Report.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021k, May 19). *Request for Extension of Time for Submittal of Hazardous Waste Transmission Lines (SWMU 10) Investigation Report.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021l, June 25). *Second TDRS UST Minimum Site Assessment Report.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021m, June 29). *NASA WSTF Well Reconfiguration Work Plan for Well BW-4.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021n, June 29). *Response to Second Disapproval of 500 Area Fuel Storage (SWMU 47) Investigation Work Plan*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021o, July 14). *Response to Disapproval of 300 Area Supplemental Abbreviated Drilling Work Plan*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021p, July 14). *Response to Disapproval of 400 Area Supplemental Groundwater and Soil Vapor Monitoring Plan*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021q, July 20) *Response to Approval with Modifications of NASA WSTF SWMU 16 (600 Area BLM Off-Site Soil Pile) Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021r, July 27). *NASA WSTF 400 Area Closure Investigation Report – NMED Third Disapproval Response*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021s, August 17). *Response to Approval with Modifications for Groundwater Data Representativeness Phase 1: Water FLUTe Well Evaluation Abbreviated Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021t, August 31*). Work Plan for Drilling and Installation of Monitoring Well 600B-001-GW at the NASA White Sands Test Facility (WSTF)*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021u, August 31). *Work Plan for Drilling and Installation of Monitoring Well 600C-001-GW at the NASA White Sands Test Facility* (WSTF). Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021v, September 14). *Request for Second Extension of Time for Submittal of Response to Disapproval of Hazardous Waste Transmission Lines (SWMU 10) Investigation Report.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021w, September 28). *Accelerated Corrective Measures Work Plan for the NASA WSTF SWMU 16 (600 Area BLM Off-Site Soil Pile).* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021x, September 28). *Request for Extension of Time for Submittal of the Completion Report for Monitoring Well BLM-30 Abandonment and Installation of Replacement Monitoring Well BLM-43*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021y, October 28). *NASA WSTF Periodic Monitoring Report – Third Quarter 2021*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021z, November 2). *Abbreviated Investigation Work Plan for Groundwater Data Representativeness, Phase 2: FLUTe Well Evaluation.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2021aa, November 30). *Well Plugging Plan of Operations for Multiport Soil Vapor Groundwater Monitoring Wells 200-SG-2 and 200-SG-*3. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022a, March 4). *Response to Second Disapproval of NASA WSTF 200 Area HWTL (SWMU 10) Investigation Report and Risk Assessment Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022b, March 4). *Response to Second Disapproval of NASA WSTF 200 Area HWTL (SWMU 10) IR Risk Assessment Report.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022c, March 8). *Response to Approval with Modifications of NASA WSTF Well Reconfiguration Work Plan for Well BW-4*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022d, March 22). *Request for a "Contained-in" Determination for Contaminated Media Associated with the 600 Area Perched Groundwater Abbreviated Investigation Work Plan*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022e, April 26). *600 Area Perched Groundwater Extraction Pilot Test Interim Status Report – Project Year 9*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022f, April 26). *Request for Second Extension of Time for Submittal of the Completion Report for Monitoring Well BLM-30 Abandonment and Installation of Replacement Monitoring Well BLM-43.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022g, April 26). *Response to Disapproval of NASA WSTF Second TDRSS Underground Storage Tank (SWMU 52) Release Assessment Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022h, April 29). *NASA White Sands Test Facility (WSTF) 700 Area Landfill Closure (SWMU 49) Phase I Investigation Report.* Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022i, April 29). *NASA WSTF Work Plan for Abandonment of NASA WSTF NASA 9 and Replacement with Monitoring Well 400-001-GW*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022j, June 29). *600 Area Perched Groundwater Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022k, August 9). *Fee Assessment for the 600 Area Perched Groundwater Investigation Report (NMED Invoice Number HWB-NASA-22-009)*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022l, August 25). *NASA White Sands Test Facility (WSTF) 500 Area Former Oxidizer Burner (FOB) Investigation Work Plan (IWP) and Historical Information Summary (HIS)*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022m, September 7). *Well Plugging Plan of Operations for NASA Wells NASA 9 and LRG-17519-POD4*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022n, September 14). *Response to Disapproval of NASA WSTF 300 Area Test Stand 302 Cooling Water Pond (SWMU 33) Investigation Work Plan (IWP) and Historical Information Summary (HIS)*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022o, September 20). *Plugging and Abandonment of WSTF Wells 400-KV-142, 400-LV-125, BLM-2-482, NASA 8, PFE-4, and PFE-6*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022p, October 4). *Notice of a Class 1 Permit Modification Request for the NASA White Sands Test Facility (WSTF) Hazardous Waste Permit No. NM8800019434*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022q, December 8). *Request for Extension of Time for NASA White Sands Test Facility (WSTF) 200 Area Wastewater Lagoons Closure (SWMU 8) Investigation Report (IR) Response to Disapproval*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2022r, December 8). *Request for Extension of Time for NASA White Sands Test Facility (WSTF) 600 Area Wastewater Lagoons Closure (SWMU 34) Investigation Report Response to Disapproval*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023a, January 18). *Request for Extension of Time for NASA White Sands Test Facility (WSTF) 100 Area Wastewater Lagoons Closure (SWMU 2) Investigation Report Response to Disapproval*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023b, January 18). *Request for Extension of Time for NASA White Sands Test Facility (WSTF) Second Tracking and Data Relay Satellite Ground Terminal (STGT) Wastewater Lagoons Closure (Area of Concern [AOC] 51) Investigation Report Response to Disapproval*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023c, January 26). *Response to Approval with Modification of First Tracking Data Relay Satellite System (TDRSS) Diesel Release (SWMU 50) Investigation Report*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023d, January 27). *Approval with Modifications Revised Small Arms Firing Ranges (SWMUs 29-31) Remedy Completion Report and Risk Assessment Report; NMED Comment 1.b*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023e, March 8). *Request for Second Extension of Time for NASA White Sands Test Facility (WSTF) 200 Area Wastewater Lagoons Closure (SWMU 8) Investigation Report (IR) Response to Disapproval*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023f, March 8). *Request for Second Extension of Time for NASA White Sands Test Facility (WSTF) 600 Area Wastewater Lagoons Closure (SWMU 34) Investigation Report Response to Disapproval*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023g, March 9). *Abandonment Report for NASA Wells PFE-4 and PFE-6*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023h, March 14). *Abandonment Report for NASA Well BLM-28*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023i, March 21). *Reconfiguration Report for NASA Well BW-4*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023j, March 21). *Reconfiguration Report for NASA Wells 200-SG-2 and 200-SG-3*. Las Cruces, NM.

NASA Johnson Space Center White Sands Test Facility. (2023k, March 30). *Abandonment Report for NASA Wells 400-C-118, 400-KV-142, 400-LV-125, BLM-2-482, and NASA 8*. Las Cruces, NM.

NMED Hazardous Waste Bureau. (2018a, September 13). *Approval with Modifications White Sands Test Facility Groundwater Monitoring Plan*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2018b, November 29). *Disapproval SWMU 49, 700 Area Landfill Phase I Investigation Work Plan and Historical Information Summary*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2019a, February 21). *Second Disapproval Small Arms Firing Ranges (SWMUs 29-31) Remedy Completion Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2019b, June 5*). Disapproval 200 Area and 600 Area Vapor Intrusion Assessment Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2019c, June 6). *Approval with Modifications SWMU 49, 700 Area Landfill Phase I Investigation Work Plan and Historical Information Summary*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2019d, August 8). *Disapproval 500 Area Fuel Storage (SWMU 47) Investigation Work Plan*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2019e, August 23). *Work Scope Modification Request Abbreviated Investigation Work Plan for 600 Area Perched Groundwater*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2019f, November 13). *Fifteen-Day Notification of a Newly Identified SWMU Within WSTF 500 Area*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2020a, January 16). *Approval Request for Extension of Time for Well Reconfiguration Work Plan*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2020b, January 16). *Approval Request for Second of Extension of Time for Response to Disapproval 200 Area and 600 Area Vapor Intrusion Assessment Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2020c, March 21). *Approval Request for Second Extension of Time for NASA WSTF Small Arms Firing Ranges (SWMUs 29-31) Response to Second Disapproval Remedy Completion Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2020d, May 14). *100 Area Wastewater Lagoons Closure (SWMU 2) Interim Status Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2020e, July 1). *Approval Request for Extension of Time for Submittal of 600 Area Perched Groundwater Investigation Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2020f, July 1). *Approval Request for Extension of Time for Submittal of the SWMU 49 (700 Area Landfill) Phase I Investigation Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2020g, July 8). *Disapproval First TDRSS (Tracking and Data Relay Satellite System) Diesel Release (SWMU 50) Investigation Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2020h, August 27). *Approval with Modifications Revised 800 Area Below Grade Storage Tank (SWMU 19) Investigation Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2020i, November 5). *Approval with Modifications Work Plan for Abandonment of NASA WSTF Well BLM-30 and Replacement With Monitoring Well BLM-43*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2020j, November 16). *Disapproval 200 Area Hazardous Waste Transmission Lines (SWMU 10) Investigation Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2020k, November 19). *Well Reconfiguration Report for Well BLM-28 and Notice of Intent to Plug and Abandon*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2020l, December 22). *Approval with Modifications 600 Area Closure Geophysical Survey Status Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2021a, January 25). *Approval Request for Fourth Extension of Time for Well Reconfiguration Work Plan.* Santa Fe, NM.

NMED Hazardous Waste Bureau. (2021b, January 25). *Approval with Modifications Groundwater Monitoring Plan*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2021c, January 29). *Disapproval Revised WSTF Septic Tanks (SWMUs 21-27) Investigation Report.* Santa Fe, NM.

NMED Petroleum Storage Tank Bureau. (2021d, February 4). *Technical Approval of Minimum Site Assessment Workplan for White Sand Complex.* Santa Fe, NM.

NMED Hazardous Waste Bureau. (2021e, March 15). *Approval Request for Extension of Time for Submittal of The SWMU 49 (700 Area Landfill) Phase I Investigation Report.* Santa Fe, NM.

NMED Hazardous Waste Bureau. (2021f, March 15). *Disapproval 400 Area Supplemental Groundwater and Soil Vapor Monitoring Plan.* Santa Fe, NM.

NMED Hazardous Waste Bureau. (2021g, March 19). *Disapproval 300 Area Supplemental Abbreviated Drilling Work Plan.* Santa Fe, NM.

NMED Hazardous Waste Bureau. (2021h, March 19). *Disapproval 400 Area Closure Investigation Report.* Santa Fe, NM.

NMED Hazardous Waste Bureau. (2021i, March 19). *Disapproval 500 Area Fuel Storage (SWMU 47) Investigation Work Plan: Phase I.* Santa Fe, NM.

NMED Hazardous Waste Bureau. (2021j, May 6). *Approval PL-12 Well Completion Summary Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2021k, May 6). *Approval with Modifications 600 Area Bureau of Land Management Off-Site Soil Pile (SWMU 16) Revised Investigation Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2021l, May 6). *Approval with Modification BLM-42 Well Completion Summary Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2021m, June 3). *Approval with Modifications Groundwater Data Representativeness Phase I: Water FLUTe Well Evaluation Abbreviated Investigation Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2021n, July 6). *600 Area Closure Geophysical Survey Status Report.* Santa Fe, NM.

NMED Hazardous Waste Bureau. (2021o, July 7). *Approval Request for Extension of Time for Submittal of Hazardous Waste Transmission Lines (SWMU 10) Investigation Report.* Santa Fe, NM.

NMED Hazardous Waste Bureau. (2021p, October 27). *Approval Request for Extension of Time for Submittal of the Completion Report for Monitoring Well BLM-30 Abandonment and Installation of Replacement Monitoring Well BLM-43.* Santa Fe, NM.

NMED Hazardous Waste Bureau. (2021q, November 15). *Approval with Modifications White Sands Test Facility Groundwater Monitoring Plan*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2021r, December 20). *Approval 500 Area Newly Identified SWMU Release Assessment Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022a, January 10). *Approval Well Plugging Plan of Operations for Multiport Soil Vapor Groundwater Monitoring Wells 200-SG-2 and 200-SG-3*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022b, January 18). *Approval with Modifications Well Reconfiguration Work Plan for BW-4*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022c, January 25). *Approval Request for Third Extension of Time for Submittal of Response to Disapproval of Hazardous Waste Transmission Lines (SWMU 10) Investigation Report.* Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022d, March 1). *Disapproval Second TRDSS Underground Storage Tank (SWMU 52) Release Assessment Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022e, April 18). *Approval Request for "Contained-In" Determination for Contaminated Media Associate With the 600 Area Perched Groundwater Investigation*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022f, May 9). *Disapproval 300 Area Test Stand 302 Cooling Water Pond (SWMU 33) Investigation Report Plan and Historical Information Summary*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022g, June 6). *Approval Request for Second Extension of Time for Submittal of the Completion Report for Monitoring Well BLM-30 Abandonment and Installation of Replacement Monitoring Well BLM-43*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022h, June 6). *Disapproval 200 Area Wastewater Lagoons Closure (SWMU 8) Investigation Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022i, June 16). *Disapproval 600 Area Wastewater Lagoons Closure (SWMU 34) Investigation Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022j, July 5). *Disapproval 100 Area Wastewater Lagoons Closure (SWMU 2) Investigation Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022k, July 25). *Disapproval STGT Wastewater Lagoons Closure (AOC 51) Investigation Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022l, August 8). *Approval Abbreviated Investigation Work Plan for Groundwater Data Representativeness Phase 2: Water FLUTe Well Evaluation*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022m, August 8). *Approval with Modification Second TDRSS Underground Storage Tank (SWMU 52) Release Assessment Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022n, September 20). *Disapproval 200 and 600 Area Vapor Intrusion Assessment Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022o, October 31). *Approval Abbreviated Work Plan for Abandonment of NASA WSTF NASA 9 and Replacement with Monitoring Well 400-001-GW*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022p, November 15). *NASA's October 4, 2022 Notice of a Class I Permit Modification Request for the NASA White Sands Test Facility Hazardous Waste Permit No. NM8800019434*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022q, November 16). *Approval with Modifications Revised First TDRSS (Tracking and Data Relay Satellite System) Diesel Release (SWMU 50) Investigation Report and Risk Screen Evaluation Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2022r, November 16). *Approval with Modifications Revised Small Arms Firing Ranges (SWMU 29-31) Remedy Completion Report and Risk Assessment Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2023a, January 6). *Approval Interim Status Report for 600 Area Perched Groundwater Extraction Pilot Test Project Year 9*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2023b, February 10). *Approval 700 Area Closure (SWMU 49) Phase I Investigation Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2023c, February 10). *Approval with Modifications 600 Area Bureau of Land Management Off-site Soil Pile (SWMU 16) Accelerated Corrective Measures Work Plan*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2023d, March 16). *Approval with Modifications Revised WSTF Septic Tanks (SWMU 21-27) Investigation Report*. Santa Fe, NM.

NMED Hazardous Waste Bureau. (2023e, April 27). *Hazardous Waste Permit No. NM8800019434*. Santa Fe, NM.