

**GENERAL SERVICES ADMINISTRATION RECLAMATION YARD
SOLID WASTE MANAGEMENT UNIT 010
2022 GROUNDWATER MONITORING REPORT
KENNEDY SPACE CENTER, FLORIDA**

Prepared for:



**Environmental Assurance Branch
National Aeronautics and Space Administration
Kennedy Space Center, Florida 32899**

**A-E Contract 80KSC019D0010
Task Order 80KSC019F0078**

**October 2023
Revision: 0**

**Prepared by:
AECOM Technical Services, Inc.
150 North Orange Avenue, Suite 200
Orlando, Florida 32801
407-843-6552**

This page intentionally left blank.

**GENERAL SERVICES ADMINISTRATION RECLAMATION YARD
SOLID WASTE MANAGEMENT UNIT 010
2022 GROUNDWATER MONITORING REPORT
KENNEDY SPACE CENTER, FLORIDA**

**October 2023
Revision: 0**

**Prepared for:
Environmental Assurance Branch
National Aeronautics and Space Administration
Kennedy Space Center, Florida 32899
A-E Contract 80KSC019D0010
Task Order 80KSC019F0078**

**Prepared by:
AECOM Technical Services, Inc.
150 North Orange Avenue, Suite 200
Orlando, Florida 32801
407-843-6552**

In accordance with the provisions of Florida Statutes, Chapter 492, this Groundwater Monitoring Report for the Kennedy Space Center General Services Administration Reclamation Yard site located in Merritt Island, Florida, has been prepared under the direct supervision of a Professional Geologist registered in the State of Florida. This work was performed in accordance with generally accepted professional geology practices pursuant to Chapter 492 of the Florida Statutes. The data, findings, recommendations, specifications, or professional opinions were prepared solely for the use of the National Aeronautics and Space Administration and the Florida Department of Environmental Protection. AECOM makes no other warranty, either expressed or implied, and is not responsible for the interpretation by others of these data.

This item has been digitally signed and sealed by:

10/23/2023

Chadwick Lee, P.G.

Date

Project Manager

Florida License No. 2741

Printed copies of this document are not considered signed and sealed, and the signature must be verified on any electronic copies.

This page intentionally left blank.

TABLE OF CONTENTS

ABBREVIATIONS, ACRONYMS, AND SYMBOLS	III
EXECUTIVE SUMMARY	ES-1
1. INTRODUCTION.....	1-1
1.1 Overview.....	1-1
1.2 Facility Location and Site Use	1-1
1.3 PCB/VOA Plume Background	1-2
1.4 Chlorinated VOC Plume Background	1-6
1.5 Purpose.....	1-8
1.6 Report Organization	1-8
2. FIELD ACTIVITIES AND GROUNDWATER FLOW	2-1
2.1 Overview.....	2-1
2.2 Depth to Groundwater Measurements	2-1
2.3 Groundwater Elevations, Flow Direction, and Gradient.....	2-1
2.4 Groundwater Monitoring.....	2-2
3. PCB/VOA PLUME ANALYTICAL RESULTS	3-1
3.1 Overview.....	3-1
3.2 Monitoring Well Groundwater And Surface Water Analytical Results.....	3-1
3.2.1 2 to 18 Feet Bls	3-1
3.2.2 10 to 30 Feet Bls	3-1
3.2.3 30 to 40 Feet Bls	3-2
3.2.4 Underground Injection Control Monitoring.....	3-2
3.2.5 Surface Water Analytical Results.....	3-2
4. CHLORINATED VOC PLUME ANALYTICAL RESULTS	4-1
4.1 Overview.....	4-1
4.2 Monitoring Well Groundwater Analytical Results	4-1
5. CONCLUSIONS AND RECOMMENDATIONS	5-1
5.1 Groundwater Flow.....	5-1
5.2 PCB/VOA Plume	5-1
5.3 Chlorinated VOC Plume	5-2
6. REFERENCES	6-1

TABLES

Table 2-1	2022 Groundwater Monitoring Plan
Table 2-2	Groundwater Elevation Data
Table 3-1	PCB/VOA Plume Groundwater and Surface Water Analytical Results
Table 3-2	PCB/VOA Plume UIC Groundwater Analytical Results
Table 4-1	Chlorinated VOC Plume UIC Groundwater Analytical Results
Table 5-1	2023 Proposed Groundwater Monitoring Plan

FIGURES

Figure 1-1	Site Location Map
Figure 1-2	Topographic Quadrangle Map
Figure 1-3	Site Layout
Figure 2-1	Groundwater Contour Map – September 27, 2022 - 2 to 18 feet bls
Figure 2-2	Groundwater Contour Map – September 27, 2022 - 10 to 30 feet bls
Figure 2-3	Groundwater Contour Map – September 27, 2022 - 30 to 40 feet bls
Figure 3-1	Groundwater and Surface Water Analytical Results - 2 to 18 feet bls - 2016-2022 - PCB/VOA Plume
Figure 3-2	Groundwater Analytical Results - 10 to 30 feet bls - 2018-2022 - PCB/VOA Plume
Figure 3-3	Groundwater Analytical Results - 30 to 40 feet bls - 2019-2022 - PCB/VOA Plume
Figure 5-1	Proposed Groundwater Monitoring Plan

APPENDICES

Appendix A	Advance Data Packages and KSC Remediation Team Meeting Minutes
Appendix B	Field Notes and Field Logs
Appendix C	Laboratory Analytical Reports
Appendix D	RIS Completion Tickets

ABBREVIATIONS, ACRONYMS, AND SYMBOLS

ADP	Advance Data Package
AECOM	AECOM Technical Services, Inc.
bls	below land surface
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
COC	contaminant of concern
13DCB	1,3-dichlorobenzene
14DCB	1,4-dichlorobenzene
DPT	direct push technology
ERD	enhanced reductive dechlorination
EVO	emulsified vegetable oil
EZVI	emulsified zero valent iron
F.A.C.	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
ft/ft	feet elevation per foot distance
GCTL	Groundwater Cleanup Target Level
GSRY	General Services Administration Reclamation Yard
IM	Interim Measure
KSC	John F. Kennedy Space Center
KSCRT	Kennedy Space Center Remediation Team
LDA	large diameter auger
LTM	long-term monitoring
µg/L	micrograms per liter
mg/kg	milligrams per kilogram
NADC	Natural Attenuation Default Concentration
NASA	National Aeronautics and Space Administration
PFAS	per- and polyfluoroalkyl substances
PCB	polychlorinated biphenyl

2022 Groundwater Monitoring Report

GSRY SWMU 010

Revision: 0

October 2023

PCE	tetrachloroethene
RCRA	Resource Conservation and Recovery Act
RIS	Remediation Information System
RRMF	Reutilization, Recycling, and Marketing Facility
SCTL	Soil Cleanup Target Level
124TCB	1,2,4-trichlorobenzene
TCE	trichloroethene
TDS	total dissolved solids
TRPH	total recoverable petroleum hydrocarbons
UIC	underground injection control
USEPA	United States Environmental Protection Agency
VC	vinyl chloride
VO/L	vegetable oil/lactate
VOA	volatile organic aromatic
VOC	volatile organic compound

EXECUTIVE SUMMARY

This report presents a summary of the groundwater monitoring activities that occurred in September and October 2022 at General Services Administration Reclamation Yard, Solid Waste Management Unit 010, located at the John F. Kennedy Space Center (KSC), Florida. The site is monitored under KSC's Resource Conservation and Recovery Act Corrective Action Program. This approach also meets the requirements of Chapter 62-780, Florida Administrative Code. For the purposes of this report, two separate plumes, known as the Polychlorinated Biphenyl (PCB)/Volatile Organic Aromatic (VOA) Plume and the Chlorinated Volatile Organic Compound (VOC) Plume, were identified for this site. The contaminants of concern (COCs) for the PCB/VOA Plume consist of PCBs, 1,2,4-trichlorobenzene, and breakdown products of 1,2,4-trichlorobenzene. The COCs for the Chlorinated VOC Plume were tetrachloroethene, trichloroethene, cis-1,2-dichloroethene, and vinyl chloride. Groundwater monitoring for VOCs in the Chlorinated VOC Plume area was discontinued following the December 2021 annual monitoring event. Annual groundwater monitoring for underground injection control (UIC) parameters continues for both the PCB/VOA Plume and the Chlorinated VOC Plume areas.

The activities presented in this report include one field event: September and October 2022, which includes sitewide semi-annual water level measurements of 55 monitoring wells, redevelopment of all monitoring wells listed in the sampling plan, and groundwater sampling of 28 monitoring wells.

Groundwater Flow

Based on water level measurement activities performed during this reporting period, the following conclusions are provided:

- In September 2022, groundwater flow for the site was generally to the north in the 2 to 18 feet below land surface (bls) and 10 to 30 feet bls zones, with flow direction varying by occasional east and west components, and to the southeast in the 30 to 40 feet bls zone. This is generally consistent with historical observations at the site; however, flow direction at the site has varied during past monitoring events.

Based on water level measurement activities performed during this reporting period, the following recommendations are provided:

- Conduct annual water level measurements at 55 monitoring wells.

PCB/VOA Plume

Based on groundwater and surface water sampling activities performed during this reporting period, the following conclusions are provided:

- Groundwater and surface water results demonstrate a reduction in plume size and COC concentrations compared to baseline sampling for the 2018 Interim Measure (IM), which

included excavation using both conventional methods and large diameter auger caisson technology. Additionally, a persulfate and ferric iron mixture was added to the bottom of the excavation in some areas; therefore, three monitoring wells in the PCB/VOA Plume area were sampled for UIC parameters. The results indicate that concentrations were above the site-approved target levels in GSRY-MW0049 for sulfate, iron, manganese, and sodium; in GSRY-MW0066 for sulfate, iron, sodium, and total dissolved solids (TDS); and in GSRY-MW0050 for sodium and TDS.

- Chlorinated benzene compound COCs were detected above State of Florida Groundwater Cleanup Target Levels (GCTLs) in the 10 to 30 feet bls zone only.
- There were no detections of PCBs.
- The VOA plumes are delineated, both horizontally and vertically.

Based on groundwater sampling activities performed during this reporting period, the following recommendations are provided:

- Discontinue monitoring for VOCs at 16 monitoring wells and one surface water location due to at least two consecutive events in which VOC concentrations were below GCTLs.
- Discontinue monitoring for PCBs at 20 monitoring wells and 1 surface water location due to at least two consecutive events in which PCB concentrations were below GCTLs.
- Perform annual monitoring at 12 monitoring wells for VOCs or PCBs.
- Discontinue UIC monitoring of TDS at GSRY-MW0049 and manganese at GSRY-MW0050 and GSRY-MW0066.
- Perform annual UIC monitoring at GSRY-MW0049 for sulfate, iron, manganese, and sodium, and at GSRY-MW0050 and GSRY-MW0066 for sulfate, iron, sodium, and TDS.

Chlorinated VOC Plume

Based on groundwater sampling activities performed during this reporting period, the following conclusions are provided:

- Annual UIC monitoring was conducted in the Chlorinated VOC Plume area at three monitoring wells, GSRY-MW0067, GSRY-MW0071, and GSRY-MW0073. UIC monitoring is being conducted to monitor for groundwater conditions that may have changed due to the enhanced reductive dechlorination treatment IMs conducted in 2013 and 2017.
- Concentrations of iron or TDS remain above the site-approved target levels in the three monitoring wells sampled.

Based on groundwater sampling activities performed during this reporting period, the following recommendations are provided:

- Perform annual UIC groundwater monitoring at GSRY-MW0067 for iron and at GSRY-MW0071 and GSRY-MW0073 for iron and TDS.

1. INTRODUCTION

1.1 OVERVIEW

The National Aeronautics and Space Administration (NASA), through its Environmental Assurance Branch, is managing cleanup of two areas at the General Services Administration Reclamation Yard (GSRY) at John F. Kennedy Space Center (KSC), Florida. The area located in the northeast portion of the GSRY has historically been referred to as the Northeast Area and is now known as the Polychlorinated Biphenyl (PCB)/Volatile Organic Aromatic (VOA) Plume. The area located in the western portion of the GSRY has been historically referred to as the Southwest Area and Southwest Hot Spot and is now referred to as the Chlorinated Volatile Organic Compound (VOC) Plume. The GSRY has been designated Solid Waste Management Unit 010 under KSC's Resource Conservation and Recovery Act (RCRA) Corrective Action Program.

AECOM Technical Services, Inc. (AECOM) has prepared this report and completed groundwater monitoring of the PCB/VOA and Chlorinated VOC Plumes at the GSRY site for NASA under contract 80KSC019D0010, Task Order 80KSC019F0078. An Advance Data Package (ADP) was presented to the KSC Remediation Team (KSCRT) in preparation for this report. The KSCRT approved the recommendations in those presentations during a meeting on April 5, 2023. The ADP and meeting minutes are provided as **Appendix A**. This report presents the activities and findings for the September and October 2022 groundwater monitoring event. The evaluation of these data provides conclusions and recommendations for continued groundwater monitoring.

1.2 FACILITY LOCATION AND SITE USE

KSC is located on the east-central Atlantic Coast of Florida in the northern portion of Merritt Island, between the Indian River and Banana River Lagoons in Brevard County. The GSRY is located within KSC on Ransom Road between State Road 3 and Space Commerce Way, as shown on **Figure 1-1**, and in Section 7 of Township 23, Range 37 East, as shown on the United States Geological Survey 7.5-minute Orsino Quadrangle Map (United States Geological Survey 1976), which is included as **Figure 1-2**. The current site layout is presented on **Figure 1-3**.

The GSRY was constructed in the 1960s on 7 acres. It was historically used to stage transformers, air conditioners, batteries, paints, solvents, oils, pesticides, and adhesives. It is currently operated as the Reutilization, Recycling, and Marketing Facility (RRMF) by KSC's Institutional Support Contractor. The RRMF is used for the sale, recycling, and temporary storage of equipment and surplus materials. The facility operates within a security fence, which is locked during after-duty hours. The facility holds public auctions and is visited by buyers and vendors.

The main area of the yard north of the main building and the entrance to the yard are paved with asphalt and concrete. The western portion of the yard and the areas south and east of the main building are covered by sand and gravel. Ransom Road and two small retention ponds border the site to the north. Drainage ditches border the yard to the west, south, and east. The Corrosion Control

Facility, also known as the Ransom Road Sandblast Yard, is located to the east, a scrap storage yard is located to the west, and undeveloped land is located to the south.

1.3 PCB/VOA PLUME BACKGROUND

In 1990, the Base Operations contractor completed a site-wide RCRA Facility Investigation Work Plan (NASA 1998), and additional site-wide RCRA Facility Investigation activities took place from 1998 to 2001 (NASA 2001). During the investigations, chlorobenzenes, pesticides, and PCBs were identified as contaminants of concern (COCs) in groundwater, and pesticides and PCBs were identified as COCs in soil.

An Interim Measure (IM) was completed in 2002 (NASA 2003) to remove exposed shallow soils containing PCB concentrations above the State of Florida Direct Exposure Industrial Soil Cleanup Target Level (SCTL), which was then 2.1 milligrams per kilogram (mg/kg), as provided in Table 2 of Chapter 62-777, Florida Administrative Code (F.A.C.). Approximately 400 tons of exposed soils were removed from the eastern ditch and around the southeast edge of pavement that contained PCB concentrations greater than the Industrial SCTL and were disposed of off-site at permitted facilities.

A Corrective Measures Study (CMS) to identify and evaluate potential remedial alternatives was completed between 2002 and 2004 (NASA 2004). Groundwater analytical results from CMS sampling indicated that pesticides were no longer a COC at the site. The CMS recommended additional soil excavation, which included short-term groundwater recovery via dewatering, as the remedial strategy for the site. Additional soil sampling to further delineate PCBs was completed as part of the remedial design process. The Corrective Measures Implementation (CMI) Design was completed in 2005 and included an excavation plan with dewatering for the PCB/VOA Plume (NASA 2006b).

In 2006, CMI was conducted, and consisted of excavation and short-term groundwater recovery (NASA 2006a). Dewatering wells, screened from 15 to 20 feet below land surface (bls), were installed around the north, east, and a portion of the south side of the PCB/VOA Plume. During dewatering activities, approximately 265,000 gallons of impacted water were removed and treated on-site by an air stripper and PCB filter cartridges to reduce VOAs and PCBs to levels suitable for discharge. The treated water was discharged into ditches along the perimeter of the GSR Y property. Approximately 1,742 tons of soil with PCB concentrations greater than or equal to the leachability SCTL of 17 mg/kg were removed at depths up to 15 feet bls for disposal at permitted facilities. The excavation was filled with verified clean fill dirt, and the area was repaved.

After completion of excavation activities, two monitoring wells (GSRY-MW0010S and GSR Y-MW0010IS) were installed to replace wells that were abandoned prior to excavation activities. Groundwater sampling in 2006 and 2007, which was included in the performance monitoring for the CMI, indicated that GSR Y-MW0010S and GSR Y-MW0010IS contained concentrations of PCBs that were below the State of Florida Groundwater Cleanup Target Levels (GCTLs) as provided in

Chapter 62-777, F.A.C.; however, chlorobenzene, trichlorobenzene, and dichlorobenzene concentrations remained above GCTLs (NASA 2008). Due to the presence of PCBs detected in the drill cuttings during well installation activities, three direct push technology (DPT) locations were sampled for saturated soil analysis. Two locations had PCBs above residential SCTLs at 14 to 15 feet bls and 24 to 25 feet bls. The site transitioned to long-term monitoring (LTM), and in 2008, analytical results indicated that concentrations of PCBs in GSRY-MW0010S and GSRY-MW0010IS were below GCTLs for the fourth consecutive event, and LTM for PCBs was discontinued. The LTM program was suspended, and additional site assessment for chlorinated benzenes was recommended.

In 2008, NASA initiated supplemental groundwater assessment due to increasing concentrations of 1,2,4-trichlorobenzene (124TCB) in GSRY-MW0010S (NASA 2019b). From August 2008 to February 2009, groundwater samples were collected from existing monitoring wells and temporary sampling points using DPT. Concentrations of chlorinated benzenes were detected above GCTLs and above the State of Florida Natural Attenuation Default Concentrations (NADCs) provided in Table 5 of Chapter 62-777, F.A.C.

Confirmation groundwater samples were collected using DPT in August 2009 from three intervals in two of the previously sampled locations (NASA 2019b). Filtered and unfiltered samples were analyzed for VOCs and PCBs. Concentrations in the filtered samples were lower than the unfiltered samples. Four unfiltered samples and one filtered sample contained PCBs: the unfiltered samples contained a maximum PCB concentration of 14 micrograms per liter ($\mu\text{g/L}$), and the filtered sample contained a maximum PCB concentration of 1.7 $\mu\text{g/L}$, which was qualified as an estimated value. The maximum PCB concentrations were above the GCTL of 0.5 $\mu\text{g/L}$.

In 2009, additional monitoring wells were installed to further delineate the chlorinated benzene compounds (NASA 2012b). Monitoring well GSRY-MW0010S contained VOC concentrations that were an order of magnitude higher than what was detected in other nearby shallow wells. Because of the correlation between turbidity and groundwater contaminant concentrations, there was an indication that GSRY-MW0010S may have been damaged. In June 2010, monitoring well GSRY-MW0035 was installed approximately 4 feet south of GSRY-MW0010S. Free product containing 75 percent PCBs (Aroclor 1260) and a concentration of 124TCB at 62,000,000 $\mu\text{g/L}$ was extracted from GSRY-MW0035 during development.

In 2010 and 2011, surface water samples were collected semi-annually from the retention pond on the northeast side of the GSRY (NASA 2012b). Samples were analyzed for VOCs, and analytical results indicated on one occasion the concentration of 1,4-dichlorobenzene (14DCB) was above the State of Florida Surface Water Cleanup Target Level for Freshwater Surface Water Criteria provided in Table 1 of Chapter 62-777, F.A.C. In May 2011, free product was again observed in GSRY-MW0035.

Soil and groundwater assessments were conducted in 2012 and continued until 2017, when the IM Work Plan for the Northeast PCB and Chlorobenzene Source Area (NASA 2017a) was completed. A total of 564 soil samples were collected to investigate PCB soil contamination. A total of 369 soil samples were analyzed at a fixed-based laboratory by United States Environmental Protection Agency (USEPA) Methods 3550C/8082A. A total of 196 soil samples were analyzed by a field test kit, some of which were also analyzed by fixed-based laboratory analysis. Two lithological soil borings were completed to a depth of 34 feet bls. Unsaturated soil results were compared to the Direct Residential Exposure SCTL for PCBs (0.5 mg/kg) (NASA 2019b). Soil samples were collected in the vadose zone (0 to 3 feet bls) to characterize PCB concentrations of the backfilled soils within the 2006 excavation. The highest PCB concentration in the vadose zone was 29.8 mg/kg.

Saturated soil samples were collected by DPT, and based on a comparison of groundwater PCB results to saturated soil concentrations, the extent of PCBs in the saturated soils was delineated to 1 mg/kg (NASA 2017a). It was found that 1 mg/kg in saturated soils corresponded with dissolved PCB concentrations equal to or below the GCTL of 0.5 µg/L. The soil assessment indicated that 15 locations in the saturated zone contained PCB concentrations exceeding the leachability SCTL of 17 mg/kg. Soil sampling in the saturated zone revealed PCB contamination extended to a depth of 22 feet bls in an area of approximately 4,285 square feet.

In 2015, groundwater samples were collected and analyzed for PCBs from existing monitoring wells GSRY-MW0010S, GSRY-MW0035, and GSRY-MW0032 (NASA 2019b). Laboratory analytical results indicated that GSRY-MW0010S and GSRY-MW0035 contained concentrations of PCBs at 20 µg/L and 667 µg/L, respectively. Based on soil analytical results, four shallow monitoring wells were installed around the perimeter of the area in which concentrations of PCBs in saturated soils exceeded 25 mg/kg. Additionally, one deep monitoring well (GSRY-MW0048) was installed to vertically delineate PCBs and sampled in November 2016. Three of the shallow wells yielded results above the PCB GCTL of 0.5 µg/L with a maximum of 20 µg/L. In December 2016, eight shallow monitoring wells were installed around the perimeter of the area in which concentrations of PCBs in saturated soils exceeded 1 mg/kg. The newly installed wells, select existing wells (GSRY-MW0004S and GSRY-MW0011S), and a surface water location (GSRY-SW0001) from the north pond were sampled for PCB analysis. Analytical results ranged from non-detect to 1.7 µg/L in the new perimeter wells. Two perimeter wells (GSRY-MW0043 and GSRY-MW0047), which both had a PCB concentration of 1.7 µg/L, were re-developed and re-sampled in January 2017. The analytical results indicated PCB concentrations were less than 0.5 µg/L in both wells. Groundwater sampling using DPT was also conducted to evaluate chlorinated benzene compounds. Analytical results indicated chlorinated benzene compounds were present with concentrations greater than GCTLs in the PCB/VOA Plume area. Concentrations of chlorinated benzene compounds also exceeded NADCs in the area near and around GSRY-MW0035, which historically contained free product. Concentrations of chlorinated benzene compounds exceeding GCTLs were not found below 24 feet bls.

In 2018, NASA implemented an IM using conventional excavation and large diameter auger (LDA) caisson technology to excavate PCB-contaminated soils (NASA 2019b). The IM objectives were to reduce PCBs in unsaturated soil to below the Direct Exposure Residential SCTLs of 0.5 mg/kg, and to remove contaminant mass in the saturated soils to accelerate groundwater cleanup. Excavation of 267 cells was completed using LDA caisson technology. Excavation of 85 proposed cells was completed using conventional methods. As part of the IM, a persulfate and ferric iron mixture, Provect-OX[®], was added to the bottom of excavation cells where the concentration of PCB was greater than 1 mg/kg. The LDA caisson excavation was completed in April 2018. The conventional excavation was completed in October 2018. Approximately 7,080 tons of PCB-impacted soils were removed during excavation activities and properly disposed of off site.

Following the IM, 21 monitoring wells were installed from September 2018 through February 2019 (NASA 2019b). Groundwater monitoring was completed in September and October 2018 and February and March 2019. A surface water sample (GSRY-SW0001) was collected from the north pond. Analytical results indicated chlorobenzene was detected above the GCTL in GSRY-MW0049 and GSRY-MW0050, and benzene was detected above the GCTL in GSRY-MW0036R. In monitoring well GSRY-MW0062, PCBs were detected above the GCTL. However, GSRY-MW0062 was redeveloped and resampled, and analytical results indicated PCBs were below detection limits. The surface water sample GSRY-SW0001 had no COC concentrations above detection limits in March 2019.

Underground injection control (UIC) sampling was conducted at a subset of monitoring wells in September 2018 to monitor the residual effects of the Provect-OX[®] treatment. UIC parameter concentrations were compared to GCTLs or KSC-wide background target levels. Analytical results indicated sulfate, iron, manganese, or sodium were detected above the site-approved target levels in either GSRY-MW0049 or GSRY-MW0050.

In February 2020 and October 2020, two monitoring wells were installed, GSRY-MW0066 and GSRY-MW0075, respectively (NASA 2021c). Both were screened within the 10 to 30 feet bls zone and were installed to assist with horizontal delineation of the PCB/VOA Plume to the west and east, respectively. Groundwater monitoring was completed in December 2019 and May/June 2020. Groundwater results for monitoring wells GSRY-MW0049 and GSRY-MW0050 indicated a decreasing trend for 124TCB, and an increasing trend for 14DCB. Groundwater results for monitoring well GSRY-MW0049 indicated an increasing trend for 1,3-dichlorobenzene (13DCB). Additionally, PCB concentrations in several monitoring wells were above the GCTL in the December 2019 sampling event; however, PCB concentrations were below the GCTL in the sampled wells for the May/June 2020 sampling event. Concentrations of UIC parameters iron, sulfate, and total dissolved solids (TDS) remained above GCTLs or KSC-wide background target level criteria in monitoring wells GSRY-MW0049 and GSRY-MW0050, located within the former Provect-OX[®] treatment area. Concentrations of UIC parameters during December 2019 and May 2020 were below the applicable site-approved target level criteria in perimeter wells GSRY-MW0057, GSRY-

MW0061, and GSRY-MW0064, indicating these analytes are not migrating outside of the treatment area.

Semi-annual groundwater monitoring was conducted in December 2020 and May/June 2021 (NASA 2021a). In May/June 2021, chlorinated benzene compound COCs were detected above the target levels in the 10 to 30 feet bls zone only. Groundwater analytical results continued to demonstrate a reduction in plume size and COC concentrations compared to baseline sampling for the 2018 LDA excavation IM. Concentrations of UIC parameters iron, sulfate, and TDS remained above applicable target level criteria in monitoring wells GSRY-MW0049, GSRY-MW0050, and GSRY-MW0066. The sampling frequency was changed from semi-annual to annual, alternating between wet and dry seasons.

In November and December 2021, DPT groundwater sampling and annual groundwater monitoring was conducted (NASA 2022). Analytical results demonstrated a reduction in plume size and COC concentrations, compared to baseline sampling for the 2018 IM. Chlorinated benzene compound COCs were detected above GCTLs in the 10 to 30 feet bls zone only. Chlorinated benzene compound COCs were below the GCTLs in monitoring wells that bound the current PCB/VOA plume horizontally and vertically. During the 2018 IM, the localized shallow aquifer was affected by the addition of flowable fill, and pore volume exchange is likely slower than pre-IM; therefore, no locations or COC analytes were recommended for elimination, although there had been two or more consecutive sampling events below GCTLs at some locations. In December 2021, UIC sampling included sampling a site-specific background monitoring well, GSRY-MW0002IS. UIC parameters iron, manganese, sodium, sulfate, or TDS were detected above baseline concentrations at GSRY-MW0049, GSRY-MW0050, and GSRY-MW0066. UIC monitoring was discontinued at GSRY-MW0057, GSRY-MW0061, and GSRY-MW0064.

1.4 CHLORINATED VOC PLUME BACKGROUND

In 1990, the Base Operations contractor completed a site-wide RCRA Facility Investigation Report (NASA 1998). Additional site-wide RCRA Facility Investigation activities took place from 1998 to 2001 (NASA 2001). Past handling practices resulted in releases of solvents to the environment in the Chlorinated VOC Plume area. During the investigation, tetrachloroethene (PCE), trichloroethene (TCE), and other VOCs created by their degradation were identified in groundwater and soils in the Chlorinated VOC Plume.

A CMS for removal of solvent-impacted soils to a depth of 16 feet bls was completed in 2004 (NASA 2004), and the CMI by excavation was completed in 2006 (NASA 2006b). During the backfill process, sodium permanganate was added to chemically oxidize additional solvents. In 2007, sodium permanganate was injected in the western portion of the site to address rebounding concentrations in groundwater. LTM was initiated after the 2006 and 2007 CMI activities were completed.

Results from LTM activities indicated increasing trends in VOC concentrations that exceeded GCTLs and NADCs. Therefore, LTM was suspended, and supplemental site assessment activities were conducted from 2008 to 2010.

In 2011, following further assessment and remedial alternatives evaluation, enhanced reductive dechlorination (ERD), through injection, using emulsified zero valent iron (EZVI) and vegetable oil/lactate (VO/L) or emulsified vegetable oil (EVO), was selected as an additional treatment method for the Chlorinated VOC Plume source area (NASA 2012a). The IM Work Plan was approved in May 2012 and included baseline sampling, two in situ treatment events, and six performance monitoring events using DPT.

In 2012 and 2013, baseline groundwater sampling was conducted using DPT. Concentrations of PCE were detected up to 170,000 µg/L within the Chlorinated VOC Plume source zone at the former GSRV-DPT3005 location (NASA 2019c). During the 2013 DPT sampling event, dense non-aqueous phase liquid was encountered at 21 to 22 feet bls in the south-center of the Chlorinated VOC Plume treatment area. The Chlorinated VOC Plume COCs are PCE, TCE, trans-1,2-dichloroethene, cis-1,2-dichloroethene, 1,1-dichloroethene, and vinyl chloride (VC).

Prior to injections in 2013, monitoring wells within a 50-foot radius of influence were abandoned (NASA 2019c). The first ERD injection event was conducted in November 2013. Approximately 9,060 gallons of EZVI were injected at 28 locations, and approximately 26,000 gallons of VO/L were injected at 13 locations. Analytical data from the first through fourth DPT performance monitoring events (July 2014 to September 2016) indicated 97 percent reduction of PCE and 71 percent reduction for other COCs.

The second ERD injection event for the Chlorinated VOC Plume was conducted in March 2017 (NASA 2019c). Approximately 3,894 gallons of EZVI were injected at 6 locations, and approximately 12,077 gallons of EVO were injected at 18 locations. Approximately 441 pounds of an anti-methanogenic agent, Provect-CH₄TM, were added to the EZVI and EVO solutions to limit methane production and increase dechlorination efficiency. The fifth and sixth DPT performance monitoring events were conducted in October 2017 and August 2018, respectively. Analytical data from these events indicated detections of PCE and VC were above GCTLs, and VC was above NADC in a significantly reduced footprint within the Chlorinated VOC Plume treatment area. The COC concentrations in groundwater were below GCTLs to the north of the Chlorinated VOC Plume treatment area.

In November 2019, eight monitoring wells (GSRY-MW0067 through GSRV-MW0074) were installed within the Chlorinated VOC Plume area (NASA 2021b). Groundwater monitoring was completed in December 2019 and May 2020, and laboratory analytical results indicated that concentrations of COCs were at or below GCTLs. During both events, UIC monitoring, associated with the ERD process, was conducted in three monitoring wells (GSRY-MW0067, GSRV-MW0071, and GSRV-MW0073) for analysis of total recoverable petroleum hydrocarbons (TRPH),

iron, and TDS. Analytical results indicated TRPH was below the GCTL in the three wells, iron was above the GCTL in one well (GSRY-MW0073), and TDS was above the GCTL in two wells (GSRY-MW0071 and GSRY-MW0073). Prior to installation of these monitoring wells, UIC monitoring had been conducted via DPT since the baseline sampling.

In October 2020, temporary sampling points were installed using DPT to sample groundwater and assess the degradation of chlorinated VOCs in areas where there are no monitoring wells and to assess the Chlorinated VOC Plume delineation (NASA 2021a). Laboratory analytical results for this event indicated that VOC concentrations were either not detected or below the GCTL in every sample, except for GSRY-DPT3076. One sample collected from GSRY-DPT3076 in the 15 to 19 feet bls depth interval indicated that PCE, TCE, and VC concentrations were above their respective GCTLs.

In December 2020 and May-June 2021, semi-annual groundwater monitoring was conducted (NASA 2021a). In May 2021, two new monitoring wells, GSRY-MW0076 and GSRY-MW0077, were installed to investigate the GSRY-DPT3076 results. In May 2021, no concentrations of site COCs were detected above GCTLs. The May 2021 results continued to demonstrate chlorinated VOCs have been reduced below GCTLs in the ERD treatment area, including down-gradient and cross-gradient. Concentrations of iron and TDS were detected above the site-approved target level or maximum baseline criteria in monitoring wells GSRY-MW0071 and GSRY-MW0073. The sampling frequency was changed from semi-annual to annual, alternating between wet and dry seasons.

In December 2021, annual groundwater monitoring was conducted (NASA 2022). No site COCs were detected above GCTLs. Concentrations of iron or TDS remained above the site-approved target levels in three monitoring wells at GSRY-MW0067, GSRY-MW0071, and GSRY-MW0073. Due to two or more consecutive events in which target VOC concentrations were below GCTLs, annual groundwater monitoring for VOCs was discontinued. Annual UIC groundwater monitoring at GSRY-MW0067 for iron and at GSRY-MW0071 and GSRY-MW0073 for iron and TDS was continued.

1.5 PURPOSE

The purpose of this report is to present the field activities and results of the September and October 2022 annual groundwater monitoring event. Additionally, this report provides recommendations for future assessment and monitoring activities.

1.6 REPORT ORGANIZATION

The remainder of this report is organized as follows:

Section 2: Field Activities and Groundwater Flow. This section describes the methodology used for the groundwater monitoring activities.

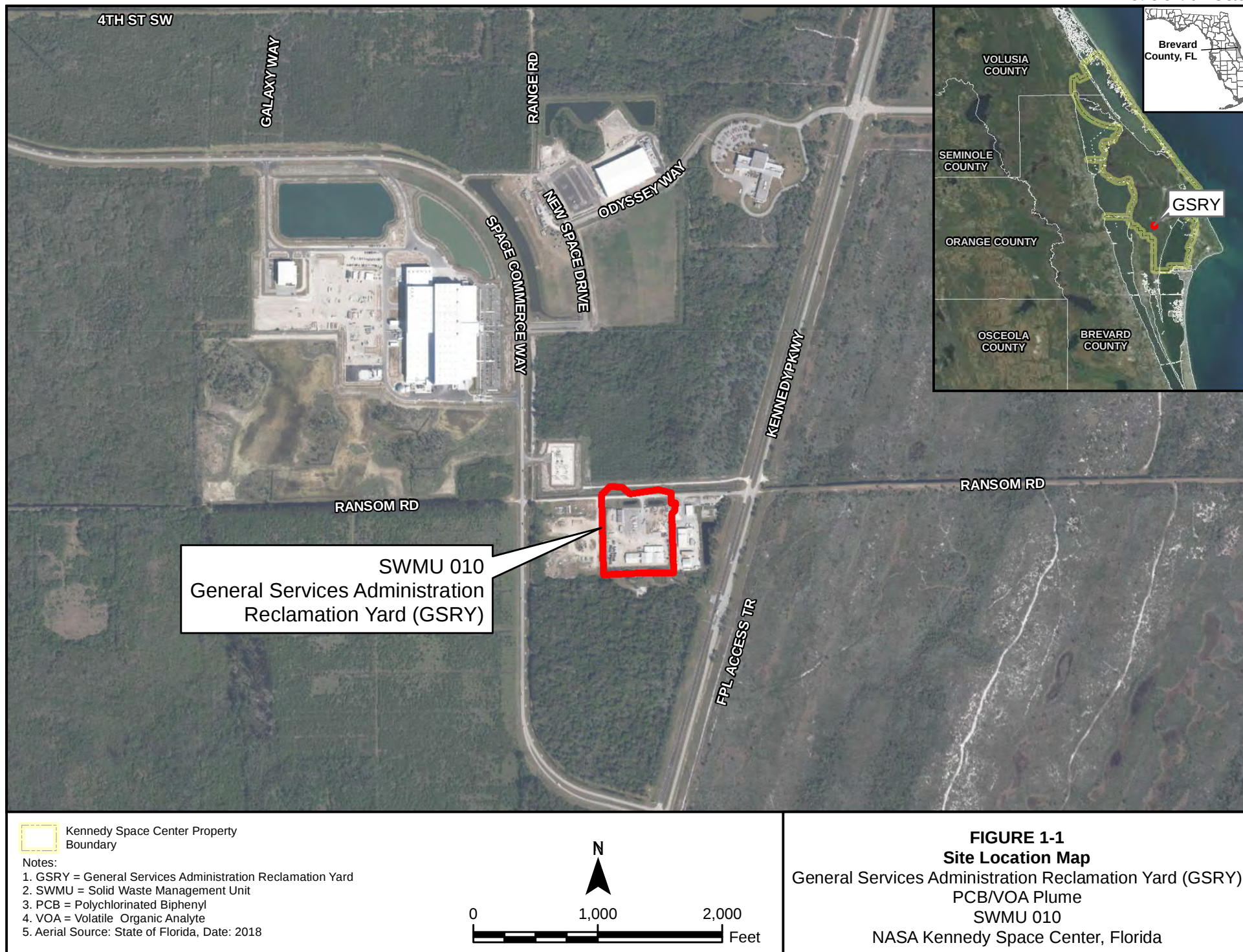
Section 3: PCB/VOA Plume Analytical Results. This section summarizes the results of the 2022 groundwater monitoring activities in the PCB/VOA Plume area.

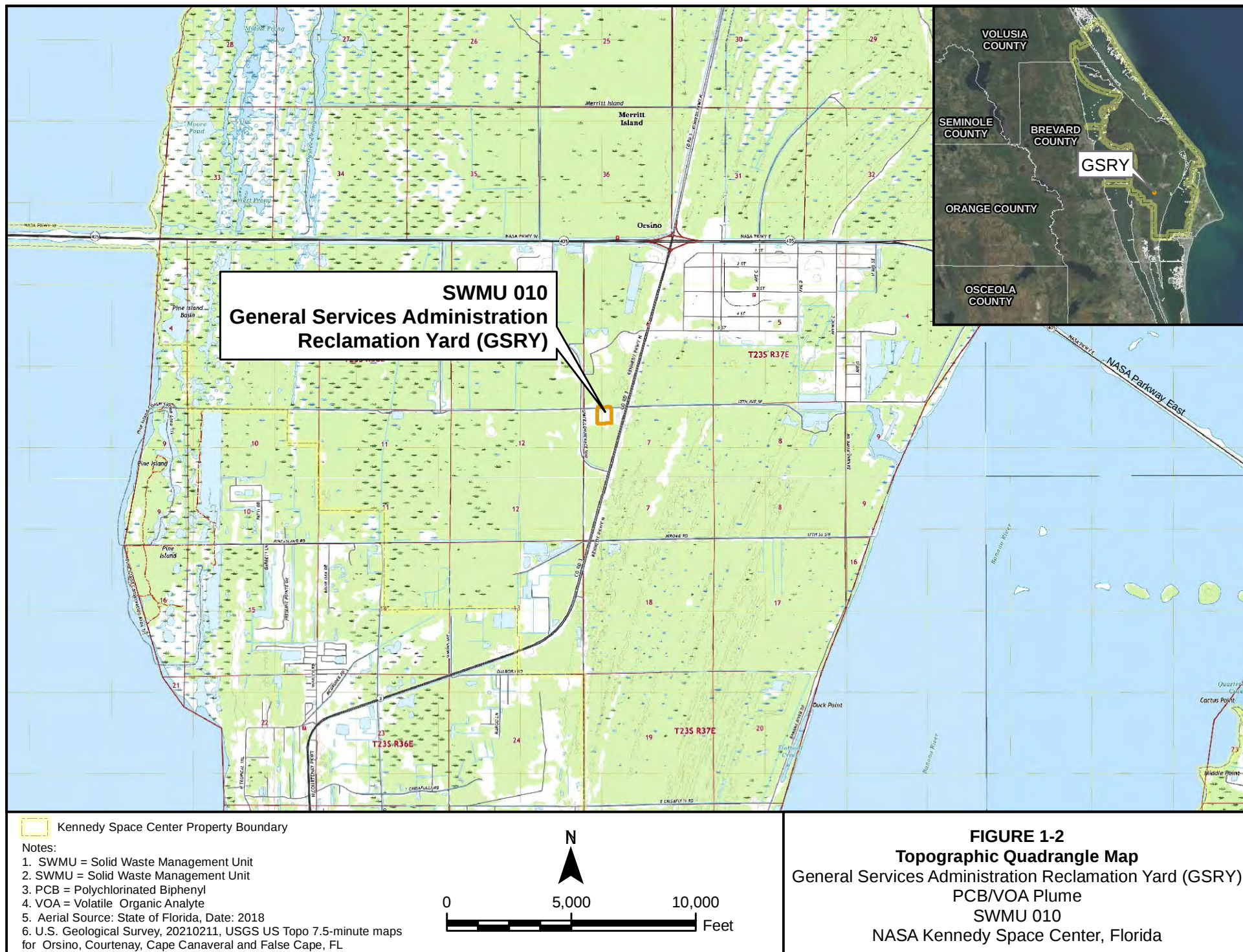
Section 4: Chlorinated VOC Plume Analytical Results. This section summarizes the results of the 2022 groundwater monitoring activities in the Chlorinated VOC Plume area.

Section 5: Conclusions and Recommendations. This section discusses conclusions based on recent and historical data and presents recommendations for future activities at the site.

Section 6: References. This section lists the documents used in developing this report.

This page intentionally left blank.





Date Saved: 2/23/2023 2:51:37 PM
Document Path: M:\GIS\projects\Projects\NASA\KSC\GSRY_SWMU010\ArcGIS_mxd\Dec_2022\F1-3_GSRY_SITELAYOUT.mxd



2. FIELD ACTIVITIES AND GROUNDWATER FLOW

2.1 OVERVIEW

In September and October 2022, AECOM field personnel conducted the annual groundwater monitoring event. Field activities were conducted in accordance with Florida Department of Environmental Protection (FDEP) Standard Operating Procedures (FDEP 2018), the KSC Sampling and Analysis Plan (NASA 2017b), and the KSC Decision Process Document for the RCRA Corrective Action Program (NASA 2019a). Analytical results for the PCB/VOA Plume and the Chlorinated VOC Plume are discussed in Sections 3 and 4, respectively. The 2022 Groundwater Monitoring Plan is presented in **Table 2-1**, and the monitoring well locations are presented on **Figure 1-3**. Field notes and field logs are provided in **Appendix B**.

Investigation-derived waste from field activities was contained in properly labeled 55-gallon drums, which were stored on NASA-provided spill pallets, and secured with cargo straps to be properly disposed of by NASA.

2.2 DEPTH TO GROUNDWATER MEASUREMENTS

On September 27, 2022, prior to sampling, water levels were measured in 55 monitoring wells: 18 are included in the Chlorinated VOC Plume, and 37 are included in the PCB/VOA Plume area. Wells from both areas were used when evaluating groundwater flow direction to enable contouring across the entire site. Groundwater level measurements were compared to top-of-casing survey data to determine a relative groundwater elevation for each well. These elevations were then used to construct groundwater contour figures.

2.3 GROUNDWATER ELEVATIONS, FLOW DIRECTION, AND GRADIENT

In September 2022, groundwater flow for the site was generally to the north in the 2 to 18 feet bls and 10 to 30 feet bls zones, with flow direction varying by occasional east and west components, and to the southeast in the 30 to 40 feet bls zone. This is generally consistent with historical observations at the site; however, flow direction at the site has varied during past monitoring events. Groundwater level measurements were recorded from site wells prior to sampling and are summarized in **Table 2-2**. Groundwater contour maps, representing the different zones for each event, are provided on **Figure 2-1** through **Figure 2-3**.

Groundwater flow direction for each zone is discussed below.

- 2 to 18 feet bls (**Figure 2-1**): Depth to water ranged from 0.22 to 2.85 feet bls, with an average depth to water of 2.10 feet bls. Groundwater elevations indicated a north flow direction and a horizontal gradient of 0.0007 feet elevation per foot distance (ft/ft) from monitoring well GSRY-MW0008S to GSRY-MW0004S.
- 10 to 30 feet bls (**Figure 2-2**): Depth to water ranged from 0.62 to 4.24 feet bls, with an average depth to water of 1.95 feet bls. Groundwater elevations indicated a north flow direction and a

horizontal gradient of 0.0001 ft/ft from monitoring well GSRY-MW0075 to GSRY-MW0066 in the PCB VOA Plume area, and a horizontal gradient of 0.0002 ft/ft from monitoring well GSRY-MW0072 to GSRY-MW0013M in the Chlorinated VOC Plume area.

- 30 to 40 feet bls (**Figure 2-3**): Depth to water ranged from 0.00 to 0.95 feet bls, with an average depth to water of 0.57 feet bls. Groundwater elevations indicated a southeast flow direction and a horizontal gradient of 0.0098 ft/ft from monitoring well GSRY-MW0058 to GSRY-MW0062.

Vertical gradients were calculated at several well pairs across the site using the September 2022 groundwater elevation data. In the PCB/VOA Plume area, the vertical gradient was 0.0072 ft/ft downward between monitoring wells GSRY-MW0036R and GSRY-MW0066 and was 0.1387 ft/ft downward between monitoring wells GSRY-MW0050 and GSRY-MW0059. In the Chlorinated VOC Plume area, the vertical gradient was 0.0040 ft/ft downward between monitoring wells GSRY-MW0074 and GSRY-MW0073.

2.4 GROUNDWATER MONITORING

In September and October 2022, AECOM personnel collected groundwater samples from 31 monitoring wells and 1 surface water sample from the northeast retention pond. Prior to sampling, the 31 monitoring wells on the sampling plan were redeveloped to remove sediments and stagnant water. The redeveloped wells were then given at least 24 hours of rest before purging and sampling. During the 2022 event, groundwater sampling for per- and polyfluoroalkyl substances (PFAS) was also conducted at seven monitoring wells across the site. The PFAS results will be presented and discussed under a separate cover.

During monitoring well purging, the following geochemical parameters were recorded at regular intervals: pH, temperature, dissolved oxygen, conductivity, oxidation reduction potential, salinity, and turbidity. Groundwater samples were submitted to a fixed-based laboratory, Eurofins Environment Testing - Orlando, for analysis by USEPA Method 8260B for VOCs and USEPA Method 8082A for total PCBs. Three monitoring wells were also analyzed for UIC parameters, including sulfate, iron, manganese, sodium, and TDS. The laboratory analytical data was reviewed for completeness, and the data is acceptable for its intended use as it pertains to this report.

Table 2-1
2022 Groundwater Monitoring Plan
General Services Administration Reclamation Yard (SMWU 010)

Location ID	Screened Interval (feet bls)	Water Levels	Sampled						
			VOCs	PCBs	Sulfate	Iron	Manganese	Sodium	Total Dissolved Solids
2 to 18 feet bls									
MW0002S	2 to 12	X							
MW0003S	2 to 12	X							
MW0004S	2 to 12	X							
MW0005S	2 to 12	X							
MW0006S	2 to 12	X							
MW0007S	2 to 12	X							
MW0008S	2 to 12	X							
MW0009S	2 to 12	X							
MW0011S	2 to 12	X		X					
MW0018S	2 to 12	X							
MW0030R	8 to 18	X	X	X					
MW0031	8 to 18	X	X	X					
MW0036R	2 to 12	X	X	X					
MW0040	2 to 12	X	X	X					
MW0041	2 to 12	X	X	X					
MW0042R	2 to 12	X	X	X					
MW0043	2 to 12	X	X	X					
MW0044	2 to 12	X	X	X					
MW0045	2 to 12	X							
MW0046R	2 to 12	X	X	X					
MW0053	2 to 12	X	X	X					
MW0054	8 to 18	X	X	X					
MW0055	8 to 18	X	X	X					
MW0060	2 to 12	X	X	X					
MW0065	4 to 14	X							
MW0074	7 to 17	X							
10 to 30 feet bls									
MW0002IS	25 to 30	X							
MW0004IS	25 to 30	X							
MW0013M	16 to 21	X							
MW0014M	15 to 20	X							
MW0015M	16 to 21	X							
MW0049	25 to 30	X	X	X	X	X	X	X	X
MW0050	25 to 30	X	X	X	X	X	X	X	X
MW0051	25 to 30	X	X	X					
MW0052	14 to 24	X	X	X					
MW0056	14 to 24	X	X	X					
MW0057	20 to 30	X	X	X					
MW0061	20 to 30	X	X						
MW0063	14 to 24	X	X	X					
MW0064	20 to 30	X	X						
MW0066	20 to 30	X	X	X	X	X	X	X	X
MW0067	10 to 20	X				X			
MW0068	10 to 20	X							
MW0069	10 to 20	X							
MW0070	10 to 20	X							
MW0071	13 to 23	X				X			X
MW0072	11 to 21	X							
MW0073	17 to 27	X				X			X
MW0075	20 to 30	X	X						
MW0076	10 to 20	X							
MW0077	10 to 20	X							
30 to 40 feet bls									
MW0058	30 to 40	X	X	X					
MW0059	30 to 40	X	X	X					
MW0062	30 to 40	X	X	X					
Surface Water									
SW0001			X	X					

Notes:
bls = below land surface
PCBs = polychlorinated biphenyls
SWMU = Solid Waste Management Unit
VOCs = Volatile Organic Compounds

Table 2-2

Groundwater Elevation Data

General Services Administration Reclamation Yard (SWMU 010)

Well ID	Plume Area	Screen Interval (ft bls)	TOC Elevation (ft NAVD88)	March 4, 2019		December 16, 2019	
				Depth to Water (ft BTOC)	Water Elevation (ft NAVD88)	Depth to Water (ft BTOC)	Water Elevation (ft NAVD88)
2 to 18 feet bls							
GSRY-MW0002S	cVOC	2 to 12	2.50	NM		2.18	0.32
GSRY-MW0003S	cVOC	2 to 12	3.44	NM		2.94	0.50
GSRY-MW0004S	PCB/VOA	2 to 12	3.30	NM		2.92	0.38
GSRY-MW0005S	PCB/VOA	2 to 12	3.60	NM		3.18	0.42
GSRY-MW0006S	PCB/VOA	2 to 12	3.50	NM		3.09	0.41
GSRY-MW0007S	PCB/VOA	2 to 12	3.50	NM		3.04	0.46
GSRY-MW0008S	PCB/VOA	2 to 12	3.66	NM		3.11	0.55
GSRY-MW0009S	cVOC	2 to 12	2.76	NM		2.43	0.33
GSRY-MW0011S	PCB/VOA	2 to 12	3.71	NM		3.15	0.56
GSRY-MW0018S	PCB/VOA	2 to 12	3.64	NM		3.18	0.46
GSRY-MW0030R	PCB/VOA	8 to 18	3.58	4.30	-0.72	3.08	0.50
GSRY-MW0031	PCB/VOA	8 to 18	3.32	4.03	-0.71	2.80	0.52
GSRY-MW0036R	PCB/VOA	2 to 12	3.58	4.34	-0.76	3.13	0.45
GSRY-MW0040	PCB/VOA	2 to 12	2.95	3.75	-0.80	2.65	0.30
GSRY-MW0041	PCB/VOA	2 to 12	3.14	4.81	-1.67	2.73	0.41
GSRY-MW0042R	PCB/VOA	2 to 12	3.33	4.10	-0.77	2.91	0.42
GSRY-MW0043	PCB/VOA	2 to 12	3.47	4.28	-0.81	3.03	0.44
GSRY-MW0044	PCB/VOA	2 to 12	3.04	3.81	-0.77	2.52	0.52
GSRY-MW0045	PCB/VOA	2 to 12	4.19	3.65	0.54	3.66	0.53
GSRY-MW0046R	PCB/VOA	2 to 12	1.47	2.12	-0.65	0.99	0.48
GSRY-MW0053	PCB/VOA	2 to 12	3.70	4.50	-0.80	3.29	0.41
GSRY-MW0054	PCB/VOA	8 to 18	2.68	3.50	-0.82	2.28	0.40
GSRY-MW0055	PCB/VOA	8 to 18	3.80	4.70	-0.90	3.34	0.46
GSRY-MW0060	PCB/VOA	2 to 12	3.38	4.03	-0.65	2.89	0.49
GSRY-MW0065	PCB/VOA	4 to 14	3.65	4.24	-0.59	3.18	0.47
GSRY-MW0074	cVOC	7 to 17	2.63	NM		2.35	0.28
GSRY-MW0078*	cVOC	7 to 17	3.06	NM		NM	
10 to 30 feet bls							
GSRY-MW0002IS	cVOC	25 to 30	5.64	NM		5.29	0.35
GSRY-MW0004IS	PCB/VOA	25 to 30	3.31	NM		NM	
GSRY-MW0013M	cVOC	16 to 21	3.25	NM		2.83	0.42
GSRY-MW0014M	cVOC	15 to 20	3.17	NM		2.70	0.47
GSRY-MW0015M	cVOC	16 to 21	5.40	NM		5.04	0.36
GSRY-MW0049	PCB/VOA	25 to 30	2.01	2.80	-0.79	1.51	0.50
GSRY-MW0050	PCB/VOA	25 to 30	3.41	4.06	-0.65	2.85	0.56
GSRY-MW0051	PCB/VOA	25 to 30	3.08	4.19	-1.11	2.53	0.55
GSRY-MW0052	PCB/VOA	14 to 24	3.14	3.82	-0.68	2.68	0.46
GSRY-MW0056	PCB/VOA	14 to 24	3.37	4.11	-0.74	2.85	0.52
GSRY-MW0057	PCB/VOA	20 to 30	3.15	3.90	-0.75	2.61	0.54
GSRY-MW0061	PCB/VOA	20 to 30	3.90	4.51	-0.61	3.29	0.61
GSRY-MW0063	PCB/VOA	14 to 24	1.80	2.42	-0.62	1.30	0.50
GSRY-MW0064	PCB/VOA	20 to 30	3.64	4.24	-0.60	3.05	0.59
GSRY-MW0066	PCB/VOA	20 to 30	3.40	NM		NM	
GSRY-MW0067	cVOC	10 to 20	3.25	NM		2.93	0.32
GSRY-MW0068	cVOC	10 to 20	2.95	NM		2.64	0.31
GSRY-MW0069	cVOC	10 to 20	2.98	NM		2.71	0.27
GSRY-MW0070	cVOC	10 to 20	2.22	NM		1.94	0.28
GSRY-MW0071	cVOC	13 to 23	3.32	NM		3.06	0.26
GSRY-MW0072	cVOC	11 to 21	2.75	NM		2.45	0.30
GSRY-MW0073	cVOC	17 to 27	2.63	NM		2.33	0.30
GSRY-MW0075	PCB/VOA	17 to 27	1.88	NM		NM	
GSRY-MW0076	cVOC	10 to 20	3.13	NM		NM	
GSRY-MW0077	cVOC	10 to 20	3.19	NM		NM	
30 to 40 feet bls							
GSRY-MW0058	PCB/VOA	30 to 40	3.09	3.20	-0.11	1.79	1.30
GSRY-MW0059	PCB/VOA	30 to 40	3.29	3.40	-0.11	1.98	1.31
GSRY-MW0062	PCB/VOA	30 to 40	1.85	1.91	-0.06	0.58	1.27

Table 2-2
Groundwater Elevation Data
General Services Administration Reclamation Yard (SWMU 010)

Well ID	Plume Area	Screen Interval (ft bls)	TOC Elevation (ft NAVD88)	May 19, 2020		December 8, 2020	
				Depth to Water (ft BTOC)	Water Elevation (ft NAVD88)	Depth to Water (ft BTOC)	Water Elevation (ft NAVD88)
2 to 18 feet bls							
GSRY-MW0002S	cVOC	2 to 12	2.50	3.68	-1.18	1.64	0.86
GSRY-MW0003S	cVOC	2 to 12	3.44	4.55	-1.11	2.72	0.72
GSRY-MW0004S	PCB/VOA	2 to 12	3.30	4.36	-1.06	2.56	0.74
GSRY-MW0005S	PCB/VOA	2 to 12	3.60	4.20	-0.60	2.79	0.81
GSRY-MW0006S	PCB/VOA	2 to 12	3.50	4.55	-1.05	2.64	0.86
GSRY-MW0007S	PCB/VOA	2 to 12	3.50	4.50	-1.00	2.66	0.84
GSRY-MW0008S	PCB/VOA	2 to 12	3.66	4.51	-0.85	2.61	1.05
GSRY-MW0009S	cVOC	2 to 12	2.76	3.90	-1.14	1.82	0.94
GSRY-MW0011S	PCB/VOA	2 to 12	3.71	4.68	-0.97	2.93	0.78
GSRY-MW0018S	PCB/VOA	2 to 12	3.64	4.70	-1.06	2.88	0.76
GSRY-MW0030R	PCB/VOA	8 to 18	3.58	4.54	-0.96	2.80	0.78
GSRY-MW0031	PCB/VOA	8 to 18	3.32	4.25	-0.93	2.64	0.68
GSRY-MW0036R	PCB/VOA	2 to 12	3.58	4.62	-1.04	2.83	0.75
GSRY-MW0040	PCB/VOA	2 to 12	2.95	4.02	-1.07	2.22	0.73
GSRY-MW0041	PCB/VOA	2 to 12	3.14	4.15	-1.01	2.33	0.81
GSRY-MW0042R	PCB/VOA	2 to 12	3.33	4.36	-1.03	2.56	0.77
GSRY-MW0043	PCB/VOA	2 to 12	3.47	4.50	-1.03	2.78	0.69
GSRY-MW0044	PCB/VOA	2 to 12	3.04	4.00	-0.96	2.63	0.41
GSRY-MW0045	PCB/VOA	2 to 12	4.19	5.00	-0.81	3.32	0.87
GSRY-MW0046R	PCB/VOA	2 to 12	1.47	2.35	-0.88	0.42	1.05
GSRY-MW0053	PCB/VOA	2 to 12	3.70	4.78	-1.08	2.97	0.73
GSRY-MW0054	PCB/VOA	8 to 18	2.68	3.78	-1.10	1.98	0.70
GSRY-MW0055	PCB/VOA	8 to 18	3.80	4.95	-1.15	3.17	0.63
GSRY-MW0060	PCB/VOA	2 to 12	3.38	4.30	-0.92	2.61	0.77
GSRY-MW0065	PCB/VOA	4 to 14	3.65	4.48	-0.83	2.80	0.85
GSRY-MW0074	cVOC	7 to 17	2.63	3.80	-1.17	1.65	0.98
GSRY-MW0078*	cVOC	7 to 17	3.06	NM		NM	
10 to 30 feet bls							
GSRY-MW0002IS	cVOC	25 to 30	5.64	6.75	-1.11	4.68	0.96
GSRY-MW0004IS	PCB/VOA	25 to 30	3.31	4.57	-1.26	2.67	0.64
GSRY-MW0013M	cVOC	16 to 21	3.25	4.33	-1.08	2.41	0.84
GSRY-MW0014M	cVOC	15 to 20	3.17	4.22	-1.05	2.29	0.88
GSRY-MW0015M	cVOC	16 to 21	5.40	6.58	-1.18	4.58	0.82
GSRY-MW0049	PCB/VOA	25 to 30	2.01	2.93	-0.92	0.98	1.03
GSRY-MW0050	PCB/VOA	25 to 30	3.41	4.36	-0.95	2.53	0.88
GSRY-MW0051	PCB/VOA	25 to 30	3.08	3.88	-0.80	2.13	0.95
GSRY-MW0052	PCB/VOA	14 to 24	3.14	4.15	-1.01	2.30	0.84
GSRY-MW0056	PCB/VOA	14 to 24	3.37	4.35	-0.98	2.59	0.78
GSRY-MW0057	PCB/VOA	20 to 30	3.15	4.14	-0.99	2.38	0.77
GSRY-MW0061	PCB/VOA	20 to 30	3.90	4.78	-0.88	3.02	0.88
GSRY-MW0063	PCB/VOA	14 to 24	1.80	2.68	-0.88	1.28	0.52
GSRY-MW0064	PCB/VOA	20 to 30	3.64	4.48	-0.84	2.75	0.89
GSRY-MW0066	PCB/VOA	20 to 30	3.40	4.42	-1.02	2.59	0.81
GSRY-MW0067	cVOC	10 to 20	3.25	4.41	-1.16	2.37	0.88
GSRY-MW0068	cVOC	10 to 20	2.95	4.11	-1.16	2.19	0.76
GSRY-MW0069	cVOC	10 to 20	2.98	4.18	-1.20	2.05	0.93
GSRY-MW0070	cVOC	10 to 20	2.22	3.40	-1.18	1.29	0.93
GSRY-MW0071	cVOC	13 to 23	3.32	4.56	-1.24	2.32	1.00
GSRY-MW0072	cVOC	11 to 21	2.75	3.94	-1.19	1.82	0.93
GSRY-MW0073	cVOC	17 to 27	2.63	3.88	-1.25	1.73	0.90
GSRY-MW0075	PCB/VOA	17 to 27	1.88	NM		0.98	0.90
GSRY-MW0076	cVOC	10 to 20	3.13	NM		NM	
GSRY-MW0077	cVOC	10 to 20	3.19	NM		NM	
30 to 40 feet bls							
GSRY-MW0058	PCB/VOA	30 to 40	3.09	3.55	-0.46	1.47	1.62
GSRY-MW0059	PCB/VOA	30 to 40	3.29	3.76	-0.47	1.71	1.58
GSRY-MW0062	PCB/VOA	30 to 40	1.85	2.27	-0.42	0.17	1.68

Table 2-2

Groundwater Elevation Data

General Services Administration Reclamation Yard (SWMU 010)

Well ID	Plume Area	Screen Interval (ft bls)	TOC Elevation (ft NAVD88)	May 18, 2021		December 7, 2021	
				Depth to Water (ft BTOC)	Water Elevation (ft NAVD88)	Depth to Water (ft BTOC)	Water Elevation (ft NAVD88)
2 to 18 feet bls							
GSRY-MW0002S	cVOC	2 to 12	2.50	2.57	-0.07	1.58	0.92
GSRY-MW0003S	cVOC	2 to 12	3.44	3.58	-0.14	2.81	0.63
GSRY-MW0004S	PCB/VOA	2 to 12	3.30	3.40	-0.10	2.64	0.66
GSRY-MW0005S	PCB/VOA	2 to 12	3.60	3.65	-0.05	2.80	0.80
GSRY-MW0006S	PCB/VOA	2 to 12	3.50	3.50	0.00	2.60	0.90
GSRY-MW0007S	PCB/VOA	2 to 12	3.50	NM		2.67	0.83
GSRY-MW0008S	PCB/VOA	2 to 12	3.66	3.50	0.16	2.57	1.09
GSRY-MW0009S	cVOC	2 to 12	2.76	2.76	0.00	1.72	1.04
GSRY-MW0011S	PCB/VOA	2 to 12	3.71	3.76	-0.05	3.00	0.71
GSRY-MW0018S	PCB/VOA	2 to 12	3.64	3.72	-0.08	2.92	0.72
GSRY-MW0030R	PCB/VOA	8 to 18	3.58	3.62	-0.04	2.83	0.75
GSRY-MW0031	PCB/VOA	8 to 18	3.32	3.38	-0.06	2.58	0.74
GSRY-MW0036R	PCB/VOA	2 to 12	3.58	3.68	-0.10	2.84	0.74
GSRY-MW0040	PCB/VOA	2 to 12	2.95	3.04	-0.09	2.16	0.79
GSRY-MW0041	PCB/VOA	2 to 12	3.14	3.20	-0.06	2.33	0.81
GSRY-MW0042R	PCB/VOA	2 to 12	3.33	3.43	-0.10	2.60	0.73
GSRY-MW0043	PCB/VOA	2 to 12	3.47	3.60	-0.13	2.76	0.71
GSRY-MW0044	PCB/VOA	2 to 12	3.04	3.11	-0.07	2.31	0.73
GSRY-MW0045	PCB/VOA	2 to 12	4.19	4.00	0.19	3.24	0.95
GSRY-MW0046R	PCB/VOA	2 to 12	1.47	1.48	-0.01	0.62	0.85
GSRY-MW0053	PCB/VOA	2 to 12	3.70	3.84	-0.14	3.02	0.68
GSRY-MW0054	PCB/VOA	8 to 18	2.68	2.84	-0.16	2.04	0.64
GSRY-MW0055	PCB/VOA	8 to 18	3.80	4.02	-0.22	3.29	0.51
GSRY-MW0060	PCB/VOA	2 to 12	3.38	3.40	-0.02	2.55	0.83
GSRY-MW0065	PCB/VOA	4 to 14	3.65	3.60	0.05	2.80	0.85
GSRY-MW0074	cVOC	7 to 17	2.63	2.53	0.10	1.64	0.99
GSRY-MW0078*	cVOC	7 to 17	3.06	NM		NM	
10 to 30 feet bls							
GSRY-MW0002IS	cVOC	25 to 30	5.64	5.61	0.03	4.56	1.08
GSRY-MW0004IS	PCB/VOA	25 to 30	3.31	3.57	-0.26	2.67	0.64
GSRY-MW0013M	cVOC	16 to 21	3.25	3.30	-0.05	2.38	0.87
GSRY-MW0014M	cVOC	15 to 20	3.17	3.17	0.00	2.28	0.89
GSRY-MW0015M	cVOC	16 to 21	5.40	5.48	-0.08	4.57	0.83
GSRY-MW0049	PCB/VOA	25 to 30	2.01	1.88	0.13	1.12	0.89
GSRY-MW0050	PCB/VOA	25 to 30	3.41	3.42	-0.01	2.55	0.86
GSRY-MW0051	PCB/VOA	25 to 30	3.08	3.07	0.01	2.18	0.90
GSRY-MW0052	PCB/VOA	14 to 24	3.14	3.15	-0.01	2.29	0.85
GSRY-MW0056	PCB/VOA	14 to 24	3.37	3.50	-0.13	2.58	0.79
GSRY-MW0057	PCB/VOA	20 to 30	3.15	3.23	-0.08	2.40	0.75
GSRY-MW0061	PCB/VOA	20 to 30	3.90	3.90	0.00	3.02	0.88
GSRY-MW0063	PCB/VOA	14 to 24	1.80	1.75	0.05	0.90	0.90
GSRY-MW0064	PCB/VOA	20 to 30	3.64	3.58	0.06	2.73	0.91
GSRY-MW0066	PCB/VOA	20 to 30	3.40	3.47	-0.07	2.58	0.82
GSRY-MW0067	cVOC	10 to 20	3.25	3.31	-0.06	2.32	0.93
GSRY-MW0068	cVOC	10 to 20	2.95	2.98	-0.03	1.96	0.99
GSRY-MW0069	cVOC	10 to 20	2.98	3.05	-0.07	1.98	1.00
GSRY-MW0070	cVOC	10 to 20	2.22	2.26	-0.04	1.21	1.01
GSRY-MW0071	cVOC	13 to 23	3.32	3.38	-0.06	2.33	0.99
GSRY-MW0072	cVOC	11 to 21	2.75	2.78	-0.03	1.72	1.03
GSRY-MW0073	cVOC	17 to 27	2.63	2.70	-0.07	1.64	0.99
GSRY-MW0075	PCB/VOA	17 to 27	1.88	1.81	0.07	0.98	0.90
GSRY-MW0076	cVOC	10 to 20	3.13	3.15	-0.02	2.18	0.95
GSRY-MW0077	cVOC	10 to 20	3.19	3.25	-0.06	2.29	0.90
30 to 40 feet bls							
GSRY-MW0058	PCB/VOA	30 to 40	3.09	2.60	0.49	1.37	1.72
GSRY-MW0059	PCB/VOA	30 to 40	3.29	2.80	0.49	1.52	1.77
GSRY-MW0062	PCB/VOA	30 to 40	1.85	1.31	0.54	0.07	1.78

Table 2-2
Groundwater Elevation Data
General Services Administration Reclamation Yard (SWMU 010)

Well ID	Plume Area	Screen Interval (ft bls)	TOC Elevation (ft NAVD88)	September 27, 2022	
				Depth to Water (ft BTOC)	Water Elevation (ft NAVD88)
2 to 18 feet bls					
GSRY-MW0002S	cVOC	2 to 12	2.50	1.32	1.18
GSRY-MW0003S	cVOC	2 to 12	3.44	2.34	1.10
GSRY-MW0004S	PCB/VOA	2 to 12	3.30	2.17	1.13
GSRY-MW0005S	PCB/VOA	2 to 12	3.60	2.45	1.15
GSRY-MW0006S	PCB/VOA	2 to 12	3.50	2.30	1.20
GSRY-MW0007S	PCB/VOA	2 to 12	3.50	2.30	1.20
GSRY-MW0008S	PCB/VOA	2 to 12	3.66	2.28	1.38
GSRY-MW0009S	cVOC	2 to 12	2.76	1.54	1.22
GSRY-MW0011S	PCB/VOA	2 to 12	3.71	2.55	1.16
GSRY-MW0018S	PCB/VOA	2 to 12	3.64	2.51	1.13
GSRY-MW0030R	PCB/VOA	8 to 18	3.58	2.42	1.16
GSRY-MW0031	PCB/VOA	8 to 18	3.32	2.15	1.17
GSRY-MW0036R	PCB/VOA	2 to 12	3.58	2.46	1.12
GSRY-MW0040	PCB/VOA	2 to 12	2.95	1.89	1.06
GSRY-MW0041	PCB/VOA	2 to 12	3.14	2.00	1.14
GSRY-MW0042R	PCB/VOA	2 to 12	3.33	2.20	1.13
GSRY-MW0043	PCB/VOA	2 to 12	3.47	2.39	1.08
GSRY-MW0044	PCB/VOA	2 to 12	3.04	1.89	1.15
GSRY-MW0045	PCB/VOA	2 to 12	4.19	2.85	1.34
GSRY-MW0046R	PCB/VOA	2 to 12	1.47	0.22	1.25
GSRY-MW0053	PCB/VOA	2 to 12	3.70	2.61	1.09
GSRY-MW0054	PCB/VOA	8 to 18	2.68	1.62	1.06
GSRY-MW0055	PCB/VOA	8 to 18	3.80	2.80	1.00
GSRY-MW0060	PCB/VOA	2 to 12	3.38	2.10	1.28
GSRY-MW0065	PCB/VOA	4 to 14	3.65	2.45	1.20
GSRY-MW0074	cVOC	7 to 17	2.63	1.41	1.22
GSRY-MW0078*	cVOC	7 to 17	3.06	1.41	1.65
10 to 30 feet bls					
GSRY-MW0002IS	cVOC	25 to 30	5.64	4.05	1.59
GSRY-MW0004IS	PCB/VOA	25 to 30	3.31	2.17	1.14
GSRY-MW0013M	cVOC	16 to 21	3.25	2.07	1.18
GSRY-MW0014M	cVOC	15 to 20	3.17	1.89	1.28
GSRY-MW0015M	cVOC	16 to 21	5.40	4.24	1.16
GSRY-MW0049	PCB/VOA	25 to 30	2.01	0.75	1.26
GSRY-MW0050	PCB/VOA	25 to 30	3.41	2.11	1.30
GSRY-MW0051	PCB/VOA	25 to 30	3.08	1.76	1.32
GSRY-MW0052	PCB/VOA	14 to 24	3.14	1.96	1.18
GSRY-MW0056	PCB/VOA	14 to 24	3.37	2.16	1.21
GSRY-MW0057	PCB/VOA	20 to 30	3.15	1.92	1.23
GSRY-MW0061	PCB/VOA	20 to 30	3.90	2.60	1.30
GSRY-MW0063	PCB/VOA	14 to 24	1.80	0.55	1.25
GSRY-MW0064	PCB/VOA	20 to 30	3.64	2.40	1.24
GSRY-MW0066	PCB/VOA	20 to 30	3.40	2.15	1.25
GSRY-MW0067	cVOC	10 to 20	3.25	2.08	1.17
GSRY-MW0068	cVOC	10 to 20	2.95	1.68	1.27
GSRY-MW0069	cVOC	10 to 20	2.98	1.75	1.23
GSRY-MW0070	cVOC	10 to 20	2.22	0.98	1.24
GSRY-MW0071	cVOC	13 to 23	3.32	2.11	1.21
GSRY-MW0072	cVOC	11 to 21	2.75	1.50	1.25
GSRY-MW0073	cVOC	17 to 27	2.63	1.37	1.26
GSRY-MW0075	PCB/VOA	17 to 27	1.88	0.62	1.26
GSRY-MW0076	cVOC	10 to 20	3.13	1.90	1.23
GSRY-MW0077	cVOC	10 to 20	3.19	2.02	1.17
30 to 40 feet bls					
GSRY-MW0058	PCB/VOA	30 to 40	3.09	0.76	2.33
GSRY-MW0059	PCB/VOA	30 to 40	3.29	0.95	2.34
GSRY-MW0062	PCB/VOA	30 to 40	1.85	0.00	1.85

Notes:
*GSRY-MW0078 was installed under the ongoing GSRY PFAS investigation
BTOC = below top of casing
cVOC = chlorinated volatile organic compound
ft bls = feet below land surface
NAVD88 = North American Vertical Datum of 1988
NM = not measured
PCB/VOA = polychlorinated biphenyl / volatile organic aromatic
TOC = top of casing

Date Saved: 12/29/2022 2:14:51 PM
Document Path: M:\GIS\projects\Projects\NASA\KSC\GSRY_SWMU010\ArcGIS_mxd\Dec_2022\F2-1_GSRY_SZ_GWELEV_20220927.mxd



- Legend**
- Monitoring Well - 2 to 18 feet bls
 - Groundwater Contour (NAVD88 ft.)
 - Approximate Direction of Groundwater Flow
 - (0.99) Groundwater Elevation (NAVD88 ft.)

Notes:

- Vertical Datum is NAVD88 (ft)
- Monitoring Wells Were Gauged on September 27, 2022
- Groundwater Contour Interval = 0.05 Ft.
- * = Not used in contouring.
- Aerial Source: FDOT 2018

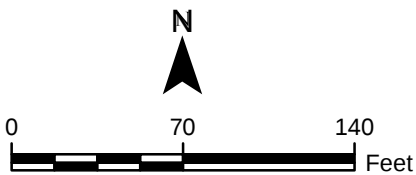
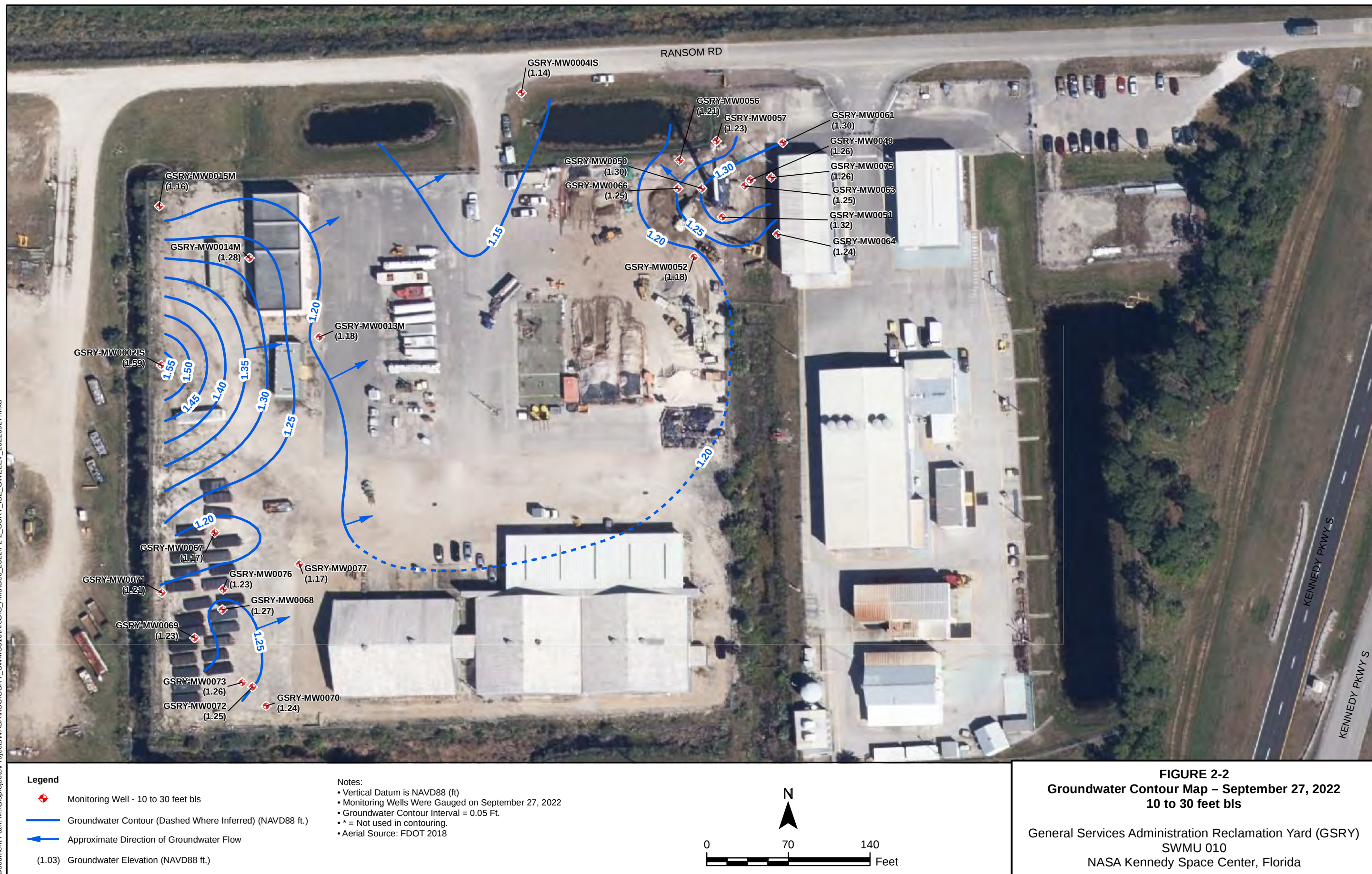


FIGURE 2-1
Groundwater Contour Map – September 27, 2022
2 to 18 feet bls

General Services Administration Reclamation Yard (GSRY)
SWMU 010
NASA Kennedy Space Center, Florida

Date Saved: 12/29/2022 2:18:35 PM
Document Path: M:\GIS\Projects\Projects\NASA\KSC\GSRY_SWMU010\ArcGIS_mxd\Dec_2022\F2-2_GSRY_ISZ_GWELEV_20220927.mxd



Date Saved: 12/29/2022 2:24:00 PM
Document Path: M:\GIS\projects\Projects\NASA\KSC\GSRY_SWMU010\ArcGIS_mxd\Dec_2022\F2-3_GSRY_IDZ_GWELEV_20220927.mxd



3. PCB/VOA PLUME ANALYTICAL RESULTS

3.1 OVERVIEW

This section presents the results of the September and October 2022 groundwater monitoring activities for the PCB/VOA Plume. The goals were to determine groundwater flow characteristics, monitor the downgradient concentration trends, and monitor select locations internal to the groundwater plume. Groundwater analytical results from each zone, including DPT results from November 2021, are summarized in **Table 3-1**, and are depicted on **Figure 3-1** through **Figure 3-3**. The November 2021 DPT groundwater sampling was conducted to confirm degradation of chlorinated benzenes in areas where there are no monitoring wells and to update the delineation of the chlorinated benzene plume. Laboratory analytical reports are provided in **Appendix C**. Data were uploaded to the Remediation Information System (RIS) upon receipt. The RIS completion tickets are provided in **Appendix D**.

3.2 MONITORING WELL GROUNDWATER AND SURFACE WATER ANALYTICAL RESULTS

Groundwater samples were submitted to a fixed-based laboratory, Eurofins Environment Testing - Orlando, for one or more of the following analyses: USEPA Method 8260B for VOCs (benzene, chlorobenzene, 1,2-dichlorobenzene, 13DCB, 14DCB, 1,2,3-trichlorobenzene, and 124TCB), USEPA Method 8082A for total PCBs, or UIC parameters (sulfate, iron, manganese, sodium, or TDS).

3.2.1 2 to 18 Feet Bls

Samples were collected from 14 monitoring wells. A summary of site COC concentrations in groundwater for the 2 to 18 feet bls interval is presented on **Figure 3-1**. There were no detections of site COCs above GCTLs in the 2 to 18 feet bls interval.

3.2.2 10 to 30 Feet Bls

Samples were collected from 11 monitoring wells. A summary of site COC concentrations in groundwater for the 10 to 30 feet bls interval is presented on **Figure 3-2**. The GCTL contours for 13DCB, 14DCB, 124TCB, and chlorobenzene are also presented on **Figure 3-2**.

Groundwater sampling results indicated that VOC concentrations were greater than GCTLs in two monitoring wells, GSRY-MW0049 and GSRY-MW0050. Concentrations of 13DCB and 14DCB have fluctuated in GSRY-MW0049 since December 2019. Concentrations of 14DCB and 124TCB have decreased in GSRY-MW0050 since December 2019. Chlorobenzene has shown an increasing trend in GSRY-MW0049 since December 2019. 124TCB was detected above the GCTL in GSRY-MW0049 for the first time since December 2019, and has shown an increasing trend since December 2021. There were no detections of PCBs above GCTLs in the 10 to 30 feet bls interval.

3.2.3 30 to 40 Feet Bls

Samples were collected from three monitoring wells. A summary of site COC concentrations in groundwater for the 30 to 40 feet bls interval is presented on **Figure 3-3**. There were no detections of site COCs above GCTLs in the 30 to 40 feet bls interval.

3.2.4 Underground Injection Control Monitoring

Groundwater sampling conducted in September and October 2022 included UIC monitoring. UIC monitoring is conducted to monitor the groundwater for residual effects from the Provect-OX® treatment at the bottom of select LDA caisson excavation cells during the 2018 IM. Three monitoring wells (GSRY-MW0049, GSRY-MW0050, and GSRY MW0066), located in the zone where Provect-OX® was applied, were sampled for sulfate, iron, manganese, sodium, and TDS. The UIC analytical results are presented in **Table 3-2**.

Laboratory analytical results indicate that concentrations were above the site-approved target levels in GSRY-MW0049 for sulfate, iron, manganese, and sodium; in GSRY-MW0066 for sulfate, iron, sodium, and TDS; and in GSRY-MW0050 for sodium and TDS. The remaining analytes were below target levels.

3.2.5 Surface Water Analytical Results

In October 2022, one surface water sample GSRY-SW0001 was collected from the retention pond in the northeast area of the site. The surface water sample collected was analyzed for benzene, chlorinated benzene compounds, and PCBs. The surface water sample had no detections of VOCs or PCBs. The surface water analytical results are summarized in **Table 3-1** and are depicted on **Figure 3-1**.

Table 3-1

PCB/VOA Plume Groundwater and Surface Water Analytical Results

General Services Administration Reclamation Yard (SMWU 010)

Category			Volatile Organic Compounds (VOCs) by Method 8260							Semi-volatiles by Method 8082
Analyte			BENZENE	CHLORO-BENZENE	1,2 (o)-DICHLORO-BENZENE	1,3 (m)-DICHLORO-BENZENE	1,4 (para)-DICHLORO-BENZENE	1,2,3-TRICHLORO-BENZENE	1,2,4-TRICHLORO-BENZENE	TOTAL PCBs
FDEP GCTLs (µg/L)			1	100	600	210	75	70	70	0.5
FDEP NADCs (µg/L)			100	1000	6000	2100	7500	700	700	50
Location ID	Screened Interval (feet bls)	Sample Date								
GSRY-DPT3083	6-10	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	10-14	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	14-18	11/19/2021	0.50 U	14	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	18-22	11/19/2021	0.50 U	1.6	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	22-26	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	26-30	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	30-34	11/19/2021	0.50 U	1.4	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
GSRY-DPT3084	6-10	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	10-14	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	14-18	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	18-22	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	22-26	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	26-30	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	30-34	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
GSRY-DPT3085	6-10	11/19/2021	0.50 U	0.55	0.50 U	0.58	1.4	2.0 U	2.0 U	
	10-14	11/19/2021	0.50 U	12	0.87	19	33	2.0 U	2.0 U	
	14-18	11/19/2021	0.50 U	4.3	0.50 U	7.5	14	2.0 U	2.0 U	
	18-22	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	22-26	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	26-30	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	30-34	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
GSRY-DPT3086	6-10	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	10-14	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	14-18	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	18-22	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	22-26	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	26-30	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	30-34	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
GSRY-DPT3087	6-10	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	10-14	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	14-18	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	18-22	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	22-26	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	26-30	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	30-34	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
GSRY-DPT3088	6-10	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	10-14	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	14-18	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	18-22	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	22-26	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	26-30	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	30-34	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
GSRY-DPT3089	6-10	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	10-14	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	14-18	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	18-22	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	22-26	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	26-30	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	30-34	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	

Table 3-1
PCB/VOA Plume Groundwater and Surface Water Analytical Results
General Services Administration Reclamation Yard (SMWU 010)

Category			Volatile Organic Compounds (VOCs) by Method 8260							Semi-volatiles by Method 8082
Analyte			BENZENE	CHLORO-BENZENE	1,2 (o)-DICHLORO-BENZENE	1,3 (m)-DICHLORO-BENZENE	1,4 (para)-DICHLORO-BENZENE	1,2,3-TRICHLORO-BENZENE	1,2,4-TRICHLORO-BENZENE	TOTAL PCBs
FDEP GCTLs (µg/L)			1	100	600	210	75	70	70	0.5
FDEP NADCs (µg/L)			100	1000	6000	2100	7500	700	700	50
Location ID	Screened Interval (feet bls)	Sample Date								
GSRY-DPT3090	6-10	11/19/2021	0.50 U	8.2	0.50 U	0.50 U	0.99	2.0 U	2.0 U	
	10-14	11/19/2021	0.50 U	27	0.50 U	0.50 U	1.4	2.0 U	2.0 U	
	14-18	11/19/2021	0.50 U	5.8	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	18-22	11/19/2021	0.50 U	2.3	0.50 U	0.50 U	0.98	2.0 U	2.0 U	
	22-26	11/19/2021	0.50 U	4.6	0.50 U	1.8	4.2	2.0 U	2.0 U	
	26-30	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	30-34	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
GSRY-DPT3091	6-10	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	10-14	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	14-18	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	18-22	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	22-26	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	26-30	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	30-34	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
GSRY-DPT3092	6-10	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	10-14	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	14-18	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	18-22	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	22-26	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	26-30	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
	30-34	11/19/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	
GSRY-MW0004S	2-12	1/6/2017								0.5 U
GSRY-MW0011S	2-12	1/6/2017								0.5 U
		5/19/2020								0.19 U
		12/10/2020								0.20 U
		5/19/2021								0.20 U
		12/8/2021								0.50 U
		10/3/2022								0.14 U
GSRY-MW0030R	8-18	3/4/2019	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		12/16/2019	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.19 U
		5/19/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.20 U
		12/9/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.20 U
		12/14/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	
		5/18/2021	0.23 U	0.16 U	0.14 U	0.21 U	0.26 U	0.28 U	0.21 U	0.21 U
		12/7/2021	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		10/4/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.15 U
GSRY-MW0031	8-18	2/15/2019	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		12/17/2019	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.22 U
		5/20/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.55 I	0.61 U	0.50 U	0.19 U
		12/9/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.20 U
		12/14/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	
		5/18/2021	0.23 U	0.16 U	0.14 U	0.21 U	0.26 U	0.28 U	0.21 U	0.20 U
		12/9/2021	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		10/3/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.15 U
GSRY-MW0036R	2-12	3/4/2019	2.4	36	4.0	6.7	12	0.86 U	1.8	0.50 U
		12/17/2019	2.8	78.2	3.2	10.3	13.9	1.2 I	6.6	0.77 J
		5/19/2020	2.1	50.2	15.5	9.4	21.6	1.4 I	5.9	0.19 U
		12/9/2020	0.80 I	24.3	1.6	3.4	6.8	0.61 U	1.1 I	0.20 U
		12/14/2020	1.1	26.7	1.5	3.5	6.9	0.61 U	0.85 I	
		5/18/2021	1.4	35.2	5.6	6.5	14.9	1.9	4.5	0.20 U
		12/9/2021	0.83 I	19	1.9	3.2	7.9	0.86 U	2.1	0.50 U
		10/4/2022	0.50 U	6.8	1.0	1.9	5.0	0.83 I	1.8	0.14 U

Table 3-1
PCB/VOA Plume Groundwater and Surface Water Analytical Results
General Services Administration Reclamation Yard (SMWU 010)

Category			Volatile Organic Compounds (VOCs) by Method 8260							Semi-volatiles by Method 8082
Analyte			BENZENE	CHLORO-BENZENE	1,2 (o)-DICHLORO-BENZENE	1,3 (m)-DICHLORO-BENZENE	1,4 (para)-DICHLORO-BENZENE	1,2,3-TRICHLORO-BENZENE	1,2,4-TRICHLORO-BENZENE	TOTAL PCBs
FDEP GCTLs (µg/L)			1	100	600	210	75	70	70	0.5
FDEP NADCs (µg/L)			100	1000	6000	2100	7500	700	700	50
Location ID	Screened Interval (feet bls)	Sample Date								
GSRY-MW0040	2-12	12/13/2016								0.5 U
		2/14/2019	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		12/17/2019	0.31 U	0.20 U	0.32 U	0.22 U	0.27 I	0.61 U	0.50 U	
		5/19/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.20 U
		12/10/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.20 U
		5/19/2021	0.23 U	0.16 U	0.14 U	0.21 U	0.26 U	0.28 U	0.21 U	0.20 U
		12/7/2021	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		10/4/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.16 U
GSRY-MW0041	2-12	12/14/2016								0.5 U
		2/12/2019	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		12/17/2019	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	
		5/19/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.20 U
		12/9/2020								0.20 U
		12/10/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	
		5/19/2021	0.23 U	0.16 U	0.14 U	0.21 U	0.26 U	0.28 U	0.21 U	0.20 U
		12/7/2021	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		10/4/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.14 U
GSRY-MW0042R	2-12	2/12/2019	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		12/17/2019	0.31 U	2.3	0.32 U	0.69 I	3.5	0.61 U	0.50 U	
		5/20/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.30 I	0.61 U	0.50 U	0.20 U
		12/11/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.20 U
		5/20/2021	0.23 U	0.16 U	0.14 U	0.21 U	0.26 U	0.28 U	0.21 U	0.20 U
		12/7/2021	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		10/4/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.15 U
GSRY-MW0043	2-12	12/13/2016								1.7
		1/6/2017								0.5 U
		3/15/2019	0.71 U	43	2.2	13	23	1.5	13	0.50 U
		12/17/2019	0.31 U	7.3	0.80 I	6.0	12.1	0.61 U	3.1	2.7
		5/21/2020	0.31 UJ	9.9 J	1.0 J	3.0 J	8.2 J	0.72 IJ	4.4 J	0.20 U
		12/9/2020	0.31 U	10.8	1.4	31.6	43.3	0.61 U	0.50 U	0.20 U
		12/11/2020	0.31 U	11.9	0.89 I	30.5	44.8	0.61 U	0.50 I	
		5/19/2021	0.23 U	2	0.25 I	1.4	8.3	0.28 U	0.74 I	0.20 U
		12/8/2021	0.71 U	6.6	0.75 I	4.2	23	0.86 U	0.70 U	0.50 U
		10/3/2022	0.50 U	0.50 U	0.50 U	0.50 U	1.4	0.50 U	0.50 U	0.15 U

Table 3-1
PCB/VOA Plume Groundwater and Surface Water Analytical Results
General Services Administration Reclamation Yard (SMWU 010)

Category			Volatile Organic Compounds (VOCs) by Method 8260							Semi-volatiles by Method 8082
Analyte			BENZENE	CHLORO-BENZENE	1,2 (o)-DICHLORO-BENZENE	1,3 (m)-DICHLORO-BENZENE	1,4 (para)-DICHLORO-BENZENE	1,2,3-TRICHLORO-BENZENE	1,2,4-TRICHLORO-BENZENE	TOTAL PCBs
FDEP GCTLs (µg/L)			1	100	600	210	75	70	70	0.5
FDEP NADCs (µg/L)			100	1000	6000	2100	7500	700	700	50
Location ID	Screened Interval (feet bls)	Sample Date								
GSRY-MW0044	2-12	12/13/2016								0.5 U
		2/15/2019	0.71 U	0.72 U	0.73 U	1.4	3.5	0.86 U	0.70 U	0.50 U
		12/17/2019	0.31 U	0.38 I	0.32 U	0.34 I	0.64 I	0.61 U	0.50 U	0.22 U
		5/20/2020	0.31 U	0.20 U	0.32 U	0.39 I	0.87 I	0.61 U	0.50 U	0.19 U
		12/9/2020	0.31 U	0.63 I	0.32 U	0.55 I	2.3	0.61 U	0.50 U	0.20 U
		12/11/2020	0.31 U	1.3	0.32 U	0.99 I	4.1	0.61 U	0.50 U	
		5/18/2021	0.23 U	0.93 I	0.27 I	0.83 I	3.1	0.28 U	0.21 U	0.20 U
		12/9/2021	0.71 U	1.0	0.73 U	0.77 U	2.5	0.86 U	0.70 U	0.50 U
		10/3/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.16 U
GSRY-MW0045	2-12	12/13/2016								0.5 U
		1/6/2017								0.5 U
		2/15/2019	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		12/16/2019	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.20 U
		5/20/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.21 U
		12/10/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.20 U
GSRY-MW0046R	2-12	3/4/2019	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		12/17/2019	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.21 U
		5/20/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.20 U
		12/11/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.20 U
		5/19/2021	0.23 U	0.16 U	0.14 U	0.21 U	0.26 U	0.28 U	0.21 U	0.21 U
		12/7/2021	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		10/28/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.14 U
GSRY-MW0049	25-30	9/27/2018	3.6 U	3.6 U	16	22	39	73	350	0.50 U
		2/15/2019	3.6 U	3.6 U	8.6	17	52	82	460	0.50 U
		12/16/2019	1.6 U	13.6	10.9	490	268	3.1 U	71.7	0.22 U
		5/20/2020	0.34 I	28.6	5.0	1140	369	0.61 U	3.1	0.21 U
		12/9/2020	3.1 U	35.1	3.4 I	766	249	6.1 U	5.0 U	0.20 U
		12/14/2020	3.1 U	29.1	3.2 U	641	213	6.1 U	5.0 U	
		5/19/2021	1.1 U	61.9	2.9 I	949	317	1.4 U	1.1 U	0.49
		12/8/2021	7.1 U	110	7.3 U	1100	350	8.6 U	20	0.50 U
		10/28/2022	0.50 U	200	7.2	1100	460	3.2	180	0.14 U
GSRY-MW0050	25-30	9/27/2018	7.1 U	7.2 U	12	47	82	130	950	0.50 U
		2/14/2019	0.71 U	15	2.1	16	49	13	88	0.50 U
		12/18/2019	0.31 U	53.8	34.4	189 Q	359 Q	25.0	206 Q	0.99
		5/19/2020	0.78 U	24.1	16.0	106	220	8.2	77.5	0.20 U
		12/9/2020	1.6 U	32.6	16.6	145	299	14.5	120	0.20 U
		12/14/2020	1.6 U	32.5	15.2	136	291	11	107	
		5/18/2021	0.23 U	32.9	15.1	121	240 L	10.3	93	2.8
		6/16/2021	0.78 U	30.7	10.7	95.9	206	7.5	65.7	0.81
		12/9/2021	0.71 U	31	11	110	210	14	110	0.50 U
		10/4/2022	0.50 U	25	10	84	140	19	110	0.15 U
GSRY-MW0051	25-30	9/27/2018	0.71 U	0.72 U	0.73 U	0.77 U	5.6	0.86 U	5.4	0.50 U
		2/14/2019	0.71 U	0.72 U	0.73 U	0.77 U	1.5	0.86 U	0.70 U	0.50 U
		12/18/2019	0.31 U	0.20 U	0.32 U	0.22 UQ	0.26 UQ	0.61 U	0.50 UQ	0.21 U
		5/20/2020	0.31 U	0.20 U	0.32 U	0.35 I	2.3	0.61 U	0.50 U	0.20 U
		12/10/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.34 I	0.61 U	0.50 U	0.20 U
		5/19/2021	0.23 U	0.16 U	0.14 U	1.1	6.5	0.28 U	0.21 U	0.20 U
		12/7/2021	0.71 U	0.72 U	0.73 U	0.77 U	1.1	0.86 U	0.70 U	0.50 U
		10/4/2022	0.50 U	0.50 U	0.50 U	0.50 U	1.1	0.50 U	1.4	0.14 U

Table 3-1

PCB/VOA Plume Groundwater and Surface Water Analytical Results

General Services Administration Reclamation Yard (SMWU 010)

Category			Volatile Organic Compounds (VOCs) by Method 8260							Semi-volatiles by Method 8082
Analyte			BENZENE	CHLORO-BENZENE	1,2 (o)-DICHLORO-BENZENE	1,3 (m)-DICHLORO-BENZENE	1,4 (para)-DICHLORO-BENZENE	1,2,3-TRICHLORO-BENZENE	1,2,4-TRICHLORO-BENZENE	TOTAL PCBs
FDEP GCTLs (µg/L)			1	100	600	210	75	70	70	0.5
FDEP NADCs (µg/L)			100	1000	6000	2100	7500	700	700	50
Location ID	Screened Interval (feet bls)	Sample Date								
GSRY-MW0052	14-24	2/14/2019	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		12/17/2019	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	
		5/19/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.34 I	0.61 U	0.50 U	0.20 U
		12/9/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.20 U
		12/10/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	
		5/19/2021	0.23 U	0.16 U	0.14 U	0.21 U	0.26 U	0.28 U	0.21 U	0.20 U
		12/7/2021	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		10/4/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.14 U
GSRY-MW0053	2-12	2/12/2019	0.71 U	10	0.73 U	1.9	4.0	0.86 U	0.70 U	0.50 U
		12/17/2019	0.31 U	25	0.78 I	4.0	18.6	0.61 U	0.50 U	0.20 U
		5/19/2020	0.31 U	6.5	0.32 U	1.7	4.7	0.61 U	0.50 U	0.19 U
		12/11/2020	0.31 U	4.3	0.32 U	0.90 I	2.7	0.61 U	0.50 U	0.20 U
		5/20/2021	0.23 U	3.1	0.14 U	0.87 I	1.8	0.28 U	0.21 U	0.20 U
		12/8/2021	0.71 U	2.1	0.73 U	3.0	2.0	0.86 U	0.70 U	0.50 U
		10/4/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.14 U
GSRY-MW0054	8-18	2/14/2019	0.71 U	57	0.73 U	0.77 U	1.0	0.86 U	0.70 U	0.50 U
		12/17/2019	0.31 U	41.2	0.32 U	1.4	3.8	0.61 U	0.50 U	
		5/20/2020	0.31 U	12.3	0.32 U	0.58 I	1.4	0.61 U	0.50 U	0.20 U
		12/9/2020								0.20 U
		12/10/2020	0.31 U	7.2	0.32 U	2.2	4.5	0.61 U	0.50 U	
		5/19/2021	0.23 U	3.3	0.14 U	0.25 I	0.57 I	0.28 U	0.21 U	0.20 U
		12/8/2021	0.71 U	1.2	0.73 U	1.0	1.4	0.86 U	0.70 U	0.50 U
		10/4/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.14 U
GSRY-MW0055	8-18	2/14/2019	0.71 U	2.0	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		12/17/2019	0.31 U	0.96 I	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	
		5/20/2020	0.31 U	0.51 I	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.21 U
		12/10/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.20 U
		5/20/2021	0.23 U	0.16 U	0.14 U	0.21 U	0.26 U	0.28 U	0.21 U	0.20 U
		12/8/2021	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		10/3/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.15 U
GSRY-MW0056	14-24	2/15/2019	0.74 I	40	1.1	20	48	0.86 U	0.70 U	0.50 U
		12/17/2019	0.31 U	3.6	0.42 I	11.0	15.3	0.61 U	0.50 U	0.21 U
		5/20/2020	0.31 U	15.9	1.6	37.6	73.6	0.61 U	0.50 U	0.20 U
		12/11/2020	0.31 U	13.2	0.96 I	31.3	50.5	0.61 U	0.50 U	0.20 U
		5/19/2021	0.23 U	21.3	1.8	53.3	98.4	0.28 U	0.21 U	0.20 U
		12/8/2021	0.71 U	17	1.3	61	65	0.86 U	0.70 U	0.50 U
		10/3/2022	0.50 U	36	0.82 I	51	71	0.50 U	0.50 U	0.15 U
GSRY-MW0057	20-30	2/15/2019	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		12/17/2019	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.21 U
		5/20/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.20 U
		12/9/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.20 U
		12/14/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	
		5/18/2021	0.23 U	0.16 U	0.14 U	0.45 I	0.92 I	0.79 I	3.7	0.20 U
		12/9/2021	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		10/3/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.14 U
GSRY-MW0058	30-40	2/15/2019	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		12/17/2019	0.31 UQ	0.20 UQ	0.32 UQ	0.22 UQ	0.26 UQ	0.61 UQ	0.50 UQ	0.21 U
		5/20/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.20 U
		12/9/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.20 U
		12/14/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	
		5/18/2021	0.23 U	0.16 U	0.14 U	0.21 U	0.26 U	0.28 U	0.36 I	0.20 U
		12/9/2021	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		10/3/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.15 U

Table 3-1
PCB/VOA Plume Groundwater and Surface Water Analytical Results
General Services Administration Reclamation Yard (SMWU 010)

Category			Volatile Organic Compounds (VOCs) by Method 8260							Semi-volatiles by Method 8082
Analyte			BENZENE	CHLORO-BENZENE	1,2 (o)-DICHLORO-BENZENE	1,3 (m)-DICHLORO-BENZENE	1,4 (para)-DICHLORO-BENZENE	1,2,3-TRICHLORO-BENZENE	1,2,4-TRICHLORO-BENZENE	TOTAL PCBs
FDEP GCTLs (µg/L)			1	100	600	210	75	70	70	0.5
FDEP NADCs (µg/L)			100	1000	6000	2100	7500	700	700	50
Location ID	Screened Interval (feet bls)	Sample Date								
GSRY-MW0059	30-40	3/4/2019	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		12/18/2019	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.21 U
		5/19/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.21 U
		12/9/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.20 U
		12/14/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	
		5/18/2021	0.23 U	0.16 U	0.14 U	0.21 U	0.26 U	0.28 U	0.21 U	0.20 U
		12/9/2021	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		10/4/2022	0.50 U	0.68 I	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.14 U
GSRY-MW0060	2-12	3/4/2019	1.4 U	2.2	1.5 U	1.5 U	1.7 I	1.7 U	4.8	0.50 U
		12/17/2019	0.32 IQ	6.5 Q	0.36 IQ	0.89 IQ	3.5 Q	2.0 Q	4.7 Q	0.20 U
		5/19/2020	0.36 I	5.6	0.32 U	0.74 I	2.6	1.9 I	3.7	0.21 U
		12/9/2020	0.31 I	4.3	0.35 I	0.85 I	2.7	1.7 I	3.2	0.21 U
		5/18/2021	0.37 I	0.16 U	0.42 I	1	3.2	2.3	4.4	0.20 U
		12/8/2021	0.71 U	1.2	0.73 U	1.9	2.7	0.86 U	1.0	0.50 U
		10/4/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.86 I	0.14 U
GSRY-MW0061	20-30	3/4/2019	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		12/16/2019	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	
		5/21/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	
		12/10/2021	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	
		5/18/2021	0.23 U	0.16 U	0.14 U	0.21 U	0.26 U	0.28 U	0.21 I	
		12/7/2021	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	
		10/4/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	
GSRY-MW0062	30-40	3/5/2019	0.71 U	0.72 U	0.73 U	0.77 U	1.3	5.9	55	2.2
		3/20/2019	0.71 U	6.9	0.91 I	14	23	2.4	21	0.50 U
		12/16/2019	0.31 U	0.59 I	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	0.56
		5/19/2020	0.31 U	0.37 I	0.32 U	0.54 I	3.1	0.61 U	0.98 I	0.77
		6/17/2020								0.42
		12/9/2020	0.31 U	0.31 I	0.32 U	0.22 U	0.60 I	0.61 U	0.50 U	0.20 U
		5/19/2021	0.23 U	0.25 I	0.14 U	0.21 U	0.65 I	0.59 I	0.43 I	0.20 U
		12/7/2021	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		10/28/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.14 U
GSRY-MW0063	14-24	3/5/2019	0.86 I	6.4	0.88 I	14	26	5.3	41	0.50 U
		12/16/2019	1.2 J	22.3	4.8	144 J	108 J	2.6	28.6	0.21 U
		5/21/2020	0.44 I	13.9	1.3	76.2	80.1	0.61 U	2.2	0.21 U
		12/9/2020	1.6 U	35	1.6 I	245	138	3.1 U	2.5 U	0.21 U
		12/14/2020	0.62 U	30.8	1.1 I	163	104	1.2 U	1.0 U	
		5/19/2021	0.27 I	15.1	0.90 I	76.2	59.3	0.28 U	0.34 I	0.21 U
		12/8/2021	0.71 U	24	1.0	99	58	0.86 U	0.70 U	0.50 U
		10/28/2022	0.50 U	18	0.75 I	56	36	0.50 U	0.50 U	0.14 U
GSRY-MW0064	20-30	3/12/2019	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		12/17/2019	0.31 UQ	0.20 UQ	0.32 UQ	0.22 UQ	0.26 UQ	0.61 UQ	0.50 UQ	
		5/20/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	
		12/11/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.31 I	0.61 U	0.50 U	
		5/20/2021	0.23 U	0.16 U	0.14 U	0.21 U	0.26 U	0.28 U	0.21 U	
		12/8/2021	0.71 U	0.72 U	0.73 U	2.2	1.5	0.86 U	0.70 U	
		10/4/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	
GSRY-MW0065	4-14	3/12/2019	0.71 U	0.84 I	0.73 U	0.77 U	0.77 I	0.86 U	0.70 U	0.50 U
		12/17/2019	0.31 UQ	0.20 UQ	0.32 UQ	0.22 UQ	0.26 UQ	0.61 UQ	0.50 UQ	
		5/20/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	
		12/11/2020	0.31 U	0.20 U	0.32 U	0.22 U	0.26 U	0.61 U	0.50 U	

Table 3-1

PCB/VOA Plume Groundwater and Surface Water Analytical Results

General Services Administration Reclamation Yard (SMWU 010)

Category			Volatile Organic Compounds (VOCs) by Method 8260							Semi-volatiles by Method 8082
Analyte			BENZENE	CHLORO-BENZENE	1,2 (o)-DICHLORO-BENZENE	1,3 (m)-DICHLORO-BENZENE	1,4 (para)-DICHLORO-BENZENE	1,2,3-TRICHLORO-BENZENE	1,2,4-TRICHLORO-BENZENE	TOTAL PCBs
FDEP GCTLs (µg/L)			1	100	600	210	75	70	70	0.5
FDEP NADCs (µg/L)			100	1000	6000	2100	7500	700	700	50
Location ID	Screened Interval (feet bls)	Sample Date								
GSRY-MW0066	20-30	5/19/2020	0.72 I	3.9	0.32 U	1.2	3.6	0.61 U	0.50 U	0.19 U
		12/9/2020	0.94 I	12.9	1.1	22.7	45	0.61 U	0.50 U	0.20 U
		12/14/2020	1.1	13.3	1.3	25.2	53.5	0.61 U	0.50 U	
		5/18/2021	0.23 U	6.5	2.1	25.9	78.9	0.28 U	0.21 U	0.20 U
		12/9/2021	0.71 U	16	1.3	19	43	0.86 U	0.70 U	0.50 U
		10/4/2022	0.50 U	14	0.50 U	8.3	23	0.50 U	0.50 U	0.14 U
GSRY-MW0075	17-27	12/9/2020	0.31 U	1.3	0.32 U	7.2	7.1	0.61 U	0.50 U	
		12/14/2020	0.31 U	1.4	0.32 U	8.2	8.3	0.61 U	0.50 U	
		5/18/2021	0.23 U	0.16 U	0.14 U	0.21 I	0.49 I	0.28 U	0.21 U	
		12/7/2021	0.71 U	5.6	0.73 U	20	13	0.86 U	0.70 U	
		10/4/2022	0.50 U	4.6	0.50 U	22	15	0.50 U	0.50 U	
GSRY-SW0001		12/21/2016								0.50 U
		3/13/2019	0.71 U	0.72 I	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		12/10/2020								0.20 U
		5/20/2021	0.23 U	0.47 I	0.14 U	0.21 U	0.46 I	0.28 U	0.21 U	0.20 U
		12/9/2021	0.71 U	0.72 U	0.73 U	0.77 U	0.76 U	0.86 U	0.70 U	0.50 U
		10/3/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.15 U

Notes:

Bolded results indicate the presence of an analyte at the specified concentration

Red font indicates an exceedance of FDEP GCTLs

Highlighted cell indicates an exceedance of FDEP NADCs

Blank cells indicate the analyte was not analyzed for that specific well and date

bls = below land surface

GCTL = Groundwater Cleanup Target Level, Chapter 62-777 Florida Administrative Code, Table 1 (2005)

I = The analytical result was greater than or equal to the method detection limit, but less than the practical quantitation limit

J = Estimated value

L = Value exceeds calibration range

NADC = Natural Attenuation Default Concentration, Chapter 62-777 Florida Administrative Code, Table V (2005)

PCB/VOA Plume = Polychlorinated Biphenyl/Volatile Organic Aromatic Plume (formerly known as the Northeast Area)

PCBs = polychlorinated biphenyls

Q = The sample was analyzed beyond hold time

SWMU = Solid Waste Management Unit

U = The analyte was not detected

µg/L = micrograms per liter

Table 3-2

PCB/VOA Plume UIC Groundwater Analytical Results

General Services Administration Reclamation Yard (SMWU 010)

Category			General Chemistry		Metals		
Analyte			SULFATE	TDS	IRON	MANGANESE	SODIUM
Target Levels* for UIC Sampling (µg/L)			250000	1100000	1300	50	204000
Location ID	Screened Interval (feet bls)	Sample Date					
GSRY-MW0002IS**	25-30	12/10/2021	160 I	1100000	1300	20.4	204000 V
GSRY-MW0049	25-30	9/27/2018	1600000		177000	1660	8880000
		12/16/2019	3180000 Q	7770000	55800	227	1870000
		5/20/2020	3580000	7610000	57800	260	1720000
		12/9/2020	2370000	5750000	37300	191	1150000
		5/19/2021	2770000	5590000	47900	259	1230000
		12/8/2021	3200000	480000	48000	246	3650000 V
		10/28/2022	3100000	210000	19000	84	1100000
GSRY-MW0050	25-30	9/27/2018	2600000		28500	344	1170000
		12/18/2019	112000 Q	1160000	2280	32.4	248000
		5/19/2020	279000	1430000	1450	28.2	295000
		12/9/2020	116000	1120000	1660	27.1	214000
		5/18/2021	259000	1310000	1600	31.5	234000
		12/9/2021	270000	1200000	2360	40.8	239000
		10/4/2022	110000	1200000	2100	46	210000
GSRY-MW0051	25-30	9/27/2018	51000		1220	22.7 I	164000
GSRY-MW0057	20-30	12/17/2019	3000 UQ	568000	905	11.9 I	56500
		5/20/2020	3000 U	628000	893	10.9 I	52900
		12/9/2020	6000 U	634000	1080	16	91600
		5/18/2021	600 U	702000	1070	13.3 I	69500
		12/9/2021	140 I	650000	1000	13.1	89500 V
GSRY-MW0061	20-30	12/16/2019	3000 UQ	452000	677	7.8 I	29300
		5/21/2020	3000 U	564000	768	8.3 I	39900
		12/10/2021	6000 U	536000	973	11.7 I	46400
		5/18/2021	600 U	554000	757	8.6 I	39100
		12/7/2021	160 I	490000	792	8.49 I	51200
GSRY-MW0064	20-30	12/17/2019	26000 Q	634000	1160	16.2	73800
		5/20/2020	3000 U	660000	969	12.7 I	63300
		12/11/2020	6000 U	566000	996	12.9 I	61500
		5/20/2021	600 U	578000	1010	13.7 I	61000
		12/8/2021	140 I	230000	876	11.9	67000 V
GSRY-MW0066	20-30	12/9/2020	609000	2010000	2980	41.3	417000
		5/18/2021	245000	1170000	1790	27.3	186000
		12/9/2021	620000	1700000	2580	32.6	349000 V
		10/28/2022	280000	1300000	1700	27	260000

Notes:

Bolded results indicate the presence of an analyte at the specified concentration

Red font indicates an exceedance of target levels for UIC Sampling

Blank cells indicate the analyte was not analyzed for that specific well and date

*Target levels for UIC sampling are GCTL for sulfate and manganese, and site-specific background** for iron, sodium, and TDS

**Site-specific background concentrations are derived from the GSRY-MW0002IS, 12/10/21 analytical results

bls = below land surface

GCTL = Groundwater Cleanup Target Level, Chapter 62-777 Florida Administrative Code, Table 1 (2005)

I = The analytical result was greater than or equal to the method detection limit, but less than the practical quantitation limit

PCB/VOA Plume = Polychlorinated Biphenyl/Volatile Organic Aromatic Plume (formerly known as the Northeast Area)

Q = The sample was analyzed beyond hold time

SWMU = Solid Waste Management Unit

TDS = Total Dissolved Solids

U = The analyte was not detected

µg/L = micrograms per liter

UIC = Underground Injection Control

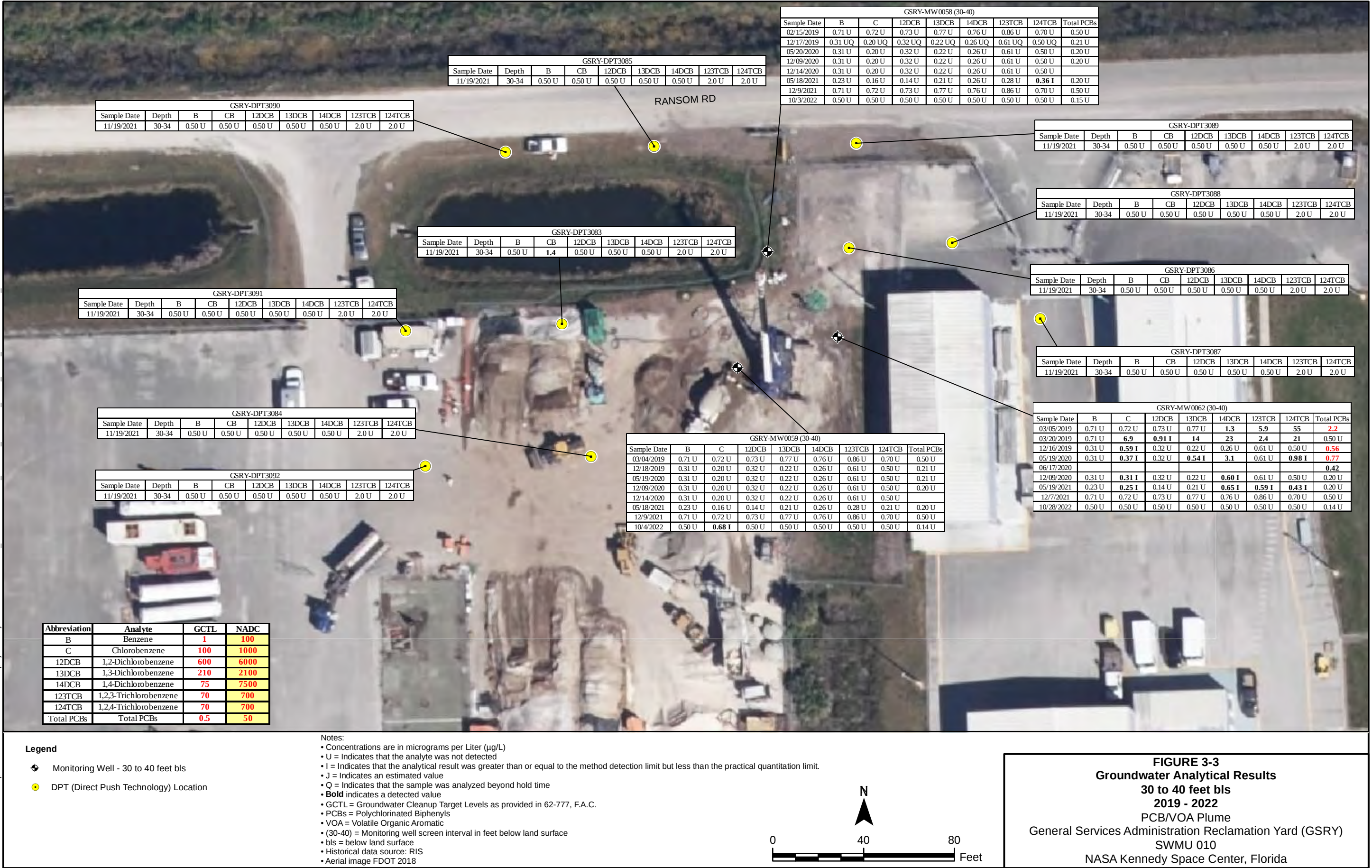
V = The analyte was detected in both the sample and the associated method blank



Date Saved: 12/23/2022 8:06:32 PM
Document Path: \\naa001\p172\naa001\p172\GIS\Projects\GSRY-SWMU010\ArcGIS_mxd\Dec_2022\F3-2_GSRY_ISMW_GWANA\VTICAL_2022_C.mxd



Date Saved: 12/29/2022 5:10:09 PM
Document Path: \\nad1c1.vfp172.na.aecommnet.com\data\Gis\projects\Projects\NASA\KSC\GSRY_SWMU010\ArcGIS_mxd\Dec_2022\F3-3_GSRY_IDMW_GWANALYTICAL_DEC2021.mxd



4. CHLORINATED VOC PLUME ANALYTICAL RESULTS

4.1 OVERVIEW

This section presents the results of the October 2022 groundwater monitoring activities for the Chlorinated VOC Plume. The goal was to monitor locations internal to and adjacent to the historical groundwater plume for UIC parameters. Analytical results are provided in **Table 4-1**. The laboratory analytical report is provided in **Appendix C**. Data were uploaded to RIS upon receipt, and the RIS completion tickets are provided in **Appendix D**.

4.2 MONITORING WELL GROUNDWATER ANALYTICAL RESULTS

Groundwater samples were submitted to a fixed-based laboratory, Eurofins Environment Testing - Orlando, for UIC parameters: iron or TDS.

Groundwater sampling conducted in October 2022 included UIC monitoring by sampling three monitoring wells GSRY-MW0067, GSRY-MW0071, and GSRY-MW0073 for iron or TDS. The UIC monitoring is being conducted in the Chlorinated VOC Plume area to monitor for groundwater conditions that may have changed due to the ERD treatment process.

Analytical results indicate the TDS concentration was above the site-approved target level in GSRY-MW0071 and GSRY-MW0073, and iron concentrations were above the site-approved target level in GSRY-MW0067, GSRY-MW0071, and GSRY-MW0073.

This page intentionally left blank.

Table 4-1
Chlorinated VOC Plume UIC Groundwater Analytical Results
General Services Administration Reclamation Yard (SMWU 010)

Category			Metals	General Chemistry	FL-PRO
Analyte			IRON	TDS	TRPH
Target Levels* for UIC Sampling (µg/L)			1220	980000	5000
Location ID	Screened Interval (feet bls)	Sample Date			
GSRY-MW0021M**	16 to 21	11/15/2012	1210	950000	100 U
		7/21/2015**	22900	930000	100 U
		3/26/2015**	21500	1100000	100 U
GSRY-MW0022M**	16 to 21	11/15/2012	1220	920000	100 U
		7/21/2015**	17700	920000	100 U
		3/26/2015**	12200	930000	130 I
GSRY-MW0023M**	16 to 21	11/15/2012	811	980000	3000
		7/21/2015**	20600	2200000	100 U
		3/26/2015**	39800	3600000	3100
GSRY-MW0067***	10 to 20	12/16/2019	2520	648000	278 IJ
		5/21/2020	1940	862000	203 I
		12/11/2020	960	952000	244 I
		5/20/2021		934000	
		12/10/2021	1420		
		10/4/2022	1400		
GSRY-MW0071***	13 to 23	12/16/2019	3560	540000	140 UJ
		5/21/2020	2220	988000	204 I
		12/11/2020	2260	1390000	306
		5/21/2021		906000	
		12/10/2021	2370	1500000	
		10/4/2022	2400	1300000	
GSRY-MW0073***	17 to 27	12/17/2019	10500	1130000	1860
		5/21/2020	5490	1300000	340
		12/11/2020	3480	1340000	478
		5/20/2021	4250	1310000	
		12/10/2021	2260	670000	
		10/5/2022	2100	1300000	

Notes:

Bolded results indicate the presence of an analyte at the specified concentration

Red font indicates an exceedance of Site Approved* Target Levels for UIC Sampling

Blank cells indicate the analyte was not analyzed for that specific well

*Target levels for UIC sampling are GCTL for TRPH, and maximum baseline**** concentration for iron and TDS

**Monitoring wells were abandoned prior to the 2014 sampling, and the 2014 and 2015 sampling events listed were collected via DPT

***MW0067, MW0071, and MW0073 were installed in November 2019 and replaced the previously abandoned wells in the UIC Program

****Maximum baseline concentrations are derived from the 11/15/2012 sampling results

bls = below land surface

GCTL = Groundwater Cleanup Target Level, Chapter 62-777 Florida Administrative Code, Table 1 (2005)

I = The analytical result was greater than or equal to the method detection limit, but less than the practical quantitation limit

J = Estimated value

SWMU = Solid Waste Manangement Unit

TDS = Total Dissolved Solids

TRPH = Total Recoverable Petroleum Hydrocarbons

U = The analyte was not detected

µg/L = micrograms per liter

UIC = Underground Injection Control

5. CONCLUSIONS AND RECOMMENDATIONS

The GSRY groundwater monitoring activities and results were presented to the KSCRT in April 2023, and the KSCRT agreed with the following conclusions and recommendations, with the understanding that FDEP will review this report and provide comments. The ADP and KSCRT meeting minutes are provided in **Appendix A**. The Proposed Groundwater Monitoring Plan, with a list of the wells and locations to be sampled and measured for water levels, is presented in **Table 5-1** and on **Figure 5-1**. The next annual groundwater monitoring event is currently planned for December 2023.

5.1 GROUNDWATER FLOW

Based on water level measurement activities performed during this reporting period, the following conclusions are provided:

- In September 2022, groundwater flow for the site was generally to the north in the 2 to 18 feet bls and 10 to 30 feet bls zones, with flow direction varying by occasional east and west components, and to the southeast in the 30 to 40 feet bls zone. This is generally consistent with historical observations at the site; however, flow direction at the site has varied during past monitoring events.

Based on water level measurement activities performed during this reporting period, the following recommendations are provided:

- Conduct annual water level measurements at 55 monitoring wells.

5.2 PCB/VOA PLUME

Based on groundwater and surface water sampling activities performed during this reporting period, the following conclusions are provided:

- Groundwater and surface water results demonstrate a reduction in plume size and COC concentrations compared to baseline sampling for the 2018 IM.
- Chlorinated benzene compound COCs were detected above GCTLs in the 10 to 30 feet bls zone only.
- There were no detections of PCBs.
- The VOA plumes are delineated, both horizontally and vertically.

Based on groundwater sampling activities performed during this reporting period, the following recommendations are provided:

- Discontinue monitoring for VOCs at 16 monitoring wells and 1 surface water location due to at least two consecutive events in which VOC concentrations were below GCTLs.
- Discontinue monitoring for PCBs at 20 monitoring wells and one surface water location due to at least two consecutive events in which PCBs concentrations were below GCTLs.
- Perform annual monitoring at 12 monitoring wells for VOCs or PCBs.
- Discontinue UIC monitoring of TDS at GSRY-MW0049, and manganese at GSRY-MW0050 and GSRY-MW0066.
- Perform annual UIC monitoring at GSRY-MW0049 for sulfate, iron, manganese, and sodium, and at GSRY-MW0050 and GSRY-MW0066 for sulfate, iron, sodium, and TDS.

5.3 CHLORINATED VOC PLUME

Based on groundwater sampling activities performed during this reporting period, the following conclusions are provided:

- In October 2022, concentrations of iron or TDS remained above the site-approved target levels in three monitoring wells.

Based on groundwater sampling activities performed during this reporting period, the following recommendation is provided:

- Perform annual UIC groundwater monitoring at GSRY-MW0067 for iron and GSRY-MW0071 and GSRY-MW0073 for iron and TDS.

Table 5-1
2023 Proposed Groundwater Monitoring Plan
General Services Administration Reclamation Yard (SMWU 010)

Location ID	Screened Interval (feet bls)	Water Levels	Sample Analysis						
			VOCs	PCBs	Sulfate	Iron	Manganese	Sodium	Total Dissolved Solids
2 to 18 feet bls									
MW0002S	2 to 12	X							
MW0003S	2 to 12	X							
MW0004S	2 to 12	X							
MW0005S	2 to 12	X							
MW0006S	2 to 12	X							
MW0007S	2 to 12	X							
MW0008S	2 to 12	X							
MW0009S	2 to 12	X							
MW0011S	2 to 12	X		✖					
MW0018S	2 to 12	X							
MW0030R	8 to 18	X	✖	✖					
MW0031	8 to 18	X	✖	✖					
MW0036R	2 to 12	X	X	X					
MW0040	2 to 12	X	✖	✖					
MW0041	2 to 12	X	✖	✖					
MW0042R	2 to 12	X	✖	✖					
MW0043	2 to 12	X	X	X					
MW0044	2 to 12	X	✖	✖					
MW0045	2 to 12	X							
MW0046R	2 to 12	X	✖	✖					
MW0053	2 to 12	X	✖	✖					
MW0054	8 to 18	X	✖	✖					
MW0055	8 to 18	X	✖	✖					
MW0060	2 to 12	X	✖	✖					
MW0065	4 to 14	X							
MW0074	7 to 17	X							
10 to 30 feet bls									
MW0002IS	25 to 30	X							
MW0004IS	25 to 30	X							
MW0013M	16 to 21	X							
MW0014M	15 to 20	X							
MW0015M	16 to 21	X							
MW0049	25 to 30	X	X	X	X	X	X	X	✖
MW0050	25 to 30	X	X	X	X	X	✖	X	X
MW0051	25 to 30	X	X	✖					
MW0052	14 to 24	X	✖	✖					
MW0056	14 to 24	X	X	✖					
MW0057	20 to 30	X	X	✖					
MW0061	20 to 30	X	X						
MW0063	14 to 24	X	X	✖					
MW0064	20 to 30	X	✖						
MW0066	20 to 30	X	X	✖	X	X	✖	X	X
MW0067	10 to 20	X				X			
MW0068	10 to 20	X							
MW0069	10 to 20	X							
MW0070	10 to 20	X							
MW0071	13 to 23	X				X			X
MW0072	11 to 21	X							
MW0073	17 to 27	X				X			X
MW0075	20 to 30	X	X						
MW0076	10 to 20	X							
MW0077	10 to 20	X							
30 to 40 feet bls									
MW0058	30 to 40	X	✖	✖					
MW0059	30 to 40	X	✖	✖					
MW0062	30 to 40	X	X	X					
Surface Water									
SW0001			✖	✖					

Notes:
bls = below land surface
PCBs = polychlorinated biphenyls
Proposed changes shown in red stikethrough
SWMU = Solid Waste Management Unit
VOCs = Volatile Organic Compounds

Date Saved: 2/24/2023 7:37:49 AM
Document Path: M:\GIS\projects\Projects\NASA\KSC\GSRY_SWMU010\ArcGIS_mxd\SW_Area\October 2021 GMRF5-1_GSRY_MW_SAMPLING_PLAN_rev20230223.mxd



Legend

- Monitoring Well (Sample and Water Level Measurement)
- Monitoring Well (Water Level Measurement Only)

Notes:

- PCB = Polychlorinated Biphenyl
- VOA = Volatile Organic Aromatics
- VOC = Volatile Organic Compound
- Aerial Source: FDOT 2018

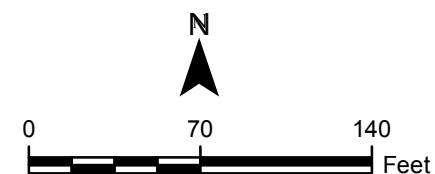


FIGURE 5-1
Proposed Groundwater Monitoring Plan

General Services Administration Reclamation Yard (GSRY)
SWMU 010
NASA Kennedy Space Center, Florida

6. REFERENCES

- FDEP. 2018. Department of Environmental Protection Standard Operating Procedures for Field Activities, DEP-SOP-001/01. Florida Department of Environmental Protection.
- NASA. 1998. M6-1671 General Services Administration Reclamation Yard RCRA Facility Investigation Work Plan (SWMU #10), Kennedy Space Center, Florida. Prepared by HSW Environmental Group, Tampa, Florida.
- NASA. 2001. RCRA Facility Investigation Report for the General Services Administration (GSA) Reclamation Yard (SWMU 10), Kennedy Space Center, Florida (Revision 1). Prepared by HSW Environmental Group, Tampa, Florida.
- NASA. 2003. Interim Measure Report for the General Services Administration (GSA) Reclamation Yard (SWMU 10) Kennedy Space Center, Florida (Revision 1). Prepared by Jacobs Engineering Group, Inc., Lakeland, Florida.
- NASA. 2004. RCRA Corrective Measures Study Report, General Services Administration Reclamation Yard (SWMU #10), Kennedy Space Center, Florida (Revision 0). Prepared by HSW Environmental Group, Tampa, Florida.
- NASA. 2006a. Construction Completion Report (Revision 0), Corrective Measures, GSA Reclamation Yard, Solid Waste Management Unit No. 10, Kennedy Space Center, Florida. Prepared by Jacobs Engineering Group, Inc., Cape Canaveral, Florida.
- NASA. 2006b. GSA Reclamation Yard, SWMU No. 10, Corrective Measures Construction Completion Report, Kennedy Space Center, Florida. Prepared by Jacobs Engineering Group, Inc., Cape Canaveral, Florida.
- NASA. 2008. GSA Reclamation Yard (M6-1671; SWMU 10), 2007/2008 Annual Long-Term Groundwater Monitoring Report, Kennedy Space Center, Florida. Prepared by LFR, Inc., Tampa, Florida.
- NASA. 2012a. Enhanced Reductive Dechlorination for West Area Hot Spot Interim Measure Work Plan, Kennedy Space Center, Florida (Revision 0). Prepared by Geosyntec Consultants, Inc., Boca Raton, Florida.
- NASA. 2012b. GSA Reclamation Yard (M6-1671), SWMU 10, Corrective Measures Implementation Progress Report, Kennedy Space Center, Florida. Prepared by Arcadis, Inc., Tampa, Florida.
- NASA. 2017a. GSA Reclamation Yard, SMWU No. 010, Northeast PCB and Chlorobenzene Source Area Interim Measure Work Plan, Kennedy Space Center, Florida. Prepared by Jacobs Engineering

2022 Groundwater Monitoring Report
GSRY SWMU 010
Revision: 0
October 2023

Group, Inc., Merritt Island, Florida, and CORE Engineering & Construction, Inc., Winter Park, Florida.

NASA. 2017b. Sampling and Analysis Plan for the RCRA Corrective Action Program, Kennedy Space Center, Florida (Revision 5). Prepared by Geosyntec Consultants, Inc., Boca Raton, Florida.

NASA. 2019a. Decision Process Document for the RCRA Corrective Action Program, John F. Kennedy Space Center, Florida (Revision 2). Prepared by Geosyntec Consultants, Inc., Boca Raton, Florida.

NASA. 2019b. GSA Reclamation Yard, SWMU No. 010, Northwest PCB and Chlorobenzene Source Area Interim Measure Implementation and Performance Monitoring Report, Kennedy Space Center, Florida. Prepared by Jacobs Engineering Group, Inc., Merritt Island, Florida, and CORE Engineering & Construction, Inc., Winter Park, Florida.

NASA. 2019c. GSA Reclamation Yard, SWMU No. 010, Southwest Hot Spot Interim Measure Implementation and Performance Monitoring, Report Kennedy Space Center, Florida. Prepared by Jacobs Engineering Group, Inc., Merritt Island, Florida, and CORE Engineering & Construction, Inc., Winter Park, Florida.

NASA. 2021a. General Services Administration Reclamation Yard, SWMU No. 010, 2020-2021 Groundwater Monitoring Report, Kennedy Space Center, Florida. Prepared by AECOM, Orlando, Florida.

NASA. 2021b. Groundwater Monitoring Report, General Services Administration Reclamation Yard, SWMU No. 010, Chlorinated Volatile Organic Compound Plume, Kennedy Space Center, Florida. Prepared by AECOM, Orlando, Florida.

NASA. 2021c. Groundwater Monitoring Report, General Services Administration Reclamation Yard, SWMU No. 010, Polychlorinated Biphenyls / Volatile Organic Aromatics Plume, Kennedy Space Center, Florida. Prepared by AECOM, Orlando, Florida.

NASA. 2022. Groundwater Monitoring Report, General Services Administration Reclamation Yard, SWMU No. 010, Polychlorinated Biphenyls / Volatile Organic Aromatics Plume, Kennedy Space Center, Florida. Prepared by AECOM, Orlando, Florida.

United States Geological Survey. 1976. Orsino, Florida Quadrangle map.

APPENDIX A

ADVANCE DATA PACKAGES AND KSC REMEDIATION TEAM MEETING MINUTES

This page intentionally left blank.



General Services Administration Reclamation Yard (GSRY) Solid Waste Management Unit (SWMU) 010

September/October 2022 Groundwater Monitoring Results

April 2023

Delivering a better world

 aecom.com

Outline

- Site Overview
- Polychlorinated Biphenyl (PCB)/Volatile Organic Aromatic (VOA) Plume Area
- Chlorinated Volatile Organic Compound (CVOC) Plume Area



PCB/VOA Plume Area



CVOC Plume Area

Site Overview – Site Location and General Site Background

- General Services Administration Reclamation Yard (GSRY), Solid Waste Management Unit (SWMU) #010, is located on Ransom Road between State Road 3 and Space Commerce Way, and currently operates as the Reutilization, Recycling, and Marketing Facility (RRMF).
- Constructed in the 1960s on 7 acres
- Historically staged transformers, air conditioners, batteries, paints, solvents, pesticides, and adhesives
- Current facility conducts reuse, resale, and recycling of materials and equipment



Site Overview – General Site Background

- Site areas of groundwater impacts
 - PCB/VOA Plume Area (formerly known as the Northeast Area)
 - CVOC Plume Area (formerly known as the Southwest Area) –
 - Groundwater sampling for CVOCs was discontinued during the March 2022 Kennedy Space Center Remediation Team (KSCRT) meeting
 - Underground injection control (UIC) monitoring remains
- Site-Wide Per- and Polyfluoroalkyl Substances (PFAS) Investigation
 - PFAS sampling events are ongoing to delineate the groundwater and surface water at the site
 - Results will be covered under a separate presentation and report
- Site-Wide PCB Soil Investigation
 - Soil sampling events are ongoing to delineate the shallow soil impacted areas
 - Results will be covered under a separate presentation and reports



Site Overview – Site Layout Map

Legend

Surface Water Sample Location

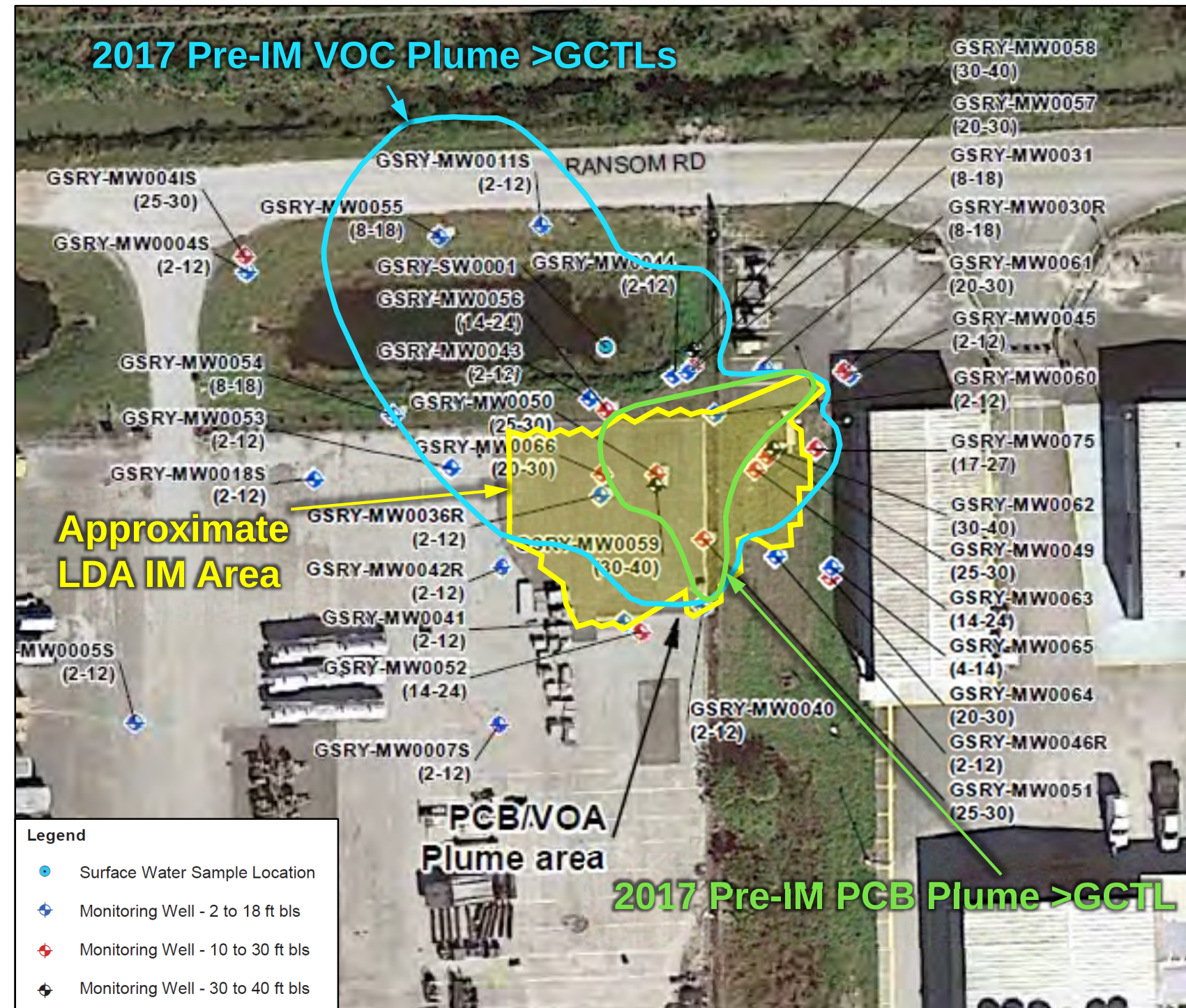
Monitoring Well - 2 to 18 ft bls

Monitoring Well - 10 to 30 ft bls

Monitoring Well - 30 to 40 ft bls

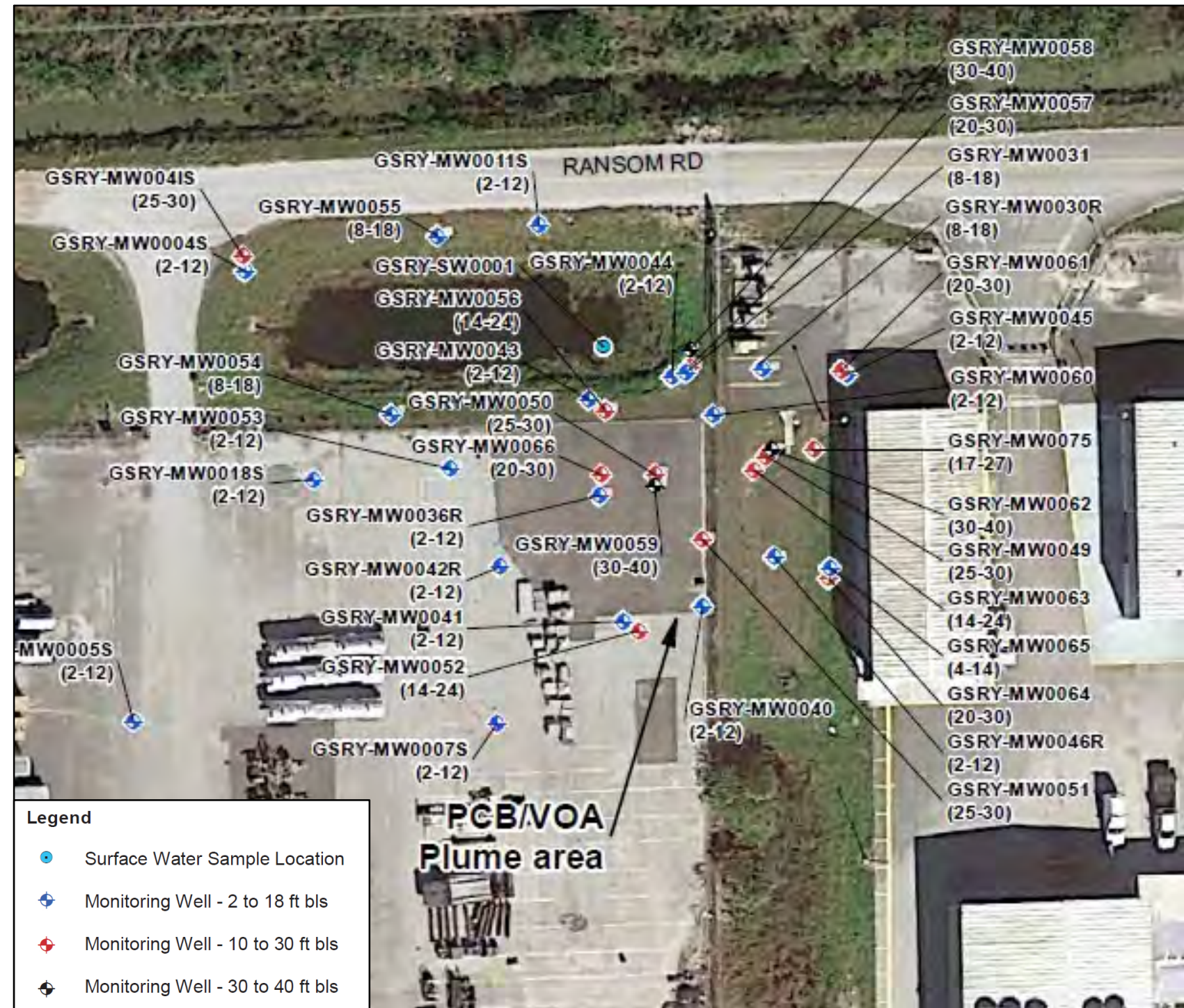
PCB/VOA Plume Area – General Background

- Dielectric fluid releases occurred from stored equipment
- PCBs and chlorobenzene compounds were present in the northeast area of the site
- Impacted soils resulted in dissolved PCB and chlorobenzene groundwater contamination
- 1999 through 2015
 - Resource Conservation and Recovery Act Facility Investigation (RFI)
 - Several Interim Measures (IMs) conducted using excavation for PCB-impacted soils
 - Corrective Measures Study for soils and groundwater conducted
 - Several events in which additional sampling for groundwater and soils were conducted
- 2018 – Large Diameter Auger (LDA) IM
 - LDA to depths of up to 25 feet bls in conjunction with conventional excavation for shallower soils up to 7 feet bls
 - Persulfate and ferric iron mixture was added to the bottom of select LDA borings where PCBs were greater than 1 part per million, which warranted UIC monitoring



PCB/VOA Plume Area – General Background

- Site volatile organic compounds (VOCs):
 - benzene
 - chlorobenzene
 - 1,2 – dichlorobenzene (12DCB)
 - 1,3 – dichlorobenzene (13DCB)
 - 1,4 – dichlorobenzene (14DCB)
 - 1,2,3 – trichlorobenzene (123TCB)
 - 1,2,4 – trichlorobenzene (124TCB)
- Sept 2018 through Feb 2019 – Installed 21 monitoring wells in the IM area
- Sept 2018 through May 2021 – Conducted four semi-annual sampling events
 - 27 to 29 monitoring wells sampled per event
 - One surface water sample was collected from the northeast pond during some of the events
 - Installed MW0066 in Feb 2020 for delineation to the west
 - Installed MW0075 in Oct 2020 for delineation to the east
 - Following the May 2021 sampling event, the sampling frequency was changed from semi-annual to annual with the first annual event in Dec 2021



PCB/VOA Plume Area – General Background

- Nov 2021 – Collected 70 groundwater samples from 10 Direct Push Technology (DPT) locations
 - Samples analyzed using an on-site mobile lab for Site VOCs
 - Site VOCs were detected at several locations, but concentrations were below the State of Florida Groundwater Cleanup Target Levels (GCTLs)
 - DPT sampling assisted with confirming delineation of the VOA plume
- Dec 2021 – Collected samples from 29 monitoring wells and one surface water sample
 - Site VOCs were detected above GCTLs in MW0049 and MW0050, both screened 25 to 30 feet bls
 - Chlorinated benzene compounds were detected above GCTLs in the 10 to 30 feet bls zone only
 - No detections of PCBs
 - The surface water sample at SW0001 had no detections of Site VOCs or PCBs

Dec 2021 Groundwater Analytical Plumes – 10 to 30 feet bls



PCB/VOA Plume Area – Scope of Work

September/October 2022 – Annual Groundwater Monitoring:

- Groundwater elevation measurements collected from 55 monitoring wells
- Redeveloped 28 monitoring wells prior to sampling
 - Wells were redeveloped to remove sediment and solids from the wells
- Groundwater samples collected from 28 monitoring wells and analyzed for one or more of the following:
 - Site VOCs
 - Total PCBs
 - UIC Parameters: sulfate, iron, manganese, sodium, or total dissolved solids (TDS)
- One surface water sample was collected from the northeast retention pond and analyzed for Site VOCs and total PCBs



PCB/VOA Plume Area – September/October 2022 Groundwater Sampling Plan

Well ID	Screen Interval (feet bls)	Sampled				
		Site VOCs	PCBs	Sulfate	Fe, Mn, Na	TDS
MW0011S	2 to 12		X			
MW0030R	8 to 18	X	X			
MW0031	8 to 18	X	X			
MW0036R	2 to 12	X	X			
MW0040	2 to 12	X	X			
MW0041	2 to 12	X	X			
MW0042R	2 to 12	X	X			
MW0043	2 to 12	X	X			
MW0044	2 to 12	X	X			
MW0046R	2 to 12	X	X			
MW0049	25 to 30	X	X	X	X	X
MW0050	25 to 30	X	X	X	X	X
MW0051	25 to 30	X	X			
MW0052	14 to 24	X	X			
MW0053	2 to 12	X	X			
MW0054	8 to 18	X	X			
MW0055	8 to 18	X	X			
MW0056	14 to 24	X	X			
MW0057	20 to 30	X	X			
MW0058	30 to 40	X	X			
MW0059	30 to 40	X	X			
MW0060	2 to 12	X	X			
MW0061	20 to 30	X				
MW0062	30 to 40	X	X			
MW0063	14 to 24	X	X			
MW0064	20 to 30	X				
MW0066	20 to 30	X	X	X	X	X
MW0075	17 to 27	X				
SW0001	NA	X	X			

VOC – Volatile Organic Compound; Fe – Iron; Mn – Manganese; Na – Sodium; TDS – Total Dissolved Solids; PCBs – Polychlorinated Biphenyls; PFAS – Per- and Polyfluoroalkyl Substances

PCB/VOA Plume Area – Groundwater Flow Results for September 27, 2022

2 to 18 feet bls

- Sept 2022 flow direction: **north**
- Previous groundwater flow:
 - Dec 2021: north
 - May 2021: northwest
 - Dec 2020: north-northwest

10 to 30 feet bls

- Sept 2022 flow direction: **north**
- Previous groundwater flow:
 - Dec 2021: north
 - May 2021: north
 - Dec 2020: north

30 to 40 feet bls

- Sept 2022 flow direction: **southeast**
- Previous groundwater flow:
 - Dec 2021: northwest
 - May 2021: west-northwest
 - Dec 2020: west



Note: bls – below land surface

PCB/VOA Plume Area – Groundwater and Surface Water Analytical Results

- VOCs - Site VOCs were above GCTLs in 2 wells, MW0049 and MW0050
 - MW0049:
 - Chlorobenzene was above the GCTL and has shown an increasing trend since Dec 2019
 - 13DCB and 14DCB have fluctuated since Dec 2019
 - 124TCB was above the GCTL for the first time since Dec 2019
 - MW0050:
 - 14DCB and 124TCB have decreased in MW0050 since Dec 2019
 - No wells screened in the 2 to 18 feet bls or 30 to 40 feet bls zones, had detections of Site VOCs above GCTLs
- PCBs - No detections of PCBs
- No wells had concentrations above State of Florida Natural Attenuation Default Concentrations (NADCs)
- The surface water sample SW0001 had no detections of Site VOCs or PCBs

MW ID	Screened Interval	Sample Date	Benzene	Chloro-benzene	12DCB	13DCB	14DCB	123TCB	124TCB	PCBs
GCTL			1	100	600	210	75	70	70	0.5
NADC			100	1,000	6,000	2,100	7,500	700	700	50
Units	feet bls		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW0049	25 to 30	9/27/2018	3.6 U	3.6 U	16	22	39	73	350	0.46 U
		2/15/2019	3.6 U	3.6 U	8.6	17	52	82	460	0.43 U
		12/16/2019	1.6 U	13.6	10.9	490	268	3.1 U	71.7	0.22 U
		5/20/2020	0.34 I	28.6	5.0	1140	369	0.61 U	3.1	0.21 U
		12/9/2020	3.1 U	35.1	3.4 I	766	249	6.1 U	5.0 U	0.20 U
		12/14/2020	3.1 U	29.1	3.2 U	641	213	6.1 U	5.0 U	
		5/19/2021	1.1 U	61.9	2.9 I	949	317	1.4 U	1.1 U	0.49
		12/8/2021	7.1 U	110	7.3 U	1,100	350	8.6 U	20	0.50 U
		10/28/2022	0.50 U	200	7.2	1,100	460	3.2	180	0.14 U
MW0050	25 to 30	9/27/2018	7.1 U	7.2 U	12	47	82	130	950	0.50 U
		2/14/2019	0.71 U	15	2.1	16	49	13	88	0.50 U
		12/18/2019	0.31 U	53.8	34.4	189	359	25.0	206	0.99
		5/19/2020	0.78 U	24.1	16.0	106	220	8.2	77.5	0.20 U
		12/9/2020	1.6 U	32.6	16.6	145	299	14.5	120	0.20 U
		12/14/2020	1.6 U	32.5	15.2	136	291	11	107	
		5/18/2021	0.23 U	32.9	15.1	121	240 L	10.3	93	2.8
		6/16/2021	0.78 U	30.7	10.7	95.9	206	7.5	65.7	0.81
		12/9/2021	0.71 U	31	11	110	210	14	110	0.50 U
		10/4/2022	0.50 U	25	10	84	140	19	110	0.15 U

Notes: Detections are **bolded**; GCTL exceedances are **red bolded**; NADC exceedances are **highlighted yellow**;
DCB = dichlorobenzene; TCB = trichlorobenzene; I = The analyte was detected, but below quantitation limits;
U = The analyte was not detected; L = Value Exceeds Calibration Range; Blank Cell = Not Sampled;
bls – below land surface; µg/L = micrograms per liter

PCB/VOA Plume Area – GW and SW Analytical Results – 2 to 18 feet bls

- Site VOCs were detected below GCTLs at various locations
- No Site Contaminants of Concern (COCs) have been above GCTLs for at least four consecutive events

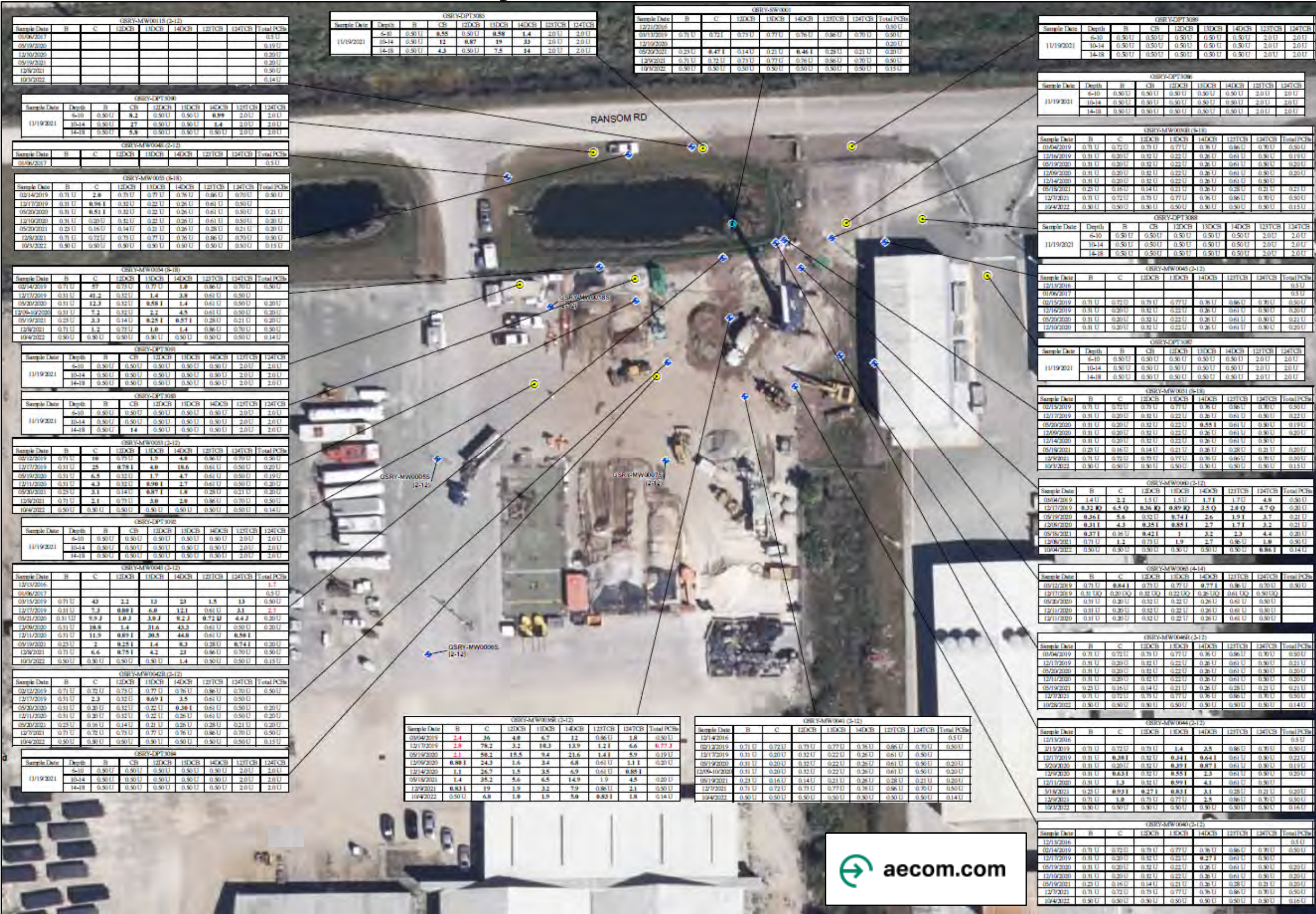
Legend

Surface Water Sample Location

Monitoring Well - 2 to 18 feet bls

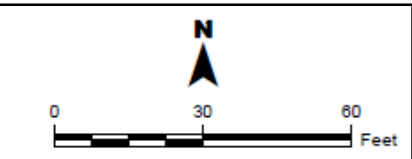
DPT (Direct Push Technology) Location

Abbreviation	Analyte	GCTL	NADC
B	Benzene	1	100
C	Chlorobenzene	100	1000
12DCB	1,2-Dichlorobenzene	600	6000
13DCB	1,3-Dichlorobenzene	210	2100
14DCB	1,4-Dichlorobenzene	75	7500
123TCB	1,2,3-Trichlorobenzene	70	700
124TCB	1,2,4-Trichlorobenzene	70	700
Total PCBs	Total PCBs	0.5	50



PCB/VOA Plume Area – GW Analytical Results – 10 to 30 feet bls

- MW0049 and MW0050 were above GCTLs for several of the Site VOCs
- Remaining wells were below GCTLs
- No wells were above NADCs



Abbreviation	Analyte	GCTL	NADC
B	Benzene	1	100
C	Chlorobenzene	100	1000
12DCB	1,2-Dichlorobenzene	600	6000
13DCB	1,3-Dichlorobenzene	210	2100
14DCB	1,4-Dichlorobenzene	75	7500
123TCB	1,2,3-Trichlorobenzene	70	700
124TCB	1,2,4-Trichlorobenzene	70	700
Total PCBs	Total PCBs	0.5	50

Legend

Monitoring Well - 10 to 30 feet bls

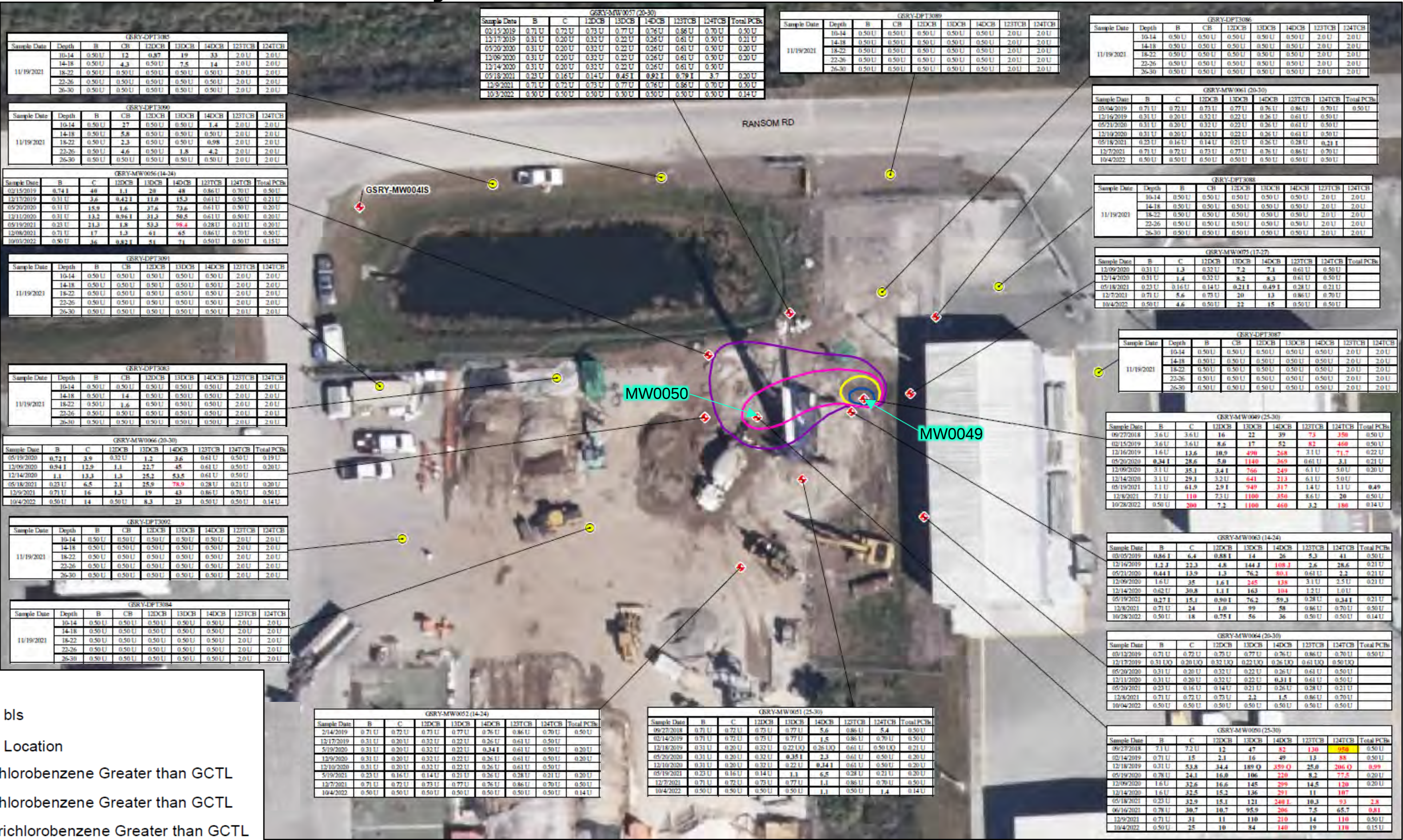
DPT (Direct Push Technology) Location

Approximate Extent of 1,3-Dichlorobenzene Greater than GCTL

Approximate Extent of 1,4-Dichlorobenzene Greater than GCTL

Approximate Extent of 1,2,4-Trichlorobenzene Greater than GCTL

Approximate Extent of Chlorobenzene Greater than GCTL



PCB/VOA Plume Area – GW Analytical Results – 30 to 40 feet bls

- No Site COCs have been above GCTLs for at least five consecutive events



PCB/VOA Plume Area – UIC Monitoring

- UIC monitoring is being conducted due to a persulfate and ferric iron mixture that was added to the bottom of select LDA borings during the 2018 IM
- UIC parameters will be monitored until results from two consecutive sampling events meet target levels.
- No baseline samples were collected prior to the addition of the persulfate and iron mixture; therefore, monitoring well MW0002IS, which was the farthest well from the IM area with a corresponding interval, was selected and sampled in December 2021 to represent the site-specific background concentrations. Based on those results, the following table presents the target level criteria for the PCB/VOA Plume Area UIC sampling program:

UIC Parameter	Target Level	Applicable Screening Standard
Sulfate	250,000 µg/L	State of Florida GCTL
Iron	1,300 µg/L	Site-Specific Background Concentration
Manganese	50 µg/L	State of Florida GCTL
Sodium	204,000 µg/L	Site-Specific Background Concentration
TDS	1,100,000 µg/L	Site-Specific Background Concentration

PCB/VOA Plume Area – UIC Monitoring

- Three monitoring wells sampled
- UIC parameters: sulfate, iron, manganese, sodium, and TDS
- MW0049 and MW0066 were above the GCTL for sulfate and above the site-specific background concentration for iron
- MW0049, MW0050 and MW0066 were above the site-specific background concentration for sodium
- MW0050 and MW0066 were above the site-specific background concentration for TDS
- MW0049 was above the GCTL for manganese

MW ID	Screened Interval	Sample Date	Sulfate	Iron	Manganese	Sodium	TDS
Target Level			250,000	1,300	50	204,000	1,100,000
Units	feet bls		µg/L	µg/L	µg/L	µg/L	µg/L
MW0049	25 to 30	5/20/2020	3,580,000	57,800	260	1,720,000	7,610,000
		12/9/2020	2,370,000	37,300	191	1,150,000	5,750,000
		5/16/2021	2,770,000	47,900	259	1,230,000	5,590,000
		12/8/2021	3,200,000	48,000	246	3,650,000 V	480,000
		10/28/2022	3,100,000	19,000	84	1,100,000	210,000
MW0050	25 to 30	5/19/2020	279,000	1,450	28.2	295,000	1,430,000
		12/9/2020	116,000	1,660	27.1	214,000	1,112,000
		5/18/2021	259,000	1,600	31.5	234,000	1,310,000
		12/9/2021	270,000	2,360	40.8	239,000	1,200,000
		10/4/2022	110,000	1,220	46	210,000	1,200,000
MW0066	20 to 30	12/9/2020	609,000	2,980	41.3	417,000	2,010,000
		5/18/2021	245,000	1,790	27.3	186,000	1,170,000
		12/9/2021	620,000	2,580	32.6	349,000 V	1,700,000
		10/28/2022	280,000	1,700	27	260,000	1,300,000

Notes:

Detections are **bolded**

Target Level exceedances are **red bolded**

*Target levels for UIC sampling are GCTL for sulfate and manganese, and site-specific background** for iron, sodium, and TDS

**site-specific background concentrations are derived from the GSRY-MW0002IS, 12/10/21 analytical results

bls – below land surface

I – the analytical result was greater than or equal to the method detection limit, but less than the practical quantitation limit

U – the analyte was not detected

µg/L – micrograms per liter

V – the analyte was detected in both the sample and the associated method blank

PCB/VOA Plume Area – Conclusions

- Groundwater results demonstrate a reduction in plume size and COC concentrations compared to baseline sampling for the 2018 IM
- In September/October 2022:
 - Chlorinated benzene compound COCs were detected above GCTLs in the 10 to 30 feet bls zone only
 - There were no detections of PCBs
 - The VOA plumes are delineated, both horizontally and vertically



PCB/VOA Plume Area – Test Consensus

- Conduct annual water level measurements at 55 monitoring wells
- Discontinue monitoring for Site VOCs at 16 monitoring wells and one surface water location due to at least two consecutive events in which Site VOC concentrations were below GCTLs
- Discontinue monitoring for PCBs at 20 monitoring wells and one surface water location due to at least two consecutive events in which PCBs concentrations were below GCTLs
- Perform annual monitoring at 12 monitoring wells for Site VOCs and/or PCBs
- Discontinue UIC monitoring for TDS at GSRY-MW0049, and discontinue UIC monitoring for manganese at GSRY-MW0050 and GSRY-MW0066
- Continue annual UIC monitoring at GSRY-MW0049 for sulfate, Fe, Mn, and NA, and at GSRY-MW0050, and GSRY-MW0066 for sulfate, Fe, Na, and TDS



PCB/VOA Plume Area – Proposed Annual Water Level Measurements

Well ID	Screen Interval (feet bls)	Well ID	Screen Interval (feet bls)	Well ID	Screen Interval (feet bls)
MW0002S	2 to 12	MW0040	2 to 12	MW0060	2 to 12
MW0002IS	25 to 30	MW0041	2 to 12	MW0061	20 to 30
MW0003S	2 to 12	MW0042R	2 to 12	MW0062	30 to 40
MW0004S	2 to 12	MW0043	2 to 12	MW0063	14 to 24
MW0004IS	25 to 30	MW0044	2 to 12	MW0064	20 to 30
MW0005S	2 to 12	MW0045	2 to 12	MW0065	4 to 14
MW0006S	2 to 12	MW0046R	2 to 12	MW0066	20 to 30
MW0007S	2 to 12	MW0049	25 to 30	MW0067	10 to 20
MW0008S	2 to 12	MW0050	25 to 30	MW0068	10 to 20
MW0009S	2 to 12	MW0051	25 to 30	MW0069	10 to 20
MW0011S	2 to 12	MW0052	14 to 24	MW0070	10 to 20
MW0013M	16 to 21	MW0053	2 to 12	MW0071	13 to 23
MW0014M	15 to 20	MW0054	8 to 18	MW0072	11 to 21
MW0015M	16 to 21	MW0055	8 to 18	MW0073	17 to 27
MW0018S	2 to 12	MW0056	14 to 24	MW0074	7 to 17
MW0030R	8 to 18	MW0057	20 to 30	MW0075	17 to 27
MW0031	8 to 18	MW0058	30 to 40	MW0076	10 to 20
MW0036R	2 to 12	MW0059	30 to 40	MW0077	10 to 20
				MW0078	7 to 17

PCB/VOA Plume Area – Proposed Annual Sampling Plan Changes

Well ID	Screen Interval (feet bls)	Site VOCs	PCBs	Sulfate	Fe	Mn	Na	TDS
MW0011S	2 to 12		✗					
MW0030R	8 to 18	✗	✗					
MW0031	8 to 18	✗	✗					
MW0036R	2 to 12	X	X					
MW0040	2 to 12	✗	✗					
MW0041	2 to 12	✗	✗					
MW0042R	2 to 12	✗	✗					
MW0043	2 to 12	X	X					
MW0044	2 to 12	✗	✗					
MW0046R	2 to 12	✗	✗					
MW0049	25 to 30	X	X	X	X	X	X	✗
MW0050	25 to 30	X	X	X	X	✗	X	X
MW0051	25 to 30	X	✗					
MW0052	14 to 24	✗	✗					
MW0053	2 to 12	✗	✗					
MW0054	8 to 18	✗	✗					
MW0055	8 to 18	✗	✗					
MW0056	14 to 24	X	✗					
MW0057	20 to 30	X	✗					
MW0058	30 to 40	✗	✗					
MW0059	30 to 40	✗	✗					
MW0060	2 to 12	✗	✗					
MW0061	20 to 30	X						
MW0062	30 to 40	X	X					
MW0063	14 to 24	X	✗					
MW0064	20 to 30	✗						
MW0066	20 to 30	X	✗	X	X	✗	X	X
MW0075	17 to 27	X						
SW0001	NA	✗	✗					

PCB/VOA Plume Area – Proposed Monitoring Well Sampling Table

Well ID	Screen Interval (feet bls)	Site VOCs	PCBs	Sulfate	Fe	Mn	Na	TDS
MW0036R	2 to 12	X	X					
MW0043	2 to 12	X	X					
MW0049	25 to 30	X	X	X	X	X	X	
MW0050	25 to 30	X	X	X	X		X	X
MW0051	25 to 30	X						
MW0056	14 to 24	X						
MW0057	20 to 30	X						
MW0061	20 to 30	X						
MW0062	30 to 40	X	X					
MW0063	14 to 24	X						
MW0066	20 to 30	X		X	X		X	X
MW0075	17 to 27	X						

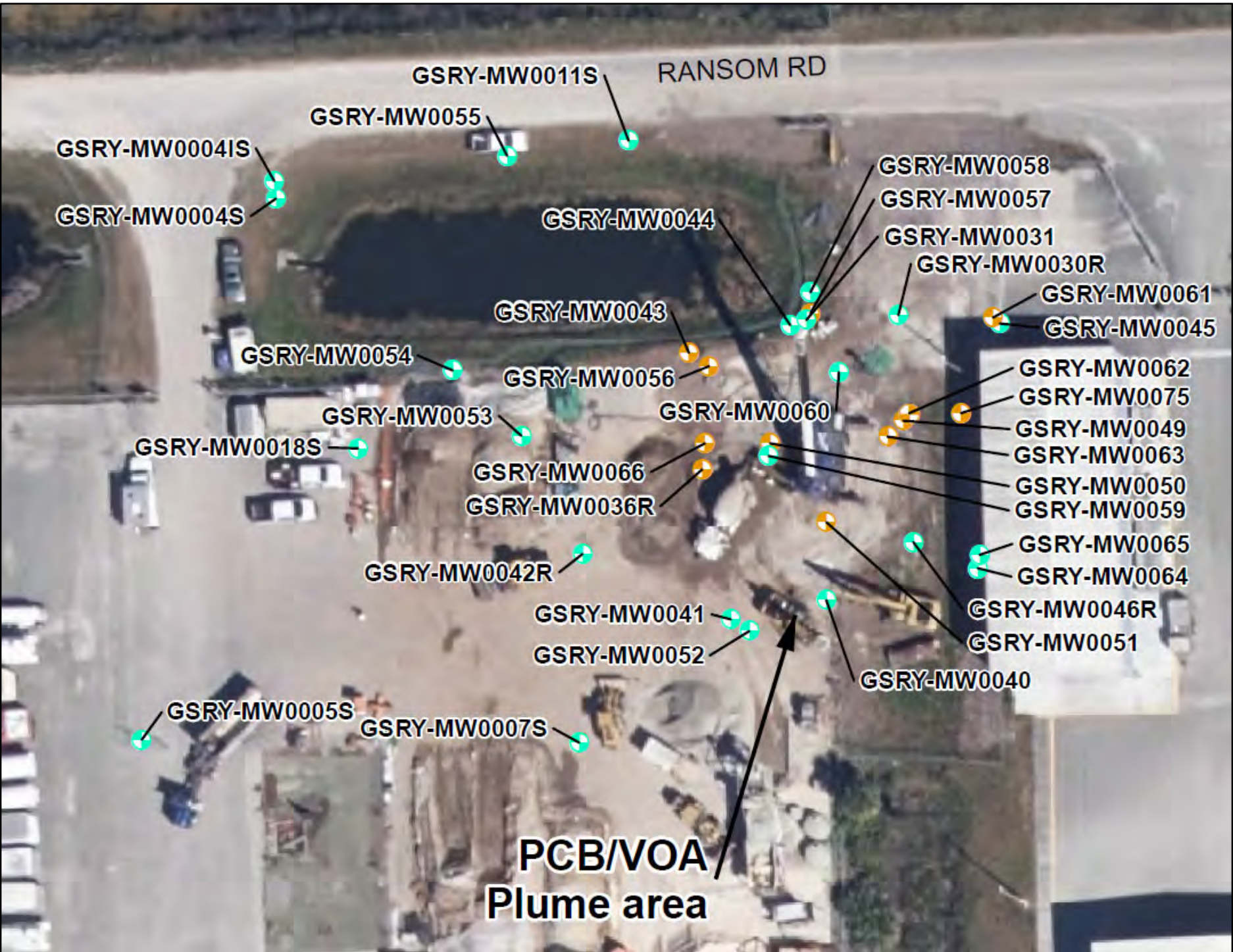
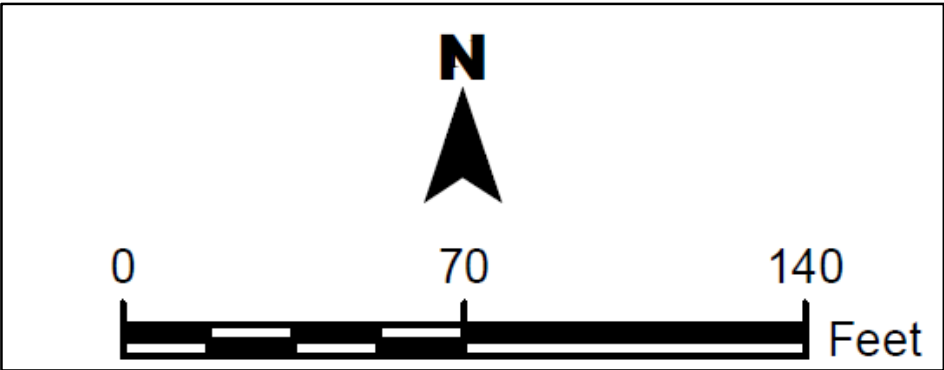
VOCs – Volatile Organic Compounds; Fe – Iron; Mn – Manganese; Na – Sodium; TDS – Total Dissolved Solids; PCBs – Polychlorinated Biphenyls; bls – below land surface



PCB/VOA Plume Area – Proposed Monitoring Well Location Figure

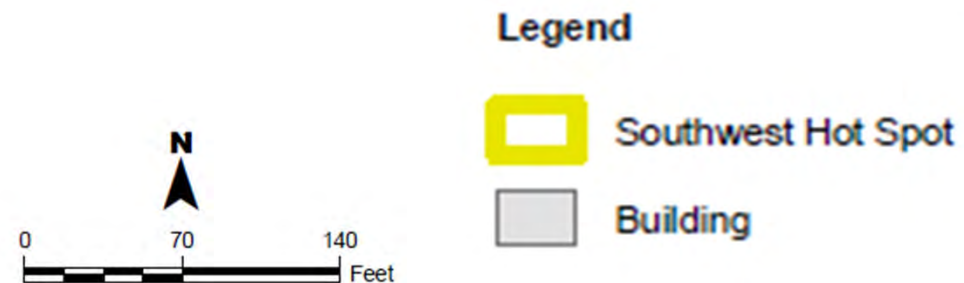
Legend

- Monitoring Well (Sample and Water Level Measurement)
- Monitoring Well (Water Level Measurement Only)



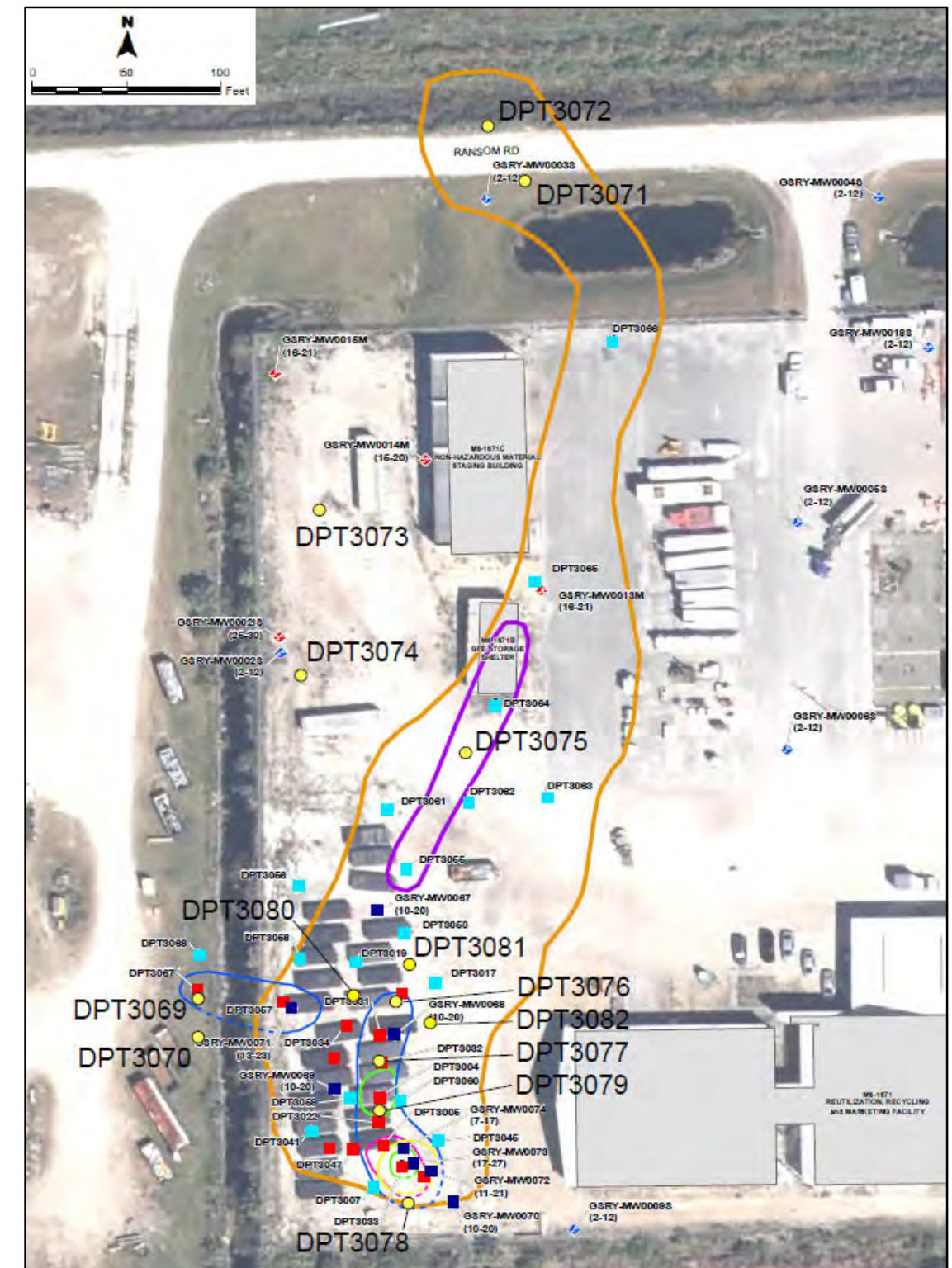
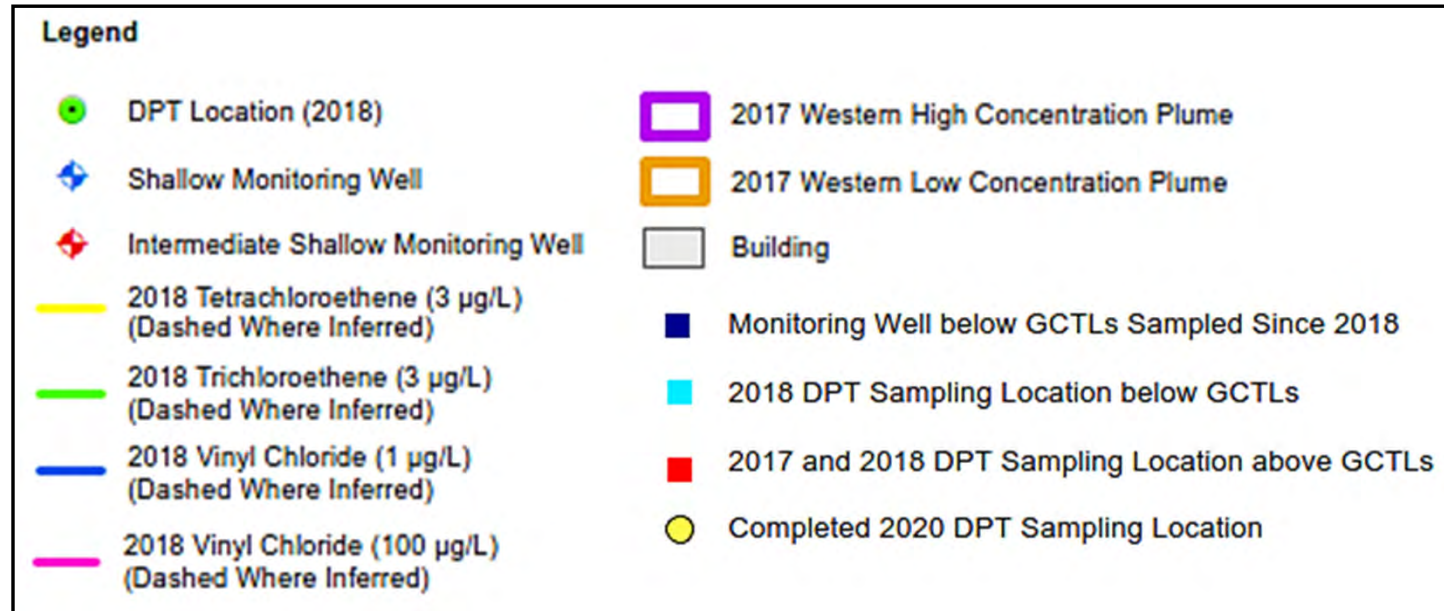
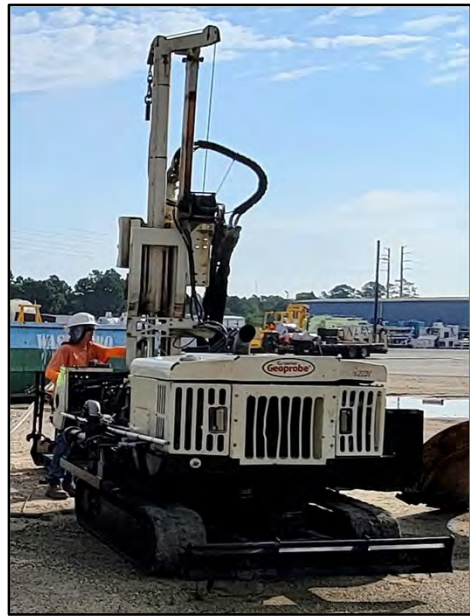
CVOC Plume Area – General Background

- Past handling practices resulted in releases of solvents
- Tetrachloroethene and possibly trichloroethene were discharged
- RFI completed from 1998 through 2005
- Several corrective measures (CMs) followed
- Site CVOCs:
 - 1,1-dichloroethene
 - cis-1,2-dichloroethene
 - trans-1,2-dichloroethene
 - tetrachloroethene
 - trichloroethene
 - vinyl chloride



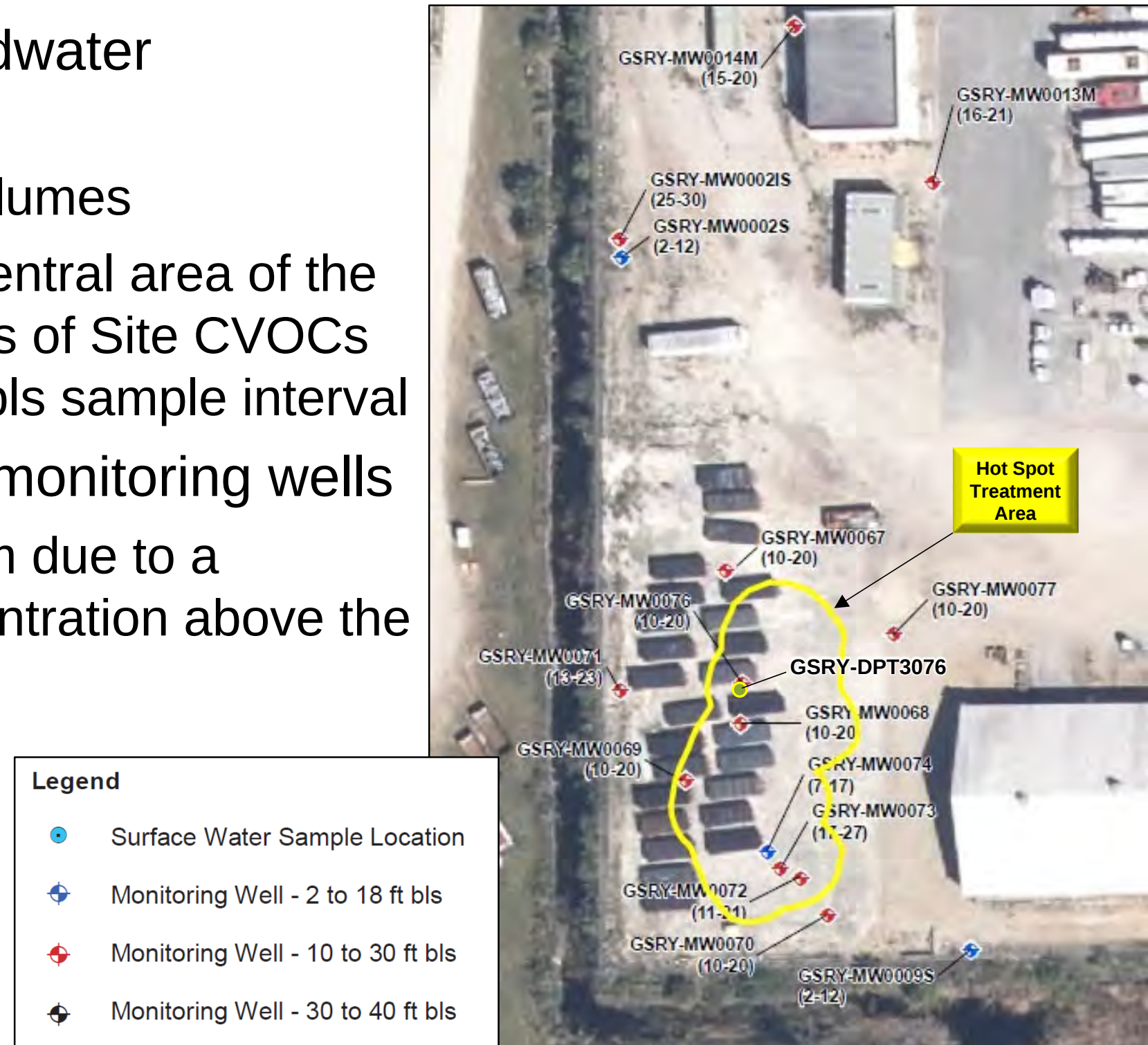
CVOC Plume Area – Post IM Groundwater Monitoring Review

- 2006 through 2017 – CMs and IMs conducted
 - Excavation of solvent-impacted soils
 - Injections of sodium permanganate
 - Enhanced reductive dechlorination (ERD) by injections of emulsified zero valent iron along with vegetable oil/lactate or emulsified vegetable oil which warranted UIC monitoring in the groundwater
- 2017 through May 2020 – Semi-annual post-IM performance monitoring
 - 2017 and 2018 – Several DPT groundwater sampling events conducted to assess IM performance and overall plume extent
 - Nov 2019 – Installed 8 monitoring wells; MW0067 through MW0074
 - Dec 2019 and May 2020 Groundwater Monitoring Events – Collected samples from 8 monitoring wells and Site CVOC concentrations were at or below GCTLs for both events



CVOC Plume Area – Post IM Groundwater Monitoring Review

- Oct 2020 – Conducted a limited groundwater assessment via DPT and mobile lab
 - Confirmed degradation of the CVOC plumes
 - One location, DPT3076, in the north-central area of the hot spot treatment area, had detections of Site CVOCs above the GCTLs in the 15 to 19 feet bls sample interval
- Dec 2020 – Collected samples from 9 monitoring wells
 - Added MW0013M to sampling program due to a historical elevated vinyl chloride concentration above the GCTL
 - Vinyl chloride was above the GCTL in MW0074 at 4.7 µg/L
 - The remaining wells had Site CVOC concentrations below GCTLs



CVOC Plume Area – Post IM Groundwater Monitoring Review

- May 2021 – Installed 2 new monitoring wells and collected samples from 11 monitoring wells
 - Installed MW0076 and MW0077; screened 10 to 20 feet bls
 - MW0076 is located adjacent to DPT3076 and MW0077 is located northeast of DPT3076
 - No wells had concentrations of Site CVOCs above GCTLs
 - Discontinued groundwater monitoring of MW0013M, MW0067, MW0068, MW0069, MW0070, MW0071, and MW0072
 - Discontinued UIC monitoring at MW0067 for TDS
 - Changed the sampling frequency to annual
- Dec 2021 – Collected samples from 6 monitoring wells
 - No wells had concentrations of Site CVOCs above GCTLs
 - Discontinued annual groundwater monitoring for site CVOCs due to at least two consecutive events in which concentrations were below GCTLs; this included discontinuing sampling of GSRY-MW0073, GSRY-MW0074, GSRY-MW0076, and GSRY-MW0077 for Site CVOCs



CVOC Plume Area – UIC Monitoring

- UIC monitoring is being conducted due to chemicals that were added during ERD implementation
- UIC parameters will be monitored until results from two consecutive sampling events meet the following target levels:



UIC Parameter	Target Level	Applicable Screening Standard
Iron	1,200 µg/L	Maximum Baseline Concentration
TDS	980,000 µg/L	Maximum Baseline Concentration

TDS - Total Dissolved Solids

CVOC Plume Area – Scope of Work and Groundwater Sampling Plan

- Three monitoring wells, MW0067, MW0071, and MW0073, were redeveloped prior to sampling to remove sediments and solids from the wells
- Groundwater samples were collected from 3 monitoring wells in October 2022 and analyzed for UIC parameters: iron or TDS

Well ID	Screen Interval (feet bls)	Sampled	
		Iron	TDS
MW0067	10 to 20	X	
MW0071	13 to 23	X	X
MW0073	17 to 27	X	X

TDS – total dissolved solids
bls – below land surface



Legend

- Surface Water Sample Location
- Monitoring Well - 2 to 18 ft bls
- Monitoring Well - 10 to 30 ft bls

CVOC Plume Area – UIC Monitoring Results

- 3 monitoring wells sampled
- Samples analyzed for Iron and TDS
- MW0067, MW0071, and MW0073 were above the maximum baseline concentration for Iron
- MW0071 and MW0073 were above the maximum baseline concentration for TDS



MW ID	Screened Interval	Sample Date	Iron	TDS
Maximum Baseline Concentration (Target Level)		11/15/2012	1,220	980,000
Units	feet bls		µg/L	µg/L
MW0067	10 to 20	5/21/2020	1,940	862,000
		12/11/2020	960	952,000
		5/20/2021		934,000
		12/10/2021	1,420	
		10/4/2022	1,400	
MW0071	13 to 23	5/21/2020	2,220	988,000
		12/11/2020	2,260	1,390,000
		5/21/2021		906,000
		12/10/2021	2,370	1,500,000
		10/4/2022	2,400	1,300,000
MW0073	17 to 27	5/21/2020	5,490	1,300,000
		12/11/2020	3,480	1,340,000
		5/20/2021	4,250	1,310,000
		12/10/2021	2,260	670,000
		10/5/2022	2,100	1,300,000



Detections are **bolded**
Target level exceedances are **red bolded**
TDS – total dissolved solids
Blank Cell – sample was not analyzed
µg/L – micrograms per liter
bls – below land surface

CVOC Plume Area – Test Consensus

- Perform annual UIC groundwater monitoring at GSRY-MW0067 for iron, and at GSRY-MW0071 and GSRY-MW0073 for iron and TDS

Well ID	Screen Interval (feet bls)	Sampled	
		Fe	TDS
MW0067	13 to 23	X	
MW0071	13 to 23	X	X
MW0073	17 to 27	X	X

Fe – iron
TDS – total dissolved solids
bls – below land surface





General Services Administration Reclamation Yard (GSRY) Solid Waste Management Unit (SWMU) 010

September/October 2022 Groundwater Monitoring Results

Tables and figures presenting the analytical results discussed in this ADP are attached.

Revision 1 Meeting Minutes for the KSCRT Meeting - April 5th, 2023

Attendees:

- | | |
|-------------------------------|---------------------------------|
| 1. Evan Miller/FDEP | 11. Sarah Damphousse/Tetra Tech |
| 2. Jason French/FDEP | 12. Jennifer Gootee/AECOM |
| 3. Ryan O'Meara/NASA | 13. Chad Lee/AECOM |
| 4. Deda Johansen/NASA | 14. Chris Marshall/AECOM |
| 5. Natasha Darre/NASA | 15. Richard Smith/HGL |
| 6. Anne Chrest/NASA | 16. Jason Bublitz/HGL |
| 7. Michelle Moore/NEMCON | 17. Greg Kusel/HGL |
| 8. Mark Jonnet/Tetra Tech | 18. Robert Lynch/HGL |
| 9. Mark Speranza/Tetra Tech | |
| 10. Andrew Walters/Tetra Tech | |

2304-M01 Michelle Moore/NEMCON

Meeting Minutes and Miscellaneous Items

Objective:

Test team consensus on February 2023 KSCRT meeting minutes and review open action items.

Discussion:

Team consensus was reached that Revision 1 of the February 2023 KSCRT meeting minutes and action items are final. Team members are aware that meeting minutes and decision/action items may become public as part of a report at a later date **(2304-D01)**.

Open action items were reviewed and the following were closed out:

C-5 Electrical Substation (SWMU #066) Groundwater

Monitoring Report and Long-Term Monitoring Work Plan: The Florida Department of Environmental Protection (FDEP) requested the team construct an east/west cross-section of the plume to show vertical delineation of the site and put data points on the figure. A figure like this already exists and was developed during the site characterization. NASA will send this figure to FDEP.

The figure was included in the C-5 Electrical Substation Groundwater Monitoring Report that was sent to FDEP on January 23, 2023 **(2210-A02)**.

A subset of DPT samples were submitted to a fixed-base laboratory for 1,4-dioxane analysis to assess if 1,4-dioxane concentrations above the GCTL were widely present across the site. The results indicate that 1,4-dioxane exceedances of the GCTL are not widespread at the site. The potential next steps include conducting additional DPT groundwater sampling for CVOCs, with a subset of samples analyzed for 1,4-dioxane. The objective of the additional DPT groundwater sampling is to refine the low concentration plume, high concentration plume (HCP), and 10 times NADCs (10xNADC) data gaps (in the vegetated area and west of the railroad tracks). The updated CSM may be used in the development of potential approaches to address the remaining dissolved phase CVOC HCP and/or 10xNADC plume.

FDEP inquired if we have vertical delineation at this site? HGL Team member confirmed we do have some vertical delineation at this location, which is part of the 2022 effort that was made. NASA offered to provide more information to FDEP on this, if needed.

Results: Decision Items 2304-D02 through D04

2304-M03 Chad Lee/AECOM

GSA Reclamation Yard (GSRY) 2022 Groundwater Monitoring Results, April 2023

Objective: This briefing provides results for 2022 groundwater monitoring activities for GSA Reclamation Yard and evaluates the data. Proposed 2023 groundwater monitoring activities are presented for Team consensus.

Discussion:

In September 2022, groundwater elevation was measured in 55 monitoring wells. Groundwater flow was to the north for the 2-18 feet below land surface (ft. bls) interval, to the north for the 10-30 ft. bls interval and to the southeast for the 30-40 ft. zone. Team consensus was reached to conduct annual water level measurements at 55 monitoring wells in 2023 (Slide 22) (**2304-D05**).

Groundwater in the northeast area of the site is contaminated by volatile organic compounds (VOCs), specifically volatile organic aromatics, polychlorinated biphenyls (PCBs) from past storage of

electrical equipment. There were 28 groundwater samples analyzed for VOCs, and 26 groundwater samples analyzed for PCBs, and one surface water sample analyzed for VOCs and PCBs. There were two monitoring wells with detections of VOCs above the associated groundwater cleanup target level (GCTL), MW0049 and MW0050. Test consensus to discontinue monitoring for VOCs at 18 monitoring wells and one surface water location due to at least two consecutive events in which site VOC concentrations were below GCTLs **(2304-D06)**.

FDEP stated they normally like to see performance monitoring quarterly but since there are two years of data, they would accept that.

PCBs were not detected in any groundwater or surface water sample. Test consensus to discontinue monitoring for polychlorinated biphenyls (PCBs) at 20 monitoring wells and one surface water location due to at least two consecutive events in which PCB concentrations were below GCTLs **(2304-D07)**.

FDEP inquired if we are removing any wells that would serve as cross gradient or down gradient that we may want to keep an eye on? FDEP advised to keep one or two wells downgradient to keep an eye on this VOC area.

AECOM noted that we have not had an exceedance in the shallow zone (2-18 ft. bls) in some time. In 2022, there were three wells with VOC detections, all below GCTLs: MW0036R, MW0043 and MW0060. We are proposing to keep MW0036R and MW0043 since they had the higher detections. MW0043 is downgradient of MW0036R, and VOCs results are lower in MW0043 than in MW0036R. The retention pond is downgradient of MW0043. For PCBs, proposing to keep MW0036R, MW0043, MW0049, MW0050, and MW0062, due to detections and GCTL exceedances for PCBs since the Large Diameter Auger Interim Measures event was completed in 2018.

FDEP and AECOM discussed groundwater flow direction, which was north to northwest in the 2-30 ft. interval. Flow direction was southeast in the 30-40 ft. interval in 2022, but a northwest pattern has been observed in some years. Need to retain monitoring wells

between the pond and well with current exceedances so we don't come back to ask later.

Test consensus to perform annual monitoring at 12 monitoring wells; samples from four to be analyzed for VOCs and PCBs, one for PCBs, and seven for VOCs **(2304-D08)**.

Underground injection control (UIC) monitoring is conducted in the PCB/VOA plume parameters associated with the iron persulfate that was used at some locations during source material excavation. It was proposed to discontinue monitoring for total dissolved solids (TDS) at GSRY-MW0049 and discontinue UIC monitoring for manganese at GSRY-MW0050 and GSRY-MW0066. FDEP noted that there is no pre-application data for the UIC parameters and requested previous FDEP approval. NASA to provide FDEP approval emails or correspondence regarding lack of pre-injection data at the site and the selection of MW0002IS as a site-specific background well **(2304-A01)**. Test consensus to continue annual UIC monitoring at GSRY-MW0049 for sulfate, iron, manganese, and sodium, and at GSRY-MW0050, and GSRY-MW0066 for sulfate, iron, sodium, and TDS **(2304-D09)**.

Iron and TDS, UIC parameters from the enhanced reductive dechlorination injections, are the remaining analytes in the former chlorinated VOC plume area. Iron and TDS remain above background concentrations. Team consensus was reached to perform annual UIC groundwater monitoring at GSRY-MW0067 for iron, and at GSRY-MW0071 and GSRY-MW0073 for iron and TDS **(2304-D10)**.

Results: Decision Items 2304-D05 through D10

2304-M04 Andrew Walters/Tetra Tech

CCB SWMU #089 - MW21 Area Groundwater IMWP, April 2023

Objective: The goal of this Interim Measures Work Plan (IMWP) Advance Data Package (ADP) is to present a design for an injection IM to remediate groundwater within the Converter Compressor Building (CCB) Monitoring Well 21 (MW21) Area where volatile organic compounds (VOCs) concentrations exceed Natural Attenuation Default Concentrations (NADC).

April 2023 Decision Items Rev 1		Decision
Decision No.	Minutes Reference	
2304-D01	2304-M01	Meeting Minutes and Miscellaneous Items: Test team consensus was reached that Revision 1 of the February 2023 KSCRT meeting minutes and action items are final. Team members are aware that meeting minutes and decision/action items may become public as part of a report at a later date.
2304-D02	2304-M02	CRHEA Groundwater Monitoring Update: Team consensus was reached continue annual sampling as follows: •Sample 15 wells for VOCs. That includes Hot Spot 1: MW0025, MW0027, MW0029, MW0047, MW0048, and MW0058; Hot Spot 2: MW0031, MW0032, and MW0042; Northern Area: MW0017I, MW0019I, and MW0034; and down gradient: MW0035, MW0039, and MW0041. •Sample 4 wells for 1,4-dioxane within HS1: MW0025 and downgradient: MW0035, MW0039, and MW0041. •Sample 3 wells for TRPH within HS1 at MW0044, MW0047, and MW0056. •Sample 1 well for sodium within HS1 at MW0047 and eliminate MW0044 since last 2 consecutive events were less than GCTL. •Sample 6 wells for TDS (biennial) within HS1 at MW0025, MW0043, MW0044, MW0056, MW0057, and MW0058. •Collect depth to water measurements from 48 site-wide monitoring wells. Abandon monitoring well IW0004S if obstruction at 2 to 3 ft. btoc cannot be repaired, and abandon IW0014I and IW0015I due to obstructions at 17.2 and 5 ft. btoc, respectively. •Make one final attempt to locate IW0016I, IW0018I, and IW0020I. Determine viability and properly abandon any wells that are located but cannot be repaired. •Generate Mann-Kendall statistics for all applicable wells (that meet the criteria for using Mann-Kendall)
2304-D03	2304-M02	CRHEA Groundwater Monitoring Update: Team consensus was reached to sample 10 monitoring wells for PFAS: IW0001S, IW0002S, IW0004I, IW0009S, IW0013S, IW0017I, IW0019I, MW0024, MW0025, and MW0030
2304-D04	2304-M02	CRHEA Groundwater Monitoring Update: Team consensus was reached to conduct sub slab soil gas sampling event for CVOCs in June and December 2023, to evaluate if there are changes in sub slab soil gas in the four vapor probes due to previous interim measure activities or plume movement.
2304-D05	2304-M03	GSA Reclamation Yard (GSRY) 2022 Groundwater Monitoring Results: Team consensus was reached to conduct annual water level measurements at 55 monitoring wells in 2023 (Slide 22).
2304-D06	2304-M03	GSA Reclamation Yard (GSRY) 2022 Groundwater Monitoring Results: Test consensus to discontinue monitoring for VOCs at 18 monitoring wells and one surface water location due to at least two consecutive events in which site VOC concentrations were below GCTLs.
2304-D07	2304-M03	GSA Reclamation Yard (GSRY) 2022 Groundwater Monitoring Results: Test consensus to discontinue monitoring for polychlorinated biphenyls (PCBs) at 20 monitoring wells and one surface water location due to at least two consecutive events in which PCB concentrations were below GCTLs.
2304-D08	2304-M03	GSA Reclamation Yard (GSRY) 2022 Groundwater Monitoring Results: Test consensus to perform annual monitoring at 12 monitoring wells; samples from four to be analyzed for VOCs and PCBs, one for PCBs, and seven for VOCs.
2304-D09	2304-M03	GSA Reclamation Yard (GSRY) 2022 Groundwater Monitoring Results: Test consensus to continue annual UIC monitoring at GSRY-MW0049 for sulfate, iron, manganese, and sodium, and at GSRY-MW0050, and GSRY-MW0066 for sulfate, iron, sodium, and TDS.
2304-D10	2304-M03	GSA Reclamation Yard (GSRY) 2022 Groundwater Monitoring Results: Team consensus was reached to perform annual UIC groundwater monitoring at GSRY-MW0067 for iron, and at GSRY-MW0071 and GSRY-MW0073 for iron and TDS.
2304-D11	2304-M04	CCB SWMU #089 - MW21 Area Groundwater IMWP: Team consensus was reached on the Interim Measure Work Plan (IMWP) design for in situ reductive dechlorination injection treatment of the high concentration plume (HCP) / Hot Spot (HS) / Source Zone (SZ) at the MW21 Area and to proceed with the develop of an Implementation Work Plan to plan and facilitate the Interim Measure.
2304-D12	2304-M05	Corrosion Atmospheric Exposure Facility (PRL 239) Interim Measure (IM) Work Plan: Team consensus was reached on the Interim Measure excavation boundary (bounded by sample locations below iSCTL: SB0026, SB0029, SB0018, SB0020, SB0031, SB0030, SB0048, SB0047, SB0046, SB0045, SB0043, SB0003, SB0042).
2304-D13	2304-M06	Hypergol Maintenance Facility (HMF) South (SWMU #070) Groundwater No Further Action (NFA) Request: Team consensus was reached for No Further Action for groundwater at HMF South and to abandon all site monitoring wells.

This page intentionally left blank.

APPENDIX B

FIELD NOTES AND FIELD LOGS

This page intentionally left blank.

9/26/22

KSC - GSRy

CL GK
MP DS

project # 60614327.4

0815 Chad Lee onsite with Jeff McDowell
(KSC utility locator)

- underground utilities clear in
area of soil borings.

0830 Greg Kusel onsite

0845 Dustin Slater onsite and Jeff McDowell
offsite.

0850 Madan parsotan onsite.

0900 Land + Sea Surveyors onsite

- Survey in GSRy - MW0078.

1015 Land + Sea offsite.

1020 MP begin redeveloping monitoring wells.

1030 CL offsite.

1045 GK begin redeveloping monitoring wells.

1115 GK, DS, MP to CCF to unload IDW.

1205 GK, DS, MP onsite at GSRy.

- MP continue developing MWs

- GK + DS begin collecting SW samples.

* FD and MS/MSD collected at SW0012.

- Collected SW0010 through SW0018 with
a MS/MSD, FD, FB, and EB samples.

1515 Crew drives to CCF to unload IDW.

1525 Unload IDW and secure spill pallets.

1545 Crew offsite.

9/27/22

KSC - GSRy

GK mp
DS

0730 GK onsite, check in at office.

0745 Begin opening monitoring wells.

Well ID	time opened	time gauged	(Ft BTL) DTW	Well ID	time opened	time gauged	(Ft BTL) DTW
MW0002S	0806	0855	1.32	MW0044	0818	0915	1.89
MW0002IS	0807	0856	4.05	MW0045	0826	0925	2.85
MW0003S	0821	0910	2.34	MW0046R	0833	0932	0.22
MW0004S	0814	0912	2.17	MW0049	0832	0929	0.75
MW0004IS	0814	0911	2.17	MW0050	0813	0906	2.11
MW0005S	0822	0935	2.45	MW0051	0812	0906	1.76
MW0006S	0811	0900	2.30	MW0052	0812	0904	1.96
MW0007S	0812	0902	2.30	MW0053	0813	0908	2.61
MW0008S	0811	0901	2.28	MW0054	0820	0912	1.62
MW0009S	0757	0846	1.54	MW0055	0815	0921	2.80
MW0011S	0816	0920	2.55	MW0056	0819	0914	2.16
MW0013M	0810	0859	2.07	MW0057	0817	0916	1.92
MW0014M	0809	0858	1.89	MW0058	0817	0917	0.76
MW0015M	0808	0857	4.24	MW0059	0813	0906	0.95
MW0018S	0813	0909	2.51	MW0060	0828	0927	2.10
MW0030R	0827	0926	2.42	MW0061	0826	0925	2.60
MW0031	0818	0916	2.15	MW0062	0832	0929	7 TOC
MW0036R	0813	0907	2.46	MW0063	0832	0929	0.55
MW0040	0812	0905	1.89	MW0064	0834	0932	2.40
MW0041	0812	0903	2.00	MW0065	0834	0930	2.45
MW0042R	0813	0908	2.20	MW0066	0813	0907	2.15
MW0043	0819	0913	2.39	MW0067	0804	0854	2.08

Pg. 2 of 9

9/27/22

KSC - GSRy

GK mp
DS

Well ID	time opened	time gauged	(Ft BTL) DTW	Well ID	time opened	time gauged	(Ft BTL) DTW
MW0068	0803	0851	1.68	MW0074	0801	0849	1.41
MW0069	0802	0850	1.75	MW0075	0832	0929	0.62
MW0070	0758	0847	0.98	MW0076	0805	0852	1.90
MW0071	0804	0853	2.11	MW0077	0756	0845	2.02
MW0072	0759	0848	1.52	MW0078	0755	0846	1.87
MW0073	0800	0848	1.37				

0745 DS onsite.

0830 mp onsite.

0845 Begin collecting water levels.

1000 mp continues developing wells and GK + DS collect soil samples.

* GSRy-FD-20220927 collected at SB4181-002.0.

1205 mp + DS drive to CCF to unload IDW.

1245 mp + DS onsite. Continue soil sampling and developing wells.

1310 Complete soil sampling at SB4178 through SB4182 at 000.5 and 002.0 Ft.

1315 GK + DS begin developing wells.

1355 Crew drives to CCF to unload IDW. - 22 wells redeveloped.

1430 Crew offsite. Soil decon water in drum #220342.

9/27/22
GK

Pg. 3 of 9

10/3/22 KSC - GSRy GK mp

0830 GK + mp onsite. Check in at office.

0845 move to CCF to complete well development^s. (Corrosion Control Facility)

1010 Drive to CCF to offload IDW.

1115 onsite at the Corrosion Control Facility.

- mp develops one more well. other 4 wells submerged: 46R, 49, 62, and 63.
- GK calibrates aquatrols. one meter not calibrating DO. mp to use YSI.

1215 Sort through sample bottleware kits.

1230 Begin sampling PCB/VOC wells around the pond (115, 31, 43, 44, ^{GK} 55, 56, 57, 58, 59).

1315 organize samples and sign out of the GSRy office.

1320 Drive to CCF to offload IDW.

1600 GK + mp offsite. mp to drop off samples at the lab.

10/3/22
GK

10/4/22 KSC - GSRy GK mp

0730 GK onsite. Sign in and prep equipment.

0815 mp onsite. Sign in and prep eq.

0900 Begin sampling PCB/VOC wells.

1105 DS onsite. prep equipment and begin sampling wells at the Corrosion Control Facility.

1315 GK moves to sample wells in the CVOC plume area.

1510 crew organizes samples.

1525 crew offsite from GSRy.

- GK + DS to CCF.
- mp to drop off samples at the lab.

Drum #	Clamshell #	% Full	IDW # or SITE	pH
226062	226061	80	08	7.25
226063	↓	80	09	7.32
220334	↓	80	06	7.94
220335	↓	80	07	7.55
220336	220340	80	04	7.70
220337	↓	80	05	7.72
220338	↓	80	01	7.85
220339	↓	80	02	7.68
220342	220341	35	03	7.66
228A61	↓	75	10	7.18
228A62	↓		11	7.41

10/5/22

KSC - GSRy

OS/MT

0730 - Justin Slater & Megan Johansson
arrive at CCF to drop off drums.

0845 - Arrive onsite.

Sign in at office.

Weather: Sunny, 73°F.

H4 S meeting -

- Begin with well GSRy-MW0073

- Collect GSRy-FD-20221005 from well

GSRy-MW0074 @ 1030

- Collect GSRy-MS-20221005 from well

GSRy-MW0074 @ 1033

- Collect GSRy-MSD-20221005 from well

GSRy-MW0074 @ 1036

1510 - All wells sampled.

1512 - Collect GSRy-FB-20221005

1515 - Collect GSRy-EB-20221005

1520 - Head to CCF to dump purge water
into drum.

1535 - OS/MT offsite.

- Samples to be dropped off at
lab.

10/27/22

KSC - GSRy

GK CB

0730 Greg Kusel and Caroline BeKins
onsite at the Corrosion Control Facility.

- Sign in at the office.

- H4 S meeting

- organize equipment

0805 Begin developing remaining four
monitoring wells: MW0063, MW0049,
MW0063, and MW0046R.

0915 GK + CB to the CCF to unload
IDW purge water.

1010 Drive back to develop last well.

1030 purge MW0046R.

1050 Sign out From Corrosion Control Facility.

~~GK - drive to CCF to unload TAZ.~~

- drive to logistics building for ICE.

~~GK~~ 1125 Drive to Wilson Corners to drop
off ICE and large geopump.

1230 onsite at the CCF. prep to
sample drums and pour purge
water into drum.

1300 Calibrate ySI.

1345 ^{GK} Begin ~~calibrating~~ Sampling IDW
drums. Sampling table on
next page.

1520 GK + CB OFFSITE.

10/27/22

KSC-GSRY

GK CB

Drum	IDW #	Time
220 338	IDW01	1350
220 339	IDW02	1358
220 312	IDW03	1405
220 336	IDW04	1415
220 337	IDW05	1422
220 334	IDW06	1430
220 335	IDW07	1438
226062	IDW08	1445
226063	IDW09	1452
228462	IDW10	1500
228461 228462	IDW11	(10/28) 1215

GK 10/28/22

10/28/22

KSC-GSRY

GK CB

- 0730 GK + CB onsite at the Corrosion Control Facility.
- Sign in at the office
 - H+S meeting
 - organize equipment
- 0745 Calibrate equipment.
- 0830 Begin ^{Purging} ~~GK Sampling~~ GSRY-MW0062-035.0-20221028.
- 0900 Begin ^{Purging} ~~GK Sampling~~ GSRY-MW0049-027.5-20221028.
- 0930 Begin purging GSRY-MW0063-019.0-20221028.
- 1045 Begin purging GSRY-MW0046R-003.0-20221028.
- 1130 Drive to the logistics building for ice.
- 1200 Arrive at the CCF to unload and Sample IDW.
- 1215 Sample IDW11.
- 1245 GK + CB offsite. GK to drop off Samples at the Lab.

GK 8/28/22

Monitoring Well Redevelopment Log
September and October 2022
General Services Administration Reclamation Yard (SMWU 010)

Location ID	Screened Interval (feet bls)	Date	Pumping						Color		Odor	
			Start Time	Stop Time	Volume Purged (gallons)	Duration (minutes)	Pumping Rate (gpm)	Continuous/ Intermittent	Start	End	Start	End
2 to 18 feet bls												
MW0011S	2 to 12	09/26/22	12:25	12:35	10	10	1.0	Continuous	gray	none	none	none
MW0030R	8 to 18	10/03/22	9:14	9:28	20	14	1.4	Continuous	gray	none	none	none
MW0031	8 to 18	09/26/22	14:02	14:15	15	13	1.2	Continuous	gray	none	none	none
MW0036R	2 to 12	09/27/22	10:52	11:10	20	18	1.1	Continuous	brown	none	none	none
MW0040	2 to 12	09/27/22	13:25	13:40	15	15	1.0	Continuous	gray	none	none	none
MW0041	2 to 12	09/27/22	13:29	13:36	10	7	1.5	Continuous	brown	none	none	none
MW0042R	2 to 12	09/27/22	11:16	11:24	10	8	1.3	Continuous	gray	none	none	none
MW0043	2 to 12	09/26/22	13:33	13:43	10	10	1.0	Continuous	yellow	none	none	none
MW0044	2 to 12	09/27/22	13:17	13:24	10	7	1.5	Continuous	brown	none	none	none
MW0046R	2 to 12	10/27/22	10:30	10:40	10	10	1.0	Continuous	brown	none	none	none
MW0053	2 to 12	09/27/22	11:28	11:36	10	8	1.3	Continuous	yellow	none	none	none
MW0054	8 to 18	09/26/22	13:07	13:17	15	10	1.5	Continuous	yellow	none	none	none
MW0055	8 to 18	09/26/22	12:42	12:58	20	16	1.3	Continuous	yellow	none	none	none
MW0060	2 to 12	10/03/22	9:34	9:46	8	12	0.7	Intermittent	gray	none	none	none
10 to 30 feet bls												
MW0049	25 to 30	10/27/22	8:25	8:35	10	10	1.0	Continuous	brown	none	none	none
MW0050	25 to 30	09/27/22	10:08	10:18	10	10	1.0	Continuous	gray	none	none	none
MW0051	25 to 30	09/27/22	12:59	13:14	15	15	1.0	Continuous	gray	none	none	none
MW0052	14 to 24	09/27/22	13:38	13:45	10	7	1.5	Continuous	gray	none	none	none
MW0056	14 to 24	09/26/22	13:45	13:58	15	13	1.2	Continuous	yellow	none	none	none
MW0057	20 to 30	09/26/22	14:18	14:32	15	14	1.1	Continuous	gray	none	none	none
MW0061	20 to 30	10/03/22	9:17	9:24	10	7	1.5	Continuous	gray	none	none	none
MW0063	14 to 24	10/27/22	8:45	9:05	20	20	1.0	Continuous	brown	none	none	none
MW0064	20 to 30	10/03/22	11:25	11:40	15	10	1.0	Continuous	yellow	none	none	none

Monitoring Well Redevelopment Log
September and October 2022
General Services Administration Reclamation Yard (SMWU 010)

Location ID	Screened Interval (feet bls)	Date	Pumping						Color		Odor	
			Start Time	Stop Time	Volume Purged (gallons)	Duration (minutes)	Pumping Rate (gpm)	Continuous/ Intermittent	Start	End	Start	End
MW0066	20 to 30	09/27/22	10:34	10:50	20	16	1.3	Continuous	brown	none	none	none
MW0067	10 to 20	09/26/22	10:12	10:27	20	15	1.3	Continuous	gray	none	none	none
MW0071	13 to 23	09/26/22	10:46	11:03	25	17	1.5	Continuous	gray	none	none	none
MW0073	17 to 27	09/26/22	10:44	11:00	20	16	1.3	Continuous	gray	none	none	none
MW0075	17 to 27	10/03/22	9:40	9:57	25	17	1.5	Continuous	gray	none	none	none
30 to 40 feet bls												
MW0058	30 to 40	09/26/22	14:41	14:57	20	16	1.3	Continuous	gray	none	none	none
MW0059	30 to 40	09/27/22	10:21	10:31	10	10	1.0	Continuous	gray	none	none	none
MW0062	30 to 40	10/27/22	8:08	8:18	10	10	1.0	Continuous	brown	none	none	none

Notes:

bls = below land surface

gpm = gallons per minute

SWMU = Solid Waste Management Unit

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0011S-007.0-20221005 Sampler: Madan Parsotan
 Well ID: GSRV-MW0011S Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	1.34
Top of Screen (ft-BTOR):	2	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	12	Sample Analysis:	PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/3/2022	13:20			0	N/A								Clear	None
10/3/2022	13:40	0.05	1	1	1.37	7.07	483.2	0.31	1.98	28.7	-16.2	0.22	Clear	None
10/3/2022	13:42	0.05	1.1	2.1	1.37	7.07	483.7	0.29	1.92	28.7	-15.6	0.22	Clear	None
10/3/2022	13:44	0.05	1.2	3.3	1.37	7.08	484.4	0.27	1.84	28.8	-15.1	0.22	Clear	None
10/3/2022	13:46	0.05	1.3	4.6	1.37	7.08	484.8	0.26	1.79	28.8	-14.7	0.21	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
13:20	13:46	26	4.6	7.08	484.8	0.26	1.79	28.8	-14.7

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0030R-013.0-20221004 Sampler: Dustin Slater
 Well ID: GSRV-MW0030R Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	1.38
Top of Screen (ft-BTOR):	8	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	18	Sample Analysis:	Select VOCs, PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/4/2022	13:55			0	1.38								Clear	None
10/4/2022	14:15	0.05	1	1	1.4	7.1	797	0.2	1.59	29.5	-115.6	0.36	None	None
10/4/2022	14:17	0.05	0.1	1.1	1.4	7.09	795	0.18	1.47	29.4	-115.6	0.36	None	None
10/4/2022	14:19	0.05	0.1	1.2	1.4	7.1	795	0.18	1.35	29.6	-115.6	0.36	None	None
10/4/2022	14:21	0.05	0.1	1.3	1.4	7.1	798	0.18	1.19	29.5	-116.1	0.36	None	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
13:55	14:21	26	1.3	7.1	798	0.18	1.19	29.5	-116.1

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0031-013.0-20221003 Sampler: Greg Kusel
 Well ID: GSRV-MW0031 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	-9999	Static Water Level (ft-BTOR):	1
Top of Screen (ft-BTOR):	8	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	18	Sample Analysis:	Select VOCs, PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/3/2022	14:08			0	1								Clear	None
10/3/2022	14:18	0.1	1	1	1.01	6.84	838.0	0.12	1.69	28.69	-221.2	0.42	Clear	None
10/3/2022	14:20	0.1	0.2	1.2	1.01	6.84	847.9	0.12	1.10	29.00	-225.5	0.42	Clear	None
10/3/2022	14:22	0.1	0.2	1.4	1.01	6.84	839.1	0.11	1.15	29.10	-227.5	0.42	Clear	None
10/3/2022	14:24	0.1	0.2	1.6	1.01	6.84	836.3	0.11	0.74	29.05	-230.7	0.41	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
14:08	14:24	16	1.6	6.84	836.3	0.11	0.74	29.05	-230.7

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0036R-007.0-20221004 Sampler: Madan Parsotan
 Well ID: GSRV-MW0036R Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	1.38
Top of Screen (ft-BTOR):	2	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	12	Sample Analysis:	Select VOCs, PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/4/2022	9:24			0	1.38								Clear	None
10/4/2022	9:44	0.05	1	1	1.46	10.76	578	0.17	7.77	30.2	-65.2	0.08	Clear	None
10/4/2022	9:46	0.05	0.1	1.1	1.46	10.76	578	0.15	7.69	29.9	-66.2	0.03	Clear	None
10/4/2022	9:48	0.05	0.1	1.2	1.46	10.75	578	0.14	0.14	29.7	-67.1	0.02	Clear	None
10/4/2022	9:50	0.05	0.1	1.3	1.46	10.75	578	0.12	7.52	29.7	-68.4	0.02	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
9:24	9:50	26	1.3	10.75	578	0.12	7.52	29.7	-68.4

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0040-003.0-20221004 Sampler: Greg Kusel
 Well ID: GSRV-MW0040 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	1	Static Water Level (ft-BTOR):	0.89
Top of Screen (ft-BTOR):	2	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	12	Sample Analysis:	Select VOCs, PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/4/2022	12:45			0	0.89								Clear	None
10/4/2022	12:55	0.1	1	1	0.92	6.87	501.6	0.15	4.00	27.91	-135.7	0.24	Clear	None
10/4/2022	12:57	0.1	0.2	1.2	0.92	6.87	502.3	0.14	3.32	28.07	-135.4	0.24	Clear	None
10/4/2022	12:59	0.1	0.2	1.4	0.92	6.86	501.4	0.15	2.77	28.13	-134.8	0.24	Clear	None
10/4/2022	13:01	0.1	0.2	1.6	0.92	6.86	499.7	0.15	2.26	28.19	-133.4	0.24	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
12:45	13:01	16	1.6	6.86	499.7	0.15	2.26	28.19	-133.4

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0041-003.0-20221004 Sampler: Greg Kusel
 Well ID: GSRV-MW0041 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	1	Static Water Level (ft-BTOR):	0.97
Top of Screen (ft-BTOR):	2	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	12	Sample Analysis:	Select VOCs, PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/4/2022	11:44			0	0.97								Clear	None
10/4/2022	12:02	0.1	1.8	1.8	1	6.91	549.2	0.11	8.31	30.04	-319.4	0.27	Clear	None
10/4/2022	12:04	0.1	0.2	2.0	1	6.90	563.9	0.10	5.98	29.89	-320.4	0.26	Clear	None
10/4/2022	12:06	0.1	0.2	2.2	1	6.91	589.9	0.10	6.09	30.08	-322.8	0.29	Clear	None
10/4/2022	12:08	0.1	0.2	2.4	1	6.91	588.3	0.10	6.56	30.02	-324.3	0.29	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
11:44	12:08	24	2.4	6.91	588.3	0.10	6.56	30.02	-324.3

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0042R-007.0-20221004 Sampler: Greg Kusel
 Well ID: GSRV-MW0042R Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	1.18
Top of Screen (ft-BTOR):	2	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	12	Sample Analysis:	Select VOCs, PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/4/2022	10:43			0	1.18								Clear	None
10/4/2022	10:53	0.1	1	1	1.19	6.72	583.0	0.15	1.32	30.19	-364.1	0.29	Clear	None
10/4/2022	10:55	0.1	0.2	1.2	1.19	6.72	589.5	0.13	1.22	30.27	-366.0	0.29	Clear	None
10/4/2022	10:57	0.1	0.2	1.4	1.19	6.73	590.2	0.12	1.2	30.42	-366.4	0.29	Clear	None
10/4/2022	10:59	0.1	0.2	1.6	1.19	6.73	588.4	0.11	1.08	30.37	-368.1	0.29	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
10:43	10:59	16	1.6	6.73	588.4	0.11	1.08	30.37	-368.1

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0043-007.0-20221003 Sampler: Madan Parsotan
 Well ID: GSRV-MW0043 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	1	Static Water Level (ft-BTOR):	1.21
Top of Screen (ft-BTOR):	2	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	12	Sample Analysis:	Select VOCs, PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/3/2022	14:05			0	N/A								Clear	None
10/3/2022	14:25	0.05	1	1	1.27	7.38	685	0.25	3.91	29.9	-242.6	0.3	Clear	None
10/3/2022	14:27	0.05	1.1	2.1	1.27	7.38	685	0.21	3.82	29.9	-242.9	0.3	Clear	None
10/3/2022	14:29	0.05	1.2	3.3	1.27	7.38	686	0.19	3.76	29.8	-243.4	0.3	Clear	None
10/3/2022	14:31	0.05	1.3	4.6	1.27	7.38	687	0.18	3.59	29.7	-243.8	0.3	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
14:05	14:31	26	4.6	7.38	687	0.18	3.59	29.7	-243.8

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0044-007.0-20221003 Sampler: Greg Kusel
 Well ID: GSRV-MW0044 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	1	Static Water Level (ft-BTOR):	0.73
Top of Screen (ft-BTOR):	2	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	12	Sample Analysis:	Select VOCs, PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/3/2022	14:30			0	0.73								Clear	None
10/3/2022	14:40	0.1	1	1	0.77	6.91	507.4	0.25	6.57	27.65	-351.7	0.25	Clear	None
10/3/2022	14:42	0.1	0.2	1.2	0.77	6.92	507.8	0.18	4.10	27.50	-362.7	0.25	Clear	None
10/3/2022	14:44	0.1	0.2	1.4	0.77	6.93	510.2	0.15	4.25	27.67	-368.1	0.25	Clear	None
10/3/2022	14:46	0.1	0.2	1.6	0.77	6.92	510.1	0.13	3.36	27.69	-376.8	0.25	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
14:30	14:46	16	1.6	6.92	510.1	0.13	3.36	27.69	-376.8

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0046R-003.0-20221028 Sampler: Greg Kusel
 Well ID: GSRV-MW0046R Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	0.55
Top of Screen (ft-BTOR):	2	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	12	Sample Analysis:	Select VOCs, PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/28/2022	10:45			0	0.55								yellow	None
10/28/2022	11:05	0.1	2	2	0.56	6.98	463.3	0.16	3.11	26.6	-99.1	0.22	yellow	None
10/28/2022	11:07	0.1	0.2	2.2	0.57	6.98	463	0.15	2.5	26.5	-100.5	0.21	yellow	None
10/28/2022	11:09	0.1	0.2	2.4	0.57	6.97	465.2	0.15	2.72	26.6	-102	0.22	yellow	None
10/28/2022	11:11	0.1	0.2	2.6	0.57	6.97	465.6	0.14	2.45	26.6	-103.2	0.22	yellow	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
10:45	11:11	26	2.6	6.97	465.6	0.14	2.45	26.6	-103.2

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0049-027.5-20221028 Sampler: Greg Kusel
 Well ID: GSRV-MW0049 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	1.55
Top of Screen (ft-BTOR):	25	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	30	Sample Analysis:	Select VOCs, PCBs, Sulfate, Fe, Mn, Na, TDS
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/28/2022	9:00			0	1.55								Clear	None
10/28/2022	9:10	0.1	1	1	1.6	6.84	6513	0.54	1.61	25.9	-108.3	3.49	Clear	None
10/28/2022	9:12	0.1	0.2	1.2	1.6	6.84	6552	0.54	2.3	25.9	-108.8	3.51	Clear	None
10/28/2022	9:14	0.1	0.2	1.4	1.6	6.83	6670	0.53	1.66	26	-109.4	3.59	Clear	None
10/28/2022	9:16	0.1	0.2	1.6	1.6	6.83	6718	0.49	2.17	25.9	-109.8	3.6	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
9:00	9:16	16	1.6	6.83	6718	0.49	2.17	25.9	-109.8

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0050-027.5-20221004 Sampler: Madan Parsotan
 Well ID: GSRV-MW0050 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	1.12
Top of Screen (ft-BTOR):	25	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	30	Sample Analysis:	Select VOCs, PCBs, Sulfate, Fe, Mn, Na, TDS
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/4/2022	12:41			0	N/A								Clear	None
10/4/2022	13:01	0.05	1	1	1.75	7.25	2076	0.24	2.81	28.8	43.7	0.98	Clear	None
10/4/2022	13:03	0.05	1.1	2.1	1.75	7.25	2075	0.22	2.77	28.7	31.8	0.98	Clear	None
10/4/2022	13:05	0.05	1.2	3.3	1.75	7.25	2078	0.21	2.75	28.7	29.4	0.97	Clear	None
10/4/2022	13:07	0.05	1.3	4.6	1.75	7.24	2078	0.2	2.68	28.7	24.7	0.98	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
12:41	13:07	26	4.6	7.24	2078	0.2	2.68	28.7	24.7

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0051-027.5-20221004 Sampler: Madan Parsotan
 Well ID: GSRV-MW0051 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	0.79
Top of Screen (ft-BTOR):	25	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	30	Sample Analysis:	Select VOCs, PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/4/2022	14:00			0	N/A								Clear	None
10/4/2022	14:20	0.05	1	1	0.86	7.43	1460	0.75	2.58	27.2	130.7	0.7	Clear	None
10/4/2022	14:22	0.05	1.1	2.1	0.86	7.41	1454	0.71	2.24	27.2	134	0.69	Clear	None
10/4/2022	14:24	0.05	1.2	3.3	0.86	7.41	1431	0.61	2.09	27.1	140.8	0.69	Clear	None
10/4/2022	14:26	0.05	1.3	4.6	0.86	7.41	1430	0.56	2.05	27	139.5	0.68	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
14:00	14:26	26	4.6	7.41	1430	0.56	2.05	27	139.5

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0052-019.0-20221004 Sampler: Greg Kusel
 Well ID: GSRV-MW0052 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	0.92
Top of Screen (ft-BTOR):	14	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	24	Sample Analysis:	Select VOCs, PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/4/2022	12:12			0	0.92								Clear	None
10/4/2022	12:22	0.1	1	1	0.94	7.01	871.9	0.15	0.06	28.09	-264.2	0.43	Clear	None
10/4/2022	12:24	0.1	0.2	1.2	0.94	7.01	870.0	0.13	0.09	27.96	-266.0	0.43	Clear	None
10/4/2022	12:26	0.1	0.2	1.4	0.94	7.01	873.8	0.12	0.08	28.10	-264.8	0.43	Clear	None
10/4/2022	12:28	0.1	0.2	1.6	0.94	7.01	870.5	0.12	0.07	28.15	-265.1	0.43	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
12:12	12:28	16	1.6	7.01	870.5	0.12	0.07	28.15	-265.1

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0053-007.0-20221004 Sampler: Greg Kusel
 Well ID: GSRV-MW0053 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	1.53
Top of Screen (ft-BTOR):	2	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	12	Sample Analysis:	Select VOCs, PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/4/2022	10:03			0	1.53								Clear	None
10/4/2022	10:13	0.1	1	1	1.54	6.87	568.9	0.17	0.08	30.64	-346.5	0.28	Clear	None
10/4/2022	10:15	0.1	0.2	1.2	1.54	6.88	568.5	0.16	0.08	30.71	-347.6	0.28	Clear	None
10/4/2022	10:17	0.1	0.2	1.4	1.54	6.87	568.5	0.15	0.08	30.84	-353.1	0.28	Clear	None
10/4/2022	10:19	0.1	0.2	1.6	1.54	6.86	565.9	0.13	0.08	30.79	-358.2	0.28	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
10:03	10:19	16	1.6	6.86	565.9	0.13	0.08	30.79	-358.2

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0054-013.0-20221004 Sampler: Greg Kusel
 Well ID: GSRV-MW0054 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	0.52
Top of Screen (ft-BTOR):	8	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	18	Sample Analysis:	Select VOCs, PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/4/2022	9:33			0	0.52								Clear	None
10/4/2022	9:43	0.1	1	1	0.53	6.90	914.7	0.25	1.3	26.54	-246.3	0.46	Clear	None
10/4/2022	9:45	0.1	0.2	1.2	0.53	6.94	921.2	0.35	0.92	26.49	-240.4	0.46	Clear	None
10/4/2022	9:47	0.1	0.2	1.4	0.53	6.95	922.0	0.30	0.85	26.37	-247.0	0.46	Clear	None
10/4/2022	9:49	0.1	0.2	1.6	0.53	6.95	922.0	0.25	0.95	26.46	-253.0	0.46	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
9:33	9:49	16	1.6	6.95	922.0	0.25	0.95	26.46	-253.0

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0055-013.0-20221003 Sampler: Madan Parsotan
 Well ID: GSRV-MW0055 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	1.55
Top of Screen (ft-BTOR):	8	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	18	Sample Analysis:	Select VOCs, PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/3/2022	12:40			0	N/A								Clear	None
10/3/2022	13:00	0.05	1	1	1.57	7.06	1046	0.25	1.75	28.4	-159.4	0.48	Clear	None
10/3/2022	13:02	0.05	1.1	2.1	1.57	7.06	1046	0.23	0.23	28.4	-160.2	0.48	Clear	None
10/3/2022	13:04	0.05	1.2	3.3	1.57	7.06	1046	0.22	1.61	28.5	-161.4	0.48	Clear	None
10/3/2022	13:06	0.05	1.3	4.6	1.57	7.06	1047	0.21	1.56	28.5	161.9	0.48	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
12:40	13:06	26	4.6	7.06	1047	0.21	1.56	28.5	161.9

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0056-019.0-20221003 Sampler: Madan Parsotan
 Well ID: GSRV-MW0056 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	1.02
Top of Screen (ft-BTOR):	14	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	24	Sample Analysis:	Select VOCs, PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/3/2022	14:43			0	N/A								Clear	None
10/3/2022	15:03	0.05	1	1	1.1	6.97	2299	0.4	2.63	27.5	-181.7	1.12	Clear	None
10/3/2022	15:05	0.05	1.1	2.1	1.1	6.97	2298	0.37	2.52	27.5	-181.9	1.12	Clear	None
10/3/2022	15:07	0.05	1.2	3.3	1.1	6.97	2201	0.35	2.44	27.6	-182.2	1.12	Clear	None
10/3/2022	15:09	0.05	1.3	4.6	1.1	6.97	2202	0.34	2.32	27.6	-182.9	1.12	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
14:43	15:09	26	4.6	6.97	2202	0.34	2.32	27.6	-182.9

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0057-025.0-20221003 Sampler: Greg Kusel
 Well ID: GSRV-MW0057 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	0.82
Top of Screen (ft-BTOR):	20	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	30	Sample Analysis:	Select VOCs, PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/3/2022	13:37			0	0.82								Clear	None
10/3/2022	13:47	0.1	1	1	0.83	6.99	1419.0	0.22	4.72	28.24	-223.0	0.72	Clear	None
10/3/2022	13:49	0.1	0.2	1.2	0.83	6.96	1344.1	0.20	2.91	28.23	-222.0	0.68	Clear	None
10/3/2022	13:51	0.1	0.2	1.4	0.83	6.95	1312.2	0.19	1.57	28.12	-221.6	0.66	Clear	None
10/3/2022	13:53	0.1	0.2	1.6	0.83	6.94	1276.6	0.18	0.43	27.23	-222.0	0.64	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
13:37	13:53	16	1.6	6.94	1276.6	0.18	0.43	27.23	-222.0

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0058-035.0-20221003 Sampler: Greg Kusel
 Well ID: GSRV-MW0058 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	0
Top of Screen (ft-BTOR):	30	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	40	Sample Analysis:	Select VOCs, PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/3/2022	13:15			0	0								Clear	None
10/3/2022	13:25	0.1	1	1	0.02	7.09	1786.2	0.18	0.62	27.99	-188.7	0.92	Clear	None
10/3/2022	13:27	0.1	0.2	1.2	0.02	7.09	1776.2	0.18	0.13	28.20	-190.6	0.91	Clear	None
10/3/2022	13:29	0.1	0.2	1.4	0.02	7.09	1759.9	0.14	0.05	28.23	-193.5	0.90	Clear	None
10/3/2022	13:31	0.1	0.2	1.6	0.02	7.09	1751.5	0.14	0.02	28.24	-194.5	0.90	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
13:15	13:31	16	1.6	7.09	1751.5	0.14	0.02	28.24	-194.5

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0059-035.0-20221004 Sampler: Madan Parsotan
 Well ID: GSRV-MW0059 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	0.26
Top of Screen (ft-BTOR):	30	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	40	Sample Analysis:	Select VOCs, PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/4/2022	12:00			0	N/A								Clear	None
10/4/2022	12:20	0.05	1	1	0.32	7.31	1810	0.29	1.75	28.5	131.9	0.85	Clear	None
10/4/2022	12:22	0.05	1.1	2.1	0.32	7.32	1821	0.25	1.69	28.4	136.3	0.86	Clear	None
10/4/2022	12:24	0.05	1.2	3.3	0.32	7.32	1840	0.24	1.62	28.5	133.2	0.87	Clear	None
10/4/2022	12:26	0.05	1.3	4.6	0.32	7.32	1865	0.23	1.58	28.5	128.8	0.88	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
12:00	12:26	26	4.6	7.32	1865	0.23	1.58	28.5	128.8

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0060-005.5-20221004 Sampler: Dustin Slater
 Well ID: GSRV-MW0060 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	1.15
Top of Screen (ft-BTOR):	2	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	12	Sample Analysis:	Select VOCs, PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/4/2022	12:58			0	1.15								Clear	None
10/4/2022	13:38	0.05	2	2	4.51	11.72	1163	1.49	0.8	28.6	-155.6	0.54	Yellow	None
10/4/2022	13:40	0.05	0.1	2.1	4.51	11.72	1177	1.5	0.84	28.6	-158	0.54	Yellow	None
10/4/2022	13:42	0.05	0.1	2.2	4.51	11.72	1181	1.31	0.74	28.5	-159	0.55	Yellow	None
10/4/2022	13:44	0.05	0.1	2.3	4.51	11.72	1183	1.32	0.69	28.5	-160.9	0.55	Yellow	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
12:58	13:44	46	2.3	11.72	1183	1.32	0.69	28.5	-160.9

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0061-025.0-20221004 Sampler: Dustin Slater
 Well ID: GSRV-MW0061 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	1.6
Top of Screen (ft-BTOR):	20	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	30	Sample Analysis:	Select VOCs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/4/2022	14:34			0	1.6								Clear	None
10/4/2022	14:54	0.05	1	1	1.62	7.09	807	0.14	5.73	29	-86.9	0.36	None	None
10/4/2022	14:56	0.05	0.1	1.1	1.62	7.08	806	0.16	5.22	29	-87.2	0.36	None	None
10/4/2022	14:58	0.05	0.1	1.2	1.62	7.09	805	0.15	4.98	29	-87.6	0.36	None	None
10/4/2022	15:00	0.05	0.1	1.3	1.62	7.08	804	0.17	4.17	29	-88	0.36	None	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
14:34	15:00	26	1.3	7.08	804	0.17	4.17	29	-88

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0062-035.0-20221028 Sampler: Greg Kusel
 Well ID: GSRV-MW0062 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	0.1
Top of Screen (ft-BTOR):	30	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	40	Sample Analysis:	Select VOCs, PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/28/2022	8:31			0	0.1								Clear	None
10/28/2022	8:41	0.1	1	1	0.12	7.22	1689	0.17	3.06	25.7	-96.9	0.83	Clear	None
10/28/2022	8:43	0.1	0.2	1.2	0.12	7.23	1668	0.19	3.81	25.7	-98.5	0.83	Clear	None
10/28/2022	8:45	0.1	0.2	1.4	0.12	7.22	1664	0.2	2.29	25.8	-99.1	0.82	Clear	None
10/28/2022	8:47	0.1	0.2	1.6	0.12	7.23	1661	0.2	2.74	25.8	-100	0.82	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
8:31	8:47	16	1.6	7.23	1661	0.2	2.74	25.8	-100

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0063-019.0-20221028 Sampler: Greg Kusel
 Well ID: GSRV-MW0063 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	0.6
Top of Screen (ft-BTOR):	14	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	24	Sample Analysis:	Select VOCs, PCBs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/28/2022	9:30	0.1		0	0.6								brown	organic
10/28/2022	9:40	0.1	1	1	1.12				21.4				brown	organic
10/28/2022	10:05	0.06	1.5	2.5	1.12				9.87				brown	organic
10/28/2022	10:15	0.06	0.6	3.1	1.12	7.07	6198	0.18	9.36	26.1	-199.6	3.29	brown	organic
10/28/2022	10:17	0.06	0.12	3.22	1.12	7.07	6151	0.17	8.8	26.1	-200.1	3.26	brown	organic
10/28/2022	10:19	0.06	0.12	3.34	1.12	7.08	6098	0.15	8.53	26	-202.8	3.23	brown	organic

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
9:30	10:19	49	3.34	7.08	6098	0.15	8.53	26	-202.8

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0064-025.0-20221004 Sampler: Dustin Slater
 Well ID: GSRV-MW0064 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	1.4
Top of Screen (ft-BTOR):	20	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	30	Sample Analysis:	Select VOCs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/4/2022	11:39			0	1.4								Clear	None
10/4/2022	11:59	0.05	1	1	1.41	7.11	1125	0.64	7.16	26.1	-120.4	0.54	None	None
10/4/2022	12:01	0.05	0.1	1.1	1.41	7.11	1111	0.61	6.48	26	-119.9	0.53	None	None
10/4/2022	12:03	0.05	0.1	1.2	1.41	7.1	1093	0.58	5.97	26	-117.4	0.53	None	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
11:39	12:03	24	1.2	7.1	1093	0.58	5.97	26	-117.4

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0066-025.0-20221004 Sampler: Madan Parsotan
 Well ID: GSRV-MW0066 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):		Static Water Level (ft-BTOR):	1.15
Top of Screen (ft-BTOR): 20		Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR): 30		Sample Analysis:	Select VOCs, PCBs, Sulfate, Fe, Mn, Na, TDS
Total Depth of Well (ft-BTOR): NM			

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/4/2022	10:41			0	N/A								Clear	None
10/4/2022	11:21	0.05	2	2	2.1	7.26	2176	0.36	6.71	28.5	88.3	1.03	Clear	None
10/4/2022	11:23	0.05	2.1	4.1	2.1	7.23	2174	0.27	6.64	28.4	84	1.03	Clear	None
10/4/2022	11:25	0.05	2.2	6.3	2.1	7.22	2168	0.25	6.56	28.3	84.3	1.03	Clear	None
10/4/2022	11:27	0.05	2.3	8.6	2.1	7.22	2169	0.24	6.48	28.3	83.7	1.03	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
10:41	11:27	46	8.6	7.22	2169	0.24	6.48	28.3	83.7

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0075-022.0-20221004 Sampler: Dustin Slater
 Well ID: GSRV-MW0075 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	2	Static Water Level (ft-BTOR):	0
Top of Screen (ft-BTOR):	17	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	27	Sample Analysis:	Select VOCs
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/4/2022	12:21			0	0								Clear	None
10/4/2022	12:40	0.05	1	1	0	7.07	1268	0.21	9.97	26.5	-166.5	0.61	None	None
10/4/2022	12:42	0.05	0.1	1.1	0	7.08	1239	0.19	8.07	26.4	-166.8	0.6	None	None
10/4/2022	12:44	0.05	0.1	1.2	0	7.08	1220	0.18	5.38	26.4	-166.3	0.59	None	None
10/4/2022	12:46	0.05	0.1	1.3	0	7.08	1217	0.19	4.63	26.4	-166	0.58	None	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
12:21	12:46	25	1.3	7.08	1217	0.19	4.63	26.4	-166

SURFACE WATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRY
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRY-SW0001-001.0-20221003 Sampler: Greg Kusel
 Well ID: GSRY-SW0001
 Remark:

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/3/2022	14:50	0.1		0	0								Clear	None
10/3/2022	15:00	0.1	1	1	0	7.38	112.2	7.13	0.39	28.28	-35.0	0.05	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
14:50	15:00	10	1	7.38	112.2	7.13	0.39	28.28	-35.0

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0067-015.0-20221004 Sampler: Greg Kusel
 Well ID: GSRV-MW0067 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	1	Static Water Level (ft-BTOR):	1.06
Top of Screen (ft-BTOR):	10	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	20	Sample Analysis:	Fe, TDS
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/4/2022	14:40			0	1.06								Clear	None
10/4/2022	14:50	0.1	1	1	1.1	6.42	2346.9	0.13	1.68	25.94	-244.9	1.22	Clear	None
10/4/2022	14:52	0.1	0.2	1.2	1.1	6.42	2337.5	0.13	0.93	26.07	-247.2	1.22	Clear	None
10/4/2022	14:56	0.1	0.2	1.4	1.1	6.42	2358.8	0.18	0.81	26.02	-223.9	1.23	Clear	None
10/4/2022	14:57	0.1	0.2	1.6	1.1	6.41	2349.3	0.18	0.87	25.99	-238.9	1.22	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (μS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
14:40	14:57	17	1.6	6.41	2349.3	0.18	0.87	25.99	-238.9

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0071-018.0-20221004 Sampler: Greg Kusel
 Well ID: GSRV-MW0071 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	1	Static Water Level (ft-BTOR):	1.14
Top of Screen (ft-BTOR):	13	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	23	Sample Analysis:	Fe, TDS
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/4/2022	14:00			0	1.14								Clear	None
10/4/2022	14:10	0.1	1	1	1.16	6.56	2213.1	0.16	0.71	25.98	-199.1	1.15	Clear	None
10/4/2022	14:12	0.1	0.2	1.2	1.16	6.56	2227.3	0.14	0.91	25.91	-208.8	1.16	Clear	None
10/4/2022	14:14	0.1	0.2	1.4	1.16	6.56	2199.1	0.13	0.81	25.92	-217.3	1.14	Clear	None
10/4/2022	14:16	0.1	0.2	1.6	1.16	6.57	2225.4	0.13	0.11	25.91	-220.3	1.15	Clear	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
14:00	14:16	16	1.6	6.57	2225.4	0.13	0.11	25.91	-220.3

GROUNDWATER SAMPLE LOG SHEET



Event: Kennedy Space Center GSRV
 Site Name: GSA Reclamation Yard
 Project No: 60614327

Sample ID: GSRV-MW0073-022.0-20221005 Sampler: Dustin Slater
 Well ID: GSRV-MW0073 Well Type: Monitoring Well
 Remark:

Well Information			
Well Diameter (in.):	1	Static Water Level (ft-BTOR):	0.27
Top of Screen (ft-BTOR):	17	Purge/Sample Method:	Low flow - peristaltic
Bottom of Screen (ft-BTOR):	27	Sample Analysis:	Fe, TDS
Total Depth of Well (ft-BTOR):	NM		

Purge Information														
Date	Time	Purge Rate (gal/min)	Volume Purged (gal)	Cum Vol Purged (gal)	Depth To Water (ft)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)	Salinity (S.U.)	Color	Odor
10/5/2022	9:09			0	0.27								Clear	None
10/5/2022	9:29	0.05	1	1	0.27	6.49	2136	0.15	2.39	25.8	-103.1	1.07	None	None
10/5/2022	9:31	0.05	0.1	1.1	0.27	6.48	2135	0.15	2.55	25.8	-104.2	1.07	None	None
10/5/2022	9:33	0.05	0.1	1.2	0.27	6.48	2130	0.15	2.07	25.8	-104.7	1.07	None	None
10/5/2022	9:35	0.05	0.1	1.3	0.27	6.49	2126	0.14	2.64	25.8	-105.4	1.07	None	None

Start Purge	End Purge	Duration (min)	Total Vol (gal)	pH (S.U.)	S.C. (µS/cm)	DO (mg/l)	Turbidity (NTUs)	Temp (C)	ORP (mV)
9:09	9:35	26	1.3	6.49	2126	0.14	2.64	25.8	-105.4

Calibration Report

Instrument Aqua TROLL 600
Serial Number 606696
Created 10/3/2022

Sensor	RDO
Serial Number	911003
Last Calibrated	10/3/2022

Calibration Details

Slope 1.010808
Offset 0.00 mg/L

Calibration point 100%

Concentration 8.11 mg/L
Pre Measurement 104.77 %Sat
Post Measurement 100.00 %Sat
Temperature 25.60 °C
Barometric Pressure 1,015.8 mbar

Sensor	Conductivity
Serial Number	673517
Last Calibrated	10/3/2022

Calibration Details

TDS Conversion Factor (ppm) 0.65
Cell Constant 1.012
Reference Temperature 25.00 °C

Pre Measurement

Actual Conductivity 7,912.0 µS/cm
Specific Conductivity 7,992.2 µS/cm

Post Measurement

Actual Conductivity 7,919.7 µS/cm
Specific Conductivity 8,000.0 µS/cm

Sensor	pH/ORP
Serial Number	723210
Last Calibrated	10/3/2022

Calibration Details

Calibration Point 1

pH of Buffer 7.00 pH
pH mV -14.9 mV
Temperature 24.47 °C

Pre Measurement

pH 7.22 pH
pH mV -14.8 mV

Post Measurement

pH 7.00 pH
pH mV -14.8 mV

Slope and Offset 1

Slope -59.06 mV/pH
Offset -14.9 mV

ORP

ORP Solution	Quick-Cal
Offset	-95.6 mV
Temperature	24.47 °C
Pre Measurement	329.9 mV
Post Measurement	224.3 mV

Sensor	Turbidity
--------	-----------

Serial Number	759683
Last Calibrated	Factory Defaults

Sensor	Barometric Pressure
--------	---------------------

Serial Number	606696
Last Calibrated	Factory Defaults

Calibration Report

Instrument Aqua TROLL 600
Serial Number 606696
Created 10/4/2022

Sensor	RDO
Serial Number	911003
Last Calibrated	10/4/2022

Calibration Details

Slope 1.016052
Offset 0.00 mg/L

Calibration point 100%

Concentration 9.20 mg/L
Pre Measurement 99.64 %Sat
Post Measurement 100.00 %Sat
Temperature 18.75 °C
Barometric Pressure 1,015.9 mbar

Sensor	Conductivity
Serial Number	673517
Last Calibrated	10/4/2022

Calibration Details

TDS Conversion Factor (ppm) 0.65
Cell Constant 1.031
Reference Temperature 25.00 °C

Pre Measurement

Actual Conductivity 7,087.1 µS/cm
Specific Conductivity 7,855.9 µS/cm

Post Measurement

Actual Conductivity 7,217.1 µS/cm
Specific Conductivity 8,000.0 µS/cm

Sensor	pH/ORP
Serial Number	723210
Last Calibrated	10/4/2022

Calibration Details

Calibration Point 1

pH of Buffer 7.02 pH
pH mV -10.4 mV
Temperature 19.88 °C

Pre Measurement

pH 6.93 pH
pH mV -10.5 mV

Post Measurement

pH 7.02 pH
pH mV -10.2 mV

Slope and Offset 1

Slope -58.14 mV/pH
Offset -9.2 mV

ORP

ORP Solution	Quick-Cal
Offset	-72.2 mV
Temperature	19.88 °C
Pre Measurement	207.5 mV
Post Measurement	231.2 mV

Sensor	Turbidity
--------	-----------

Serial Number	759683
Last Calibrated	Factory Defaults

Sensor	Barometric Pressure
--------	---------------------

Serial Number	606696
Last Calibrated	Factory Defaults

Field Instrument Calibration Records

INSTRUMENT

HACH 2100P # 10Serial # 020500026630PARAMETER: *Turbidity*

STANDARDS: [Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]

Standard A GELEX 0-10 NTU (+/- 10%)Standard B GELEX 10-100 NTU (+/- 6.5%)Standard C GELEX 100-1000 NTU (+/- 5%)

DATE (mm/dd/yy)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
10/3/22	1130	A	5.14	5.27	2.5	NO	INITIAL	GK
"	"	B	51.9	51.7	0.4	"	"	"
"	"	C	565	582	3.0	"	"	"
10/3/22	1510	A	5.14	5.25	2.1	NO	Cont	GK
"	"	B	51.9	51.8	0.6	"	"	"
"	"	C	565	580	2.7	"	"	"
10/4/22	0745	A	5.14	5.11	0.6	NO	Cont	GK
		B	51.9	51.6	0.6	"		
		C	565	576	1.9	"		
10/28/22	0750	A	5.14	5.21	1.4	NO	Cont	GK
		B	51.9	52.4	0.96	"		
		C	565	574	1.68	"		
10/28/22	1230	A	5.14	5.17	0.6	NO	Final	GK
		B	51.9	52.1	0.4	"		
		C	565	575	1.7	"		
		A				NO		
		B				"		
		C				"		

Field Instrument Calibration Records

INSTRUMENT

HACH 2100Q # 11Serial # 021000028051
~~152205011291~~PARAMETER: *Turbidity***STANDARDS:** [Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]Standard A GELEX 0-10 NTU (+/- 10%)Standard B GELEX 10-100 NTU (+/- 6.5%)Standard C GELEX 100-1000 NTU (+/- 5%)

DATE (mm/dd/yy)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
10/03/22	1215	A	10	9.98		NO	INITIAL	MP
"	"	B	20	19.95		"	"	"
"	"	C	100	99.99		"	"	"
10/04/22	0857	A	10	9.97		NO	Cont	MP
"	"	B	20	19.96		"	"	"
"	"	C	100	99.95		"	"	"
		A				NO		
		B				"		
		C				"		
		A				NO		
		B				"		
		C				"		
		A				NO		
		B				"		
		C				"		
		A				NO		
		B				"		
		C				"		

GSR4

Field Instrument Calibration Records

INSTRUMENT

~~Oakton 310 Series # 11~~

Serial # 216102047

PARAMETER: *ORP*

Requirements: $\pm 10\text{mV}$

STANDARDS: [Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]

Standard: MFG ORP standard 240mV Lot 1GRC531 Expires 12/22/200

DATE (mm/dd/yy)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
10/03/22	12:10	Temp	21.3°C	21.3°C	-	YES	Initial	MF
"	"	ORP	236 mV	237 mV		"	"	"
10/04/22	0851	Temp	19.0°C	19.0°C	-	YES	cont	MF
"	"	ORP	238 mV	241 mV		"	"	"
		Temp						
		ORP						
		Temp						
		ORP						
		Temp						
		ORP						
		Temp						
		ORP						
		Temp						
		ORP						

Field Instrument Calibration Records

INSTRUMENT

HACH 2100P # 3Serial # 31373PARAMETER: *Turbidity*

STANDARDS: [Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]

Standard A GELEX 0-10 NTU (+/- 10%)Standard B GELEX 10-100 NTU (+/- 6.5%)Standard C GELEX 100-1000 NTU (+/- 5%)

DATE (mm/dd/yy)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
10/4/22	1130	A	5.81	5.80		NO	INITIAL	DS
"	"	B	54.0	53.7		"	"	"
"	"	C	586	585		"	"	"
10/5/22	1510	A	5.81	5.79		NO	ICV	DS
"	"	B	54.0	53.8		"	"	"
"	"	C	586	584		"	"	"
10/18/22	0801	A	5.81	5.78		NO	ICV	DS
f	f	B	54.0	53.9		"	f	f
f	f	C	586	586		"	f	f
		A				NO		
		B				"		
		C				"		
		A				NO		
		B				"		
		C				"		
		A				NO		
		B				"		
		C				"		

Form FD9000-8 CALIBRATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000) 11-10-05

Boldly "X" this box
if there is qualified
data on this page.

Project/Site: RSC - GSRyDate: 10/27/22Meter # 208000237Temperature (Quarterly) For Date of Last Temperature Verification see in log book

Dissolved Oxygen	DEP SOP FT 1500	Initials	Date	Time	Probe Charge	Probe Gain	mg/L	Temp °C	% DO	Saturation mg/L (from chart)	Pass or Fail
Acceptance Criteria: ± 0.3 mg/l											
CAL <u>ICV</u> CCV		GK	10/28	0755			8.57	23.1	100	8.562	(B) F
CAL ICV <u>CCV</u>		↓	↓	1230			8.16	25.7	100	8.154	(P) F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F

Specific Conductance	DEP SOP FT 1200	Initials	Date	Time	Standard µmhos/cm	Exp. Date	Lot #	Bottle #	Cell Constant	Reading µmhos/cm	Pass or Fail
Acceptance Criteria: $\pm 5\%$											
CAL <u>ICV</u> CCV		GK	10/28	0752	1413	12/22	10K502			1398	(P) F
CAL ICV <u>CCV</u>		↓	↓	1230	1413	↓	16K009			1403	(P) F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F

pH	DEP SOP FT 1100	Initials	Date	Time	Standard SU	Exp. Date	Lot #	Bottle #	Slope	Reading SU	Pass or Fail
Acceptance Criteria: ± 0.2 SU											
CAL <u>ICV</u> CCV		GK	10/27	1300	4.0	10/23	16K380			3.98	(B) F
CAL <u>ICV</u> CCV		↓	↓	↓	7.0	10/23	16J214			7.03	(B) F
CAL <u>ICV</u> CCV		↓	↓	↓	10.0	8/23	16J354			10.04	(P) F
CAL ICV <u>CCV</u>		GK	10/28	0745	4.0					4.00	(P) F
CAL ICV <u>CCV</u>		↓	↓	↓	7.0					7.07	(P) F
CAL ICV <u>CCV</u>		↓	↓	↓	10.0					10.10	(P) F
CAL ICV <u>CCV</u>		↓	↓	1230						3.99	(B) F
CAL ICV <u>CCV</u>		↓	↓	↓						7.04	(B) F
CAL ICV <u>CCV</u>		↓	↓	↓						10.08	(P) F

Maintenance: Weekly pH Slope: _____ Specific Conductance Probe Cleaned? Yes No Dissolved Oxygen Membrane Changed: Yes No

Notes:

ORP:

ICV
CCV

GK 10/29 0750 240 08/22 16K009 239.8 ✓
 GK 10/28 0750 240 ↓ ↓ 239.7 ✓
 1230

Perform only in Calibrate Mode:
 Perform only in Run Mode:
 Perform only in Run Mode:

CAL - Calibrate -
 ICV - Initial Calibration Verification
 CCV - Continuing Calibration Verification

Page _____

Boldly "X" this box
if there is qualified
data on this page.

Form FD9000-8 CALIBRATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000) 11-10-05

Project/Site: GSRX Date: 10/03/22 Meter # 11 SN#216102047

Temperature (Quarterly) For Date of Last Temperature Verification see in log book

Dissolved Oxygen	DEP SOP FT 1500	Initials	Date	Time	Probe Charge	Probe Gain	mg/L	Temp °C	% DO	Saturation mg/L (from chart)	Pass or Fail
Acceptance Criteria: +/- 0.3mg/l											
<u>CAL</u> ICV CCV		<u>WIP</u>	<u>10/03/22</u>	<u>1155</u>			<u>8.75</u>	<u>22.0°C</u>	<u>100%</u>	<u>8.74</u>	<u>P</u> F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F

Specific Conductance	DEP SOP FT 1200	Initials	Date	Time	Standard µmhos/cm	Exp. Date	Lot #	Bottle #	Cell Constant	Reading µmhos/cm	Pass or Fail
Acceptance Criteria: +/- 5%											
<u>CAL</u> ICV CCV		<u>WIP</u>	<u>10/03/22</u>	<u>1155</u>	<u>1463</u>	<u>10/22</u>	<u>211015D</u>			<u>1415</u>	<u>P</u> F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F

pH	DEP SOP FT 1100	Initials	Date	Time	Standard SU	Exp. Date	Lot #	Bottle #	Slope	Reading SU	Pass or Fail
Acceptance Criteria: +/- 0.2 SU											
<u>CAL</u> ICV CCV		<u>WIP</u>	<u>10/03/22</u>	<u>1155</u>	<u>7.00</u>	<u>03/23</u>	<u>210831E</u>			<u>7.00</u>	<u>P</u> F
<u>CAL</u> ICV CCV		<u>↓</u>	<u>↓</u>		<u>4.00</u>	<u>10/22</u>	<u>210415E</u>			<u>4.01</u>	<u>P</u> F
<u>CAL</u> ICV CCV		<u>↓</u>	<u>↓</u>		<u>10.00</u>	<u>03/23</u>	<u>210831E</u>			<u>10.00</u>	<u>P</u> F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F

Maintenance: Weekly pH Slope: _____ Specific Conductance Probe Cleaned? Yes No Dissolved Oxygen Membrane Changed: Yes No

Notes:

Perform only in Calibrate Mode:
Perform only in Run Mode:
Perform only in Run Mode:

CAL - Calibrate -
ICV - Initial Calibration Verification
CCV - Continuing Calibration Verification

Boldly "X" this box
if there is qualified
data on this page.

Form FD9000-8 CALIBRATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000) 11-10-05

Project/Site: GSRVDate: 10/04/22Meter # 11 SN#216102047Temperature (Quarterly) For Date of Last Temperature Verification see in log book

Dissolved Oxygen	DEP SOP FT 1500	Initials	Date	Time	Probe Charge	Probe Gain	mg/L	Temp °C	% DO	Saturation mg/L (from chart)	Pass or Fail
Acceptance Criteria: ± 0.3 mg/l											
<u>CAL</u> ICV CCV		<u>MP</u>	<u>10/04/22</u>	<u>0837</u>			<u>9.24</u>	<u>19.1°C</u>	<u>100%</u>	<u>9.25</u>	<u>P</u> F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F

Specific Conductance	DEP SOP FT 1200	Initials	Date	Time	Standard μ mhos/cm	Exp. Date	Lot #	Bottle #	Cell Constant	Reading μ mhos/cm	Pass or Fail
Acceptance Criteria: $\pm 5\%$											
<u>CAL</u> ICV CCV		<u>MP</u>	<u>10/04/22</u>	<u>0837</u>	<u>1413</u>	<u>10/22</u>	<u>211015D</u>			<u>1415</u>	<u>P</u> F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F

pH	DEP SOP FT 1100	Initials	Date	Time	Standard SU	Exp. Date	Lot #	Bottle #	Slope	Reading SU	Pass or Fail
Acceptance Criteria: ± 0.2 SU											
<u>CAL</u> ICV CCV		<u>MP</u>	<u>10/04/22</u>	<u>0837</u>	<u>7.00</u>	<u>03/23</u>	<u>210831E</u>			<u>7.03</u>	<u>P</u> F
<u>CAL</u> ICV CCV					<u>4.00</u>	<u>10/22</u>	<u>210415E</u>			<u>4.01</u>	<u>P</u> F
<u>CAL</u> ICV CCV		<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>10.00</u>	<u>03/23</u>	<u>210831J</u>			<u>10.04</u>	<u>P</u> F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F
CAL ICV CCV											P F

Maintenance: Weekly pH Slope: _____ Specific Conductance Probe Cleaned? Yes No Dissolved Oxygen Membrane Changed: Yes No

Notes:

Perform only in Calibrate Mode:
Perform only in Run Mode:
Perform only in Run Mode:

CAL - Calibrate -
ICV - Initial Calibration Verification
CCV - Continuing Calibration Verification

Form FD9000-8 CALIBRATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000) 11-10-05

Buildup: N - this box
if there is qualitative
data on this page

Project/Site: KSC GSP44

Date: 10/4/22-10/5/22

Meter # 21L162052

Temperature (Quarterly) For Date of Last Temperature Verification see in log book

Dissolved Oxygen	DEP SOP FT 1500	Initials	Date	Time	Probe Charge	Probe Gain	mg/L	Temp °C	% DO	Saturation mg/L (from chart)	Pass or Fail
Acceptance Criteria: $\pm 0.3 \text{ mg/L}$											
CAL	ICV	CCV	DS	10/4/22	1133		8.71	22.2	100%	8.710	P F
CAL	ICV	CCV	↓	10/5/22	1512		8.34	24.1	100%	8.467	P F
CAL	ICV	CCV	DS	10/4/22	1133		10.24	14.0	100%	10.301	P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F

Specific Conductance	DEP SOP FT 1200	Initials	Date	Time	Standard $\mu\text{mhos/cm}$	Exp. Date	Lot #	Bottle #	Cell Constant	Reading $\mu\text{mhos/cm}$	Pass or Fail
Acceptance Criteria: $\pm 5\%$											
CAL	ICV	CCV	DS	10/4/22	1413	10/22	21101SD			1413	P F
CAL	ICV	CCV	↓	10/5/22	1413	↓	↓			1416	P F
CAL	ICV	CCV	DS	10/4/22							P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F

pH	DEP SOP FT 1100	Initials	Date	Time	Standard SU	Exp. Date	Lot #	Bottle #	Slope	Reading SU	Pass or Fail
Acceptance Criteria: $\pm 0.2 \text{ SU}$											
CAL	ICV	CCV	DS	10/4/22	7.00	4/23	21101SB			7.00	P F
CAL	ICV	CCV	↓	↓	4.00	10/22	21041SE			7.00	P F
CAL	ICV	CCV	↓	↓	10.00	3/23	210831U			10.00	P F
CAL	ICV	CCV	↓	10/5/22	7.00	↓	↓			7.07	P F
CAL	ICV	CCV	↓	↓	4.00	↓	↓			4.04	P F
CAL	ICV	CCV	↓	↓	10.00	↓	↓			10.03	P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F

Maintenance: Weekly pH Slope: Specific Conductance Probe Cleaned? Yes No Dissolved Oxygen Membrane Changed: Yes No

Notes:	DS	10/4/22	1133	238	3/26	210100633	238.0	P
	↓	10/5/22		238	↓	↓	234.9	P

Perform only in Calibrate Mode:
Perform only in Run Mode:
Perform only in Run Mode:

CAL - Calibrate -
ICV - Initial Calibration Verification
CCV - Continuing Calibration Verification

APPENDIX C

LABORATORY ANALYTICAL REPORTS

This page intentionally left blank.



Environment Testing

PERMISSION TO PUBLISH

Eurofins Environment Testing Southeast, LLC (EETSE) grants NASA and the U.S. Government permission to reproduce, publish, and distribute Resource Conservation and Recovery Act (RCRA) Program Documents, submitted in 2019 or beyond, hereinafter referred to as “the Work” in any form, language, or manner, now or hereafter known or developed, throughout the world, and to authorize others to do so on its behalf.

EETSE certifies that the Work does not infringe any existing copyright, proprietary right, or other right of a third party; and all clearance permissions, if necessary, to use materials of third parties have been obtained.

A handwritten signature in blue ink, appearing to read "Alex M.", is positioned above a horizontal line.
Signature

10.14.2022

Date

Eurofins Environment Testing Southeast, LLC
Alex Montoya
President
5102 LaRoche Avenue
Savannah, GA 31404



Environment Testing

ANALYTICAL REPORT

Eurofins Orlando
481 Newburyport Avenue
Altamonte Springs, FL 32701
Tel: (407)339-5984

Laboratory Job ID: 670-6709-1

Client Project/Site: NASA KSC GSRV PCB VOC Area

For:

AECOM Technical Services Inc.
150 North Orange Avenue
Suite 200
Orlando, Florida 32801

Attn: Teresa Amentt Jennings

Authorized for release by:
10/31/2022 2:40:32 PM

Kaitlin Dylnicki, Project Manager
(407)339-5984
kaitlin.dylnicki@et.eurofinsus.com

LINKS

Review your project
results through



Have a Question?



Visit us at:

www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Detection Summary	5
Client Sample Results	6
Surrogate Summary	12
QC Sample Results	14
QC Association Summary	18
Lab Chronicle	19
Certification Summary	21
Method Summary	22
Sample Summary	23
Chain of Custody	24
Receipt Checklists	28



Definitions/Glossary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6709-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J1	Estimated value; value may not be accurate. Surrogate recovery outside of criteria.
U	Indicates that the compound was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6709-1

Job ID: 670-6709-1

Laboratory: Eurofins Orlando

Narrative

Job Narrative 670-6709-1

Receipt

The samples were received on 10/4/2022 12:00 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.2°C

GC/MS VOA

Method 8260B: The continuing calibration verification (CCV) associated with batch 670-7445 recovered above the upper control limit for 1,2-Dichlorobenzene and 1,3-Dichlorobenzene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

PCBs

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6709-1

Client Sample ID: GSRV-MW0011S-007.0-20221003

Lab Sample ID: 670-6709-1

No Detections.

Client Sample ID: GSRV-MW0031-013.0-20221003

Lab Sample ID: 670-6709-2

No Detections.

Client Sample ID: GSRV-MW0043-007.0-20221003

Lab Sample ID: 670-6709-3

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
para-Dichlorobenzene	1.4		1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: GSRV-MW0044-007.0-20221003

Lab Sample ID: 670-6709-4

No Detections.

Client Sample ID: GSRV-MW0055-013.0-20221003

Lab Sample ID: 670-6709-5

No Detections.

Client Sample ID: GSRV-MW0056-019.0-20221003

Lab Sample ID: 670-6709-6

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	36		1.0	0.50	ug/L	1		8260B	Total/NA
m-Dichlorobenzene	51		1.0	0.50	ug/L	1		8260B	Total/NA
o-Dichlorobenzene	0.82	I	1.0	0.50	ug/L	1		8260B	Total/NA
para-Dichlorobenzene	71		1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: GSRV-MW0057-025.0-20221003

Lab Sample ID: 670-6709-7

No Detections.

Client Sample ID: GSRV-MW0058-035.0-20221003

Lab Sample ID: 670-6709-8

No Detections.

Client Sample ID: GSRV-SW0001-001.0-20221003

Lab Sample ID: 670-6709-9

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6709-1

Client Sample ID: GSRY-MW0011S-007.0-20221003

Lab Sample ID: 670-6709-1

Date Collected: 10/03/22 13:47

Matrix: Ground Water

Date Received: 10/04/22 12:00

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.35	U	0.45	0.35	ug/L		10/07/22 14:44	10/12/22 16:40	1
PCB-1221	0.14	U	0.45	0.14	ug/L		10/07/22 14:44	10/12/22 16:40	1
PCB-1232	0.11	U	0.45	0.11	ug/L		10/07/22 14:44	10/12/22 16:40	1
PCB-1242	0.12	U	0.45	0.12	ug/L		10/07/22 14:44	10/12/22 16:40	1
PCB-1248	0.088	U	0.45	0.088	ug/L		10/07/22 14:44	10/12/22 16:40	1
PCB-1254	0.11	U	0.45	0.11	ug/L		10/07/22 14:44	10/12/22 16:40	1
PCB-1260	0.23	U	0.45	0.23	ug/L		10/07/22 14:44	10/12/22 16:40	1
Polychlorinated biphenyls, Total	0.14	U	0.45	0.14	ug/L		10/07/22 14:44	10/12/22 16:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	61		50 - 150	10/07/22 14:44	10/12/22 16:40	1
Tetrachloro-m-xylene	97		50 - 150	10/07/22 14:44	10/12/22 16:40	1

Client Sample ID: GSRY-MW0031-013.0-20221003

Lab Sample ID: 670-6709-2

Date Collected: 10/03/22 14:25

Matrix: Ground Water

Date Received: 10/04/22 12:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 02:14	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 02:14	1
Benzene	0.50	U	1.0	0.50	ug/L			10/06/22 02:14	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 02:14	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 02:14	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 02:14	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 02:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 120		10/06/22 02:14	1
4-Bromofluorobenzene (Surr)	93		80 - 120		10/06/22 02:14	1
Dibromofluoromethane (Surr)	117		80 - 120		10/06/22 02:14	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.37	U	0.47	0.37	ug/L		10/07/22 14:44	10/12/22 17:08	1
PCB-1221	0.15	U	0.47	0.15	ug/L		10/07/22 14:44	10/12/22 17:08	1
PCB-1232	0.12	U	0.47	0.12	ug/L		10/07/22 14:44	10/12/22 17:08	1
PCB-1242	0.13	U	0.47	0.13	ug/L		10/07/22 14:44	10/12/22 17:08	1
PCB-1248	0.093	U	0.47	0.093	ug/L		10/07/22 14:44	10/12/22 17:08	1
PCB-1254	0.11	U	0.47	0.11	ug/L		10/07/22 14:44	10/12/22 17:08	1
PCB-1260	0.24	U	0.47	0.24	ug/L		10/07/22 14:44	10/12/22 17:08	1
Polychlorinated biphenyls, Total	0.15	U	0.47	0.15	ug/L		10/07/22 14:44	10/12/22 17:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	68		50 - 150	10/07/22 14:44	10/12/22 17:08	1
Tetrachloro-m-xylene	114		50 - 150	10/07/22 14:44	10/12/22 17:08	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6709-1

Client Sample ID: GSRY-MW0043-007.0-20221003

Lab Sample ID: 670-6709-3

Date Collected: 10/03/22 14:32

Matrix: Ground Water

Date Received: 10/04/22 12:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 02:31	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 02:31	1
Benzene	0.50	U	1.0	0.50	ug/L			10/06/22 02:31	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 02:31	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 02:31	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 02:31	1
para-Dichlorobenzene	1.4		1.0	0.50	ug/L			10/06/22 02:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 120		10/06/22 02:31	1
4-Bromofluorobenzene (Surr)	91		80 - 120		10/06/22 02:31	1
Dibromofluoromethane (Surr)	119		80 - 120		10/06/22 02:31	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.37	U	0.47	0.37	ug/L		10/07/22 14:44	10/12/22 17:37	1
PCB-1221	0.15	U	0.47	0.15	ug/L		10/07/22 14:44	10/12/22 17:37	1
PCB-1232	0.12	U	0.47	0.12	ug/L		10/07/22 14:44	10/12/22 17:37	1
PCB-1242	0.13	U	0.47	0.13	ug/L		10/07/22 14:44	10/12/22 17:37	1
PCB-1248	0.092	U	0.47	0.092	ug/L		10/07/22 14:44	10/12/22 17:37	1
PCB-1254	0.11	U	0.47	0.11	ug/L		10/07/22 14:44	10/12/22 17:37	1
PCB-1260	0.24	U	0.47	0.24	ug/L		10/07/22 14:44	10/12/22 17:37	1
Polychlorinated biphenyls, Total	0.15	U	0.47	0.15	ug/L		10/07/22 14:44	10/12/22 17:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	77		50 - 150	10/07/22 14:44	10/12/22 17:37	1
Tetrachloro-m-xylene	92		50 - 150	10/07/22 14:44	10/12/22 17:37	1

Client Sample ID: GSRY-MW0044-007.0-20221003

Lab Sample ID: 670-6709-4

Date Collected: 10/03/22 14:47

Matrix: Ground Water

Date Received: 10/04/22 12:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 02:48	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 02:48	1
Benzene	0.50	U	1.0	0.50	ug/L			10/06/22 02:48	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 02:48	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 02:48	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 02:48	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 02:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		80 - 120		10/06/22 02:48	1
4-Bromofluorobenzene (Surr)	93		80 - 120		10/06/22 02:48	1
Dibromofluoromethane (Surr)	117		80 - 120		10/06/22 02:48	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.39	U	0.49	0.39	ug/L		10/07/22 14:44	10/12/22 18:05	1
PCB-1221	0.16	U	0.49	0.16	ug/L		10/07/22 14:44	10/12/22 18:05	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6709-1

Client Sample ID: GSRY-MW0044-007.0-20221003

Lab Sample ID: 670-6709-4

Date Collected: 10/03/22 14:47

Matrix: Ground Water

Date Received: 10/04/22 12:00

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1232	0.12	U	0.49	0.12	ug/L		10/07/22 14:44	10/12/22 18:05	1
PCB-1242	0.14	U	0.49	0.14	ug/L		10/07/22 14:44	10/12/22 18:05	1
PCB-1248	0.097	U	0.49	0.097	ug/L		10/07/22 14:44	10/12/22 18:05	1
PCB-1254	0.12	U	0.49	0.12	ug/L		10/07/22 14:44	10/12/22 18:05	1
PCB-1260	0.25	U	0.49	0.25	ug/L		10/07/22 14:44	10/12/22 18:05	1
Polychlorinated biphenyls, Total	0.16	U	0.49	0.16	ug/L		10/07/22 14:44	10/12/22 18:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	82		50 - 150	10/07/22 14:44	10/12/22 18:05	1
Tetrachloro-m-xylene	83		50 - 150	10/07/22 14:44	10/12/22 18:05	1

Client Sample ID: GSRY-MW0055-013.0-20221003

Lab Sample ID: 670-6709-5

Date Collected: 10/03/22 13:07

Matrix: Ground Water

Date Received: 10/04/22 12:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:06	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:06	1
Benzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:06	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:06	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:06	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:06	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 120		10/06/22 03:06	1
4-Bromofluorobenzene (Surr)	94		80 - 120		10/06/22 03:06	1
Dibromofluoromethane (Surr)	116		80 - 120		10/06/22 03:06	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.37	U	0.47	0.37	ug/L		10/07/22 14:44	10/12/22 18:33	1
PCB-1221	0.15	U	0.47	0.15	ug/L		10/07/22 14:44	10/12/22 18:33	1
PCB-1232	0.12	U	0.47	0.12	ug/L		10/07/22 14:44	10/12/22 18:33	1
PCB-1242	0.13	U	0.47	0.13	ug/L		10/07/22 14:44	10/12/22 18:33	1
PCB-1248	0.092	U	0.47	0.092	ug/L		10/07/22 14:44	10/12/22 18:33	1
PCB-1254	0.11	U	0.47	0.11	ug/L		10/07/22 14:44	10/12/22 18:33	1
PCB-1260	0.23	U	0.47	0.23	ug/L		10/07/22 14:44	10/12/22 18:33	1
Polychlorinated biphenyls, Total	0.15	U	0.47	0.15	ug/L		10/07/22 14:44	10/12/22 18:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	87		50 - 150	10/07/22 14:44	10/12/22 18:33	1
Tetrachloro-m-xylene	98		50 - 150	10/07/22 14:44	10/12/22 18:33	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6709-1

Client Sample ID: GSRY-MW0056-019.0-20221003

Lab Sample ID: 670-6709-6

Date Collected: 10/03/22 15:10

Matrix: Ground Water

Date Received: 10/04/22 12:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:23	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:23	1
Benzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:23	1
Chlorobenzene	36		1.0	0.50	ug/L			10/06/22 03:23	1
m-Dichlorobenzene	51		1.0	0.50	ug/L			10/10/22 18:46	1
o-Dichlorobenzene	0.82	I	1.0	0.50	ug/L			10/10/22 18:46	1
para-Dichlorobenzene	71		1.0	0.50	ug/L			10/06/22 03:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 120		10/06/22 03:23	1
Toluene-d8 (Surr)	105		80 - 120		10/10/22 18:46	1
4-Bromofluorobenzene (Surr)	76	J1	80 - 120		10/06/22 03:23	1
4-Bromofluorobenzene (Surr)	81		80 - 120		10/10/22 18:46	1
Dibromofluoromethane (Surr)	118		80 - 120		10/06/22 03:23	1
Dibromofluoromethane (Surr)	109		80 - 120		10/10/22 18:46	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.38	U	0.48	0.38	ug/L		10/07/22 14:44	10/12/22 19:01	1
PCB-1221	0.15	U	0.48	0.15	ug/L		10/07/22 14:44	10/12/22 19:01	1
PCB-1232	0.12	U	0.48	0.12	ug/L		10/07/22 14:44	10/12/22 19:01	1
PCB-1242	0.13	U	0.48	0.13	ug/L		10/07/22 14:44	10/12/22 19:01	1
PCB-1248	0.095	U	0.48	0.095	ug/L		10/07/22 14:44	10/12/22 19:01	1
PCB-1254	0.11	U	0.48	0.11	ug/L		10/07/22 14:44	10/12/22 19:01	1
PCB-1260	0.24	U	0.48	0.24	ug/L		10/07/22 14:44	10/12/22 19:01	1
Polychlorinated biphenyls, Total	0.15	U	0.48	0.15	ug/L		10/07/22 14:44	10/12/22 19:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	63		50 - 150	10/07/22 14:44	10/12/22 19:01	1
Tetrachloro-m-xylene	84		50 - 150	10/07/22 14:44	10/12/22 19:01	1

Client Sample ID: GSRY-MW0057-025.0-20221003

Lab Sample ID: 670-6709-7

Date Collected: 10/03/22 13:54

Matrix: Ground Water

Date Received: 10/04/22 12:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:40	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:40	1
Benzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:40	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:40	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:40	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:40	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 120		10/06/22 03:40	1
4-Bromofluorobenzene (Surr)	93		80 - 120		10/06/22 03:40	1
Dibromofluoromethane (Surr)	115		80 - 120		10/06/22 03:40	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6709-1

Client Sample ID: GSRY-MW0057-025.0-20221003

Lab Sample ID: 670-6709-7

Date Collected: 10/03/22 13:54

Matrix: Ground Water

Date Received: 10/04/22 12:00

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.36	U	0.46	0.36	ug/L		10/07/22 14:44	10/12/22 23:13	1
PCB-1221	0.14	U	0.46	0.14	ug/L		10/07/22 14:44	10/12/22 23:13	1
PCB-1232	0.12	U	0.46	0.12	ug/L		10/07/22 14:44	10/12/22 23:13	1
PCB-1242	0.13	U	0.46	0.13	ug/L		10/07/22 14:44	10/12/22 23:13	1
PCB-1248	0.090	U	0.46	0.090	ug/L		10/07/22 14:44	10/12/22 23:13	1
PCB-1254	0.11	U	0.46	0.11	ug/L		10/07/22 14:44	10/12/22 23:13	1
PCB-1260	0.23	U	0.46	0.23	ug/L		10/07/22 14:44	10/12/22 23:13	1
Polychlorinated biphenyls, Total	0.14	U	0.46	0.14	ug/L		10/07/22 14:44	10/12/22 23:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	64		50 - 150	10/07/22 14:44	10/12/22 23:13	1
Tetrachloro-m-xylene	104		50 - 150	10/07/22 14:44	10/12/22 23:13	1

Client Sample ID: GSRY-MW0058-035.0-20221003

Lab Sample ID: 670-6709-8

Date Collected: 10/03/22 13:32

Matrix: Ground Water

Date Received: 10/04/22 12:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:57	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:57	1
Benzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:57	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:57	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:57	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:57	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 03:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		80 - 120		10/06/22 03:57	1
4-Bromofluorobenzene (Surr)	96		80 - 120		10/06/22 03:57	1
Dibromofluoromethane (Surr)	118		80 - 120		10/06/22 03:57	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.37	U	0.48	0.37	ug/L		10/07/22 14:44	10/12/22 19:29	1
PCB-1221	0.15	U	0.48	0.15	ug/L		10/07/22 14:44	10/12/22 19:29	1
PCB-1232	0.12	U	0.48	0.12	ug/L		10/07/22 14:44	10/12/22 19:29	1
PCB-1242	0.13	U	0.48	0.13	ug/L		10/07/22 14:44	10/12/22 19:29	1
PCB-1248	0.094	U	0.48	0.094	ug/L		10/07/22 14:44	10/12/22 19:29	1
PCB-1254	0.11	U	0.48	0.11	ug/L		10/07/22 14:44	10/12/22 19:29	1
PCB-1260	0.24	U	0.48	0.24	ug/L		10/07/22 14:44	10/12/22 19:29	1
Polychlorinated biphenyls, Total	0.15	U	0.48	0.15	ug/L		10/07/22 14:44	10/12/22 19:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	66		50 - 150	10/07/22 14:44	10/12/22 19:29	1
Tetrachloro-m-xylene	101		50 - 150	10/07/22 14:44	10/12/22 19:29	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6709-1

Client Sample ID: GSRY-SW0001-001.0-20221003

Lab Sample ID: 670-6709-9

Date Collected: 10/03/22 15:01

Matrix: Surface Water

Date Received: 10/04/22 12:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 04:14	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 04:14	1
Benzene	0.50	U	1.0	0.50	ug/L			10/06/22 04:14	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 04:14	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 04:14	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 04:14	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 04:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 120		10/06/22 04:14	1
4-Bromofluorobenzene (Surr)	93		80 - 120		10/06/22 04:14	1
Dibromofluoromethane (Surr)	118		80 - 120		10/06/22 04:14	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.37	U	0.47	0.37	ug/L		10/07/22 14:44	10/12/22 19:57	1
PCB-1221	0.15	U	0.47	0.15	ug/L		10/07/22 14:44	10/12/22 19:57	1
PCB-1232	0.12	U	0.47	0.12	ug/L		10/07/22 14:44	10/12/22 19:57	1
PCB-1242	0.13	U	0.47	0.13	ug/L		10/07/22 14:44	10/12/22 19:57	1
PCB-1248	0.092	U	0.47	0.092	ug/L		10/07/22 14:44	10/12/22 19:57	1
PCB-1254	0.11	U	0.47	0.11	ug/L		10/07/22 14:44	10/12/22 19:57	1
PCB-1260	0.24	U	0.47	0.24	ug/L		10/07/22 14:44	10/12/22 19:57	1
Polychlorinated biphenyls, Total	0.15	U	0.47	0.15	ug/L		10/07/22 14:44	10/12/22 19:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	88		50 - 150	10/07/22 14:44	10/12/22 19:57	1
Tetrachloro-m-xylene	91		50 - 150	10/07/22 14:44	10/12/22 19:57	1

Eurofins Orlando

Surrogate Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6709-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Ground Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)						
		TOL (80-120)	BFB (80-120)	DBFM (80-120)				
670-6709-2	GSRV-MW0031-013.0-2022100	102	93	117				
670-6709-3	GSRV-MW0043-007.0-202210 03	105	91	119				
670-6709-4	GSRV-MW0044-007.0-202210 03	107	93	117				
670-6709-5	GSRV-MW0055-013.0-202210 03	104	94	116				
670-6709-6	GSRV-MW0056-019.0-202210 03	105	76 J1	118				
670-6709-6	GSRV-MW0056-019.0-202210 03	105	81	109				
670-6709-7	GSRV-MW0057-025.0-202210 03	105	93	115				
670-6709-8	GSRV-MW0058-035.0-202210 03	106	96	118				

Surrogate Legend

TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Surface Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)						
		TOL (80-120)	BFB (80-120)	DBFM (80-120)				
670-6709-9	GSRV-SW0001-001.0-2022100	104	93	118				

Surrogate Legend

TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)						
		TOL (80-120)	BFB (80-120)	DBFM (80-120)				
LCS 670-7445/4	Lab Control Sample	102	87	100				
LCS 670-7698/4	Lab Control Sample	104	81	109				
LCSD 670-7445/5	Lab Control Sample Dup	103	86	101				
LCSD 670-7698/5	Lab Control Sample Dup	106	81	109				
MB 670-7445/7	Method Blank	105	88	112				
MB 670-7698/7	Method Blank	104	82	109				

Surrogate Legend

TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Eurofins Orlando

Surrogate Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6709-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Ground Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCBP2 (50-150)	TCX2 (50-150)
670-6709-1	GSRY-MW0011S-007.0-202210	61	97
670-6709-2	GSRY-MW0031-013.0-202210	68	114
670-6709-3	03 GSRY-MW0043-007.0-202210	77	92
670-6709-4	03 GSRY-MW0044-007.0-202210	82	83
670-6709-5	03 GSRY-MW0055-013.0-202210	87	98
670-6709-6	03 GSRY-MW0056-019.0-202210	63	84
670-6709-7	03 GSRY-MW0057-025.0-202210	64	104
670-6709-8	03 GSRY-MW0058-035.0-202210	66	101
Surrogate Legend			
DCBP = DCB Decachlorobiphenyl			
TCX = Tetrachloro-m-xylene			

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Surface Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCBP2 (50-150)	TCX2 (50-150)
670-6709-9	GSRY-SW0001-001.0-2022100	88	91
Surrogate Legend			
DCBP = DCB Decachlorobiphenyl			
TCX = Tetrachloro-m-xylene			

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCBP2 (50-150)	TCX2 (50-150)
LCS 400-595510/2-A	Lab Control Sample	106	87
LCSD 400-595510/3-A	Lab Control Sample Dup	100	113
MB 400-595510/1-A	Method Blank	125	97
Surrogate Legend			
DCBP = DCB Decachlorobiphenyl			
TCX = Tetrachloro-m-xylene			

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6709-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 670-7445/7

Matrix: Water

Analysis Batch: 7445

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/05/22 22:31	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/05/22 22:31	1
Benzene	0.50	U	1.0	0.50	ug/L			10/05/22 22:31	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/05/22 22:31	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/05/22 22:31	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/05/22 22:31	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/05/22 22:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 120		10/05/22 22:31	1
4-Bromofluorobenzene (Surr)	88		80 - 120		10/05/22 22:31	1
Dibromofluoromethane (Surr)	112		80 - 120		10/05/22 22:31	1

Lab Sample ID: LCS 670-7445/4

Matrix: Water

Analysis Batch: 7445

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichlorobenzene	20.0	18.3		ug/L		92	50 - 150
1,2,4-Trichlorobenzene	20.0	18.0		ug/L		90	50 - 150
Benzene	20.0	16.6		ug/L		83	50 - 150
Chlorobenzene	20.0	16.3		ug/L		81	50 - 150
m-Dichlorobenzene	20.0	16.8		ug/L		84	50 - 150
o-Dichlorobenzene	20.0	16.4		ug/L		82	50 - 150
para-Dichlorobenzene	20.0	16.3		ug/L		81	50 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 120
4-Bromofluorobenzene (Surr)	87		80 - 120
Dibromofluoromethane (Surr)	100		80 - 120

Lab Sample ID: LCSD 670-7445/5

Matrix: Water

Analysis Batch: 7445

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,3-Trichlorobenzene	20.0	17.4		ug/L		87	50 - 150	5	30
1,2,4-Trichlorobenzene	20.0	17.5		ug/L		88	50 - 150	3	30
Benzene	20.0	15.4		ug/L		77	50 - 150	7	30
Chlorobenzene	20.0	15.3		ug/L		77	50 - 150	6	30
m-Dichlorobenzene	20.0	16.3		ug/L		81	50 - 150	3	30
o-Dichlorobenzene	20.0	15.7		ug/L		78	50 - 150	4	30
para-Dichlorobenzene	20.0	15.1		ug/L		76	50 - 150	7	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	103		80 - 120
4-Bromofluorobenzene (Surr)	86		80 - 120

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6709-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 670-7445/5

Matrix: Water

Analysis Batch: 7445

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	101		80 - 120

Lab Sample ID: MB 670-7698/7

Matrix: Water

Analysis Batch: 7698

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/10/22 16:05	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/10/22 16:05	1
Benzene	0.50	U	1.0	0.50	ug/L			10/10/22 16:05	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/10/22 16:05	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/10/22 16:05	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/10/22 16:05	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/10/22 16:05	1

	MB	MB							
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Toluene-d8 (Surr)	104		80 - 120		10/10/22 16:05	1			
4-Bromofluorobenzene (Surr)	82		80 - 120		10/10/22 16:05	1			
Dibromofluoromethane (Surr)	109		80 - 120		10/10/22 16:05	1			

Lab Sample ID: LCS 670-7698/4

Matrix: Water

Analysis Batch: 7698

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS					%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
1,2,3-Trichlorobenzene	20.0	16.4		ug/L		82	50 - 150		
1,2,4-Trichlorobenzene	20.0	16.5		ug/L		83	50 - 150		
Benzene	20.0	15.7		ug/L		79	50 - 150		
Chlorobenzene	20.0	16.0		ug/L		80	50 - 150		
m-Dichlorobenzene	20.0	16.3		ug/L		81	50 - 150		
o-Dichlorobenzene	20.0	16.0		ug/L		80	50 - 150		
para-Dichlorobenzene	20.0	16.0		ug/L		80	50 - 150		

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	104		80 - 120
4-Bromofluorobenzene (Surr)	81		80 - 120
Dibromofluoromethane (Surr)	109		80 - 120

Lab Sample ID: LCSD 670-7698/5

Matrix: Water

Analysis Batch: 7698

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	Spike	LCSD	LCSD					%Rec	RPD	RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
1,2,3-Trichlorobenzene	20.0	16.9		ug/L		84	50 - 150	3	30	
1,2,4-Trichlorobenzene	20.0	16.9		ug/L		84	50 - 150	2	30	
Benzene	20.0	15.2		ug/L		76	50 - 150	3	30	
Chlorobenzene	20.0	15.5		ug/L		77	50 - 150	3	30	
m-Dichlorobenzene	20.0	15.6		ug/L		78	50 - 150	4	30	

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6709-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 670-7698/5

Matrix: Water

Analysis Batch: 7698

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
o-Dichlorobenzene	20.0	15.6		ug/L		78	50 - 150	3	30
para-Dichlorobenzene	20.0	15.6		ug/L		78	50 - 150	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	106		80 - 120
4-Bromofluorobenzene (Surr)	81		80 - 120
Dibromofluoromethane (Surr)	109		80 - 120

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 400-595510/1-A

Matrix: Water

Analysis Batch: 596067

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 595510

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.39	U	0.50	0.39	ug/L		10/07/22 14:43	10/12/22 15:16	1
PCB-1221	0.16	U	0.50	0.16	ug/L		10/07/22 14:43	10/12/22 15:16	1
PCB-1232	0.13	U	0.50	0.13	ug/L		10/07/22 14:43	10/12/22 15:16	1
PCB-1242	0.14	U	0.50	0.14	ug/L		10/07/22 14:43	10/12/22 15:16	1
PCB-1248	0.098	U	0.50	0.098	ug/L		10/07/22 14:43	10/12/22 15:16	1
PCB-1254	0.12	U	0.50	0.12	ug/L		10/07/22 14:43	10/12/22 15:16	1
PCB-1260	0.25	U	0.50	0.25	ug/L		10/07/22 14:43	10/12/22 15:16	1
Polychlorinated biphenyls, Total	0.16	U	0.50	0.16	ug/L		10/07/22 14:43	10/12/22 15:16	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	125		50 - 150	10/07/22 14:43	10/12/22 15:16	1
Tetrachloro-m-xylene	97		50 - 150	10/07/22 14:43	10/12/22 15:16	1

Lab Sample ID: LCS 400-595510/2-A

Matrix: Water

Analysis Batch: 596067

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 595510

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
PCB-1016	5.05	6.87		ug/L		136	41 - 150
PCB-1260	5.03	5.86		ug/L		117	31 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	106		50 - 150
Tetrachloro-m-xylene	87		50 - 150

Lab Sample ID: LCSD 400-595510/3-A

Matrix: Water

Analysis Batch: 596067

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 595510

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1016	5.05	6.97		ug/L		138	41 - 150	1	30
PCB-1260	5.03	5.61		ug/L		112	31 - 150	4	30

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6709-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCSD 400-595510/3-A

Matrix: Water

Analysis Batch: 596067

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 595510

Surrogate	LCSD	LCSD	Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	100		50 - 150
Tetrachloro-m-xylene	113		50 - 150

QC Association Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6709-1

GC/MS VOA

Analysis Batch: 7445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-6709-2	GSRV-MW0031-013.0-20221003	Total/NA	Ground Water	8260B	
670-6709-3	GSRV-MW0043-007.0-20221003	Total/NA	Ground Water	8260B	
670-6709-4	GSRV-MW0044-007.0-20221003	Total/NA	Ground Water	8260B	
670-6709-5	GSRV-MW0055-013.0-20221003	Total/NA	Ground Water	8260B	
670-6709-6	GSRV-MW0056-019.0-20221003	Total/NA	Ground Water	8260B	
670-6709-7	GSRV-MW0057-025.0-20221003	Total/NA	Ground Water	8260B	
670-6709-8	GSRV-MW0058-035.0-20221003	Total/NA	Ground Water	8260B	
670-6709-9	GSRV-SW0001-001.0-20221003	Total/NA	Surface Water	8260B	
MB 670-7445/7	Method Blank	Total/NA	Water	8260B	
LCS 670-7445/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 670-7445/5	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 7698

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-6709-6	GSRV-MW0056-019.0-20221003	Total/NA	Ground Water	8260B	
MB 670-7698/7	Method Blank	Total/NA	Water	8260B	
LCS 670-7698/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 670-7698/5	Lab Control Sample Dup	Total/NA	Water	8260B	

GC Semi VOA

Prep Batch: 595510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-6709-1	GSRV-MW0011S-007.0-20221003	Total/NA	Ground Water	3511	
670-6709-2	GSRV-MW0031-013.0-20221003	Total/NA	Ground Water	3511	
670-6709-3	GSRV-MW0043-007.0-20221003	Total/NA	Ground Water	3511	
670-6709-4	GSRV-MW0044-007.0-20221003	Total/NA	Ground Water	3511	
670-6709-5	GSRV-MW0055-013.0-20221003	Total/NA	Ground Water	3511	
670-6709-6	GSRV-MW0056-019.0-20221003	Total/NA	Ground Water	3511	
670-6709-7	GSRV-MW0057-025.0-20221003	Total/NA	Ground Water	3511	
670-6709-8	GSRV-MW0058-035.0-20221003	Total/NA	Ground Water	3511	
670-6709-9	GSRV-SW0001-001.0-20221003	Total/NA	Surface Water	3511	
MB 400-595510/1-A	Method Blank	Total/NA	Water	3511	
LCS 400-595510/2-A	Lab Control Sample	Total/NA	Water	3511	
LCSD 400-595510/3-A	Lab Control Sample Dup	Total/NA	Water	3511	

Analysis Batch: 596067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-6709-1	GSRV-MW0011S-007.0-20221003	Total/NA	Ground Water	8082A	595510
670-6709-2	GSRV-MW0031-013.0-20221003	Total/NA	Ground Water	8082A	595510
670-6709-3	GSRV-MW0043-007.0-20221003	Total/NA	Ground Water	8082A	595510
670-6709-4	GSRV-MW0044-007.0-20221003	Total/NA	Ground Water	8082A	595510
670-6709-5	GSRV-MW0055-013.0-20221003	Total/NA	Ground Water	8082A	595510
670-6709-6	GSRV-MW0056-019.0-20221003	Total/NA	Ground Water	8082A	595510
670-6709-7	GSRV-MW0057-025.0-20221003	Total/NA	Ground Water	8082A	595510
670-6709-8	GSRV-MW0058-035.0-20221003	Total/NA	Ground Water	8082A	595510
670-6709-9	GSRV-SW0001-001.0-20221003	Total/NA	Surface Water	8082A	595510
MB 400-595510/1-A	Method Blank	Total/NA	Water	8082A	595510
LCS 400-595510/2-A	Lab Control Sample	Total/NA	Water	8082A	595510
LCSD 400-595510/3-A	Lab Control Sample Dup	Total/NA	Water	8082A	595510

Eurofins Orlando

Lab Chronicle

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6709-1

Client Sample ID: GSRV-MW0011S-007.0-20221003

Lab Sample ID: 670-6709-1

Date Collected: 10/03/22 13:47

Matrix: Ground Water

Date Received: 10/04/22 12:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3511			595510	PG	EET PEN	10/07/22 14:44
Total/NA	Analysis	8082A		1	596067	DS	EET PEN	10/12/22 16:40

Client Sample ID: GSRV-MW0031-013.0-20221003

Lab Sample ID: 670-6709-2

Date Collected: 10/03/22 14:25

Matrix: Ground Water

Date Received: 10/04/22 12:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7445	YP	EET ORL	10/06/22 02:14
Total/NA	Prep	3511			595510	PG	EET PEN	10/07/22 14:44
Total/NA	Analysis	8082A		1	596067	DS	EET PEN	10/12/22 17:08

Client Sample ID: GSRV-MW0043-007.0-20221003

Lab Sample ID: 670-6709-3

Date Collected: 10/03/22 14:32

Matrix: Ground Water

Date Received: 10/04/22 12:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7445	YP	EET ORL	10/06/22 02:31
Total/NA	Prep	3511			595510	PG	EET PEN	10/07/22 14:44
Total/NA	Analysis	8082A		1	596067	DS	EET PEN	10/12/22 17:37

Client Sample ID: GSRV-MW0044-007.0-20221003

Lab Sample ID: 670-6709-4

Date Collected: 10/03/22 14:47

Matrix: Ground Water

Date Received: 10/04/22 12:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7445	YP	EET ORL	10/06/22 02:48
Total/NA	Prep	3511			595510	PG	EET PEN	10/07/22 14:44
Total/NA	Analysis	8082A		1	596067	DS	EET PEN	10/12/22 18:05

Client Sample ID: GSRV-MW0055-013.0-20221003

Lab Sample ID: 670-6709-5

Date Collected: 10/03/22 13:07

Matrix: Ground Water

Date Received: 10/04/22 12:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7445	YP	EET ORL	10/06/22 03:06
Total/NA	Prep	3511			595510	PG	EET PEN	10/07/22 14:44
Total/NA	Analysis	8082A		1	596067	DS	EET PEN	10/12/22 18:33

Client Sample ID: GSRV-MW0056-019.0-20221003

Lab Sample ID: 670-6709-6

Date Collected: 10/03/22 15:10

Matrix: Ground Water

Date Received: 10/04/22 12:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7698	YP	EET ORL	10/10/22 18:46
Total/NA	Analysis	8260B		1	7445	YP	EET ORL	10/06/22 03:23

Eurofins Orlando

Lab Chronicle

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6709-1

Client Sample ID: GSRY-MW0056-019.0-20221003

Lab Sample ID: 670-6709-6

Date Collected: 10/03/22 15:10

Matrix: Ground Water

Date Received: 10/04/22 12:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3511			595510	PG	EET PEN	10/07/22 14:44
Total/NA	Analysis	8082A		1	596067	DS	EET PEN	10/12/22 19:01

Client Sample ID: GSRY-MW0057-025.0-20221003

Lab Sample ID: 670-6709-7

Date Collected: 10/03/22 13:54

Matrix: Ground Water

Date Received: 10/04/22 12:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7445	YP	EET ORL	10/06/22 03:40
Total/NA	Prep	3511			595510	PG	EET PEN	10/07/22 14:44
Total/NA	Analysis	8082A		1	596067	DS	EET PEN	10/12/22 23:13

Client Sample ID: GSRY-MW0058-035.0-20221003

Lab Sample ID: 670-6709-8

Date Collected: 10/03/22 13:32

Matrix: Ground Water

Date Received: 10/04/22 12:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7445	YP	EET ORL	10/06/22 03:57
Total/NA	Prep	3511			595510	PG	EET PEN	10/07/22 14:44
Total/NA	Analysis	8082A		1	596067	DS	EET PEN	10/12/22 19:29

Client Sample ID: GSRY-SW0001-001.0-20221003

Lab Sample ID: 670-6709-9

Date Collected: 10/03/22 15:01

Matrix: Surface Water

Date Received: 10/04/22 12:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7445	YP	EET ORL	10/06/22 04:14
Total/NA	Prep	3511			595510	PG	EET PEN	10/07/22 14:44
Total/NA	Analysis	8082A		1	596067	DS	EET PEN	10/12/22 19:57

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

EET PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Accreditation/Certification Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6709-1

Laboratory: Eurofins Orlando

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E83018	06-30-23

Laboratory: Eurofins Pensacola

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E81010	06-30-23

Method Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6709-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET ORL
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET PEN
3511	Microextraction of Organic Compounds	SW846	EET PEN
5030C	Purge and Trap	SW846	EET ORL

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

EET PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6709-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
670-6709-1	GSRV-MW0011S-007.0-20221003	Ground Water	10/03/22 13:47	10/04/22 12:00
670-6709-2	GSRV-MW0031-013.0-20221003	Ground Water	10/03/22 14:25	10/04/22 12:00
670-6709-3	GSRV-MW0043-007.0-20221003	Ground Water	10/03/22 14:32	10/04/22 12:00
670-6709-4	GSRV-MW0044-007.0-20221003	Ground Water	10/03/22 14:47	10/04/22 12:00
670-6709-5	GSRV-MW0055-013.0-20221003	Ground Water	10/03/22 13:07	10/04/22 12:00
670-6709-6	GSRV-MW0056-019.0-20221003	Ground Water	10/03/22 15:10	10/04/22 12:00
670-6709-7	GSRV-MW0057-025.0-20221003	Ground Water	10/03/22 13:54	10/04/22 12:00
670-6709-8	GSRV-MW0058-035.0-20221003	Ground Water	10/03/22 13:32	10/04/22 12:00
670-6709-9	GSRV-SW0001-001.0-20221003	Surface Water	10/03/22 15:01	10/04/22 12:00

	Project Name: NASA KSC - GSA Reclamation Yard		PO No.	TBD	Project No.	60614327.4	Phase:
	Site Location: GSKY - PCB VOC Area		Send Invoice To: Instructions in MSA# 21S-27172-GV03				
	TO No.: 80KSC019F0078		Chad Lee cc: Jennifer Gootee				
	AECOM Project Manager:		Deliver Sample Kits To: AECOM Depot, 523 18th Street, Orlando				
	Greg Kusel / (772) 631-7426		Deliver Samples To: Eurofins Orlando				
Sample/Phone #	Dustin Slater / (407) 766-0747						
EDD to: Jennifer Chastain Cc: Teresa Ament Jennings Report to Jennifer Chastain Cc: Teresa Ament Jennings Site-Specific WS# 15 from QAPP: 15-17A							

Turnaround Time(specify):

Lab ID	Sample ID (sys_samp_code)	Location ID (sys_loc_code)	Date (YYYYMMDD)	Time (Military) (hhmm)	Matrix Code (1)	Sample Type (2)	G=Grab C=Comp	(3)	4 DEG	4 DEG	4 DEG	HNO3	4 DEG	Comments
	GSRY-MW00115-007.0-20221003	GSRY-MW00115	20221003	1347	WG	N	G	2	2					
OK	GSRY-MW0030R	GSRY-MW0030R	2022		WG	N	G	5	3					
	GSRY-MW0031-013.0-20221003	GSRY-MW0031	20221003	1425	WG	N	G	4	2	2				
OK	GSRY-MW0036R	GSRY-MW0036R	2022		WG	N	G	5	3	2				
OK	GSRY-MW0040	GSRY-MW0040	2022		WG	N	G	5	3	2				
OK	GSRY-MW0041	GSRY-MW0041	2022		WG	N	G	5	3	2				
OK	GSRY-MW0042R	GSRY-MW0042R	2022		WG	N	G	5	3	2				
	GSRY-MW0043-0070-20221003	GSRY-MW0043	20221003	1432	WG	N	G	4	2	2				
	GSRY-MW0044-0070-20221003	GSRY-MW0044	20221003	1447	WG	N	G	4	2	2				
OK	GSRY-MW0046R	GSRY-MW0046R	2022		WG	N	G	5	3	2				
OK	GSRY-MW0049	GSRY-MW0049	2022		WG	N	G	8	3	2	1	1	1	
OK	GSRY-MW0050	GSRY-MW0050	2022		WG	N	G	8	3	2	1	1	1	

Report only per QAPP WS #15-17A

Lab Comments:

Sample Shipment and Delivery Details

Number of coolers in shipment:

Samples Iced?(check)	Yes	No
----------------------	-----	----

Shipping Company:

Tracking No:

Date Shipped:

(1) **AA**=Ambient air, **AQ**=Air quality control, **ASB**=Asbestos, **CK**=Caulk, **DS**=Storm drain sediment, **GS**=Soil gas, **IC**=IDW Concrete, **IDB**=IDW Solid, **IDW**=IDW soil, **TDS**=IDW Solid, **LF**=Free Product, **MA**=Mastic, **PC**=Paint Chips, **SC**=Cement/Concrete, **SE**=Sediment, **SI**=Sludge, **SO**=Soil, **SS**=Soil/Solid quality control, **SSD**=Subsurface sediment, **SU**=Surface soil (< 1 in), **SW**=Swab or wipe, **TA**=Animal tissue, **TP**=Plant tissue, **TQ**=Tissue quality control, **WG**=Ground water, **WL**=Leachate, **WO**=Ocean water, **WP**=Drinking water, **WQ**=Water quality control, **WR**=Ground water effluent, **WS**=Surface water, **WU**=Storm water, **WUW**=Waste water.

(2) Sample Type: **AB**=Ambient Bk, **EB**=Equipment Bk, **FB**=Field Bk, **FD**=Field Duplicate Sample, **IDW**=Investigative-Derived Waste, **MIS**=Incremental Sampling Methodology, **N**=Normal Environmental Sample, **TB**=Trip Bk

[illegible]

Rev 8/19

Lab Name: Eurofins

Turnaround Time(specify): Standard 14 day

Sample Analysis Requested (Enter number of containers for each test)

[illegible]

Lab Comments:
Request only for OADR MC #1E 17A

	Date	Time	Received by (signature)
Relinquished by (signature)			
Number of coolers in shipment:			

Date: 12/21/2011
 Time: 12:00 PM
 Samples Used: (check) YES NO
 Name: [Signature]
 Title: [Signature]
 Address: [Signature]
 City: [Signature]
 State: [Signature]
 Zip: [Signature]

Shipping Company:

	Date Shipped:
3	

(1) AA= Ambient air, AQ= Air quality control, ASB= Asbestos, CK= Caulk, DS= Storm drain sediment, GS= Soil gas, IC= IDW soil, IDS= IDW solid, IDD= IDW Concrete, IDW= IDW water, LF= Free Product, MA= Mastic, PC= Paint Chips, SC= Cement/Concrete, SF= Sediment, SI= Sludge

WR=Ground water effluent, **WS**=Surface water, **WU**=Storm water, **WW**=Waste water
WP=Drinking water, **WL**=Leachate, **WO**=Ocean water, **WQ**=Water quality control,
WT=Treated wastewater, **WTG**=Wastewater treatment plant, **WTN**=Wastewater treatment network

[illegible][illegible]

0.4 oz. **NaHSO₄** <2>-Adjust to pH < 2 with sodium hydroxide sulfate, **NaOH** >2>-Adjust to pH < 2 with sodium hydroxide sulfate, **NaOH** >2>-Adjust to pH < 2 with sulfuric acid, **H₂SO₄** >2>-Adjust to pH < 2 with nitric acid, **MeUN** =Mentano preservation, **NaZnO32.3/gal**=Add 3 mL 10% sodium thiosulfate per gal. **NaZO3S2.3/gal**=Add 3 mL 10% sodium thiosulfate per gal. **NaZO3S2.4/oz.**=4 drops of 10% sodium thiosulfate per oz. **VITC 0.6/500ml**=0.6 g of ascorbic acid to 500ml of water **ZnAc2.2/500ml**=0.2 g zinc acetate to 500ml of water

ZnAct+NaOH >9=Zinc acetate and NaOH to pH>9; store cool at 4C
Rev B/19 If **NO preservative** added leave blank

2.2

CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD															
Project Name: NASA KSC - GSA Reclamation Yard		COC No.		Page: 3 of 3		Project No. 60614327.4		Phase:							
Site Location: GSRV - PCB VOC Area		Send Invoice To: Instructions in MSA# 21S-27172-GV03		EDD to: Jennifer Chastain		Cc: Teresa Amant Jennings		Report to: Jennifer Chastain							
TO No.: 80KSC019F0078		AECOM Project Manager: Chad Lee cc: Jennifer Gootee		Deliver Sample Kits To: AECOM Depot, 523 18th Street, Orlando		Report to: Jennifer Chastain		Cc: Teresa Amant Jennings							
Greg Kusel / (772) 631-7426		Dustin Slater / (407) 766-0747		Deliver Samples To: Eurofins Orlando		Site-Specific WS#15 from QAPP: 15-17A									
Eurofins		Turnaround Time(specific): Standard 14 day													
Lab ID	Sample ID (sys_samp_code)	Location ID (sys_loc_code)	Date (YYYYMMDD)	Time (Military) (hhmm)	Matrix Code (1)	Sample Type (2)	G=Grab C=Comp	(3)	4 DEG	4 DEG	4 DEG	4 DEG	4 DEG	4 DEG	Comments
6K	GSRV-MW0063	GSRV-MW0063	2022		WG	N	G	5	3	2					
6K	GSRV-MW0064	GSRV-MW0064	2022		WG	N	G	3	3						
6K	GSRV-MW0066	GSRV-MW0066	2022		WG	N	G	8	3	2					
6K	GSRV-MW0075	GSRV-MW0075	2022		WG	N	G	3	3						
	GSRV-SW0001-001.0 - 20221003	GSRV-SW0001	2022 1003	1501	WS	N	G	4	8	2					
6K	GSRV-TB01	GSRV-TB01	2022		WQ	TB	G	3	3						
Field Comments: Report only per QAPP WS #15-17A															
Lab Comments: Received by (signature) _____ Date 10/03/22 Time 1735															
Relinquished by (signature) _____ Date 10/03/22 Time 1735															
Shipping Company: _____ Tracking No: _____ Date Shipped: _____															

(1) AA= Ambient air, AQ= Air quality control, ASB= Asbestos, CK= Caulk, DS= Storm drain sediment, GS= Soil gas, IC= IDW Concrete, IDW= IDW Solid, IDS= IDW Soil, IDW= IDW Water, LF= Free Product, MA= Mastic, PC= Paint Chips, SC= Cement/Concrete, SE= Sediment, SL= Sludge, SO= Soil, SQ= Soil/Solid quality control, SSD= Subsurface sediment, SU= Surface soil (<6 in), SW= Swab or wipe, TA= Animal tissue, TP= Tissue quality control, WG= Ground water, WL= Leachate, WO= Ocean water, WP= Drinking water, WQ= Water quality control, WR= Ground water effluent, WS= Surface water, WU= Storm water, WW= Waste water

(2) Sample Type: AB= Ambient Blk, EB= Equipment Blk, FB= Field Blk, FD= Field Duplicate Sample, IDW= Investigative-Derived Waste, MIS= Incremental Sampling Methodology, N= Normal Environmental Sample, TB= Trip Blk

(3) Preservative added: 4 DEG C= Cool to 4 degrees, Dark= Store in Darkness, store cool at 4 degrees C, H2SO4= Hydrogen sulfate, H2SO4 <2= Adjust to pH < 2 with sulfuric acid, H3PO4 <2= Adjust to pH < 2 with phosphoric acid, HCl <2= Adjust to pH < 2 with hydrochloric acid, HNO3 <2= Adjust to pH < 2 with nitric acid, MeOH= Methanol preservation, Na2O3S2= Sodium thiosulfate, Na2O3S2 3/gal= Add 3 mL 10% sodium thiosulfate per 1-gal, Na2O3S2 4/4oz= 4 drops of 10% sodium thiosulfate to 4 oz, NaHSO4 <2= Adjust to pH < 2 with sodium hydrogen sulfate, NaOH >12= Adjust to pH > 12 with sodium hydroxide, NaOH >9= Adjust to pH > 9 with sodium hydroxide, VHC 0.6/500= 0.6 g of ascorbic acid to 500mL, ZnAct 2/500= Add 2 mL of zinc acetate to 500mL, ZnAct+NaOH >9= Zinc acetate and NaOH to pH>9; store cool at 4C. If NO preservative added leave blank

Rev 8/19

Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:				
Shipping/Receiving		Phone:	Dylnicki, Kaitlin	State of Origin:	670-650.1				
Company:		E-Mail:	kaitlin.dylnicki@et.eurofinsus.com	Page:	Page 1 of 1				
Eurofins Environment Testing Southeast,		Accreditations Required (See note):		Job #:					
Address:		NELAP - Florida			670-6709-1				
City:		Due Date Requested:		Preservation Codes:					
3355 McLenore Drive,		10/17/2022		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:					
State, Zip:		TAT Requested (days):		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)					
FL, 32514		PO #:							
Phone:		WO #:							
850-474-1001(Tel) 850-478-2671(Fax)									
Email:		Project #:							
		67000875							
Project Name:		SSOW#:							
NASA KSC GSRV PCB VOC Area									
Site:									
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=Water, S=solid, O=soil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8082A/3511 PCB, 1YR TCL PCBs by 8082A	Total Number of containers	Special Instructions/Note:
GSRV-MW0011S-007.0-20221003 (670-6709-1)	10/3/22	13:47 Eastern	Water	Water	X	X		2	
GSRV-MW0031-013.0-20221003 (670-6709-2)	10/3/22	14:25 Eastern	Water	Water	X	X		2	
GSRV-MW0043-007.0-20221003 (670-6709-3)	10/3/22	14:32 Eastern	Water	Water	X	X		2	
GSRV-MW0044-007.0-20221003 (670-6709-4)	10/3/22	14:47 Eastern	Water	Water	X	X		2	
GSRV-MW0055-013.0-20221003 (670-6709-5)	10/3/22	13:07 Eastern	Water	Water	X	X		2	
GSRV-MW0056-019.0-20221003 (670-6709-6)	10/3/22	15:10 Eastern	Water	Water	X	X		2	
GSRV-MW0057-025.0-20221003 (670-6709-7)	10/3/22	13:54 Eastern	Water	Water	X	X		2	
GSRV-MW0058-035.0-20221003 (670-6709-8)	10/3/22	13:32 Eastern	Water	Water	X	X		2	
GSRV-SW0001-001.0-20221003 (670-6709-9)	10/3/22	15:01 Eastern	Water	Water	X	X		2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southeast, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southeast, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southeast, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Southeast, LLC.

Possible Hazard Identification	
Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Deliverable Requested: I, II, III, IV, Other (specify)	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	
Date/Time:	Time:
10/15/2022 14:00	
Relinquished by:	Received by:
	Company
Relinquished by:	Received by:
	Company
Relinquished by:	Received by:
	Company
Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 0.3°C 589	

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: AECOM Technical Services Inc.

Job Number: 670-6709-1

Login Number: 6709

List Number: 1

Creator: Hartley, Tyler

List Source: Eurofins Orlando

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: AECOM Technical Services Inc.

Job Number: 670-6709-1

Login Number: 6709

List Number: 2

Creator: Roberts, Alexis J

List Source: Eurofins Pensacola

List Creation: 10/06/22 02:59 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.3°C IR8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



ANALYTICAL REPORT

PREPARED FOR

Attn: Teresa Amentt Jennings
AECOM Technical Services Inc.
150 North Orange Avenue
Suite 200
Orlando, Florida 32801

Generated 12/27/2022 4:47:18 PM Revision 2

JOB DESCRIPTION

NASA KSC GSRV PCB VOC Area

JOB NUMBER

670-6769-1

Eurofins Orlando

Job Notes

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. This report may not be reproduced, except in full, without the written approval of the laboratory. Questions should be directed to the person who signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

Authorization



Authorized for release by
Kaitlin Dylnicki, Project Manager
kaitlin.dylnicki@et.eurofinsus.com
(407)339-5984

Generated
12/27/2022 4:47:18 PM
Revision 2

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	6
Detection Summary	8
Client Sample Results	10
Surrogate Summary	21
QC Sample Results	24
QC Association Summary	31
Lab Chronicle	34
Certification Summary	38
Method Summary	39
Sample Summary	40
Chain of Custody	41
Receipt Checklists	45



Definitions/Glossary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6769-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J1	Estimated value; value may not be accurate. Surrogate recovery outside of criteria.
U	Indicates that the compound was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
J1	Estimated value; value may not be accurate. Surrogate recovery outside of criteria.
U	Indicates that the compound was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Eurofins Orlando

Definitions/Glossary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6769-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TNTC	Too Numerous To Count

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Case Narrative

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6769-1

Job ID: 670-6769-1

Laboratory: Eurofins Orlando

Narrative

Job Narrative 670-6769-1

REVISION

The report being provided is a revision of the original report sent on 10/18/2022. The report (revision 1) is being revised to update the reported units for Sulfate, Metals, and TDS.

Report revision history

Receipt

The samples were received on 10/4/2022 4:00 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.0°C

GC/MS VOA

Method 8260B: Surrogate recovery for the following samples were outside the upper control limit: GSRV-MW0053-007.0-20221004 (670-6769-9), GSRV-MW0054-013.0-20221004 (670-6769-10), GSRV-MW0061-025.0-20221004 (670-6769-13) and GSRV-MW0064-005.0-20221004 (670-6769-14). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method 8260B: Surrogate recovery for the following samples were outside control limits: GSRV-MW0051-027.5-20221004 (670-6769-7), GSRV-MW0059-035.0-20221004 (670-6769-11), GSRV-MW0066-025.0-20221004 (670-6769-15) and GSRV-MW0075-022.0-20221004 (670-6769-16). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8260B: Surrogate recovery for the following sample was outside control limits: GSRV-MW0066-025.0-20221004 (670-6769-15). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

PCBs

Method 8082A: Two surrogates are used for this analysis. The laboratory's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following sample contained an allowable number of surrogate compounds outside limits: GSRV-MW0036R-007.0-20221004 (670-6769-2). These results have been reported and qualified.

Method 8082A: The surrogate recovery for the blank associated with preparation batch 400-595883 and analytical batch 400-595986 was outside the upper control limits.

Method 8082A: Two surrogates are used for this analysis. The laboratory's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following samples contained an allowable number of surrogate compounds outside limits: GSRV-MW0052-019.0-20221004 (670-6769-8) and GSRV-MW0059-035.0-20221004 (670-6769-11). These results have been reported and qualified.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Case Narrative

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6769-1

Job ID: 670-6769-1 (Continued)

Laboratory: Eurofins Orlando (Continued)

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Detection Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6769-1

Client Sample ID: GSRY-MW0030R-013.0-20221004

Lab Sample ID: 670-6769-1

No Detections.

Client Sample ID: GSRY-MW0036R-007.0-20221004

Lab Sample ID: 670-6769-2

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3-Trichlorobenzene	0.83	I	1.0	0.50	ug/L	1		8260B	Total/NA
1,2,4-Trichlorobenzene	1.8		1.0	0.50	ug/L	1		8260B	Total/NA
Chlorobenzene	6.8		1.0	0.50	ug/L	1		8260B	Total/NA
m-Dichlorobenzene	1.9		1.0	0.50	ug/L	1		8260B	Total/NA
o-Dichlorobenzene	1.0		1.0	0.50	ug/L	1		8260B	Total/NA
para-Dichlorobenzene	5.0		1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: GSRY-MW0040-003.0-20221004

Lab Sample ID: 670-6769-3

No Detections.

Client Sample ID: GSRY-MW0041-003.0-20221004

Lab Sample ID: 670-6769-4

No Detections.

Client Sample ID: GSRY-MW0042R-007.0-20221004

Lab Sample ID: 670-6769-5

No Detections.

Client Sample ID: GSRY-MW0050-027.5-20221004

Lab Sample ID: 670-6769-6

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3-Trichlorobenzene	19		1.0	0.50	ug/L	1		8260B	Total/NA
1,2,4-Trichlorobenzene	110		5.0	2.5	ug/L	5		8260B	Total/NA
Chlorobenzene	25		1.0	0.50	ug/L	1		8260B	Total/NA
m-Dichlorobenzene	84		1.0	0.50	ug/L	1		8260B	Total/NA
o-Dichlorobenzene	10		1.0	0.50	ug/L	1		8260B	Total/NA
para-Dichlorobenzene	140		5.0	2.5	ug/L	5		8260B	Total/NA
Sulfate	110000		20000	20000	ug/L	10		300.0	Total/NA
Iron	2100		22	11	ug/L	1		6010D	Total
Manganese	46		22	11	ug/L	1		6010D	Total
Sodium	210000		2200	1100	ug/L	1		6010D	Total
Total Dissolved Solids	1200000		5000	5000	ug/L	1		SM 2540C	Total/NA

Client Sample ID: GSRY-MW0051-027.5-20221004

Lab Sample ID: 670-6769-7

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trichlorobenzene	1.4		1.0	0.50	ug/L	1		8260B	Total/NA
para-Dichlorobenzene	1.1		1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: GSRY-MW0052-019.0-20221004

Lab Sample ID: 670-6769-8

No Detections.

Client Sample ID: GSRY-MW0053-007.0-20221004

Lab Sample ID: 670-6769-9

No Detections.

Client Sample ID: GSRY-MW0054-013.0-20221004

Lab Sample ID: 670-6769-10

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Orlando

Detection Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6769-1

Client Sample ID: GSRV-MW0059-035.0-20221004

Lab Sample ID: 670-6769-11

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	0.68	I	1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: GSRV-MW0060-005.5-20221004

Lab Sample ID: 670-6769-12

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trichlorobenzene	0.86	I	1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: GSRV-MW0061-025.0-20221004

Lab Sample ID: 670-6769-13

No Detections.

Client Sample ID: GSRV-MW0064-025.0-20221004

Lab Sample ID: 670-6769-14

No Detections.

Client Sample ID: GSRV-MW0066-025.0-20221004

Lab Sample ID: 670-6769-15

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	14		1.0	0.50	ug/L	1		8260B	Total/NA
m-Dichlorobenzene	8.3		1.0	0.50	ug/L	1		8260B	Total/NA
para-Dichlorobenzene	23		1.0	0.50	ug/L	1		8260B	Total/NA
Sulfate	280000		20000	20000	ug/L	10		300.0	Total/NA
Iron	1700		22	11	ug/L	1		6010D	Total
Manganese	27		22	11	ug/L	1		6010D	Total
Sodium	260000		2200	1100	ug/L	1		6010D	Total
Total Dissolved Solids	1300000		5000	5000	ug/L	1		SM 2540C	Total/NA

Client Sample ID: GSRV-MW0075-022.0-20221004

Lab Sample ID: 670-6769-16

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	4.6		1.0	0.50	ug/L	1		8260B	Total/NA
m-Dichlorobenzene	22		1.0	0.50	ug/L	1		8260B	Total/NA
para-Dichlorobenzene	15		1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: GSRV-TB01-20221003

Lab Sample ID: 670-6769-17

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6769-1

Client Sample ID: GSRY-MW0030R-013.0-20221004

Lab Sample ID: 670-6769-1

Date Collected: 10/04/22 14:22

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 16:20	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 16:20	1
Benzene	0.50	U	1.0	0.50	ug/L			10/09/22 16:20	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 16:20	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 16:20	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 16:20	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 16:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 120		10/09/22 16:20	1
4-Bromofluorobenzene (Surr)	95		80 - 120		10/09/22 16:20	1
Dibromofluoromethane (Surr)	117		80 - 120		10/09/22 16:20	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.36	U	0.46	0.36	ug/L		10/07/22 14:44	10/12/22 20:25	1
PCB-1221	0.15	U	0.46	0.15	ug/L		10/07/22 14:44	10/12/22 20:25	1
PCB-1232	0.12	U	0.46	0.12	ug/L		10/07/22 14:44	10/12/22 20:25	1
PCB-1242	0.13	U	0.46	0.13	ug/L		10/07/22 14:44	10/12/22 20:25	1
PCB-1248	0.091	U	0.46	0.091	ug/L		10/07/22 14:44	10/12/22 20:25	1
PCB-1254	0.11	U	0.46	0.11	ug/L		10/07/22 14:44	10/12/22 20:25	1
PCB-1260	0.23	U	0.46	0.23	ug/L		10/07/22 14:44	10/12/22 20:25	1
Polychlorinated biphenyls, Total	0.15	U	0.46	0.15	ug/L		10/07/22 14:44	10/12/22 20:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	86		50 - 150	10/07/22 14:44	10/12/22 20:25	1
Tetrachloro-m-xylene	106		50 - 150	10/07/22 14:44	10/12/22 20:25	1

Client Sample ID: GSRY-MW0036R-007.0-20221004

Lab Sample ID: 670-6769-2

Date Collected: 10/04/22 09:41

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.83	I	1.0	0.50	ug/L			10/09/22 16:37	1
1,2,4-Trichlorobenzene	1.8		1.0	0.50	ug/L			10/09/22 16:37	1
Benzene	0.50	U	1.0	0.50	ug/L			10/09/22 16:37	1
Chlorobenzene	6.8		1.0	0.50	ug/L			10/10/22 18:29	1
m-Dichlorobenzene	1.9		1.0	0.50	ug/L			10/09/22 16:37	1
o-Dichlorobenzene	1.0		1.0	0.50	ug/L			10/09/22 16:37	1
para-Dichlorobenzene	5.0		1.0	0.50	ug/L			10/09/22 16:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 120		10/09/22 16:37	1
Toluene-d8 (Surr)	107		80 - 120		10/10/22 18:29	1
4-Bromofluorobenzene (Surr)	94		80 - 120		10/09/22 16:37	1
4-Bromofluorobenzene (Surr)	80		80 - 120		10/10/22 18:29	1
Dibromofluoromethane (Surr)	116		80 - 120		10/09/22 16:37	1
Dibromofluoromethane (Surr)	110		80 - 120		10/10/22 18:29	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6769-1

Client Sample ID: GSRY-MW0036R-007.0-20221004

Lab Sample ID: 670-6769-2

Date Collected: 10/04/22 09:41

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.36	U	0.46	0.36	ug/L		10/07/22 14:44	10/12/22 20:53	1
PCB-1221	0.14	U	0.46	0.14	ug/L		10/07/22 14:44	10/12/22 20:53	1
PCB-1232	0.12	U	0.46	0.12	ug/L		10/07/22 14:44	10/12/22 20:53	1
PCB-1242	0.13	U	0.46	0.13	ug/L		10/07/22 14:44	10/12/22 20:53	1
PCB-1248	0.090	U	0.46	0.090	ug/L		10/07/22 14:44	10/12/22 20:53	1
PCB-1254	0.11	U	0.46	0.11	ug/L		10/07/22 14:44	10/12/22 20:53	1
PCB-1260	0.23	U	0.46	0.23	ug/L		10/07/22 14:44	10/12/22 20:53	1
Polychlorinated biphenyls, Total	0.14	U	0.46	0.14	ug/L		10/07/22 14:44	10/12/22 20:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	48	J1	50 - 150	10/07/22 14:44	10/12/22 20:53	1
Tetrachloro-m-xylene	57		50 - 150	10/07/22 14:44	10/12/22 20:53	1

Client Sample ID: GSRY-MW0040-003.0-20221004

Lab Sample ID: 670-6769-3

Date Collected: 10/04/22 13:02

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 16:54	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 16:54	1
Benzene	0.50	U	1.0	0.50	ug/L			10/09/22 16:54	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 16:54	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 16:54	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 16:54	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 16:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 120		10/09/22 16:54	1
4-Bromofluorobenzene (Surr)	95		80 - 120		10/09/22 16:54	1
Dibromofluoromethane (Surr)	118		80 - 120		10/09/22 16:54	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.39	U	0.49	0.39	ug/L		10/07/22 14:44	10/12/22 21:21	1
PCB-1221	0.16	U	0.49	0.16	ug/L		10/07/22 14:44	10/12/22 21:21	1
PCB-1232	0.12	U	0.49	0.12	ug/L		10/07/22 14:44	10/12/22 21:21	1
PCB-1242	0.14	U	0.49	0.14	ug/L		10/07/22 14:44	10/12/22 21:21	1
PCB-1248	0.097	U	0.49	0.097	ug/L		10/07/22 14:44	10/12/22 21:21	1
PCB-1254	0.12	U	0.49	0.12	ug/L		10/07/22 14:44	10/12/22 21:21	1
PCB-1260	0.25	U	0.49	0.25	ug/L		10/07/22 14:44	10/12/22 21:21	1
Polychlorinated biphenyls, Total	0.16	U	0.49	0.16	ug/L		10/07/22 14:44	10/12/22 21:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	84		50 - 150	10/07/22 14:44	10/12/22 21:21	1
Tetrachloro-m-xylene	97		50 - 150	10/07/22 14:44	10/12/22 21:21	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6769-1

Client Sample ID: GSRV-MW0041-003.0-20221004

Lab Sample ID: 670-6769-4

Date Collected: 10/04/22 12:09

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 17:11	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 17:11	1
Benzene	0.50	U	1.0	0.50	ug/L			10/09/22 17:11	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 17:11	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 17:11	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 17:11	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 17:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 120		10/09/22 17:11	1
4-Bromofluorobenzene (Surr)	95		80 - 120		10/09/22 17:11	1
Dibromofluoromethane (Surr)	119		80 - 120		10/09/22 17:11	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.36	U	0.46	0.36	ug/L		10/07/22 14:44	10/12/22 21:49	1
PCB-1221	0.14	U	0.46	0.14	ug/L		10/07/22 14:44	10/12/22 21:49	1
PCB-1232	0.12	U	0.46	0.12	ug/L		10/07/22 14:44	10/12/22 21:49	1
PCB-1242	0.13	U	0.46	0.13	ug/L		10/07/22 14:44	10/12/22 21:49	1
PCB-1248	0.090	U	0.46	0.090	ug/L		10/07/22 14:44	10/12/22 21:49	1
PCB-1254	0.11	U	0.46	0.11	ug/L		10/07/22 14:44	10/12/22 21:49	1
PCB-1260	0.23	U	0.46	0.23	ug/L		10/07/22 14:44	10/12/22 21:49	1
Polychlorinated biphenyls, Total	0.14	U	0.46	0.14	ug/L		10/07/22 14:44	10/12/22 21:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	80		50 - 150	10/07/22 14:44	10/12/22 21:49	1
Tetrachloro-m-xylene	88		50 - 150	10/07/22 14:44	10/12/22 21:49	1

Client Sample ID: GSRV-MW0042R-007.0-20221004

Lab Sample ID: 670-6769-5

Date Collected: 10/04/22 11:00

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 17:28	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 17:28	1
Benzene	0.50	U	1.0	0.50	ug/L			10/09/22 17:28	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 17:28	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 17:28	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 17:28	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 17:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 120		10/09/22 17:28	1
4-Bromofluorobenzene (Surr)	93		80 - 120		10/09/22 17:28	1
Dibromofluoromethane (Surr)	118		80 - 120		10/09/22 17:28	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.36	U	0.46	0.36	ug/L		10/07/22 14:44	10/12/22 22:17	1
PCB-1221	0.15	U	0.46	0.15	ug/L		10/07/22 14:44	10/12/22 22:17	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6769-1

Client Sample ID: GSRV-MW0042R-007.0-20221004

Lab Sample ID: 670-6769-5

Date Collected: 10/04/22 11:00

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1232	0.12	U	0.46	0.12	ug/L		10/07/22 14:44	10/12/22 22:17	1
PCB-1242	0.13	U	0.46	0.13	ug/L		10/07/22 14:44	10/12/22 22:17	1
PCB-1248	0.091	U	0.46	0.091	ug/L		10/07/22 14:44	10/12/22 22:17	1
PCB-1254	0.11	U	0.46	0.11	ug/L		10/07/22 14:44	10/12/22 22:17	1
PCB-1260	0.23	U	0.46	0.23	ug/L		10/07/22 14:44	10/12/22 22:17	1
Polychlorinated biphenyls, Total	0.15	U	0.46	0.15	ug/L		10/07/22 14:44	10/12/22 22:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	84		50 - 150	10/07/22 14:44	10/12/22 22:17	1
Tetrachloro-m-xylene	74		50 - 150	10/07/22 14:44	10/12/22 22:17	1

Client Sample ID: GSRV-MW0050-027.5-20221004

Lab Sample ID: 670-6769-6

Date Collected: 10/04/22 13:08

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	19		1.0	0.50	ug/L			10/09/22 17:46	1
1,2,4-Trichlorobenzene	110		5.0	2.5	ug/L			10/10/22 16:42	5
Benzene	0.50	U	1.0	0.50	ug/L			10/09/22 17:46	1
Chlorobenzene	25		1.0	0.50	ug/L			10/09/22 17:46	1
m-Dichlorobenzene	84		1.0	0.50	ug/L			10/09/22 17:46	1
o-Dichlorobenzene	10		1.0	0.50	ug/L			10/09/22 17:46	1
para-Dichlorobenzene	140		5.0	2.5	ug/L			10/10/22 16:42	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 120		10/09/22 17:46	1
Toluene-d8 (Surr)	108		80 - 120		10/10/22 16:42	5
4-Bromofluorobenzene (Surr)	67	J1	80 - 120		10/09/22 17:46	1
4-Bromofluorobenzene (Surr)	84		80 - 120		10/10/22 16:42	5
Dibromofluoromethane (Surr)	123	J1	80 - 120		10/09/22 17:46	1
Dibromofluoromethane (Surr)	110		80 - 120		10/10/22 16:42	5

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.37	U	0.47	0.37	ug/L		10/07/22 14:44	10/12/22 22:45	1
PCB-1221	0.15	U	0.47	0.15	ug/L		10/07/22 14:44	10/12/22 22:45	1
PCB-1232	0.12	U	0.47	0.12	ug/L		10/07/22 14:44	10/12/22 22:45	1
PCB-1242	0.13	U	0.47	0.13	ug/L		10/07/22 14:44	10/12/22 22:45	1
PCB-1248	0.092	U	0.47	0.092	ug/L		10/07/22 14:44	10/12/22 22:45	1
PCB-1254	0.11	U	0.47	0.11	ug/L		10/07/22 14:44	10/12/22 22:45	1
PCB-1260	0.24	U	0.47	0.24	ug/L		10/07/22 14:44	10/12/22 22:45	1
Polychlorinated biphenyls, Total	0.15	U	0.47	0.15	ug/L		10/07/22 14:44	10/12/22 22:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	54		50 - 150	10/07/22 14:44	10/12/22 22:45	1
Tetrachloro-m-xylene	93		50 - 150	10/07/22 14:44	10/12/22 22:45	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	110000		20000	20000	ug/L			10/17/22 23:38	10

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6769-1

Client Sample ID: GSRY-MW0050-027.5-20221004

Lab Sample ID: 670-6769-6

Date Collected: 10/04/22 13:08

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	2100		22	11	ug/L		10/06/22 09:47	10/06/22 17:38	1
Manganese	46		22	11	ug/L		10/06/22 09:47	10/06/22 17:38	1
Sodium	210000		2200	1100	ug/L		10/06/22 09:47	10/06/22 17:38	1

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1200000		5000	5000	ug/L			10/06/22 13:09	1

Client Sample ID: GSRY-MW0051-027.5-20221004

Lab Sample ID: 670-6769-7

Date Collected: 10/04/22 14:27

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:03	1
1,2,4-Trichlorobenzene	1.4		1.0	0.50	ug/L			10/09/22 18:03	1
Benzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:03	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:03	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:03	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:03	1
para-Dichlorobenzene	1.1		1.0	0.50	ug/L			10/09/22 18:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 120		10/09/22 18:03	1
4-Bromofluorobenzene (Surr)	91		80 - 120		10/09/22 18:03	1
Dibromofluoromethane (Surr)	120		80 - 120		10/09/22 18:03	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.35	U	0.45	0.35	ug/L		10/11/22 14:31	10/13/22 23:15	1
PCB-1221	0.14	U	0.45	0.14	ug/L		10/11/22 14:31	10/13/22 23:15	1
PCB-1232	0.11	U	0.45	0.11	ug/L		10/11/22 14:31	10/13/22 23:15	1
PCB-1242	0.12	U	0.45	0.12	ug/L		10/11/22 14:31	10/13/22 23:15	1
PCB-1248	0.087	U	0.45	0.087	ug/L		10/11/22 14:31	10/13/22 23:15	1
PCB-1254	0.10	U	0.45	0.10	ug/L		10/11/22 14:31	10/13/22 23:15	1
PCB-1260	0.22	U	0.45	0.22	ug/L		10/11/22 14:31	10/13/22 23:15	1
Polychlorinated biphenyls, Total	0.14	U	0.45	0.14	ug/L		10/11/22 14:31	10/13/22 23:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	98		50 - 150	10/11/22 14:31	10/13/22 23:15	1
Tetrachloro-m-xylene	146		50 - 150	10/11/22 14:31	10/13/22 23:15	1

Client Sample ID: GSRY-MW0052-019.0-20221004

Lab Sample ID: 670-6769-8

Date Collected: 10/04/22 12:29

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:20	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:20	1
Benzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:20	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6769-1

Client Sample ID: GSRY-MW0052-019.0-20221004

Lab Sample ID: 670-6769-8

Date Collected: 10/04/22 12:29

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:20	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:20	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:20	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 120					10/09/22 18:20	1
4-Bromofluorobenzene (Surr)	95		80 - 120					10/09/22 18:20	1
Dibromofluoromethane (Surr)	120		80 - 120					10/09/22 18:20	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.35	U	0.45	0.35	ug/L		10/11/22 14:31	10/13/22 23:43	1
PCB-1221	0.14	U	0.45	0.14	ug/L		10/11/22 14:31	10/13/22 23:43	1
PCB-1232	0.11	U	0.45	0.11	ug/L		10/11/22 14:31	10/13/22 23:43	1
PCB-1242	0.12	U	0.45	0.12	ug/L		10/11/22 14:31	10/13/22 23:43	1
PCB-1248	0.088	U	0.45	0.088	ug/L		10/11/22 14:31	10/13/22 23:43	1
PCB-1254	0.11	U	0.45	0.11	ug/L		10/11/22 14:31	10/13/22 23:43	1
PCB-1260	0.22	U	0.45	0.22	ug/L		10/11/22 14:31	10/13/22 23:43	1
Polychlorinated biphenyls, Total	0.14	U	0.45	0.14	ug/L		10/11/22 14:31	10/13/22 23:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	134		50 - 150				10/11/22 14:31	10/13/22 23:43	1
Tetrachloro-m-xylene	171	J1	50 - 150				10/11/22 14:31	10/13/22 23:43	1

Client Sample ID: GSRY-MW0053-007.0-20221004

Lab Sample ID: 670-6769-9

Date Collected: 10/04/22 10:20

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:37	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:37	1
Benzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:37	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:37	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:37	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:37	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 120					10/09/22 18:37	1
4-Bromofluorobenzene (Surr)	92		80 - 120					10/09/22 18:37	1
Dibromofluoromethane (Surr)	121	J1	80 - 120					10/09/22 18:37	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.35	U	0.45	0.35	ug/L		10/11/22 14:31	10/14/22 00:11	1
PCB-1221	0.14	U	0.45	0.14	ug/L		10/11/22 14:31	10/14/22 00:11	1
PCB-1232	0.11	U	0.45	0.11	ug/L		10/11/22 14:31	10/14/22 00:11	1
PCB-1242	0.12	U	0.45	0.12	ug/L		10/11/22 14:31	10/14/22 00:11	1
PCB-1248	0.088	U	0.45	0.088	ug/L		10/11/22 14:31	10/14/22 00:11	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6769-1

Client Sample ID: GSRY-MW0053-007.0-20221004

Lab Sample ID: 670-6769-9

Date Collected: 10/04/22 10:20

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1254	0.10	U	0.45	0.10	ug/L		10/11/22 14:31	10/14/22 00:11	1
PCB-1260	0.22	U	0.45	0.22	ug/L		10/11/22 14:31	10/14/22 00:11	1
Polychlorinated biphenyls, Total	0.14	U	0.45	0.14	ug/L		10/11/22 14:31	10/14/22 00:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	119		50 - 150				10/11/22 14:31	10/14/22 00:11	1
Tetrachloro-m-xylene	148		50 - 150				10/11/22 14:31	10/14/22 00:11	1

Client Sample ID: GSRY-MW0054-013.0-20221004

Lab Sample ID: 670-6769-10

Date Collected: 10/04/22 09:50

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:54	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:54	1
Benzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:54	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:54	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:54	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:54	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 18:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 120					10/09/22 18:54	1
4-Bromofluorobenzene (Surr)	96		80 - 120					10/09/22 18:54	1
Dibromofluoromethane (Surr)	124	J1	80 - 120					10/09/22 18:54	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.35	U	0.45	0.35	ug/L		10/11/22 14:31	10/14/22 00:39	1
PCB-1221	0.14	U	0.45	0.14	ug/L		10/11/22 14:31	10/14/22 00:39	1
PCB-1232	0.11	U	0.45	0.11	ug/L		10/11/22 14:31	10/14/22 00:39	1
PCB-1242	0.12	U	0.45	0.12	ug/L		10/11/22 14:31	10/14/22 00:39	1
PCB-1248	0.088	U	0.45	0.088	ug/L		10/11/22 14:31	10/14/22 00:39	1
PCB-1254	0.11	U	0.45	0.11	ug/L		10/11/22 14:31	10/14/22 00:39	1
PCB-1260	0.22	U	0.45	0.22	ug/L		10/11/22 14:31	10/14/22 00:39	1
Polychlorinated biphenyls, Total	0.14	U	0.45	0.14	ug/L		10/11/22 14:31	10/14/22 00:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	98		50 - 150				10/11/22 14:31	10/14/22 00:39	1
Tetrachloro-m-xylene	139		50 - 150				10/11/22 14:31	10/14/22 00:39	1

Client Sample ID: GSRY-MW0059-035.0-20221004

Lab Sample ID: 670-6769-11

Date Collected: 10/04/22 12:27

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 19:11	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 19:11	1
Benzene	0.50	U	1.0	0.50	ug/L			10/09/22 19:11	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6769-1

Client Sample ID: GSRY-MW0059-035.0-20221004

Lab Sample ID: 670-6769-11

Date Collected: 10/04/22 12:27

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	0.68	I	1.0	0.50	ug/L			10/09/22 19:11	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 19:11	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 19:11	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 19:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		80 - 120					10/09/22 19:11	1
4-Bromofluorobenzene (Surr)	93		80 - 120					10/09/22 19:11	1
Dibromofluoromethane (Surr)	123	J1	80 - 120					10/09/22 19:11	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.36	U	0.46	0.36	ug/L		10/11/22 14:31	10/14/22 01:07	1
PCB-1221	0.14	U	0.46	0.14	ug/L		10/11/22 14:31	10/14/22 01:07	1
PCB-1232	0.11	U	0.46	0.11	ug/L		10/11/22 14:31	10/14/22 01:07	1
PCB-1242	0.13	U	0.46	0.13	ug/L		10/11/22 14:31	10/14/22 01:07	1
PCB-1248	0.089	U	0.46	0.089	ug/L		10/11/22 14:31	10/14/22 01:07	1
PCB-1254	0.11	U	0.46	0.11	ug/L		10/11/22 14:31	10/14/22 01:07	1
PCB-1260	0.23	U	0.46	0.23	ug/L		10/11/22 14:31	10/14/22 01:07	1
Polychlorinated biphenyls, Total	0.14	U	0.46	0.14	ug/L		10/11/22 14:31	10/14/22 01:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	120		50 - 150				10/11/22 14:31	10/14/22 01:07	1
Tetrachloro-m-xylene	175	J1	50 - 150				10/11/22 14:31	10/14/22 01:07	1

Client Sample ID: GSRY-MW0060-005.5-20221004

Lab Sample ID: 670-6769-12

Date Collected: 10/04/22 13:45

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 19:29	1
1,2,4-Trichlorobenzene	0.86	I	1.0	0.50	ug/L			10/09/22 19:29	1
Benzene	0.50	U	1.0	0.50	ug/L			10/09/22 19:29	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 19:29	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 19:29	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 19:29	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 19:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 120					10/09/22 19:29	1
4-Bromofluorobenzene (Surr)	92		80 - 120					10/09/22 19:29	1
Dibromofluoromethane (Surr)	112		80 - 120					10/09/22 19:29	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.36	U	0.46	0.36	ug/L		10/11/22 14:31	10/14/22 01:35	1
PCB-1221	0.14	U	0.46	0.14	ug/L		10/11/22 14:31	10/14/22 01:35	1
PCB-1232	0.12	U	0.46	0.12	ug/L		10/11/22 14:31	10/14/22 01:35	1
PCB-1242	0.13	U	0.46	0.13	ug/L		10/11/22 14:31	10/14/22 01:35	1
PCB-1248	0.090	U	0.46	0.090	ug/L		10/11/22 14:31	10/14/22 01:35	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6769-1

Client Sample ID: GSRY-MW0060-005.5-20221004

Lab Sample ID: 670-6769-12

Date Collected: 10/04/22 13:45

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1254	0.11	U	0.46	0.11	ug/L		10/11/22 14:31	10/14/22 01:35	1
PCB-1260	0.23	U	0.46	0.23	ug/L		10/11/22 14:31	10/14/22 01:35	1
Polychlorinated biphenyls, Total	0.14	U	0.46	0.14	ug/L		10/11/22 14:31	10/14/22 01:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	107		50 - 150				10/11/22 14:31	10/14/22 01:35	1
Tetrachloro-m-xylene	144		50 - 150				10/11/22 14:31	10/14/22 01:35	1

Client Sample ID: GSRY-MW0061-025.0-20221004

Lab Sample ID: 670-6769-13

Date Collected: 10/04/22 15:01

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 19:46	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 19:46	1
Benzene	0.50	U	1.0	0.50	ug/L			10/09/22 19:46	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 19:46	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 19:46	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 19:46	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 19:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 120					10/09/22 19:46	1
4-Bromofluorobenzene (Surr)	92		80 - 120					10/09/22 19:46	1
Dibromofluoromethane (Surr)	124	J1	80 - 120					10/09/22 19:46	1

Client Sample ID: GSRY-MW0064-025.0-20221004

Lab Sample ID: 670-6769-14

Date Collected: 10/04/22 12:04

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 20:03	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 20:03	1
Benzene	0.50	U	1.0	0.50	ug/L			10/09/22 20:03	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 20:03	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 20:03	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 20:03	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 20:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 120					10/09/22 20:03	1
4-Bromofluorobenzene (Surr)	95		80 - 120					10/09/22 20:03	1
Dibromofluoromethane (Surr)	122	J1	80 - 120					10/09/22 20:03	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6769-1

Client Sample ID: GSRY-MW0066-025.0-20221004

Lab Sample ID: 670-6769-15

Date Collected: 10/04/22 11:28

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 20:20	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 20:20	1
Benzene	0.50	U	1.0	0.50	ug/L			10/09/22 20:20	1
Chlorobenzene	14		1.0	0.50	ug/L			10/10/22 19:03	1
m-Dichlorobenzene	8.3		1.0	0.50	ug/L			10/09/22 20:20	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 20:20	1
para-Dichlorobenzene	23		1.0	0.50	ug/L			10/09/22 20:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		80 - 120		10/09/22 20:20	1
Toluene-d8 (Surr)	105		80 - 120		10/10/22 19:03	1
4-Bromofluorobenzene (Surr)	86		80 - 120		10/09/22 20:20	1
4-Bromofluorobenzene (Surr)	79	J1	80 - 120		10/10/22 19:03	1
Dibromofluoromethane (Surr)	125	J1	80 - 120		10/09/22 20:20	1
Dibromofluoromethane (Surr)	109		80 - 120		10/10/22 19:03	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.36	U	0.46	0.36	ug/L		10/11/22 14:31	10/14/22 02:03	1
PCB-1221	0.14	U	0.46	0.14	ug/L		10/11/22 14:31	10/14/22 02:03	1
PCB-1232	0.11	U	0.46	0.11	ug/L		10/11/22 14:31	10/14/22 02:03	1
PCB-1242	0.12	U	0.46	0.12	ug/L		10/11/22 14:31	10/14/22 02:03	1
PCB-1248	0.089	U	0.46	0.089	ug/L		10/11/22 14:31	10/14/22 02:03	1
PCB-1254	0.11	U	0.46	0.11	ug/L		10/11/22 14:31	10/14/22 02:03	1
PCB-1260	0.23	U	0.46	0.23	ug/L		10/11/22 14:31	10/14/22 02:03	1
Polychlorinated biphenyls, Total	0.14	U	0.46	0.14	ug/L		10/11/22 14:31	10/14/22 02:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	90		50 - 150	10/11/22 14:31	10/14/22 02:03	1
Tetrachloro-m-xylene	141		50 - 150	10/11/22 14:31	10/14/22 02:03	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	280000		20000	20000	ug/L			10/17/22 23:52	10

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1700		22	11	ug/L		10/06/22 09:47	10/06/22 17:39	1
Manganese	27		22	11	ug/L		10/06/22 09:47	10/06/22 17:39	1
Sodium	260000		2200	1100	ug/L		10/06/22 09:47	10/06/22 17:39	1

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1300000		5000	5000	ug/L			10/06/22 13:09	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6769-1

Client Sample ID: GSRY-MW0075-022.0-20221004

Lab Sample ID: 670-6769-16

Date Collected: 10/04/22 12:47

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 20:37	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 20:37	1
Benzene	0.50	U	1.0	0.50	ug/L			10/09/22 20:37	1
Chlorobenzene	4.6		1.0	0.50	ug/L			10/10/22 19:20	1
m-Dichlorobenzene	22		1.0	0.50	ug/L			10/09/22 20:37	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 20:37	1
para-Dichlorobenzene	15		1.0	0.50	ug/L			10/09/22 20:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 120		10/09/22 20:37	1
Toluene-d8 (Surr)	105		80 - 120		10/10/22 19:20	1
4-Bromofluorobenzene (Surr)	83		80 - 120		10/09/22 20:37	1
4-Bromofluorobenzene (Surr)	82		80 - 120		10/10/22 19:20	1
Dibromofluoromethane (Surr)	124	J1	80 - 120		10/09/22 20:37	1
Dibromofluoromethane (Surr)	111		80 - 120		10/10/22 19:20	1

Client Sample ID: GSRY-TB01-20221003

Lab Sample ID: 670-6769-17

Date Collected: 10/03/22 08:00

Matrix: Ground Water

Date Received: 10/04/22 16:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/07/22 02:32	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/07/22 02:32	1
Benzene	0.50	U	1.0	0.50	ug/L			10/07/22 02:32	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/07/22 02:32	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/07/22 02:32	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/07/22 02:32	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/07/22 02:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 120		10/07/22 02:32	1
4-Bromofluorobenzene (Surr)	77	J1	80 - 120		10/07/22 02:32	1
Dibromofluoromethane (Surr)	110		80 - 120		10/07/22 02:32	1

Eurofins Orlando

Surrogate Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6769-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Ground Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)						
		TOL (80-120)	BFB (80-120)	DBFM (80-120)				
670-6769-1	GSRY-MW0030R-013.0-202210	102	95	117				
670-6769-2	GSRY-MW0036R-007.0-20221004	104	94	116				
670-6769-2	GSRY-MW0036R-007.0-20221004	107	80	110				
670-6769-3	GSRY-MW0040-003.0-20221004	105	95	118				
670-6769-4	GSRY-MW0041-003.0-20221004	103	95	119				
670-6769-5	GSRY-MW0042R-007.0-20221004	104	93	118				
670-6769-6	GSRY-MW0050-027.5-20221004	105	67 J1	123 J1				
670-6769-6	GSRY-MW0050-027.5-20221004	108	84	110				
670-6769-7	GSRY-MW0051-027.5-20221004	105	91	120				
670-6769-8	GSRY-MW0052-019.0-20221004	104	95	120				
670-6769-9	GSRY-MW0053-007.0-20221004	105	92	121 J1				
670-6769-10	GSRY-MW0054-013.0-20221004	105	96	124 J1				
670-6769-11	GSRY-MW0059-035.0-20221004	106	93	123 J1				
670-6769-12	GSRY-MW0060-005.5-20221004	104	92	112				
670-6769-13	GSRY-MW0061-025.0-20221004	105	92	124 J1				
670-6769-14	GSRY-MW0064-025.0-20221004	104	95	122 J1				
670-6769-15	GSRY-MW0066-025.0-20221004	106	86	125 J1				
670-6769-15	GSRY-MW0066-025.0-20221004	105	79 J1	109				
670-6769-16	GSRY-MW0075-022.0-20221004	105	83	124 J1				
670-6769-16	GSRY-MW0075-022.0-20221004	105	82	111				
670-6769-17	GSRY-TB01-20221003	102	77 J1	110				
Surrogate Legend								
TOL = Toluene-d8 (Surr)								
BFB = 4-Bromofluorobenzene (Surr)								
DBFM = Dibromofluoromethane (Surr)								

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)						
		TOL (80-120)	BFB (80-120)	DBFM (80-120)				
LCS 670-7541/4	Lab Control Sample	100	95	102				
LCS 670-7553/1004	Lab Control Sample	99	76 J1	109				
LCS 670-7698/4	Lab Control Sample	104	81	109				

Eurofins Orlando

Surrogate Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6769-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		TOL (80-120)	BFB (80-120)	DBFM (80-120)
LCSD 670-7541/5	Lab Control Sample Dup	100	96	98
LCSD 670-7553/5	Lab Control Sample Dup	99	78 J1	106
LCSD 670-7698/5	Lab Control Sample Dup	106	81	109
MB 670-7541/7	Method Blank	104	97	114
MB 670-7553/7	Method Blank	101	81	113
MB 670-7698/7	Method Blank	104	82	109

Surrogate Legend
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Ground Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		DCBP2 (50-150)	TCX2 (50-150)
670-6769-1	GSRV-MW0030R-013.0-202210	86	106
670-6769-2	GSRV-MW0036R-007.0-20221004	48 J1	57
670-6769-3	GSRV-MW0040-003.0-20221004	84	97
670-6769-4	GSRV-MW0041-003.0-20221004	80	88
670-6769-5	GSRV-MW0042R-007.0-20221004	84	74
670-6769-6	GSRV-MW0050-027.5-20221004	54	93

Surrogate Legend
DCBP = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Ground Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		DCBP1 (50-150)	TCX1 (50-150)
670-6769-7	GSRV-MW0051-027.5-2022100	98	146
670-6769-8	GSRV-MW0052-019.0-20221004	134	171 J1
670-6769-9	GSRV-MW0053-007.0-20221004	119	148
670-6769-10	GSRV-MW0054-013.0-20221004	98	139
670-6769-11	GSRV-MW0059-035.0-20221004	120	175 J1
670-6769-12	GSRV-MW0060-005.5-20221004	107	144
670-6769-15	GSRV-MW0066-025.0-20221004	90	141

Surrogate Legend

Eurofins Orlando

Surrogate Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area
DCBP = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Job ID: 670-6769-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCBP2	TCX2
		(50-150)	(50-150)
LCS 400-595510/2-A	Lab Control Sample	106	87
LCS 400-595883/4-A	Lab Control Sample	71	73
LCSD 400-595510/3-A	Lab Control Sample Dup	100	113
LCSD 400-595883/5-A	Lab Control Sample Dup	82	100
MB 400-595510/1-A	Method Blank	125	97
MB 400-595883/1-A	Method Blank	186 J1	209 J1

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6769-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 670-7541/7

Matrix: Water

Analysis Batch: 7541

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 15:45	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 15:45	1
Benzene	0.50	U	1.0	0.50	ug/L			10/09/22 15:45	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 15:45	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 15:45	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 15:45	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/09/22 15:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 120		10/09/22 15:45	1
4-Bromofluorobenzene (Surr)	97		80 - 120		10/09/22 15:45	1
Dibromofluoromethane (Surr)	114		80 - 120		10/09/22 15:45	1

Lab Sample ID: LCS 670-7541/4

Matrix: Water

Analysis Batch: 7541

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichlorobenzene	20.0	20.2		ug/L		101	50 - 150
1,2,4-Trichlorobenzene	20.0	19.7		ug/L		99	50 - 150
Benzene	20.0	18.5		ug/L		92	50 - 150
Chlorobenzene	20.0	17.7		ug/L		89	50 - 150
m-Dichlorobenzene	20.0	18.2		ug/L		91	50 - 150
o-Dichlorobenzene	20.0	18.0		ug/L		90	50 - 150
para-Dichlorobenzene	20.0	17.7		ug/L		88	50 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	95		80 - 120
Dibromofluoromethane (Surr)	102		80 - 120

Lab Sample ID: LCSD 670-7541/5

Matrix: Water

Analysis Batch: 7541

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,3-Trichlorobenzene	20.0	21.0		ug/L		105	50 - 150	4	30
1,2,4-Trichlorobenzene	20.0	20.8		ug/L		104	50 - 150	5	30
Benzene	20.0	19.1		ug/L		96	50 - 150	3	30
Chlorobenzene	20.0	18.4		ug/L		92	50 - 150	3	30
m-Dichlorobenzene	20.0	19.5		ug/L		98	50 - 150	7	30
o-Dichlorobenzene	20.0	18.8		ug/L		94	50 - 150	4	30
para-Dichlorobenzene	20.0	18.6		ug/L		93	50 - 150	5	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	96		80 - 120

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6769-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 670-7541/5

Matrix: Water

Analysis Batch: 7541

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	98		80 - 120

Lab Sample ID: MB 670-7553/7

Matrix: Water

Analysis Batch: 7553

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 23:52	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 23:52	1
Benzene	0.50	U	1.0	0.50	ug/L			10/06/22 23:52	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 23:52	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 23:52	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 23:52	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/06/22 23:52	1

	MB	MB							
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Toluene-d8 (Surr)	101		80 - 120		10/06/22 23:52	1			
4-Bromofluorobenzene (Surr)	81		80 - 120		10/06/22 23:52	1			
Dibromofluoromethane (Surr)	113		80 - 120		10/06/22 23:52	1			

Lab Sample ID: LCS 670-7553/1004

Matrix: Water

Analysis Batch: 7553

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS						
Analyte	Added	Result	Qualifier	Unit	D	%Rec	%Rec	Limits	
1,2,3-Trichlorobenzene	20.0	15.8		ug/L		79		50 - 150	
1,2,4-Trichlorobenzene	20.0	15.9		ug/L		80		50 - 150	
Benzene	20.0	16.6		ug/L		83		50 - 150	
Chlorobenzene	20.0	17.0		ug/L		85		50 - 150	
m-Dichlorobenzene	20.0	16.7		ug/L		83		50 - 150	
o-Dichlorobenzene	20.0	16.5		ug/L		82		50 - 150	
para-Dichlorobenzene	20.0	16.4		ug/L		82		50 - 150	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	99		80 - 120
4-Bromofluorobenzene (Surr)	76	J1	80 - 120
Dibromofluoromethane (Surr)	109		80 - 120

Lab Sample ID: LCSD 670-7553/5

Matrix: Water

Analysis Batch: 7553

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	Spike	LCSD	LCSD							
Analyte	Added	Result	Qualifier	Unit	D	%Rec	%Rec	Limits	RPD	Limit
1,2,3-Trichlorobenzene	20.0	15.7		ug/L		79		50 - 150	0	30
1,2,4-Trichlorobenzene	20.0	15.8		ug/L		79		50 - 150	1	30
Benzene	20.0	15.6		ug/L		78		50 - 150	6	30
Chlorobenzene	20.0	16.1		ug/L		80		50 - 150	6	30
m-Dichlorobenzene	20.0	16.3		ug/L		81		50 - 150	2	30

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6769-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 670-7553/5

Matrix: Water

Analysis Batch: 7553

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
o-Dichlorobenzene	20.0	15.9		ug/L		80	50 - 150	3	30
para-Dichlorobenzene	20.0	15.8		ug/L		79	50 - 150	4	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	99		80 - 120
4-Bromofluorobenzene (Surr)	78	J1	80 - 120
Dibromofluoromethane (Surr)	106		80 - 120

Lab Sample ID: MB 670-7698/7

Matrix: Water

Analysis Batch: 7698

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/10/22 16:05	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/10/22 16:05	1
Benzene	0.50	U	1.0	0.50	ug/L			10/10/22 16:05	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/10/22 16:05	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/10/22 16:05	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/10/22 16:05	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/10/22 16:05	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 120		10/10/22 16:05	1
4-Bromofluorobenzene (Surr)	82		80 - 120		10/10/22 16:05	1
Dibromofluoromethane (Surr)	109		80 - 120		10/10/22 16:05	1

Lab Sample ID: LCS 670-7698/4

Matrix: Water

Analysis Batch: 7698

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichlorobenzene	20.0	16.4		ug/L		82	50 - 150
1,2,4-Trichlorobenzene	20.0	16.5		ug/L		83	50 - 150
Benzene	20.0	15.7		ug/L		79	50 - 150
Chlorobenzene	20.0	16.0		ug/L		80	50 - 150
m-Dichlorobenzene	20.0	16.3		ug/L		81	50 - 150
o-Dichlorobenzene	20.0	16.0		ug/L		80	50 - 150
para-Dichlorobenzene	20.0	16.0		ug/L		80	50 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	104		80 - 120
4-Bromofluorobenzene (Surr)	81		80 - 120
Dibromofluoromethane (Surr)	109		80 - 120

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6769-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 670-7698/5

Matrix: Water

Analysis Batch: 7698

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,3-Trichlorobenzene	20.0	16.9		ug/L		84	50 - 150	3	30
1,2,4-Trichlorobenzene	20.0	16.9		ug/L		84	50 - 150	2	30
Benzene	20.0	15.2		ug/L		76	50 - 150	3	30
Chlorobenzene	20.0	15.5		ug/L		77	50 - 150	3	30
m-Dichlorobenzene	20.0	15.6		ug/L		78	50 - 150	4	30
o-Dichlorobenzene	20.0	15.6		ug/L		78	50 - 150	3	30
para-Dichlorobenzene	20.0	15.6		ug/L		78	50 - 150	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	106		80 - 120
4-Bromofluorobenzene (Surr)	81		80 - 120
Dibromofluoromethane (Surr)	109		80 - 120

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 400-595510/1-A

Matrix: Water

Analysis Batch: 596067

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 595510

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.39	U	0.50	0.39	ug/L		10/07/22 14:43	10/12/22 15:16	1
PCB-1221	0.16	U	0.50	0.16	ug/L		10/07/22 14:43	10/12/22 15:16	1
PCB-1232	0.13	U	0.50	0.13	ug/L		10/07/22 14:43	10/12/22 15:16	1
PCB-1242	0.14	U	0.50	0.14	ug/L		10/07/22 14:43	10/12/22 15:16	1
PCB-1248	0.098	U	0.50	0.098	ug/L		10/07/22 14:43	10/12/22 15:16	1
PCB-1254	0.12	U	0.50	0.12	ug/L		10/07/22 14:43	10/12/22 15:16	1
PCB-1260	0.25	U	0.50	0.25	ug/L		10/07/22 14:43	10/12/22 15:16	1
Polychlorinated biphenyls, Total	0.16	U	0.50	0.16	ug/L		10/07/22 14:43	10/12/22 15:16	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	125		50 - 150	10/07/22 14:43	10/12/22 15:16	1
Tetrachloro-m-xylene	97		50 - 150	10/07/22 14:43	10/12/22 15:16	1

Lab Sample ID: LCS 400-595510/2-A

Matrix: Water

Analysis Batch: 596067

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 595510

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
PCB-1016	5.05	6.87		ug/L		136	41 - 150
PCB-1260	5.03	5.86		ug/L		117	31 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	106		50 - 150
Tetrachloro-m-xylene	87		50 - 150

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6769-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCSD 400-595510/3-A

Matrix: Water

Analysis Batch: 596067

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 595510

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1016	5.05	6.97		ug/L		138	41 - 150	1	30
PCB-1260	5.03	5.61		ug/L		112	31 - 150	4	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl	100		50 - 150
Tetrachloro-m-xylene	113		50 - 150

Lab Sample ID: MB 400-595883/1-A

Matrix: Water

Analysis Batch: 595986

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 595883

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.39	U	0.50	0.39	ug/L		10/11/22 14:31	10/12/22 22:36	1
PCB-1221	0.16	U	0.50	0.16	ug/L		10/11/22 14:31	10/12/22 22:36	1
PCB-1232	0.13	U	0.50	0.13	ug/L		10/11/22 14:31	10/12/22 22:36	1
PCB-1242	0.14	U	0.50	0.14	ug/L		10/11/22 14:31	10/12/22 22:36	1
PCB-1248	0.098	U	0.50	0.098	ug/L		10/11/22 14:31	10/12/22 22:36	1
PCB-1254	0.12	U	0.50	0.12	ug/L		10/11/22 14:31	10/12/22 22:36	1
PCB-1260	0.25	U	0.50	0.25	ug/L		10/11/22 14:31	10/12/22 22:36	1
Polychlorinated biphenyls, Total	0.16	U	0.50	0.16	ug/L		10/11/22 14:31	10/12/22 22:36	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	186	J1	50 - 150	10/11/22 14:31	10/12/22 22:36	1
Tetrachloro-m-xylene	209	J1	50 - 150	10/11/22 14:31	10/12/22 22:36	1

Lab Sample ID: LCS 400-595883/4-A

Matrix: Water

Analysis Batch: 595986

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 595883

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
PCB-1016	10.1	9.22		ug/L		91	41 - 150
PCB-1260	10.1	7.00		ug/L		70	31 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	71		50 - 150
Tetrachloro-m-xylene	73		50 - 150

Lab Sample ID: LCSD 400-595883/5-A

Matrix: Water

Analysis Batch: 595986

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 595883

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1016	10.1	10.8		ug/L		107	41 - 150	16	30
PCB-1260	10.1	8.53		ug/L		85	31 - 150	20	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl	82		50 - 150

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6769-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCSD 400-595883/5-A
Matrix: Water
Analysis Batch: 595986

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 595883

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
Tetrachloro-m-xylene	100		50 - 150

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 670-8244/5
Matrix: Water
Analysis Batch: 8244

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2000	U	2000	2000	ug/L			10/17/22 15:41	1

Lab Sample ID: MB 670-8244/50
Matrix: Water
Analysis Batch: 8244

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2000	U	2000	2000	ug/L			10/17/22 22:30	1

Lab Sample ID: LCS 670-8244/4
Matrix: Water
Analysis Batch: 8244

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	4000	4170		ug/L		104	90 - 110

Lab Sample ID: LCS 670-8244/49
Matrix: Water
Analysis Batch: 8244

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	4000	4140		ug/L		104	90 - 110

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 670-7526/3-A
Matrix: Water
Analysis Batch: 7628

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 7526

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	10	U	20	10	ug/L		10/06/22 09:47	10/06/22 17:24	1
Manganese	10	U	20	10	ug/L		10/06/22 09:47	10/06/22 17:24	1
Sodium	1000	U	2000	1000	ug/L		10/06/22 09:47	10/06/22 17:24	1

Lab Sample ID: LCS 670-7526/1-A
Matrix: Water
Analysis Batch: 7628

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 7526

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	10000	10800		ug/L		108	80 - 120
Manganese	10000	11100		ug/L		111	80 - 120

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6769-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LCS 670-7526/1-A

Matrix: Water

Analysis Batch: 7628

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 7526

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	10000	10400		ug/L		104	80 - 120

Lab Sample ID: LCSD 670-7526/2-A

Matrix: Water

Analysis Batch: 7628

Client Sample ID: Lab Control Sample Dup

Prep Type: Total Recoverable

Prep Batch: 7526

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Iron	10000	10700		ug/L		107	80 - 120	200	20
Manganese	10000	11000		ug/L		110	80 - 120	200	20
Sodium	10000	10300		ug/L		103	80 - 120	200	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 670-7557/1

Matrix: Water

Analysis Batch: 7557

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	5000	U	5000	5000	ug/L			10/06/22 13:09	1

Lab Sample ID: LCS 670-7557/2

Matrix: Water

Analysis Batch: 7557

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1500000	1570000		ug/L		105	80 - 120

Eurofins Orlando

QC Association Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6769-1

GC/MS VOA

Analysis Batch: 7541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-6769-1	GSRV-MW0030R-013.0-20221004	Total/NA	Ground Water	8260B	
670-6769-2	GSRV-MW0036R-007.0-20221004	Total/NA	Ground Water	8260B	
670-6769-3	GSRV-MW0040-003.0-20221004	Total/NA	Ground Water	8260B	
670-6769-4	GSRV-MW0041-003.0-20221004	Total/NA	Ground Water	8260B	
670-6769-5	GSRV-MW0042R-007.0-20221004	Total/NA	Ground Water	8260B	
670-6769-6	GSRV-MW0050-027.5-20221004	Total/NA	Ground Water	8260B	
670-6769-7	GSRV-MW0051-027.5-20221004	Total/NA	Ground Water	8260B	
670-6769-8	GSRV-MW0052-019.0-20221004	Total/NA	Ground Water	8260B	
670-6769-9	GSRV-MW0053-007.0-20221004	Total/NA	Ground Water	8260B	
670-6769-10	GSRV-MW0054-013.0-20221004	Total/NA	Ground Water	8260B	
670-6769-11	GSRV-MW0059-035.0-20221004	Total/NA	Ground Water	8260B	
670-6769-12	GSRV-MW0060-005.5-20221004	Total/NA	Ground Water	8260B	
670-6769-13	GSRV-MW0061-025.0-20221004	Total/NA	Ground Water	8260B	
670-6769-14	GSRV-MW0064-025.0-20221004	Total/NA	Ground Water	8260B	
670-6769-15	GSRV-MW0066-025.0-20221004	Total/NA	Ground Water	8260B	
670-6769-16	GSRV-MW0075-022.0-20221004	Total/NA	Ground Water	8260B	
MB 670-7541/7	Method Blank	Total/NA	Water	8260B	
LCS 670-7541/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 670-7541/5	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 7553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-6769-17	GSRV-TB01-20221003	Total/NA	Ground Water	8260B	
MB 670-7553/7	Method Blank	Total/NA	Water	8260B	
LCS 670-7553/1004	Lab Control Sample	Total/NA	Water	8260B	
LCSD 670-7553/5	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 7698

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-6769-2	GSRV-MW0036R-007.0-20221004	Total/NA	Ground Water	8260B	
670-6769-6	GSRV-MW0050-027.5-20221004	Total/NA	Ground Water	8260B	
670-6769-15	GSRV-MW0066-025.0-20221004	Total/NA	Ground Water	8260B	
670-6769-16	GSRV-MW0075-022.0-20221004	Total/NA	Ground Water	8260B	
MB 670-7698/7	Method Blank	Total/NA	Water	8260B	
LCS 670-7698/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 670-7698/5	Lab Control Sample Dup	Total/NA	Water	8260B	

GC Semi VOA

Prep Batch: 595510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-6769-1	GSRV-MW0030R-013.0-20221004	Total/NA	Ground Water	3511	
670-6769-2	GSRV-MW0036R-007.0-20221004	Total/NA	Ground Water	3511	
670-6769-3	GSRV-MW0040-003.0-20221004	Total/NA	Ground Water	3511	
670-6769-4	GSRV-MW0041-003.0-20221004	Total/NA	Ground Water	3511	
670-6769-5	GSRV-MW0042R-007.0-20221004	Total/NA	Ground Water	3511	
670-6769-6	GSRV-MW0050-027.5-20221004	Total/NA	Ground Water	3511	
MB 400-595510/1-A	Method Blank	Total/NA	Water	3511	
LCS 400-595510/2-A	Lab Control Sample	Total/NA	Water	3511	
LCSD 400-595510/3-A	Lab Control Sample Dup	Total/NA	Water	3511	

Eurofins Orlando

QC Association Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6769-1

GC Semi VOA

Prep Batch: 595883

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-6769-7	GSRV-MW0051-027.5-20221004	Total/NA	Ground Water	3511	
670-6769-8	GSRV-MW0052-019.0-20221004	Total/NA	Ground Water	3511	
670-6769-9	GSRV-MW0053-007.0-20221004	Total/NA	Ground Water	3511	
670-6769-10	GSRV-MW0054-013.0-20221004	Total/NA	Ground Water	3511	
670-6769-11	GSRV-MW0059-035.0-20221004	Total/NA	Ground Water	3511	
670-6769-12	GSRV-MW0060-005.5-20221004	Total/NA	Ground Water	3511	
670-6769-15	GSRV-MW0066-025.0-20221004	Total/NA	Ground Water	3511	
MB 400-595883/1-A	Method Blank	Total/NA	Water	3511	
LCS 400-595883/4-A	Lab Control Sample	Total/NA	Water	3511	
LCSD 400-595883/5-A	Lab Control Sample Dup	Total/NA	Water	3511	

Analysis Batch: 595986

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 400-595883/1-A	Method Blank	Total/NA	Water	8082A	595883
LCS 400-595883/4-A	Lab Control Sample	Total/NA	Water	8082A	595883
LCSD 400-595883/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	595883

Analysis Batch: 596067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-6769-1	GSRV-MW0030R-013.0-20221004	Total/NA	Ground Water	8082A	595510
670-6769-2	GSRV-MW0036R-007.0-20221004	Total/NA	Ground Water	8082A	595510
670-6769-3	GSRV-MW0040-003.0-20221004	Total/NA	Ground Water	8082A	595510
670-6769-4	GSRV-MW0041-003.0-20221004	Total/NA	Ground Water	8082A	595510
670-6769-5	GSRV-MW0042R-007.0-20221004	Total/NA	Ground Water	8082A	595510
670-6769-6	GSRV-MW0050-027.5-20221004	Total/NA	Ground Water	8082A	595510
MB 400-595510/1-A	Method Blank	Total/NA	Water	8082A	595510
LCS 400-595510/2-A	Lab Control Sample	Total/NA	Water	8082A	595510
LCSD 400-595510/3-A	Lab Control Sample Dup	Total/NA	Water	8082A	595510

Analysis Batch: 596099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-6769-7	GSRV-MW0051-027.5-20221004	Total/NA	Ground Water	8082A	595883
670-6769-8	GSRV-MW0052-019.0-20221004	Total/NA	Ground Water	8082A	595883
670-6769-9	GSRV-MW0053-007.0-20221004	Total/NA	Ground Water	8082A	595883
670-6769-10	GSRV-MW0054-013.0-20221004	Total/NA	Ground Water	8082A	595883
670-6769-11	GSRV-MW0059-035.0-20221004	Total/NA	Ground Water	8082A	595883
670-6769-12	GSRV-MW0060-005.5-20221004	Total/NA	Ground Water	8082A	595883
670-6769-15	GSRV-MW0066-025.0-20221004	Total/NA	Ground Water	8082A	595883

HPLC/IC

Analysis Batch: 8244

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-6769-6	GSRV-MW0050-027.5-20221004	Total/NA	Ground Water	300.0	
670-6769-15	GSRV-MW0066-025.0-20221004	Total/NA	Ground Water	300.0	
MB 670-8244/5	Method Blank	Total/NA	Water	300.0	
MB 670-8244/50	Method Blank	Total/NA	Water	300.0	
LCS 670-8244/4	Lab Control Sample	Total/NA	Water	300.0	
LCS 670-8244/49	Lab Control Sample	Total/NA	Water	300.0	

Eurofins Orlando

QC Association Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6769-1

Metals

Prep Batch: 7526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-6769-6	GSRV-MW0050-027.5-20221004	Total Recoverable	Ground Water	3005A	
670-6769-15	GSRV-MW0066-025.0-20221004	Total Recoverable	Ground Water	3005A	
MB 670-7526/3-A	Method Blank	Total Recoverable	Water	3005A	
LCS 670-7526/1-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 670-7526/2-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Analysis Batch: 7628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-6769-6	GSRV-MW0050-027.5-20221004	Total Recoverable	Ground Water	6010D	7526
670-6769-15	GSRV-MW0066-025.0-20221004	Total Recoverable	Ground Water	6010D	7526
MB 670-7526/3-A	Method Blank	Total Recoverable	Water	6010D	7526
LCS 670-7526/1-A	Lab Control Sample	Total Recoverable	Water	6010D	7526
LCSD 670-7526/2-A	Lab Control Sample Dup	Total Recoverable	Water	6010D	7526

General Chemistry

Analysis Batch: 7557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-6769-6	GSRV-MW0050-027.5-20221004	Total/NA	Ground Water	SM 2540C	
670-6769-15	GSRV-MW0066-025.0-20221004	Total/NA	Ground Water	SM 2540C	
MB 670-7557/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 670-7557/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6769-1

Client Sample ID: GSRY-MW0030R-013.0-20221004

Lab Sample ID: 670-6769-1

Date Collected: 10/04/22 14:22

Matrix: Ground Water

Date Received: 10/04/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7541	YP	EET ORL	10/09/22 16:20
Total/NA	Prep	3511			595510	PG	EET PEN	10/07/22 14:44
Total/NA	Analysis	8082A		1	596067	DS	EET PEN	10/12/22 20:25

Client Sample ID: GSRY-MW0036R-007.0-20221004

Lab Sample ID: 670-6769-2

Date Collected: 10/04/22 09:41

Matrix: Ground Water

Date Received: 10/04/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7698	YP	EET ORL	10/10/22 18:29
Total/NA	Analysis	8260B		1	7541	YP	EET ORL	10/09/22 16:37
Total/NA	Prep	3511			595510	PG	EET PEN	10/07/22 14:44
Total/NA	Analysis	8082A		1	596067	DS	EET PEN	10/12/22 20:53

Client Sample ID: GSRY-MW0040-003.0-20221004

Lab Sample ID: 670-6769-3

Date Collected: 10/04/22 13:02

Matrix: Ground Water

Date Received: 10/04/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7541	YP	EET ORL	10/09/22 16:54
Total/NA	Prep	3511			595510	PG	EET PEN	10/07/22 14:44
Total/NA	Analysis	8082A		1	596067	DS	EET PEN	10/12/22 21:21

Client Sample ID: GSRY-MW0041-003.0-20221004

Lab Sample ID: 670-6769-4

Date Collected: 10/04/22 12:09

Matrix: Ground Water

Date Received: 10/04/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7541	YP	EET ORL	10/09/22 17:11
Total/NA	Prep	3511			595510	PG	EET PEN	10/07/22 14:44
Total/NA	Analysis	8082A		1	596067	DS	EET PEN	10/12/22 21:49

Client Sample ID: GSRY-MW0042R-007.0-20221004

Lab Sample ID: 670-6769-5

Date Collected: 10/04/22 11:00

Matrix: Ground Water

Date Received: 10/04/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7541	YP	EET ORL	10/09/22 17:28
Total/NA	Prep	3511			595510	PG	EET PEN	10/07/22 14:44
Total/NA	Analysis	8082A		1	596067	DS	EET PEN	10/12/22 22:17

Eurofins Orlando

Lab Chronicle

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6769-1

Client Sample ID: GSRV-MW0050-027.5-20221004

Lab Sample ID: 670-6769-6

Date Collected: 10/04/22 13:08

Matrix: Ground Water

Date Received: 10/04/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		5	7698	YP	EET ORL	10/10/22 16:42
Total/NA	Analysis	8260B		1	7541	YP	EET ORL	10/09/22 17:46
Total/NA	Prep	3511			595510	PG	EET PEN	10/07/22 14:44
Total/NA	Analysis	8082A		1	596067	DS	EET PEN	10/12/22 22:45
Total/NA	Analysis	300.0		10	8244	YS	EET ORL	10/17/22 23:38
Total Recoverable	Prep	3005A			7526	NR	EET ORL	10/06/22 09:47
Total Recoverable	Analysis	6010D		1	7628	EV	EET ORL	10/06/22 17:38
Total/NA	Analysis	SM 2540C		1	7557	KS	EET ORL	10/06/22 13:09

Client Sample ID: GSRV-MW0051-027.5-20221004

Lab Sample ID: 670-6769-7

Date Collected: 10/04/22 14:27

Matrix: Ground Water

Date Received: 10/04/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7541	YP	EET ORL	10/09/22 18:03
Total/NA	Prep	3511			595883	JTC	EET PEN	10/11/22 14:31
Total/NA	Analysis	8082A		1	596099	DS	EET PEN	10/13/22 23:15

Client Sample ID: GSRV-MW0052-019.0-20221004

Lab Sample ID: 670-6769-8

Date Collected: 10/04/22 12:29

Matrix: Ground Water

Date Received: 10/04/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7541	YP	EET ORL	10/09/22 18:20
Total/NA	Prep	3511			595883	JTC	EET PEN	10/11/22 14:31
Total/NA	Analysis	8082A		1	596099	DS	EET PEN	10/13/22 23:43

Client Sample ID: GSRV-MW0053-007.0-20221004

Lab Sample ID: 670-6769-9

Date Collected: 10/04/22 10:20

Matrix: Ground Water

Date Received: 10/04/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7541	YP	EET ORL	10/09/22 18:37
Total/NA	Prep	3511			595883	JTC	EET PEN	10/11/22 14:31
Total/NA	Analysis	8082A		1	596099	DS	EET PEN	10/14/22 00:11

Client Sample ID: GSRV-MW0054-013.0-20221004

Lab Sample ID: 670-6769-10

Date Collected: 10/04/22 09:50

Matrix: Ground Water

Date Received: 10/04/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7541	YP	EET ORL	10/09/22 18:54
Total/NA	Prep	3511			595883	JTC	EET PEN	10/11/22 14:31
Total/NA	Analysis	8082A		1	596099	DS	EET PEN	10/14/22 00:39

Eurofins Orlando

Lab Chronicle

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6769-1

Client Sample ID: GSRY-MW0059-035.0-20221004

Lab Sample ID: 670-6769-11

Date Collected: 10/04/22 12:27

Matrix: Ground Water

Date Received: 10/04/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7541	YP	EET ORL	10/09/22 19:11
Total/NA	Prep	3511			595883	JTC	EET PEN	10/11/22 14:31
Total/NA	Analysis	8082A		1	596099	DS	EET PEN	10/14/22 01:07

Client Sample ID: GSRY-MW0060-005.5-20221004

Lab Sample ID: 670-6769-12

Date Collected: 10/04/22 13:45

Matrix: Ground Water

Date Received: 10/04/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7541	YP	EET ORL	10/09/22 19:29
Total/NA	Prep	3511			595883	JTC	EET PEN	10/11/22 14:31
Total/NA	Analysis	8082A		1	596099	DS	EET PEN	10/14/22 01:35

Client Sample ID: GSRY-MW0061-025.0-20221004

Lab Sample ID: 670-6769-13

Date Collected: 10/04/22 15:01

Matrix: Ground Water

Date Received: 10/04/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7541	YP	EET ORL	10/09/22 19:46

Client Sample ID: GSRY-MW0064-025.0-20221004

Lab Sample ID: 670-6769-14

Date Collected: 10/04/22 12:04

Matrix: Ground Water

Date Received: 10/04/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7541	YP	EET ORL	10/09/22 20:03

Client Sample ID: GSRY-MW0066-025.0-20221004

Lab Sample ID: 670-6769-15

Date Collected: 10/04/22 11:28

Matrix: Ground Water

Date Received: 10/04/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7698	YP	EET ORL	10/10/22 19:03
Total/NA	Analysis	8260B		1	7541	YP	EET ORL	10/09/22 20:20
Total/NA	Prep	3511			595883	JTC	EET PEN	10/11/22 14:31
Total/NA	Analysis	8082A		1	596099	DS	EET PEN	10/14/22 02:03
Total/NA	Analysis	300.0		10	8244	YS	EET ORL	10/17/22 23:52
Total Recoverable	Prep	3005A			7526	NR	EET ORL	10/06/22 09:47
Total Recoverable	Analysis	6010D		1	7628	EV	EET ORL	10/06/22 17:39
Total/NA	Analysis	SM 2540C		1	7557	KS	EET ORL	10/06/22 13:09

Eurofins Orlando

Lab Chronicle

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6769-1

Client Sample ID: GSRV-MW0075-022.0-20221004

Lab Sample ID: 670-6769-16

Date Collected: 10/04/22 12:47

Matrix: Ground Water

Date Received: 10/04/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7698	YP	EET ORL	10/10/22 19:20
Total/NA	Analysis	8260B		1	7541	YP	EET ORL	10/09/22 20:37

Client Sample ID: GSRV-TB01-20221003

Lab Sample ID: 670-6769-17

Date Collected: 10/03/22 08:00

Matrix: Ground Water

Date Received: 10/04/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	7553	YP	EET ORL	10/07/22 02:32

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

EET PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Accreditation/Certification Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6769-1

Laboratory: Eurofins Orlando

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E83018	06-30-23

Laboratory: Eurofins Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alabama	State	40150	06-30-23
ANAB	ISO/IEC 17025	L2471	02-23-23
Arkansas DEQ	State	88-0689	09-01-23
California	State	2510	06-30-23
Florida	NELAP	E81010	06-30-23
Georgia	State	E81010(FL)	06-30-23
Illinois	NELAP	200041	10-09-23
Kansas	NELAP	E-10253	10-31-22
Kentucky (UST)	State	53	06-30-23
Kentucky (WW)	State	KY98030	12-31-22
Louisiana (All)	NELAP	30976	06-30-23
Louisiana (DW)	State	LA017	12-31-22
Maryland	State	233	09-30-23
Michigan	State	9912	06-30-23
North Carolina (WW/SW)	State	314	12-31-22
Oklahoma	NELAP	9810	08-31-23
Pennsylvania	NELAP	68-00467	01-31-23
South Carolina	State	96026	06-30-23
Tennessee	State	TN02907	06-30-23
Texas	NELAP	T104704286	09-30-23
US Fish & Wildlife	US Federal Programs	A22340	06-30-23
USDA	US Federal Programs	P330-21-00056	05-17-24
Virginia	NELAP	460166	06-14-23
West Virginia DEP	State	136	03-31-23

Eurofins Orlando

Method Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-6769-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET ORL
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET PEN
300.0	Anions, Ion Chromatography	MCAWW	EET ORL
6010D	Metals (ICP)	SW846	EET ORL
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET ORL
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET ORL
3511	Microextraction of Organic Compounds	SW846	EET PEN
5030C	Purge and Trap	SW846	EET ORL

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

EET PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-6769-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
670-6769-1	GSRV-MW0030R-013.0-20221004	Ground Water	10/04/22 14:22	10/04/22 16:00
670-6769-2	GSRV-MW0036R-007.0-20221004	Ground Water	10/04/22 09:41	10/04/22 16:00
670-6769-3	GSRV-MW0040-003.0-20221004	Ground Water	10/04/22 13:02	10/04/22 16:00
670-6769-4	GSRV-MW0041-003.0-20221004	Ground Water	10/04/22 12:09	10/04/22 16:00
670-6769-5	GSRV-MW0042R-007.0-20221004	Ground Water	10/04/22 11:00	10/04/22 16:00
670-6769-6	GSRV-MW0050-027.5-20221004	Ground Water	10/04/22 13:08	10/04/22 16:00
670-6769-7	GSRV-MW0051-027.5-20221004	Ground Water	10/04/22 14:27	10/04/22 16:00
670-6769-8	GSRV-MW0052-019.0-20221004	Ground Water	10/04/22 12:29	10/04/22 16:00
670-6769-9	GSRV-MW0053-007.0-20221004	Ground Water	10/04/22 10:20	10/04/22 16:00
670-6769-10	GSRV-MW0054-013.0-20221004	Ground Water	10/04/22 09:50	10/04/22 16:00
670-6769-11	GSRV-MW0059-035.0-20221004	Ground Water	10/04/22 12:27	10/04/22 16:00
670-6769-12	GSRV-MW0060-005.5-20221004	Ground Water	10/04/22 13:45	10/04/22 16:00
670-6769-13	GSRV-MW0061-025.0-20221004	Ground Water	10/04/22 15:01	10/04/22 16:00
670-6769-14	GSRV-MW0064-025.0-20221004	Ground Water	10/04/22 12:04	10/04/22 16:00
670-6769-15	GSRV-MW0066-025.0-20221004	Ground Water	10/04/22 11:28	10/04/22 16:00
670-6769-16	GSRV-MW0075-022.0-20221004	Ground Water	10/04/22 12:47	10/04/22 16:00
670-6769-17	GSRV-TB01-20221003	Ground Water	10/03/22 08:00	10/04/22 16:00

CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD															
Project Name: NASA KSC - GSA Reclamation Yard		COC No.		Page: 1 of 3		Project No. 60614327.4		Phase:							
Site Location: GSRV - PCB VOC Area		Send Invoice To: Instructions in MSA# 215-27172-GV03		EDD to: Jennifer Chastain		Cc: Teresa Ament Jennings		Report to: Jennifer Chastain							
TO No.: 80KSC019F0078		AECOM Project Manager: Chad Lee cc: Jennifer Joyal		Deliver Sample Kits To: AECOM Depot, 523 18th Street, Orlando		Cc: Teresa Ament Jennings		Site-Specific WS# 15 from QAPP: 15-17A							
Greg Kusel / (772) 631-7426		Dustin Slater / (407) 766-0747		Deliver Samples To: ENCO Orlando											
Lab Name: ENCO		Turnaround Time(specific):		Standard 14 day											
Lab ID	Sample ID (sys_samp_code)	Location ID (sys_loc_code)	Date (YYYYMMDD)	Time (hhmm)	Matrix Code (1)	Sample Type (2)	G-Grab C=Comp	(3)	4 DEG	4 DEG	4 DEG	4 DEG	4 DEG	4 DEG	Comments
6K	GSRV-MW00419	GSRV-MW00115	2022		WG	N	G	2							
	GSRV-MW0030R-013.0-20221004	GSRV-MW0030R	20221004	1422	WG	N	G	4	OK	2					
6K	GSRV-MW00021	GSRV-MW00021	2022		WG	N	G	3	3	2					
	GSRV-MW0036R-007.0-20221004	GSRV-MW0036R	20221004	0941	WG	N	G	4	OK	2					
	GSRV-MW0040-003.0-20221004	GSRV-MW0040	20221004	1302	WG	N	G	4	OK	2					
	GSRV-MW0041-003.0-2022004	GSRV-MW0041	20221004	1209	WG	N	G	4	OK	2					
	GSRV-MW0042R-007.0-20221004	GSRV-MW0042R	20221004	1100	WG	N	G	4	OK	2					
6K	GSRV-MW00043	GSRV-MW00043	2022		WG	N	G	5	3	2					
6K	GSRV-MW00044	GSRV-MW00044	2022		WG	N	G	5	3	2					
6K	GSRV-MW00045R	GSRV-MW00045R	2022		WG	N	G	5	3	2					
6K	GSRV-MW00046	GSRV-MW00046	2022		WG	N	G	8	3	2					
	GSRV-MW00050-027.5-20221004	GSRV-MW00050	20221004	1308	WG	N	G	7	OK	2					



670-6769 Chain of Custody

Field Comments:		Lab Comments:	
Report only per QAPP WS # 15			
Relinquished by (signature)	Date	Received by (signature)	Time
1. M. Parnett	10/6/22	1. [Signature]	1649
2		2	
3		3	

Sample Shipment and Delivery Details	
Number of coolers in shipment:	
Samples Iced?(check) Yes No	
Shipping Company:	
Tracking No:	
Date Shipped:	

(1) AA=Ambient air, AQ=Air quality control, ASB=Asbestos, CK=Caulk, DS=Storm drain sediment, GS=Soil gas, IC=IDW Concrete, IDD=IDW Solid, IDS=IDW soil, IDW=IDW Water, LF=Free Product, MA=Mastic, PC=Paint Chips, SC=Cement/Concrete, SE=Sediment, SL=Sludge, SO=Soil, SQ=Soil/Solid quality control, SSD=Subsurface sediment, SU=Surface soil (<6 in), SW=Swab or wipe, TA=Animal tissue, TP=Tissue quality control, WG=Ground water, WL=Leachate, WO=Ocean water, WP=Drinking water, WQ=Water quality control, WR=Ground water effluent, WS=Surface water, WU=Storm water, WW=Waste water

(2) Sample Type: AB=Ambient Bk, EB=Equipment Bk, FB=Field Bk, FD=Field Duplicate Sample, IDW=Investigative-Derived Waste, MIS=Incremental Sampling Methodology, N=Normal Environmental Sample, TB=Trip Bk

(3) Preservative added: 4 DEG C=Cool to 4 degrees, Dark=Store in Darkness, store cool at 4 degrees C H2SO4 <2=Adjust to pH < 2 with sulfuric acid, H3PO4 <2=Adjust to pH < 2 with phosphoric acid, HCl <2=Adjust to pH < 2 with hydrochloric acid, HNO3 <2=Adjust to pH < 2 with nitric acid, MeOH=Methanol preservation, Na2O3S2 3/gal=Add 3 mL 10% sodium thiosulfate per 1-gal, Na2O3S2 4/4oz=4 drops of 10% sodium thiosulfate to 4 oz, NaHSO4 <2=Adjust to pH < 2 with sodium hydrogen sulfate, NaOH >12=Adjust to pH > 12 with sodium hydroxide, NaOH >9=Adjust to pH > 9 with sodium hydroxide, VHC 0.6/500=0.6 g of ascorbic acid to 500mLs, ZnAct 2/500=Add 2 mL of zinc acetate to 500mLs, ZnAct+NaOH >9=Zinc acetate and NaOH to pH>9; store cool at 4C. If NO preservative added leave blank

Rev 8/19

CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD															
Project Name: NASA KSC - GSA Reclamation Yard		COC No.		Page: 3 of 3		Project No. 60614327.4		Phase:							
Site Location: GSRV - PCB VOC Area		Send Invoice To: Instructions in MSA# 21S-27172-GV03		EDD to: Jennifer Chastain		Cc: Teresa Ament Jennings		Report to: Jennifer Chastain							
TO No.: 80KSC019F0078		AECOM Project Manager: Chad Lee cc: Jennifer Joyal		Deliver Sample Kits To: AECOM Depot, 523 18th Street, Orlando		Cc: Teresa Ament Jennings		Site-Specific WS# 15 from QAPP: 15-17A							
Greg Kusel / (772) 631-7426		Dustin Slater / (407) 766-0747		Madan Parsotan / (321) 696-6000		ENCO Orlando		ENCO Orlando							
Lab Name: ENCO		Turnaround Time(specific): Standard 14 day													
Lab ID	Sample ID (sys_samp_code)	Location ID (sys_loc_code)	Date (YYYYMMDD)	Time (Military) (hhmm)	Matrix Code (1)	Sample Type (2)	G=Grab C=Comp	(3)	4 DEG	4 DEG	4 DEG	4 DEG	4 DEG	4 DEG	Comments
6K	GSRV-MW0063	GSRV-MW0063	2022		WG	N	G	5	3	2	2	1	1	1	TDS by SM2540C
	GSRV-MW0064	GSRV-MW0064	2022 1004	1204	WG	N	G	2	3	2	2	1	1	1	
	GSRV-MW0066	GSRV-MW0066	2022 1004	1128	WG	N	G	7	8	3	2	1	1	1	
	GSRV-MW0075	GSRV-MW0075	2022 1004	1247	WG	N	G	2	3	2	2	1	1	1	
6K	GSRV-MW0075	GSRV-MW0075	2022		WS	N	G	5	3	2	2	1	1	1	
	GSRV-TB01	GSRV-TB01	2022 1003	0800	WQ	TB	G	2	3	2	2	1	1	1	

Field Comments:

Report only per QAPP WS #15

Relinquished by (signature) *M. Rangel* Date *10/04/22* Time *1649*

1 *M. Rangel*

2

3

Lab Comments:

Number of coolers in shipment: _____

Samples Iced?(check) Yes _____ No _____

Shipping Company: _____

Tracking No: _____

Date Shipped: _____

(1) AA= Ambient air, AQ= Air quality control, ASB= Asbestos, CK= Caulk, DS= Storm drain sediment, GS= Soil gas, IC= IDW Solid, IDW= IDW soil, IDW= IDW water, LF= Free Product, MA= Mastic, PC= Paint Chips, SC= Cement/Concrete, SE= Sediment, SL= Sludge, SO= Soil, SQ= Soil/Solid quality control, SSD= Subsurface sediment, SU= Surface soil (<6 n), SW= Swab or wipe, TA= Animal tissue, TP= Tissue quality control, WG= Ground water, WL= Leachate, WO= Ocean water, WP= Drinking water, WQ= Water quality control, WR= Ground water effluent, WS= Surface water, WU= Storm water, WW= Waste water

(2) Sample Type: AB= Ambient Bk, EB= Equipment Bk, FB= Field Bk, FD= Field Duplicate Sample, IDW= Investigative-Derived Waste, MIS= Incremental Sampling Methodology, N= Normal Environmental Sample, TB= Trip Bk

(3) Preservative added: 4 DEG C= Cool to 4 degrees, Dark= Store in Darkness, store cool at 4 degrees, H2SO4 <2= Adjust to pH < 2 with sulfuric acid, H3PO4 <2= Adjust to pH < 2 with phosphoric acid, HCl <2= Adjust to pH < 2 with hydrochloric acid, HNO3 <2= Adjust to pH < 2 with nitric acid, MeOH= Methanol preservation, Na2O3S2 <2= Sodium thiosulfate, Na2O3S2 3/gal= Add 3 mL 10% sodium thiosulfate per 1 gal, Na2O3S2 4/4oz= 4 drops of 10% sodium thiosulfate to 4 oz, NaHSO4 <2= Adjust to pH < 2 with sodium hydroxide, NaOH >9= Adjust to pH > 9 with sodium hydroxide, VHC 0.6/500= 0.6 g of ascorbic acid to 500mLs, ZnAct 2/500= Add 2 mL of zinc acetate to 500mLs, ZnAct+NaOH >9= Zinc acetate and NaOH to pH > 9; store cool at 4C If NO preservative added leave blank

Rev 8/19

Chain of Custody Record

Client Information (Sub Contract Lab)				Lab PM: Dylnicki, Kaitlin	Carrier Tracking No(s):	COC No: 670-650.1						
Client Contact: Eurofins Environment Testing Southeast, 3355 McLemore Drive, Pensacola, FL 32514 Phone: 850-474-1001 (Tel) 850-478-2671 (Fax) Email:				E-Mail: kailin.dylnicki@eurofins.com	State of Origin: Florida	Page: Page 1 of 2						
Project Name: NASA KSC GSRV POB VOC Area				Accreditations Required (See note): NELAP - Florida	Job #:	670-6769-1						
Due Date Requested: 10/17/2022				Analysis Requested ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months Special Instructions/QC Requirements: Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)								
TAT Requested (days):												
PO #:												
WO #:												
Project #: 67000875												
SSOW#:				Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ica U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Y - Trizma Z - other (specify) Other:								
Sample Identification - Client ID (Lab ID)				Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=water/soil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8082A/3511_PCB_1YR (MOD) TCL PCBs by 8082A	Total Number of Containers	Special Instructions/Note:
GSRV-MW0030R-013.0-20221004 (670-6769-1)				10/4/22	14:22 Eastern		Water			X	2	
GSRV-MW0036R-007.0-20221004 (670-6769-2)				10/4/22	09:41 Eastern		Water			X	2	
GSRV-MW0040-003.0-20221004 (670-6769-3)				10/4/22	13:02 Eastern		Water			X	2	
GSRV-MW0041-003.0-20221004 (670-6769-4)				10/4/22	12:09 Eastern		Water			X	2	
GSRV-MW0042R-007.0-20221004 (670-6769-5)				10/4/22	11:00 Eastern		Water			X	2	
GSRV-MW0050-027.5-20221004 (670-6769-6)				10/4/22	13:08 Eastern		Water			X	2	
GSRV-MW0051-027.5-20221004 (670-6769-7)				10/4/22	14:27 Eastern		Water			X	2	
GSRV-MW0052-019.0-20221004 (670-6769-8)				10/4/22	12:29 Eastern		Water			X	2	
GSRV-MW0053-007.0-20221004 (670-6769-9)				10/4/22	10:20 Eastern		Water			X	2	
Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southeast, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southeast, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southeast, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Southeast, LLC.												
Possible Hazard Identification Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify) _____ Primary Deliverable Rank: 2												
Empty Kit Relinquished by:				Date:		Time:		Method of Shipment:				
Relinquished by:				Date/Time: 10/5 1400		Company		Received by:				
Relinquished by:				Date/Time:		Company		Received by:				
Relinquished by:				Date/Time:		Company		Received by:				
Custody Seals Intact: ^ Yes ^ No				Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 0.3°C IR9						

Login Sample Receipt Checklist

Client: AECOM Technical Services Inc.

Job Number: 670-6769-1

Login Number: 6769

List Number: 1

Creator: Hartley, Tyler

List Source: Eurofins Orlando

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: AECOM Technical Services Inc.

Job Number: 670-6769-1

Login Number: 6769

List Number: 2

Creator: Roberts, Alexis J

List Source: Eurofins Pensacola

List Creation: 10/06/22 02:59 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.3°C IR8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Environment Testing

ANALYTICAL REPORT

Eurofins Orlando
481 Newburyport Avenue
Altamonte Springs, FL 32701
Tel: (407)339-5984

Laboratory Job ID: 670-6897-1

Client Project/Site: NASA KSC GSRV CVOC Area

For:

AECOM Technical Services Inc.
150 North Orange Avenue
Suite 200
Orlando, Florida 32801

Attn: Teresa Amentt Jennings

Authorized for release by:
10/31/2022 3:36:12 PM

Kaitlin Dylnicki, Project Manager
(407)339-5984
kaitlin.dylnicki@et.eurofinsus.com

LINKS

Review your project
results through



Have a Question?



Visit us at:

www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Detection Summary	5
Client Sample Results	6
QC Sample Results	7
QC Association Summary	9
Lab Chronicle	10
Certification Summary	11
Method Summary	12
Sample Summary	13
Chain of Custody	14
Receipt Checklists	15



Definitions/Glossary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY CVOC Area

Job ID: 670-6897-1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV CVOC Area

Job ID: 670-6897-1

Job ID: 670-6897-1

Laboratory: Eurofins Orlando

Narrative

Job Narrative 670-6897-1

Receipt

The samples were received on 10/5/2022 4:45 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.0°C

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV CVOC Area

Job ID: 670-6897-1

Client Sample ID: GSRV-MW0067-015.0-20221004

Lab Sample ID: 670-6897-1

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	1400		22	11	ug/L	1		6010D	Total Recoverable

Client Sample ID: GSRV-MW0071-018.0-20221004

Lab Sample ID: 670-6897-2

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	2400		22	11	ug/L	1		6010D	Total Recoverable
Total Dissolved Solids	1300000		5000	5000	ug/L	1		SM 2540C	Total/NA

Client Sample ID: GSRV-MW0073-022.0-20221005

Lab Sample ID: 670-6897-3

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	2100		22	11	ug/L	1		6010D	Total Recoverable
Total Dissolved Solids	1300000		10000	10000	ug/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV CVOC Area

Job ID: 670-6897-1

Client Sample ID: GSRV-MW0067-015.0-20221004

Lab Sample ID: 670-6897-1

Date Collected: 10/04/22 14:57

Matrix: Ground Water

Date Received: 10/05/22 16:45

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1400		22	11	ug/L		10/10/22 11:14	10/17/22 19:13	1

Client Sample ID: GSRV-MW0071-018.0-20221004

Lab Sample ID: 670-6897-2

Date Collected: 10/04/22 14:17

Matrix: Ground Water

Date Received: 10/05/22 16:45

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	2400		22	11	ug/L		10/10/22 11:14	10/17/22 19:14	1

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1300000		5000	5000	ug/L			10/07/22 07:24	1

Client Sample ID: GSRV-MW0073-022.0-20221005

Lab Sample ID: 670-6897-3

Date Collected: 10/05/22 09:36

Matrix: Ground Water

Date Received: 10/05/22 16:45

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	2100		22	11	ug/L		10/10/22 11:14	10/17/22 19:15	1

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1300000		10000	10000	ug/L			10/07/22 07:24	1

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY CVOC Area

Job ID: 670-6897-1

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 670-7720/3-A
Matrix: Water
Analysis Batch: 8315

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 7720

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	10	U	20	10	ug/L		10/10/22 11:14	10/17/22 18:59	1

Lab Sample ID: LCS 670-7720/1-A
Matrix: Water
Analysis Batch: 8315

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 7720

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	10000	10600		ug/L		106	80 - 120

Lab Sample ID: LCSD 670-7720/2-A
Matrix: Water
Analysis Batch: 8315

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 7720

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Iron	10000	10700		ug/L		107	80 - 120	0	20

Lab Sample ID: 670-6855-B-1-A MS
Matrix: Water
Analysis Batch: 8315

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 7720

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	16	I	11100	12000		ug/L		108	70 - 120

Lab Sample ID: 670-6855-B-1-B MSD
Matrix: Water
Analysis Batch: 8315

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 7720

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Iron	16	I	11100	11400		ug/L		103	70 - 120	5	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 670-7620/1
Matrix: Water
Analysis Batch: 7620

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	5000	U	5000	5000	ug/L			10/07/22 07:24	1

Lab Sample ID: LCS 670-7620/2
Matrix: Water
Analysis Batch: 7620

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1500000	1560000		ug/L		104	80 - 120

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV CVOC Area

Job ID: 670-6897-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 670-6689-A-3 DU

Matrix: Water

Analysis Batch: 7620

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	300000		298000		ug/L		0.7	20

Lab Sample ID: 670-6689-A-4 DU

Matrix: Water

Analysis Batch: 7620

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	290000		292000		ug/L		0	20

QC Association Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY CVOC Area

Job ID: 670-6897-1

Metals

Prep Batch: 7720

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-6897-1	GSRY-MW0067-015.0-20221004	Total Recoverable	Ground Water	3005A	
670-6897-2	GSRY-MW0071-018.0-20221004	Total Recoverable	Ground Water	3005A	
670-6897-3	GSRY-MW0073-022.0-20221005	Total Recoverable	Ground Water	3005A	
MB 670-7720/3-A	Method Blank	Total Recoverable	Water	3005A	
LCS 670-7720/1-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 670-7720/2-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	
670-6855-B-1-A MS	Matrix Spike	Total Recoverable	Water	3005A	
670-6855-B-1-B MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 8315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-6897-1	GSRY-MW0067-015.0-20221004	Total Recoverable	Ground Water	6010D	7720
670-6897-2	GSRY-MW0071-018.0-20221004	Total Recoverable	Ground Water	6010D	7720
670-6897-3	GSRY-MW0073-022.0-20221005	Total Recoverable	Ground Water	6010D	7720
MB 670-7720/3-A	Method Blank	Total Recoverable	Water	6010D	7720
LCS 670-7720/1-A	Lab Control Sample	Total Recoverable	Water	6010D	7720
LCSD 670-7720/2-A	Lab Control Sample Dup	Total Recoverable	Water	6010D	7720
670-6855-B-1-A MS	Matrix Spike	Total Recoverable	Water	6010D	7720
670-6855-B-1-B MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010D	7720

General Chemistry

Analysis Batch: 7620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-6897-2	GSRY-MW0071-018.0-20221004	Total/NA	Ground Water	SM 2540C	
670-6897-3	GSRY-MW0073-022.0-20221005	Total/NA	Ground Water	SM 2540C	
MB 670-7620/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 670-7620/2	Lab Control Sample	Total/NA	Water	SM 2540C	
670-6689-A-3 DU	Duplicate	Total/NA	Water	SM 2540C	
670-6689-A-4 DU	Duplicate	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY CVOC Area

Job ID: 670-6897-1

Client Sample ID: GSRY-MW0067-015.0-20221004

Lab Sample ID: 670-6897-1

Date Collected: 10/04/22 14:57

Matrix: Ground Water

Date Received: 10/05/22 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			7720	NR	EET ORL	10/10/22 11:14
Total Recoverable	Analysis	6010D		1	8315	EV	EET ORL	10/17/22 19:13

Client Sample ID: GSRY-MW0071-018.0-20221004

Lab Sample ID: 670-6897-2

Date Collected: 10/04/22 14:17

Matrix: Ground Water

Date Received: 10/05/22 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			7720	NR	EET ORL	10/10/22 11:14
Total Recoverable	Analysis	6010D		1	8315	EV	EET ORL	10/17/22 19:14
Total/NA	Analysis	SM 2540C		1	7620	KS	EET ORL	10/07/22 07:24

Client Sample ID: GSRY-MW0073-022.0-20221005

Lab Sample ID: 670-6897-3

Date Collected: 10/05/22 09:36

Matrix: Ground Water

Date Received: 10/05/22 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			7720	NR	EET ORL	10/10/22 11:14
Total Recoverable	Analysis	6010D		1	8315	EV	EET ORL	10/17/22 19:15
Total/NA	Analysis	SM 2540C		1	7620	KS	EET ORL	10/07/22 07:24

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

Accreditation/Certification Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY CVOC Area

Job ID: 670-6897-1

Laboratory: Eurofins Orlando

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E83018	06-30-23

1

2

3

4

5

6

7

8

9

10

11

12

13

14

Method Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY CVOC Area

Job ID: 670-6897-1

Method	Method Description	Protocol	Laboratory
6010D	Metals (ICP)	SW846	EET ORL
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET ORL
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET ORL

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

Sample Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV CVOC Area

Job ID: 670-6897-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
670-6897-1	GSRV-MW0067-015.0-20221004	Ground Water	10/04/22 14:57	10/05/22 16:45
670-6897-2	GSRV-MW0071-018.0-20221004	Ground Water	10/04/22 14:17	10/05/22 16:45
670-6897-3	GSRV-MW0073-022.0-20221005	Ground Water	10/05/22 09:36	10/05/22 16:45

Login Sample Receipt Checklist

Client: AECOM Technical Services Inc.

Job Number: 670-6897-1

Login Number: 6897

List Number: 1

Creator: Hartley, Tyler

List Source: Eurofins Orlando

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

PREPARED FOR

Attn: Teresa Amentt Jennings
AECOM Technical Services Inc.
150 North Orange Avenue
Suite 200
Orlando, Florida 32801

Generated 12/16/2022 12:57:34 PM Revision 1

JOB DESCRIPTION

NASA KSC GSRV IDW
October Sampling

JOB NUMBER

670-8406-1

Eurofins Orlando

Job Notes

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. This report may not be reproduced, except in full, without the written approval of the laboratory. Questions should be directed to the person who signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

Authorization



Authorized for release by
Kaitlin Dylnicki, Project Manager
kaitlin.dylnicki@et.eurofinsus.com
(407)339-5984

Generated
12/16/2022 12:57:34 PM
Revision 1

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	6
Detection Summary	9
Client Sample Results	13
Surrogate Summary	34
Isotope Dilution Summary	36
QC Sample Results	38
QC Association Summary	51
Lab Chronicle	56
Certification Summary	60
Method Summary	62
Sample Summary	63
Chain of Custody	64
Receipt Checklists	69



Definitions/Glossary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U	Indicates that the compound was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
J1	Estimated value; value may not be accurate. Surrogate recovery outside of criteria.
U	Indicates that the compound was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
Q	Sample held beyond the accepted holding time.
U	Indicates that the compound was analyzed for but not detected.

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U	Indicates that the compound was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.
U	Indicates that the compound was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)

Eurofins Orlando

Definitions/Glossary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

Case Narrative

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Job ID: 670-8406-1

Laboratory: Eurofins Orlando

Narrative

Job Narrative 670-8406-1

Receipt

The samples were received on 10/28/2022 2:15 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.9°C and 3.8°C

Revision

The report being provided is a revision of the original report sent on 11/29/2022. The report (revision 1) is being revised due to: update of units for total phosphorus and nitrate.

GC/MS VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

PCBs

Method 8082A: Two surrogates are used for this analysis. The laboratory's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following samples contained an allowable number of surrogate compounds outside limits: GSRY-IDW01-20221027 (670-8406-1), GSRY-IDW03-20221027 (670-8406-3), GSRY-IDW04-20221027 (670-8406-4), GSRY-IDW06-20221027 (670-8406-6), GSRY-IDW08-20221027 (670-8406-8), GSRY-IDW10-20221027 (670-8406-10) and GSRY-IDW11-20221028 (670-8406-11). These results have been reported and qualified.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC

Method 300_ORGFMS: The following samples were performed outside of the analytical holding time due to failing instrument QC: GSRY-IDW01-20221027 (670-8406-1), GSRY-IDW02-20221027 (670-8406-2), GSRY-IDW03-20221027 (670-8406-3), GSRY-IDW04-20221027 (670-8406-4), GSRY-IDW05-20221027 (670-8406-5), GSRY-IDW06-20221027 (670-8406-6) and GSRY-IDW07-20221027 (670-8406-7), GSRY-IDW08-20221027 (670-8406-8), GSRY-IDW09-20221027 (670-8406-9) and GSRY-IDW10-20221027 (670-8406-10).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

PFAS

Method PFC_IDA_D5.3: The recovery for the labeled isotope(s) 13C2-PFDoDA, d5-NEtFOSAA, 13C5 PFPeA, 13C2 PFTeDA, 13C7 PFUnA, d3-NMeFOSAA, d3-NMePFOSA and 13C4 PFBA in the following sample: GSRY-IDW01-20221027 (670-8406-1) is outside the QC acceptance limits. The following action was taken: This sample was re-extracted outside of the required holding time and the recovery for labeled isotope(s) 13C2 PFTeDA d3-NMePFOSA 13C4 PFBA was again outside of the QC acceptance limits. The recovery for labeled isotope d5-NEtFOSAA d3-NMeFOSAA 13C5 PFPeA 13C2-PFDoDA 13C7 PFUnA was within the QC acceptance limits.

Method PFC_IDA_D5.3: The recovery for the labeled isotope(s) 13C6 PFDA, 13C2-PFDoDA, 13C5 PFHxA, 13C3 PFBS, 13C8 FOSA, d5-NEtFOSAA, 13C5 PFPeA, 13C2 PFTeDA, 13C7 PFUnA, d3-NMeFOSAA, 13C8 PFOA, 13C9 PFNA, d3-NMePFOSA, 13C4 PFHpA, M2-8: FTS, 13C8 PFOS and 13C4 PFBA in the following sample: GSRY-IDW02-20221027 (670-8406-2) is outside the QC acceptance limits. The following action was taken: This sample was re-extracted outside of the required holding time and the recovery for labeled isotope(s) 13C2 PFTeDA 13C4 PFBA d3-NMePFOSA was again outside of the QC acceptance limits. The recovery for labeled isotope(s) M2-8:2 FTS 13C3 PFBS 13C8 PFOS 13C5 PFHxA d3-NMeFOSAA 13C4 PFHpA 13C8 PFOA 13C9 PFNA d5-NEtFOSAA 13C6 PFDA 13C5 PFPeA 13C2-PFDoDA 13C7 PFUnA 13C8 FOSA was within the QC acceptance limits.

Method PFC_IDA_D5.3: The recovery for the labeled isotope(s) 13C6 PFDA, 13C2-PFDoDA, 13C8 FOSA, d5-NEtFOSAA, 13C5 PFPeA, 13C2 PFTeDA, 13C7 PFUnA, d3-NMeFOSAA, d3-NMePFOSA and 13C4 PFBA in the following sample: GSRY-IDW03-20221027 (670-8406-3) is outside the QC acceptance limits. The following action was taken: This sample was re-extracted outside of the required holding time and the recovery for labeled isotope(s) d3-NMePFOSA was again outside of the QC acceptance limits. The recovery for labeled isotope(s) 13C2 PFTeDA 13C4 PFBA d3-NMeFOSAA d5-NEtFOSAA 13C6 PFDA 13C5 PFPeA 13C2-PFDoDA 13C7 PFUnA 13C8 FOSA was within the QC acceptance limits.

Case Narrative

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Job ID: 670-8406-1 (Continued)

Laboratory: Eurofins Orlando (Continued)

Method PFC_IDA_D5.3: The recovery for the labeled isotope(s) 13C6 PFDA, 13C2-PFDoDA, 13C5 PFHxA, 13C3 PFBS, 13C8 FOSA, d5-NEtFOSAA, 13C5 PFPeA, 13C2 PFTeDA, 13C7 PFUnA, d3-NMeFOSAA, 13C8 PFOA, 13C9 PFNA, d3-NMePFOSA, 13C4 PFHpA, M2-8: FTS, 13C8 PFOS and 13C4 PFBA in the following sample: GSRY-IDW04-20221027 (670-8406-4) is outside the QC acceptance limits. The following action was taken: This sample was re-extracted outside of the required holding time and the recovery for labeled isotope(s) 13C4 PFBA d3-NMePFOSA was again outside of the QC acceptance limits. The recovery for labeled isotope(s) 13C2 PFTeDA M2-8:2 FTS 13C3 PFBS 13C8 PFOS 13C5 PFHxA d3-NMeFOSAA 13C4 PFHpA 13C8 PFOA 13C9 PFNA d5-NEtFOSAA 13C6 PFDA 13C5 PFPeA 13C2-PFDoDA 13C7 PFUnA 13C8 FOSA was within the QC acceptance limits.

Method PFC_IDA_D5.3: The recovery for the labeled isotope(s) 13C2-PFDoDA, 13C8 FOSA, M2-4:2 FTS, d5-NEtFOSAA, 13C2 PFTeDA, 13C7 PFUnA, d3-NMePFOSA and 13C4 PFBA in the following sample: GSRY-IDW05-20221027 (670-8406-5) is outside the QC acceptance limits. The following action was taken: This sample was re-extracted outside of the required holding time and the recovery for labeled isotope(s) 13C4 PFBA M2-4:2 FTS was again outside of the QC acceptance limits. The recovery for labeled isotope(s) 13C2 PFTeDA d3-NMePFOSA d5-NEtFOSAA 13C2-PFDoDA 13C7 PFUnA 13C8 FOSA was within the QC acceptance limits.

Method PFC_IDA_D5.3: The recovery for the labeled isotope(s) 13C6 PFDA, 13C2-PFDoDA, 13C8 FOSA, d5-NEtFOSAA, 13C5 PFPeA, 13C2 PFTeDA, 13C7 PFUnA, d3-NMeFOSAA, d3-NMePFOSA and 13C4 PFBA in the following sample: GSRY-IDW06-20221027 (670-8406-6) is outside the QC acceptance limits. The following action was taken: This sample was re-extracted outside of the required holding time and the recovery for labeled isotope(s) 13C2 PFTeDA d3-NMePFOSA 13C2-PFDoDA was again outside of the QC acceptance limits. The recovery for labeled isotope(s) 13C4 PFBA d3-NMeFOSAA d5-NEtFOSAA 13C6 PFDA 13C5 PFPeA 13C7 PFUnA 13C8 FOSA was within the QC acceptance limits.

Method PFC_IDA_D5.3: The recovery for the labeled isotope(s) 13C6 PFDA, 13C2-PFDoDA, 13C5 PFHxA, 13C3 PFBS, 13C8 FOSA, d5-NEtFOSAA, 13C5 PFPeA, 13C7 PFUnA, d3-NMeFOSAA, 13C9 PFNA, d3-NMePFOSA, 13C4 PFHpA, M2-8:2 FTS, 13C8 PFOS and 13C4 PFBA in the following sample: GSRY-IDW07-20221027 (670-8406-7) is outside the QC acceptance limits. The following action was taken: This sample was re-extracted outside of the required holding time and the recovery for labeled isotope(s) M2-8:2 FTS d3-NMePFOSA 13C4 PFBA d3-NMeFOSAA d5-NEtFOSAA was again outside of the QC acceptance limits. The recovery for labeled isotope(s) 13C3 PFBS 13C8 PFOS 13C5 PFHxA 13C4 PFHpA 13C9 PFNA 13C6 PFDA 13C5 PFPeA 13C2-PFDoDA 13C7 PFUnA 13C8 FOSA was within the QC acceptance limits.

Method PFC_IDA_D5.3: The recovery for the labeled isotope(s) 13C6 PFDA, 13C2-PFDoDA, 13C5 PFHxA, 13C3 PFBS, 13C8 FOSA, M2-6:2 FTS, d5-NEtFOSAA, 13C5 PFPeA, 13C2 PFTeDA, 13C7 PFUnA, d3-NMeFOSAA, 13C8 PFOA, 13C9 PFNA, d3-NMePFOSA, 13C4 PFHpA, M2-8:2 FTS, 13C3 PFHxS, 13C8 PFOS and 13C4 PFBA in the following sample: GSRY-IDW08-20221027 (670-8406-8) is outside the QC acceptance limits. The following action was taken: This sample was re-extracted outside of the required holding time and the recovery for labeled isotope(s) 13C2 PFTeDA d3-NMePFOSA M2-6:2 FTS was again outside of the QC acceptance limits. The recovery for labeled isotope(s) 13C3 PFHxS M2-8:2 FTS 13C3 PFBS 13C8 PFOS 13C5 PFHxA 13C4 PFBA d3-NMeFOSAA 13C4 PFHpA 13C8 PFOA 13C9 PFNA d5-NEtFOSAA 13C6 PFDA 13C5 PFPeA 13C2-PFDoDA 13C7 PFUnA 13C8 FOSA was within the QC acceptance limits.

Method PFC_IDA_D5.3: The recovery for the labeled isotope(s) 13C6 PFDA, 13C2-PFDoDA, 13C5 PFHxA, 13C8 FOSA, d5-NEtFOSAA, 13C5 PFPeA, 13C2 PFTeDA, 13C7 PFUnA, d3-NMeFOSAA, d3-NMePFOSA and 13C4 PFBA in the following sample: GSRY-IDW09-20221027 (670-8406-9) is outside the QC acceptance limits. The following action was taken: This sample was re-extracted outside of the required holding time and the recovery for labeled isotope(s) 13C4 PFBA d3-NMePFOSA was again outside of the QC acceptance limits. The recovery for labeled isotope(s) 13C2 PFTeDA 13C5 PFHxA d3-NMeFOSAA d5-NEtFOSAA 13C6 PFDA 13C5 PFPeA 13C2-PFDoDA 13C7 PFUnA 13C8 FOSA was within the QC acceptance limits.

Method PFC_IDA_D5.3: The recovery for the labeled isotope(s) 13C6 PFDA, 13C2-PFDoDA, 13C5 PFHxA, 13C3 PFBS, 13C8 FOSA, d5-NEtFOSAA, 13C5 PFPeA, 13C2 PFTeDA, 13C7 PFUnA, d3-NMeFOSAA, 13C8 PFOA, 13C9 PFNA, d3-NMePFOSA, 13C4 PFHpA, M2-8: FTS, 13C3 PFHxS, 13C8 PFOS and 13C4 PFBA in the following sample: GSRY-IDW10-20221027 (670-8406-10) is outside the QC acceptance limits. The following action was taken: This sample was re-extracted outside of the required holding time and the recovery for labeled isotope(s) 13C2 PFTeDA 13C4 PFBA d3-NMePFOSA was again outside of the QC acceptance limits. The recovery for labeled isotope(s) 13C3 PFHxS M2-8:2 FTS 13C3 PFBS 13C8 PFOS 13C5 PFHxA d3-NMeFOSAA 13C4 PFHpA 13C8 PFOA 13C9 PFNA d5-NEtFOSAA 13C6 PFDA 13C5 PFPeA 13C2-PFDoDA 13C7 PFUnA 13C8 FOSA was within the QC acceptance limits.

Case Narrative

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Job ID: 670-8406-1 (Continued)

Laboratory: Eurofins Orlando (Continued)

Method PFC_IDA_D5.3: The recovery for the labeled isotope(s) 13C6 PFDA, 13C2-PFDoDA, 13C5 PFHxA, 13C3 PFBS, 13C8 FOSA, d5-NEtFOSAA, 13C5 PFPeA, 13C2 PFTeDA, 13C7 PFUnA, d3-NMeFOSAA, 13C8 PFOA, 13C9 PFNA, d3-NMePFOSA, 13C4 PFHpA, 13C3 HFPO-DA, M2-8:2 FTS, 13C3 PFHxS, 13C8 PFOS and 13C4 PFBA in the following sample: GSRY-IDW11-20221028 (670-8406-11) is outside the QC acceptance limits. The following action was taken: This sample was re-extracted outside of the required holding time and the recovery for labeled isotope(s) 13C6 PFDA, 13C2-PFDoDA, 13C5 PFHxA, 13C3 PFBS, 13C8 FOSA, d5-NEtFOSAA, 13C5 PFPeA, 13C2 PFTeDA, 13C7 PFUnA, d3-NMeFOSAA, 13C8 PFOA, 13C9 PFNA, d3-NMePFOSA, 13C4 PFHpA, 13C3 HFPO-DA, M2-8:2 FTS, 13C3 PFHxS, 13C8 PFOS and 13C4 PFBA was again outside of the QC acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW01-20221027

Lab Sample ID: 670-8406-1

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
8:2 Fluorotelomer sulfonic acid	0.0010	I	0.0027	0.00090	ug/L	1		QSM B15	Total/NA
Perfluorobutanesulfonic acid	0.0011	I	0.0018	0.00045	ug/L	1		QSM B15	Total/NA
Perfluorobutanoic acid	0.0026	I	0.0045	0.0018	ug/L	1		QSM B15	Total/NA
Perfluoroheptanoic acid	0.0016	I	0.0018	0.00045	ug/L	1		QSM B15	Total/NA
Perfluorohexanesulfonic acid	0.0057		0.0018	0.00045	ug/L	1		QSM B15	Total/NA
Perfluorohexanoic acid	0.0030		0.0018	0.00045	ug/L	1		QSM B15	Total/NA
Perfluorooctanesulfonic acid	0.015		0.0019	0.00090	ug/L	1		QSM B15	Total/NA
Perfluorooctanoic acid	0.0014	I	0.0018	0.00045	ug/L	1		QSM B15	Total/NA
Perfluoropentanesulfonic acid	0.0011	I	0.0018	0.00045	ug/L	1		QSM B15	Total/NA
Perfluoropentanoic acid	0.0026		0.0018	0.00045	ug/L	1		QSM B15	Total/NA
Total Phosphorus as P	49	I	100	40	ug/L	1		365.4	Total/NA

Client Sample ID: GSRY-IDW02-20221027

Lab Sample ID: 670-8406-2

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid	0.00070	I	0.0017	0.00042	ug/L	1		QSM B15	Total/NA
Perfluorobutanoic acid	0.0021	I	0.0042	0.0017	ug/L	1		QSM B15	Total/NA
Perfluoroheptanoic acid	0.00058	I	0.0017	0.00042	ug/L	1		QSM B15	Total/NA
Perfluorohexanesulfonic acid	0.0031		0.0017	0.00042	ug/L	1		QSM B15	Total/NA
Perfluorohexanoic acid	0.0015	I	0.0017	0.00042	ug/L	1		QSM B15	Total/NA
Perfluorooctanesulfonic acid	0.0052		0.0018	0.00085	ug/L	1		QSM B15	Total/NA
Perfluorooctanoic acid	0.00093	I	0.0017	0.00042	ug/L	1		QSM B15	Total/NA
Perfluoropentanesulfonic acid	0.00058	I	0.0017	0.00042	ug/L	1		QSM B15	Total/NA
Perfluoropentanoic acid	0.0012	I	0.0017	0.00042	ug/L	1		QSM B15	Total/NA
Total Phosphorus as P	160		100	40	ug/L	1		365.4	Total/NA

Client Sample ID: GSRY-IDW03-20221027

Lab Sample ID: 670-8406-3

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
6:2 Fluorotelomer sulfonic acid	0.0025	I	0.0026	0.00088	ug/L	1		QSM B15	Total/NA
Perfluorobutanesulfonic acid	0.00056	I	0.0018	0.00044	ug/L	1		QSM B15	Total/NA
Perfluoroheptanoic acid	0.0025		0.0018	0.00044	ug/L	1		QSM B15	Total/NA
Perfluorohexanesulfonic acid	0.0048		0.0018	0.00044	ug/L	1		QSM B15	Total/NA
Perfluorohexanoic acid	0.0037		0.0018	0.00044	ug/L	1		QSM B15	Total/NA
Perfluorooctanesulfonic acid	0.0043		0.0018	0.00088	ug/L	1		QSM B15	Total/NA
Perfluorooctanoic acid	0.013		0.0018	0.00044	ug/L	1		QSM B15	Total/NA
Perfluoropentanesulfonic acid	0.00058	I	0.0018	0.00044	ug/L	1		QSM B15	Total/NA
Perfluoropentanoic acid	0.0025		0.0018	0.00044	ug/L	1		QSM B15	Total/NA
Total Phosphorus as P	76	I	100	40	ug/L	1		365.4	Total/NA

Client Sample ID: GSRY-IDW04-20221027

Lab Sample ID: 670-8406-4

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
6:2 Fluorotelomer sulfonic acid	0.0021	I	0.0026	0.00087	ug/L	1		QSM B15	Total/NA
Perfluorobutanesulfonic acid	0.0086		0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Perfluorobutanoic acid	0.013		0.0043	0.0017	ug/L	1		QSM B15	Total/NA
Perfluoroheptanesulfonic acid	0.0020		0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Perfluoroheptanoic acid	0.015		0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Perfluorohexanesulfonic acid	0.051		0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Perfluorohexanoic acid	0.031		0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Perfluorononanoic acid	0.0014	I	0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Perfluorooctanesulfonic acid	0.080		0.0018	0.00087	ug/L	1		QSM B15	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Orlando

Detection Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW04-20221027 (Continued)

Lab Sample ID: 670-8406-4

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid	0.0087		0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Perfluoropentanesulfonic acid	0.0080		0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Perfluoropentanoic acid	0.025		0.0017	0.00043	ug/L	1		QSM B15	Total/NA

Client Sample ID: GSRY-IDW05-20221027

Lab Sample ID: 670-8406-5

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
6:2 Fluorotelomer sulfonic acid	0.0022	I	0.0026	0.00087	ug/L	1		QSM B15	Total/NA
Perfluorobutanesulfonic acid	0.00094	I	0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Perfluorobutanoic acid	0.0030	I	0.0043	0.0017	ug/L	1		QSM B15	Total/NA
Perfluoroheptanoic acid	0.0017		0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Perfluorohexanesulfonic acid	0.0074		0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Perfluorohexanoic acid	0.0035		0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Perfluorooctanesulfonic acid	0.012		0.0018	0.00087	ug/L	1		QSM B15	Total/NA
Perfluorooctanoic acid	0.0020		0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Perfluoropentanesulfonic acid	0.00092	I	0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Perfluoropentanoic acid	0.0027		0.0017	0.00043	ug/L	1		QSM B15	Total/NA

Client Sample ID: GSRY-IDW06-20221027

Lab Sample ID: 670-8406-6

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3-Trichlorobenzene	1.0		1.0	0.50	ug/L	1		8260B	Total/NA
1,2,4-Trichlorobenzene	1.9		1.0	0.50	ug/L	1		8260B	Total/NA
m-Dichlorobenzene	0.68	I	1.0	0.50	ug/L	1		8260B	Total/NA
o-Dichlorobenzene	0.87	I	1.0	0.50	ug/L	1		8260B	Total/NA
6:2 Fluorotelomer sulfonic acid	0.0013	I	0.0026	0.00086	ug/L	1		QSM B15	Total/NA
Perfluorobutanesulfonic acid	0.00096	I	0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Perfluorobutanoic acid	0.0041	I	0.0043	0.0017	ug/L	1		QSM B15	Total/NA
Perfluoroheptanoic acid	0.0021		0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Perfluorohexanesulfonic acid	0.0085		0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Perfluorohexanoic acid	0.0046		0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Perfluorononanoic acid	0.00047	I	0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Perfluorooctanesulfonic acid	0.018		0.0018	0.00086	ug/L	1		QSM B15	Total/NA
Perfluorooctanoic acid	0.0038		0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Perfluoropentanesulfonic acid	0.00091	I	0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Perfluoropentanoic acid	0.0040		0.0017	0.00043	ug/L	1		QSM B15	Total/NA
Total Phosphorus as P	84	I	100	40	ug/L	1		365.4	Total/NA

Client Sample ID: GSRY-IDW07-20221027

Lab Sample ID: 670-8406-7

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid	0.0015	I	0.0017	0.00044	ug/L	1		QSM B15	Total/NA
Perfluorobutanoic acid	0.0037	I	0.0044	0.0017	ug/L	1		QSM B15	Total/NA
Perfluoroheptanoic acid	0.0018		0.0017	0.00044	ug/L	1		QSM B15	Total/NA
Perfluorohexanesulfonic acid	0.010		0.0017	0.00044	ug/L	1		QSM B15	Total/NA
Perfluorohexanoic acid	0.0055		0.0017	0.00044	ug/L	1		QSM B15	Total/NA
Perfluorooctanesulfonic acid	0.011		0.0018	0.00087	ug/L	1		QSM B15	Total/NA
Perfluorooctanoic acid	0.0037		0.0017	0.00044	ug/L	1		QSM B15	Total/NA
Perfluoropentanesulfonic acid	0.0012	I	0.0017	0.00044	ug/L	1		QSM B15	Total/NA
Perfluoropentanoic acid	0.0047		0.0017	0.00044	ug/L	1		QSM B15	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Orlando

Detection Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW08-20221027

Lab Sample ID: 670-8406-8

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid	0.0017		0.0017	0.00044	ug/L	1		QSM B15	Total/NA
Perfluorohexanesulfonic acid	0.0031		0.0017	0.00044	ug/L	1		QSM B15	Total/NA
Perfluorohexanoic acid	0.0027		0.0017	0.00044	ug/L	1		QSM B15	Total/NA
Perfluorooctanesulfonic acid	0.0045		0.0018	0.00087	ug/L	1		QSM B15	Total/NA
Perfluorooctanoic acid	0.0087		0.0017	0.00044	ug/L	1		QSM B15	Total/NA
Perfluoropentanoic acid	0.0014	I	0.0017	0.00044	ug/L	1		QSM B15	Total/NA
Total Phosphorus as P	150		100	40	ug/L	1		365.4	Total/NA

Client Sample ID: GSRY-IDW09-20221027

Lab Sample ID: 670-8406-9

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid	0.00052	I	0.0018	0.00044	ug/L	1		QSM B15	Total/NA
Perfluoroheptanoic acid	0.0010	I	0.0018	0.00044	ug/L	1		QSM B15	Total/NA
Perfluorohexanesulfonic acid	0.0030		0.0018	0.00044	ug/L	1		QSM B15	Total/NA
Perfluorohexanoic acid	0.0018		0.0018	0.00044	ug/L	1		QSM B15	Total/NA
Perfluorooctanesulfonic acid	0.0044		0.0018	0.00088	ug/L	1		QSM B15	Total/NA
Perfluorooctanoic acid	0.0048		0.0018	0.00044	ug/L	1		QSM B15	Total/NA
Perfluoropentanoic acid	0.0014	I	0.0018	0.00044	ug/L	1		QSM B15	Total/NA

Client Sample ID: GSRY-IDW10-20221027

Lab Sample ID: 670-8406-10

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trichlorobenzene	10		1.0	0.50	ug/L	1		8260B	Total/NA
Chlorobenzene	24		1.0	0.50	ug/L	1		8260B	Total/NA
m-Dichlorobenzene	130		2.0	1.0	ug/L	2		8260B	Total/NA
o-Dichlorobenzene	1.0		1.0	0.50	ug/L	1		8260B	Total/NA
para-Dichlorobenzene	54		1.0	0.50	ug/L	1		8260B	Total/NA
6:2 Fluorotelomer sulfonic acid	0.0033		0.0027	0.00089	ug/L	1		QSM B15	Total/NA
Perfluorobutanesulfonic acid	0.00070	I	0.0018	0.00044	ug/L	1		QSM B15	Total/NA
Perfluorobutanoic acid	0.0028	I	0.0044	0.0018	ug/L	1		QSM B15	Total/NA
Perfluoroheptanoic acid	0.0014	I	0.0018	0.00044	ug/L	1		QSM B15	Total/NA
Perfluorohexanesulfonic acid	0.0034		0.0018	0.00044	ug/L	1		QSM B15	Total/NA
Perfluorohexanoic acid	0.0028		0.0018	0.00044	ug/L	1		QSM B15	Total/NA
Perfluorooctanesulfonic acid	0.0093		0.0019	0.00089	ug/L	1		QSM B15	Total/NA
Perfluorooctanoic acid	0.0021		0.0018	0.00044	ug/L	1		QSM B15	Total/NA
Perfluoropentanoic acid	0.0025		0.0018	0.00044	ug/L	1		QSM B15	Total/NA

Client Sample ID: GSRY-IDW11-20221028

Lab Sample ID: 670-8406-11

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trichlorobenzene	3.2		1.0	0.50	ug/L	1		8260B	Total/NA
Chlorobenzene	7.3		1.0	0.50	ug/L	1		8260B	Total/NA
m-Dichlorobenzene	31		1.0	0.50	ug/L	1		8260B	Total/NA
para-Dichlorobenzene	14		1.0	0.50	ug/L	1		8260B	Total/NA
6:2 Fluorotelomer sulfonic acid	0.0066		0.0027	0.00091	ug/L	1		QSM B15	Total/NA
Perfluorobutanesulfonic acid	0.011		0.0018	0.00045	ug/L	1		QSM B15	Total/NA
Perfluorobutanoic acid	0.014		0.0045	0.0018	ug/L	1		QSM B15	Total/NA
Perfluoroheptanesulfonic acid	0.00054	I	0.0018	0.00045	ug/L	1		QSM B15	Total/NA
Perfluoroheptanoic acid	0.010		0.0018	0.00045	ug/L	1		QSM B15	Total/NA
Perfluorohexanesulfonic acid	0.046		0.0018	0.00045	ug/L	1		QSM B15	Total/NA
Perfluorohexanoic acid	0.028		0.0018	0.00045	ug/L	1		QSM B15	Total/NA
Perfluorononanoic acid	0.00092	I	0.0018	0.00045	ug/L	1		QSM B15	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Orlando

Detection Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW11-20221028 (Continued)

Lab Sample ID: 670-8406-11

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid	0.035		0.0019	0.00091	ug/L	1		QSM B15	Total/NA
Perfluorooctanoic acid	0.0070		0.0018	0.00045	ug/L	1		QSM B15	Total/NA
Perfluoropentanesulfonic acid	0.011		0.0018	0.00045	ug/L	1		QSM B15	Total/NA
Perfluoropentanoic acid	0.019		0.0018	0.00045	ug/L	1		QSM B15	Total/NA
Total Phosphorus as P	240		100	40	ug/L	1		365.4	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW01-20221027

Lab Sample ID: 670-8406-1

Date Collected: 10/27/22 13:50

Matrix: Water

Date Received: 10/28/22 14:15

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 10:40	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 10:40	1
Benzene	0.50	U	1.0	0.50	ug/L			11/09/22 10:40	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 10:40	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 10:40	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 10:40	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 10:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 120		11/09/22 10:40	1
4-Bromofluorobenzene (Surr)	103		80 - 120		11/09/22 10:40	1
Dibromofluoromethane (Surr)	100		80 - 120		11/09/22 10:40	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.35	U	0.44	0.35	ug/L		11/03/22 08:46	11/05/22 09:24	1
PCB-1221	0.14	U	0.44	0.14	ug/L		11/03/22 08:46	11/05/22 09:24	1
PCB-1232	0.11	U	0.44	0.11	ug/L		11/03/22 08:46	11/05/22 09:24	1
PCB-1242	0.12	U	0.44	0.12	ug/L		11/03/22 08:46	11/05/22 09:24	1
PCB-1248	0.087	U	0.44	0.087	ug/L		11/03/22 08:46	11/05/22 09:24	1
PCB-1254	0.10	U	0.44	0.10	ug/L		11/03/22 08:46	11/05/22 09:24	1
PCB-1260	0.22	U	0.44	0.22	ug/L		11/03/22 08:46	11/05/22 09:24	1
Polychlorinated biphenyls, Total	0.14	U	0.44	0.14	ug/L		11/03/22 08:46	11/05/22 09:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	48	J1	50 - 150	11/03/22 08:46	11/05/22 09:24	1
Tetrachloro-m-xylene	74		50 - 150	11/03/22 08:46	11/05/22 09:24	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	200	U Q	400	200	ug/L			10/29/22 22:52	1

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
11CI-PF3OUdS	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1
4:2 Fluorotelomer sulfonic acid	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1
6:2 Fluorotelomer sulfonic acid	0.00090	U	0.0027	0.00090	ug/L		11/09/22 07:56	11/11/22 05:41	1
8:2 Fluorotelomer sulfonic acid	0.0010	I	0.0027	0.00090	ug/L		11/09/22 07:56	11/11/22 05:41	1
9CI-PF3ONS	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1
DONA	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1
HFPODA	0.00045	U	0.0027	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1
NEtFOSAA	0.00045	U	0.0027	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1
NMeFOSAA	0.00054	U	0.0018	0.00054	ug/L		11/09/22 07:56	11/11/22 05:41	1
NMeFOSA	0.00090	U	0.0027	0.00090	ug/L		11/09/22 07:56	11/11/22 05:41	1
Perfluorobutanesulfonic acid	0.0011	I	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1
Perfluorobutanoic acid	0.0026	I	0.0045	0.0018	ug/L		11/09/22 07:56	11/11/22 05:41	1
Perfluorodecanesulfonic acid	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1
Perfluorodecanoic acid	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1
Perfluorododecanoic acid	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1
Perfluoroheptanesulfonic acid	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1
Perfluoroheptanoic acid	0.0016	I	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW01-20221027

Lab Sample ID: 670-8406-1

Date Collected: 10/27/22 13:50

Matrix: Water

Date Received: 10/28/22 14:15

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15 (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid	0.0057		0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1
Perfluorohexanoic acid	0.0030		0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1
Perfluorononanesulfonic acid	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1
Perfluorononanoic acid	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1
Perfluorooctanesulfonamide	0.00063	U	0.0018	0.00063	ug/L		11/09/22 07:56	11/11/22 05:41	1
Perfluorooctanesulfonic acid	0.015		0.0019	0.00090	ug/L		11/09/22 07:56	11/11/22 05:41	1
Perfluorooctanoic acid	0.0014	I	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1
Perfluoropentanesulfonic acid	0.0011	I	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1
Perfluoropentanoic acid	0.0026		0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1
Perfluorotetradecanoic acid	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1
Perfluorotridecanoic acid	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1
Perfluoroundecanoic acid	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 05:41	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C6 PFDA	54		50 - 150	11/09/22 07:56	11/11/22 05:41	1
13C2-PFDoDA	38	*	50 - 150	11/09/22 07:56	11/11/22 05:41	1
13C5 PFHxA	53		50 - 150	11/09/22 07:56	11/11/22 05:41	1
13C3 PFBS	55		50 - 150	11/09/22 07:56	11/11/22 05:41	1
13C8 FOSA	51		50 - 150	11/09/22 07:56	11/11/22 05:41	1
M2-6:2 FTS	75		50 - 150	11/09/22 07:56	11/11/22 05:41	1
M2-4:2 FTS	112		50 - 150	11/09/22 07:56	11/11/22 05:41	1
d5-NEtFOSAA	46	*	50 - 150	11/09/22 07:56	11/11/22 05:41	1
13C5 PFPeA	47	*	50 - 150	11/09/22 07:56	11/11/22 05:41	1
13C2 PFTeDA	25	*	50 - 150	11/09/22 07:56	11/11/22 05:41	1
13C7 PFUnA	48	*	50 - 150	11/09/22 07:56	11/11/22 05:41	1
d3-NMeFOSAA	48	*	50 - 150	11/09/22 07:56	11/11/22 05:41	1
13C8 PFOA	61		50 - 150	11/09/22 07:56	11/11/22 05:41	1
13C9 PFNA	57		50 - 150	11/09/22 07:56	11/11/22 05:41	1
d3-NMePFOSA	25	*	50 - 150	11/09/22 07:56	11/11/22 05:41	1
13C4 PFHpA	57		50 - 150	11/09/22 07:56	11/11/22 05:41	1
13C3 HFPO-DA	73		50 - 150	11/09/22 07:56	11/11/22 05:41	1
M2-8:2 FTS	63		50 - 150	11/09/22 07:56	11/11/22 05:41	1
13C3 PFHxS	61		50 - 150	11/09/22 07:56	11/11/22 05:41	1
13C8 PFOS	55		50 - 150	11/09/22 07:56	11/11/22 05:41	1
13C4 PFBA	38	*	50 - 150	11/09/22 07:56	11/11/22 05:41	1

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as P (EPA 365.4)	49	I	100	40	ug/L		11/11/22 06:01	11/15/22 11:19	1

Client Sample ID: GSRY-IDW02-20221027

Lab Sample ID: 670-8406-2

Date Collected: 10/27/22 13:52

Matrix: Water

Date Received: 10/28/22 14:15

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 11:01	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 11:01	1
Benzene	0.50	U	1.0	0.50	ug/L			11/09/22 11:01	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 11:01	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 11:01	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW02-20221027

Lab Sample ID: 670-8406-2

Date Collected: 10/27/22 13:52

Matrix: Water

Date Received: 10/28/22 14:15

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 11:01	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 11:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 120					11/09/22 11:01	1
4-Bromofluorobenzene (Surr)	103		80 - 120					11/09/22 11:01	1
Dibromofluoromethane (Surr)	100		80 - 120					11/09/22 11:01	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.35	U	0.45	0.35	ug/L		11/03/22 08:46	11/05/22 09:51	1
PCB-1221	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 09:51	1
PCB-1232	0.11	U	0.45	0.11	ug/L		11/03/22 08:46	11/05/22 09:51	1
PCB-1242	0.12	U	0.45	0.12	ug/L		11/03/22 08:46	11/05/22 09:51	1
PCB-1248	0.089	U	0.45	0.089	ug/L		11/03/22 08:46	11/05/22 09:51	1
PCB-1254	0.11	U	0.45	0.11	ug/L		11/03/22 08:46	11/05/22 09:51	1
PCB-1260	0.23	U	0.45	0.23	ug/L		11/03/22 08:46	11/05/22 09:51	1
Polychlorinated biphenyls, Total	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 09:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	65		50 - 150				11/03/22 08:46	11/05/22 09:51	1
Tetrachloro-m-xylene	68		50 - 150				11/03/22 08:46	11/05/22 09:51	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	200	U Q	400	200	ug/L			10/29/22 23:09	1

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
11CI-PF3OUdS	0.00042	U	0.0017	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
4:2 Fluorotelomer sulfonic acid	0.00042	U	0.0017	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
6:2 Fluorotelomer sulfonic acid	0.00085	U	0.0025	0.00085	ug/L		11/09/22 07:56	11/11/22 06:13	1
8:2 Fluorotelomer sulfonic acid	0.00085	U	0.0025	0.00085	ug/L		11/09/22 07:56	11/11/22 06:13	1
9CI-PF3ONS	0.00042	U	0.0017	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
DONA	0.00042	U	0.0017	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
HFPODA	0.00042	U	0.0025	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
NEtFOSAA	0.00042	U	0.0025	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
NMeFOSAA	0.00051	U	0.0017	0.00051	ug/L		11/09/22 07:56	11/11/22 06:13	1
NMeFOSA	0.00085	U	0.0025	0.00085	ug/L		11/09/22 07:56	11/11/22 06:13	1
Perfluorobutanesulfonic acid	0.00070	I	0.0017	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
Perfluorobutanoic acid	0.0021	I	0.0042	0.0017	ug/L		11/09/22 07:56	11/11/22 06:13	1
Perfluorodecanesulfonic acid	0.00042	U	0.0017	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
Perfluorodecanoic acid	0.00042	U	0.0017	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
Perfluorododecanoic acid	0.00042	U	0.0017	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
Perfluoroheptanesulfonic acid	0.00042	U	0.0017	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
Perfluoroheptanoic acid	0.00058	I	0.0017	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
Perfluorohexanesulfonic acid	0.0031		0.0017	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
Perfluorohexanoic acid	0.0015	I	0.0017	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
Perfluorononanesulfonic acid	0.00042	U	0.0017	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
Perfluorononanoic acid	0.00042	U	0.0017	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
Perfluorooctanesulfonamide	0.00059	U	0.0017	0.00059	ug/L		11/09/22 07:56	11/11/22 06:13	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW02-20221027

Lab Sample ID: 670-8406-2

Date Collected: 10/27/22 13:52

Matrix: Water

Date Received: 10/28/22 14:15

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15 (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid	0.0052		0.0018	0.00085	ug/L		11/09/22 07:56	11/11/22 06:13	1
Perfluorooctanoic acid	0.00093	I	0.0017	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
Perfluoropentanesulfonic acid	0.00058	I	0.0017	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
Perfluoropentanoic acid	0.0012	I	0.0017	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
Perfluorotetradecanoic acid	0.00042	U	0.0017	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
Perfluorotridecanoic acid	0.00042	U	0.0017	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
Perfluoroundecanoic acid	0.00042	U	0.0017	0.00042	ug/L		11/09/22 07:56	11/11/22 06:13	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C6 PFDA	19	*	50 - 150				11/09/22 07:56	11/11/22 06:13	1
13C2-PFDoDA	2	*	50 - 150				11/09/22 07:56	11/11/22 06:13	1
13C5 PFHxA	44	*	50 - 150				11/09/22 07:56	11/11/22 06:13	1
13C3 PFBS	47	*	50 - 150				11/09/22 07:56	11/11/22 06:13	1
13C8 FOSA	14	*	50 - 150				11/09/22 07:56	11/11/22 06:13	1
M2-6:2 FTS	66		50 - 150				11/09/22 07:56	11/11/22 06:13	1
M2-4:2 FTS	102		50 - 150				11/09/22 07:56	11/11/22 06:13	1
d5-NEtFOSAA	22	*	50 - 150				11/09/22 07:56	11/11/22 06:13	1
13C5 PFPeA	40	*	50 - 150				11/09/22 07:56	11/11/22 06:13	1
13C2 PFTeDA	0.1	*	50 - 150				11/09/22 07:56	11/11/22 06:13	1
13C7 PFUnA	7	*	50 - 150				11/09/22 07:56	11/11/22 06:13	1
d3-NMeFOSAA	27	*	50 - 150				11/09/22 07:56	11/11/22 06:13	1
13C8 PFOA	45	*	50 - 150				11/09/22 07:56	11/11/22 06:13	1
13C9 PFNA	36	*	50 - 150				11/09/22 07:56	11/11/22 06:13	1
d3-NMePFOSA	3	*	50 - 150				11/09/22 07:56	11/11/22 06:13	1
13C4 PFHpA	48	*	50 - 150				11/09/22 07:56	11/11/22 06:13	1
13C3 HFPO-DA	58		50 - 150				11/09/22 07:56	11/11/22 06:13	1
M2-8:2 FTS	26	*	50 - 150				11/09/22 07:56	11/11/22 06:13	1
13C3 PFHxS	51		50 - 150				11/09/22 07:56	11/11/22 06:13	1
13C8 PFOS	37	*	50 - 150				11/09/22 07:56	11/11/22 06:13	1
13C4 PFBA	30	*	50 - 150				11/09/22 07:56	11/11/22 06:13	1

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as P (EPA 365.4)	160		100	40	ug/L		11/11/22 06:09	11/15/22 11:29	1

Client Sample ID: GSRY-IDW03-20221027

Lab Sample ID: 670-8406-3

Date Collected: 10/27/22 14:05

Matrix: Water

Date Received: 10/28/22 14:15

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 13:46	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 13:46	1
Benzene	0.50	U	1.0	0.50	ug/L			11/09/22 13:46	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 13:46	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 13:46	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 13:46	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 13:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 120					11/09/22 13:46	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW03-20221027

Lab Sample ID: 670-8406-3

Date Collected: 10/27/22 14:05

Matrix: Water

Date Received: 10/28/22 14:15

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120		11/09/22 13:46	1
Dibromofluoromethane (Surr)	99		80 - 120		11/09/22 13:46	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.35	U	0.45	0.35	ug/L		11/03/22 08:46	11/05/22 10:19	1
PCB-1221	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 10:19	1
PCB-1232	0.11	U	0.45	0.11	ug/L		11/03/22 08:46	11/05/22 10:19	1
PCB-1242	0.12	U	0.45	0.12	ug/L		11/03/22 08:46	11/05/22 10:19	1
PCB-1248	0.089	U	0.45	0.089	ug/L		11/03/22 08:46	11/05/22 10:19	1
PCB-1254	0.11	U	0.45	0.11	ug/L		11/03/22 08:46	11/05/22 10:19	1
PCB-1260	0.23	U	0.45	0.23	ug/L		11/03/22 08:46	11/05/22 10:19	1
Polychlorinated biphenyls, Total	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 10:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	48	J1	50 - 150	11/03/22 08:46	11/05/22 10:19	1
Tetrachloro-m-xylene	76		50 - 150	11/03/22 08:46	11/05/22 10:19	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	200	U Q	400	200	ug/L			10/29/22 23:25	1

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
11CI-PF3OUdS	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1
4:2 Fluorotelomer sulfonic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1
6:2 Fluorotelomer sulfonic acid	0.0025	I	0.0026	0.00088	ug/L		11/09/22 07:56	11/11/22 06:23	1
8:2 Fluorotelomer sulfonic acid	0.00088	U	0.0026	0.00088	ug/L		11/09/22 07:56	11/11/22 06:23	1
9CI-PF3ONS	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1
DONA	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1
HFPODA	0.00044	U	0.0026	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1
NEtFOSAA	0.00044	U	0.0026	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1
NMeFOSAA	0.00053	U	0.0018	0.00053	ug/L		11/09/22 07:56	11/11/22 06:23	1
NMeFOSA	0.00088	U	0.0026	0.00088	ug/L		11/09/22 07:56	11/11/22 06:23	1
Perfluorobutanesulfonic acid	0.00056	I	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1
Perfluorobutanoic acid	0.0018	U	0.0044	0.0018	ug/L		11/09/22 07:56	11/11/22 06:23	1
Perfluorodecanesulfonic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1
Perfluorodecanoic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1
Perfluorododecanoic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1
Perfluoroheptanesulfonic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1
Perfluoroheptanoic acid	0.0025		0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1
Perfluorohexanesulfonic acid	0.0048		0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1
Perfluorohexanoic acid	0.0037		0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1
Perfluorononanesulfonic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1
Perfluorononanoic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1
Perfluorooctanesulfonamide	0.00061	U	0.0018	0.00061	ug/L		11/09/22 07:56	11/11/22 06:23	1
Perfluorooctanesulfonic acid	0.0043		0.0018	0.00088	ug/L		11/09/22 07:56	11/11/22 06:23	1
Perfluorooctanoic acid	0.013		0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1
Perfluoropentanesulfonic acid	0.00058	I	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1
Perfluoropentanoic acid	0.0025		0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW03-20221027

Lab Sample ID: 670-8406-3

Date Collected: 10/27/22 14:05

Matrix: Water

Date Received: 10/28/22 14:15

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15 (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1
Perfluorotridecanoic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1
Perfluoroundecanoic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 06:23	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C6 PFDA	49	*	50 - 150				11/09/22 07:56	11/11/22 06:23	1
13C2-PFDoDA	32	*	50 - 150				11/09/22 07:56	11/11/22 06:23	1
13C5 PFHxA	50		50 - 150				11/09/22 07:56	11/11/22 06:23	1
13C3 PFBS	52		50 - 150				11/09/22 07:56	11/11/22 06:23	1
13C8 FOSA	45	*	50 - 150				11/09/22 07:56	11/11/22 06:23	1
M2-6:2 FTS	80		50 - 150				11/09/22 07:56	11/11/22 06:23	1
M2-4:2 FTS	111		50 - 150				11/09/22 07:56	11/11/22 06:23	1
d5-NEtFOSAA	43	*	50 - 150				11/09/22 07:56	11/11/22 06:23	1
13C5 PFPeA	44	*	50 - 150				11/09/22 07:56	11/11/22 06:23	1
13C2 PFTeDA	18	*	50 - 150				11/09/22 07:56	11/11/22 06:23	1
13C7 PFUnA	41	*	50 - 150				11/09/22 07:56	11/11/22 06:23	1
d3-NMeFOSAA	47	*	50 - 150				11/09/22 07:56	11/11/22 06:23	1
13C8 PFOA	56		50 - 150				11/09/22 07:56	11/11/22 06:23	1
13C9 PFNA	53		50 - 150				11/09/22 07:56	11/11/22 06:23	1
d3-NMePFOSA	19	*	50 - 150				11/09/22 07:56	11/11/22 06:23	1
13C4 PFHpA	54		50 - 150				11/09/22 07:56	11/11/22 06:23	1
13C3 HFPO-DA	62		50 - 150				11/09/22 07:56	11/11/22 06:23	1
M2-8:2 FTS	60		50 - 150				11/09/22 07:56	11/11/22 06:23	1
13C3 PFHxS	56		50 - 150				11/09/22 07:56	11/11/22 06:23	1
13C8 PFOS	53		50 - 150				11/09/22 07:56	11/11/22 06:23	1
13C4 PFBA	37	*	50 - 150				11/09/22 07:56	11/11/22 06:23	1

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as P (EPA 365.4)	76	I	100	40	ug/L		11/11/22 06:09	11/15/22 11:30	1

Client Sample ID: GSRY-IDW04-20221027

Lab Sample ID: 670-8406-4

Date Collected: 10/27/22 14:15

Matrix: Water

Date Received: 10/28/22 14:15

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:07	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:07	1
Benzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:07	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:07	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:07	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:07	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 120					11/09/22 14:07	1
4-Bromofluorobenzene (Surr)	102		80 - 120					11/09/22 14:07	1
Dibromofluoromethane (Surr)	100		80 - 120					11/09/22 14:07	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW04-20221027

Lab Sample ID: 670-8406-4

Date Collected: 10/27/22 14:15

Matrix: Water

Date Received: 10/28/22 14:15

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.35	U	0.44	0.35	ug/L		11/03/22 08:46	11/05/22 10:47	1
PCB-1221	0.14	U	0.44	0.14	ug/L		11/03/22 08:46	11/05/22 10:47	1
PCB-1232	0.11	U	0.44	0.11	ug/L		11/03/22 08:46	11/05/22 10:47	1
PCB-1242	0.12	U	0.44	0.12	ug/L		11/03/22 08:46	11/05/22 10:47	1
PCB-1248	0.087	U	0.44	0.087	ug/L		11/03/22 08:46	11/05/22 10:47	1
PCB-1254	0.10	U	0.44	0.10	ug/L		11/03/22 08:46	11/05/22 10:47	1
PCB-1260	0.22	U	0.44	0.22	ug/L		11/03/22 08:46	11/05/22 10:47	1
Polychlorinated biphenyls, Total	0.14	U	0.44	0.14	ug/L		11/03/22 08:46	11/05/22 10:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	44	J1	50 - 150				11/03/22 08:46	11/05/22 10:47	1
Tetrachloro-m-xylene	73		50 - 150				11/03/22 08:46	11/05/22 10:47	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	200	U Q	400	200	ug/L			10/29/22 23:41	1

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
11CI-PF3OUdS	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
4:2 Fluorotelomer sulfonic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
6:2 Fluorotelomer sulfonic acid	0.0021	I	0.0026	0.00087	ug/L		11/09/22 07:56	11/11/22 06:34	1
8:2 Fluorotelomer sulfonic acid	0.00087	U	0.0026	0.00087	ug/L		11/09/22 07:56	11/11/22 06:34	1
9CI-PF3ONS	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
DONA	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
HFPODA	0.00043	U	0.0026	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
NEtFOSAA	0.00043	U	0.0026	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
NMeFOSAA	0.00052	U	0.0017	0.00052	ug/L		11/09/22 07:56	11/11/22 06:34	1
NMeFOSA	0.00087	U	0.0026	0.00087	ug/L		11/09/22 07:56	11/11/22 06:34	1
Perfluorobutanesulfonic acid	0.0086		0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
Perfluorobutanoic acid	0.013		0.0043	0.0017	ug/L		11/09/22 07:56	11/11/22 06:34	1
Perfluorodecanesulfonic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
Perfluorodecanoic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
Perfluorododecanoic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
Perfluoroheptanesulfonic acid	0.0020		0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
Perfluoroheptanoic acid	0.015		0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
Perfluorohexanesulfonic acid	0.051		0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
Perfluorohexanoic acid	0.031		0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
Perfluorononanesulfonic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
Perfluorononanoic acid	0.0014	I	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
Perfluorooctanesulfonamide	0.00061	U	0.0017	0.00061	ug/L		11/09/22 07:56	11/11/22 06:34	1
Perfluorooctanesulfonic acid	0.080		0.0018	0.00087	ug/L		11/09/22 07:56	11/11/22 06:34	1
Perfluorooctanoic acid	0.0087		0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
Perfluoropentanesulfonic acid	0.0080		0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
Perfluoropentanoic acid	0.025		0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
Perfluorotetradecanoic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
Perfluorotridecanoic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
Perfluoroundecanoic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:34	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C6 PFDA	37	*	50 - 150				11/09/22 07:56	11/11/22 06:34	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW04-20221027

Lab Sample ID: 670-8406-4

Date Collected: 10/27/22 14:15

Matrix: Water

Date Received: 10/28/22 14:15

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15 (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-PFDoDA	14	*	50 - 150	11/09/22 07:56	11/11/22 06:34	1
13C5 PFHxA	46	*	50 - 150	11/09/22 07:56	11/11/22 06:34	1
13C3 PFBS	48	*	50 - 150	11/09/22 07:56	11/11/22 06:34	1
13C8 FOSA	37	*	50 - 150	11/09/22 07:56	11/11/22 06:34	1
M2-6:2 FTS	72		50 - 150	11/09/22 07:56	11/11/22 06:34	1
M2-4:2 FTS	102		50 - 150	11/09/22 07:56	11/11/22 06:34	1
d5-NEtFOSAA	38	*	50 - 150	11/09/22 07:56	11/11/22 06:34	1
13C5 PFPeA	42	*	50 - 150	11/09/22 07:56	11/11/22 06:34	1
13C2 PFTeDA	2	*	50 - 150	11/09/22 07:56	11/11/22 06:34	1
13C7 PFUnA	26	*	50 - 150	11/09/22 07:56	11/11/22 06:34	1
d3-NMeFOSAA	38	*	50 - 150	11/09/22 07:56	11/11/22 06:34	1
13C8 PFOA	49	*	50 - 150	11/09/22 07:56	11/11/22 06:34	1
13C9 PFNA	47	*	50 - 150	11/09/22 07:56	11/11/22 06:34	1
d3-NMePFOSA	16	*	50 - 150	11/09/22 07:56	11/11/22 06:34	1
13C4 PFHpA	49	*	50 - 150	11/09/22 07:56	11/11/22 06:34	1
13C3 HFPO-DA	60		50 - 150	11/09/22 07:56	11/11/22 06:34	1
M2-8:2 FTS	40	*	50 - 150	11/09/22 07:56	11/11/22 06:34	1
13C3 PFHxS	52		50 - 150	11/09/22 07:56	11/11/22 06:34	1
13C8 PFOS	47	*	50 - 150	11/09/22 07:56	11/11/22 06:34	1
13C4 PFBA	33	*	50 - 150	11/09/22 07:56	11/11/22 06:34	1

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as P (EPA 365.4)	40	U	100	40	ug/L		11/11/22 06:09	11/15/22 11:32	1

Client Sample ID: GSRY-IDW05-20221027

Lab Sample ID: 670-8406-5

Date Collected: 10/27/22 14:22

Matrix: Water

Date Received: 10/28/22 14:15

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:28	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:28	1
Benzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:28	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:28	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:28	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:28	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 120		11/09/22 14:28	1
4-Bromofluorobenzene (Surr)	102		80 - 120		11/09/22 14:28	1
Dibromofluoromethane (Surr)	100		80 - 120		11/09/22 14:28	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.35	U	0.44	0.35	ug/L		11/03/22 08:46	11/05/22 11:15	1
PCB-1221	0.14	U	0.44	0.14	ug/L		11/03/22 08:46	11/05/22 11:15	1
PCB-1232	0.11	U	0.44	0.11	ug/L		11/03/22 08:46	11/05/22 11:15	1
PCB-1242	0.12	U	0.44	0.12	ug/L		11/03/22 08:46	11/05/22 11:15	1
PCB-1248	0.087	U	0.44	0.087	ug/L		11/03/22 08:46	11/05/22 11:15	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW05-20221027

Lab Sample ID: 670-8406-5

Date Collected: 10/27/22 14:22

Matrix: Water

Date Received: 10/28/22 14:15

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1254	0.10	U	0.44	0.10	ug/L		11/03/22 08:46	11/05/22 11:15	1
PCB-1260	0.22	U	0.44	0.22	ug/L		11/03/22 08:46	11/05/22 11:15	1
Polychlorinated biphenyls, Total	0.14	U	0.44	0.14	ug/L		11/03/22 08:46	11/05/22 11:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	51		50 - 150				11/03/22 08:46	11/05/22 11:15	1
Tetrachloro-m-xylene	81		50 - 150				11/03/22 08:46	11/05/22 11:15	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	200	U Q	400	200	ug/L			10/29/22 23:58	1

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
11CI-PF3OUdS	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
4:2 Fluorotelomer sulfonic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
6:2 Fluorotelomer sulfonic acid	0.0022	I	0.0026	0.00087	ug/L		11/09/22 07:56	11/11/22 06:45	1
8:2 Fluorotelomer sulfonic acid	0.00087	U	0.0026	0.00087	ug/L		11/09/22 07:56	11/11/22 06:45	1
9CI-PF3ONS	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
DONA	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
HFPODA	0.00043	U	0.0026	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
NEtFOSAA	0.00043	U	0.0026	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
NMeFOSAA	0.00052	U	0.0017	0.00052	ug/L		11/09/22 07:56	11/11/22 06:45	1
NMeFOSA	0.00087	U	0.0026	0.00087	ug/L		11/09/22 07:56	11/11/22 06:45	1
Perfluorobutanesulfonic acid	0.00094	I	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
Perfluorobutanoic acid	0.0030	I	0.0043	0.0017	ug/L		11/09/22 07:56	11/11/22 06:45	1
Perfluorodecanesulfonic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
Perfluorodecanoic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
Perfluorododecanoic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
Perfluoroheptanesulfonic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
Perfluoroheptanoic acid	0.0017		0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
Perfluorohexanesulfonic acid	0.0074		0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
Perfluorohexanoic acid	0.0035		0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
Perfluorononanesulfonic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
Perfluorononanoic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
Perfluorooctanesulfonamide	0.00061	U	0.0017	0.00061	ug/L		11/09/22 07:56	11/11/22 06:45	1
Perfluorooctanesulfonic acid	0.012		0.0018	0.00087	ug/L		11/09/22 07:56	11/11/22 06:45	1
Perfluorooctanoic acid	0.0020		0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
Perfluoropentanesulfonic acid	0.00092	I	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
Perfluoropentanoic acid	0.0027		0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
Perfluorotetradecanoic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
Perfluorotridecanoic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
Perfluoroundecanoic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:45	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C6 PFDA	55		50 - 150				11/09/22 07:56	11/11/22 06:45	1
13C2-PFDoDA	14	*	50 - 150				11/09/22 07:56	11/11/22 06:45	1
13C5 PFHxA	72		50 - 150				11/09/22 07:56	11/11/22 06:45	1
13C3 PFBS	77		50 - 150				11/09/22 07:56	11/11/22 06:45	1
13C8 FOSA	48	*	50 - 150				11/09/22 07:56	11/11/22 06:45	1
M2-6:2 FTS	139		50 - 150				11/09/22 07:56	11/11/22 06:45	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW05-20221027

Lab Sample ID: 670-8406-5

Date Collected: 10/27/22 14:22

Matrix: Water

Date Received: 10/28/22 14:15

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15 (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-4:2 FTS	177	*	50 - 150	11/09/22 07:56	11/11/22 06:45	1
d5-NEtFOSAA	49	*	50 - 150	11/09/22 07:56	11/11/22 06:45	1
13C5 PFPeA	63		50 - 150	11/09/22 07:56	11/11/22 06:45	1
13C2 PFTeDA	2	*	50 - 150	11/09/22 07:56	11/11/22 06:45	1
13C7 PFUnA	31	*	50 - 150	11/09/22 07:56	11/11/22 06:45	1
d3-NMeFOSAA	59		50 - 150	11/09/22 07:56	11/11/22 06:45	1
13C8 PFOA	82		50 - 150	11/09/22 07:56	11/11/22 06:45	1
13C9 PFNA	74		50 - 150	11/09/22 07:56	11/11/22 06:45	1
d3-NMePFOSA	16	*	50 - 150	11/09/22 07:56	11/11/22 06:45	1
13C4 PFHpA	83		50 - 150	11/09/22 07:56	11/11/22 06:45	1
13C3 HFPO-DA	102		50 - 150	11/09/22 07:56	11/11/22 06:45	1
M2-8:2 FTS	71		50 - 150	11/09/22 07:56	11/11/22 06:45	1
13C3 PFHxS	90		50 - 150	11/09/22 07:56	11/11/22 06:45	1
13C8 PFOS	73		50 - 150	11/09/22 07:56	11/11/22 06:45	1
13C4 PFBA	47	*	50 - 150	11/09/22 07:56	11/11/22 06:45	1

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as P (EPA 365.4)	40	U	100	40	ug/L		11/11/22 06:09	11/15/22 11:33	1

Client Sample ID: GSRY-IDW06-20221027

Lab Sample ID: 670-8406-6

Date Collected: 10/27/22 14:30

Matrix: Water

Date Received: 10/28/22 14:15

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	1.0		1.0	0.50	ug/L			11/09/22 14:48	1
1,2,4-Trichlorobenzene	1.9		1.0	0.50	ug/L			11/09/22 14:48	1
Benzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:48	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:48	1
m-Dichlorobenzene	0.68	I	1.0	0.50	ug/L			11/09/22 14:48	1
o-Dichlorobenzene	0.87	I	1.0	0.50	ug/L			11/09/22 14:48	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 120		11/09/22 14:48	1
4-Bromofluorobenzene (Surr)	103		80 - 120		11/09/22 14:48	1
Dibromofluoromethane (Surr)	99		80 - 120		11/09/22 14:48	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.36	U	0.46	0.36	ug/L		11/03/22 08:46	11/05/22 11:43	1
PCB-1221	0.14	U	0.46	0.14	ug/L		11/03/22 08:46	11/05/22 11:43	1
PCB-1232	0.11	U	0.46	0.11	ug/L		11/03/22 08:46	11/05/22 11:43	1
PCB-1242	0.13	U	0.46	0.13	ug/L		11/03/22 08:46	11/05/22 11:43	1
PCB-1248	0.089	U	0.46	0.089	ug/L		11/03/22 08:46	11/05/22 11:43	1
PCB-1254	0.11	U	0.46	0.11	ug/L		11/03/22 08:46	11/05/22 11:43	1
PCB-1260	0.23	U	0.46	0.23	ug/L		11/03/22 08:46	11/05/22 11:43	1
Polychlorinated biphenyls, Total	0.14	U	0.46	0.14	ug/L		11/03/22 08:46	11/05/22 11:43	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW06-20221027

Lab Sample ID: 670-8406-6

Date Collected: 10/27/22 14:30

Matrix: Water

Date Received: 10/28/22 14:15

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	44	J1	50 - 150	11/03/22 08:46	11/05/22 11:43	1
Tetrachloro-m-xylene	75		50 - 150	11/03/22 08:46	11/05/22 11:43	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	200	U Q	400	200	ug/L			10/30/22 00:14	1

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
11CI-PF3OUdS	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1
4:2 Fluorotelomer sulfonic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1
6:2 Fluorotelomer sulfonic acid	0.0013	I	0.0026	0.00086	ug/L		11/09/22 07:56	11/11/22 06:55	1
8:2 Fluorotelomer sulfonic acid	0.00086	U	0.0026	0.00086	ug/L		11/09/22 07:56	11/11/22 06:55	1
9CI-PF3ONS	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1
DONA	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1
HFPODA	0.00043	U	0.0026	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1
NEtFOSAA	0.00043	U	0.0026	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1
NMeFOSAA	0.00052	U	0.0017	0.00052	ug/L		11/09/22 07:56	11/11/22 06:55	1
NMeFOSA	0.00086	U	0.0026	0.00086	ug/L		11/09/22 07:56	11/11/22 06:55	1
Perfluorobutanesulfonic acid	0.00096	I	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1
Perfluorobutanoic acid	0.0041	I	0.0043	0.0017	ug/L		11/09/22 07:56	11/11/22 06:55	1
Perfluorodecanesulfonic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1
Perfluorodecanoic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1
Perfluorododecanoic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1
Perfluoroheptanesulfonic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1
Perfluoroheptanoic acid	0.0021		0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1
Perfluorohexanesulfonic acid	0.0085		0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1
Perfluorohexanoic acid	0.0046		0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1
Perfluorononanesulfonic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1
Perfluorononanoic acid	0.00047	I	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1
Perfluorooctanesulfonamide	0.00060	U	0.0017	0.00060	ug/L		11/09/22 07:56	11/11/22 06:55	1
Perfluorooctanesulfonic acid	0.018		0.0018	0.00086	ug/L		11/09/22 07:56	11/11/22 06:55	1
Perfluorooctanoic acid	0.0038		0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1
Perfluoropentanesulfonic acid	0.00091	I	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1
Perfluoropentanoic acid	0.0040		0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1
Perfluorotetradecanoic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1
Perfluorotridecanoic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1
Perfluoroundecanoic acid	0.00043	U	0.0017	0.00043	ug/L		11/09/22 07:56	11/11/22 06:55	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C6 PFDA	43	*	50 - 150	11/09/22 07:56	11/11/22 06:55	1
13C2-PFDoDA	23	*	50 - 150	11/09/22 07:56	11/11/22 06:55	1
13C5 PFHxA	50		50 - 150	11/09/22 07:56	11/11/22 06:55	1
13C3 PFBS	53		50 - 150	11/09/22 07:56	11/11/22 06:55	1
13C8 FOSA	42	*	50 - 150	11/09/22 07:56	11/11/22 06:55	1
M2-6:2 FTS	81		50 - 150	11/09/22 07:56	11/11/22 06:55	1
M2-4:2 FTS	112		50 - 150	11/09/22 07:56	11/11/22 06:55	1
d5-NEtFOSAA	43	*	50 - 150	11/09/22 07:56	11/11/22 06:55	1
13C5 PFPeA	44	*	50 - 150	11/09/22 07:56	11/11/22 06:55	1
13C2 PFTeDA	7	*	50 - 150	11/09/22 07:56	11/11/22 06:55	1
13C7 PFUnA	35	*	50 - 150	11/09/22 07:56	11/11/22 06:55	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW06-20221027

Lab Sample ID: 670-8406-6

Date Collected: 10/27/22 14:30

Matrix: Water

Date Received: 10/28/22 14:15

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15 (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d3-NMeFOSAA	46	*	50 - 150	11/09/22 07:56	11/11/22 06:55	1
13C8 PFOA	53		50 - 150	11/09/22 07:56	11/11/22 06:55	1
13C9 PFNA	51		50 - 150	11/09/22 07:56	11/11/22 06:55	1
d3-NMePFOSA	18	*	50 - 150	11/09/22 07:56	11/11/22 06:55	1
13C4 PFHpA	52		50 - 150	11/09/22 07:56	11/11/22 06:55	1
13C3 HFPO-DA	67		50 - 150	11/09/22 07:56	11/11/22 06:55	1
M2-8:2 FTS	52		50 - 150	11/09/22 07:56	11/11/22 06:55	1
13C3 PFHxS	56		50 - 150	11/09/22 07:56	11/11/22 06:55	1
13C8 PFOS	52		50 - 150	11/09/22 07:56	11/11/22 06:55	1
13C4 PFBA	34	*	50 - 150	11/09/22 07:56	11/11/22 06:55	1

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as P (EPA 365.4)	84	I	100	40	ug/L		11/11/22 06:09	11/15/22 11:34	1

Client Sample ID: GSRY-IDW07-20221027

Lab Sample ID: 670-8406-7

Date Collected: 10/27/22 14:38

Matrix: Water

Date Received: 10/28/22 14:15

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:48	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:48	1
Benzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:48	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:48	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:48	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:48	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 14:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 120		11/09/22 14:48	1
4-Bromofluorobenzene (Surr)	101		80 - 120		11/09/22 14:48	1
Dibromofluoromethane (Surr)	100		80 - 120		11/09/22 14:48	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.35	U	0.45	0.35	ug/L		11/03/22 08:46	11/05/22 12:10	1
PCB-1221	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 12:10	1
PCB-1232	0.11	U	0.45	0.11	ug/L		11/03/22 08:46	11/05/22 12:10	1
PCB-1242	0.12	U	0.45	0.12	ug/L		11/03/22 08:46	11/05/22 12:10	1
PCB-1248	0.087	U	0.45	0.087	ug/L		11/03/22 08:46	11/05/22 12:10	1
PCB-1254	0.10	U	0.45	0.10	ug/L		11/03/22 08:46	11/05/22 12:10	1
PCB-1260	0.22	U	0.45	0.22	ug/L		11/03/22 08:46	11/05/22 12:10	1
Polychlorinated biphenyls, Total	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 12:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	79		50 - 150	11/03/22 08:46	11/05/22 12:10	1
Tetrachloro-m-xylene	69		50 - 150	11/03/22 08:46	11/05/22 12:10	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW07-20221027

Lab Sample ID: 670-8406-7

Date Collected: 10/27/22 14:38

Matrix: Water

Date Received: 10/28/22 14:15

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	200	U Q	400	200	ug/L			10/30/22 00:30	1

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
11CI-PF3OUdS	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1
4:2 Fluorotelomer sulfonic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1
6:2 Fluorotelomer sulfonic acid	0.00087	U	0.0026	0.00087	ug/L		11/09/22 07:56	11/11/22 07:06	1
8:2 Fluorotelomer sulfonic acid	0.00087	U	0.0026	0.00087	ug/L		11/09/22 07:56	11/11/22 07:06	1
9CI-PF3ONS	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1
DONA	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1
HFPODA	0.00044	U	0.0026	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1
NEtFOSAA	0.00044	U	0.0026	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1
NMeFOSAA	0.00052	U	0.0017	0.00052	ug/L		11/09/22 07:56	11/11/22 07:06	1
NMeFOSA	0.00087	U	0.0026	0.00087	ug/L		11/09/22 07:56	11/11/22 07:06	1
Perfluorobutanesulfonic acid	0.0015	I	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1
Perfluorobutanoic acid	0.0037	I	0.0044	0.0017	ug/L		11/09/22 07:56	11/11/22 07:06	1
Perfluorodecanesulfonic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1
Perfluorodecanoic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1
Perfluorododecanoic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1
Perfluoroheptanesulfonic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1
Perfluoroheptanoic acid	0.0018		0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1
Perfluorohexanesulfonic acid	0.010		0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1
Perfluorohexanoic acid	0.0055		0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1
Perfluorononanesulfonic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1
Perfluorononanoic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1
Perfluorooctanesulfonamide	0.00061	U	0.0017	0.00061	ug/L		11/09/22 07:56	11/11/22 07:06	1
Perfluorooctanesulfonic acid	0.011		0.0018	0.00087	ug/L		11/09/22 07:56	11/11/22 07:06	1
Perfluorooctanoic acid	0.0037		0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1
Perfluoropentanesulfonic acid	0.0012	I	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1
Perfluoropentanoic acid	0.0047		0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1
Perfluorotetradecanoic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1
Perfluorotridecanoic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1
Perfluoroundecanoic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:06	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C6 PFDA	34	*	50 - 150	11/09/22 07:56	11/11/22 07:06	1
13C2-PFDoDA	12	*	50 - 150	11/09/22 07:56	11/11/22 07:06	1
13C5 PFHxA	47	*	50 - 150	11/09/22 07:56	11/11/22 07:06	1
13C3 PFBS	48	*	50 - 150	11/09/22 07:56	11/11/22 07:06	1
13C8 FOSA	28	*	50 - 150	11/09/22 07:56	11/11/22 07:06	1
M2-6:2 FTS	70		50 - 150	11/09/22 07:56	11/11/22 07:06	1
M2-4:2 FTS	105		50 - 150	11/09/22 07:56	11/11/22 07:06	1
d5-NEtFOSAA	33	*	50 - 150	11/09/22 07:56	11/11/22 07:06	1
13C5 PFPeA	43	*	50 - 150	11/09/22 07:56	11/11/22 07:06	1
13C2 PFTeDA	2	*	50 - 150	11/09/22 07:56	11/11/22 07:06	1
13C7 PFUnA	24	*	50 - 150	11/09/22 07:56	11/11/22 07:06	1
d3-NMeFOSAA	38	*	50 - 150	11/09/22 07:56	11/11/22 07:06	1
13C8 PFOA	51		50 - 150	11/09/22 07:56	11/11/22 07:06	1
13C9 PFNA	45	*	50 - 150	11/09/22 07:56	11/11/22 07:06	1
d3-NMePFOSA	8	*	50 - 150	11/09/22 07:56	11/11/22 07:06	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW07-20221027

Lab Sample ID: 670-8406-7

Date Collected: 10/27/22 14:38

Matrix: Water

Date Received: 10/28/22 14:15

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15 (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFHpA	49	*	50 - 150	11/09/22 07:56	11/11/22 07:06	1
13C3 HFPO-DA	63		50 - 150	11/09/22 07:56	11/11/22 07:06	1
M2-8:2 FTS	45	*	50 - 150	11/09/22 07:56	11/11/22 07:06	1
13C3 PFHxS	55		50 - 150	11/09/22 07:56	11/11/22 07:06	1
13C8 PFOS	45	*	50 - 150	11/09/22 07:56	11/11/22 07:06	1
13C4 PFBA	35	*	50 - 150	11/09/22 07:56	11/11/22 07:06	1

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as P (EPA 365.4)	40	U	100	40	ug/L		11/11/22 06:09	11/15/22 11:35	1

Client Sample ID: GSRY-IDW08-20221027

Lab Sample ID: 670-8406-8

Date Collected: 10/27/22 14:45

Matrix: Water

Date Received: 10/28/22 14:15

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 15:30	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 15:30	1
Benzene	0.50	U	1.0	0.50	ug/L			11/09/22 15:30	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 15:30	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 15:30	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 15:30	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 15:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 120		11/09/22 15:30	1
4-Bromofluorobenzene (Surr)	104		80 - 120		11/09/22 15:30	1
Dibromofluoromethane (Surr)	100		80 - 120		11/09/22 15:30	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.35	U	0.45	0.35	ug/L		11/03/22 08:46	11/05/22 12:38	1
PCB-1221	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 12:38	1
PCB-1232	0.11	U	0.45	0.11	ug/L		11/03/22 08:46	11/05/22 12:38	1
PCB-1242	0.12	U	0.45	0.12	ug/L		11/03/22 08:46	11/05/22 12:38	1
PCB-1248	0.089	U	0.45	0.089	ug/L		11/03/22 08:46	11/05/22 12:38	1
PCB-1254	0.11	U	0.45	0.11	ug/L		11/03/22 08:46	11/05/22 12:38	1
PCB-1260	0.23	U	0.45	0.23	ug/L		11/03/22 08:46	11/05/22 12:38	1
Polychlorinated biphenyls, Total	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 12:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	12	J1	50 - 150	11/03/22 08:46	11/05/22 12:38	1
Tetrachloro-m-xylene	66		50 - 150	11/03/22 08:46	11/05/22 12:38	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	200	U Q	400	200	ug/L			10/30/22 02:09	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW08-20221027

Lab Sample ID: 670-8406-8

Date Collected: 10/27/22 14:45

Matrix: Water

Date Received: 10/28/22 14:15

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
11CI-PF3OUdS	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1
4:2 Fluorotelomer sulfonic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1
6:2 Fluorotelomer sulfonic acid	0.00087	U	0.0026	0.00087	ug/L		11/09/22 07:56	11/11/22 07:16	1
8:2 Fluorotelomer sulfonic acid	0.00087	U	0.0026	0.00087	ug/L		11/09/22 07:56	11/11/22 07:16	1
9CI-PF3ONS	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1
DONA	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1
HFPODA	0.00044	U	0.0026	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1
NEtFOSAA	0.00044	U	0.0026	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1
NMeFOSAA	0.00052	U	0.0017	0.00052	ug/L		11/09/22 07:56	11/11/22 07:16	1
NMeFOSA	0.00087	U	0.0026	0.00087	ug/L		11/09/22 07:56	11/11/22 07:16	1
Perfluorobutanesulfonic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1
Perfluorobutanoic acid	0.0017	U	0.0044	0.0017	ug/L		11/09/22 07:56	11/11/22 07:16	1
Perfluorodecanesulfonic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1
Perfluorodecanoic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1
Perfluorododecanoic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1
Perfluoroheptanesulfonic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1
Perfluoroheptanoic acid	0.0017		0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1
Perfluorohexanesulfonic acid	0.0031		0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1
Perfluorohexanoic acid	0.0027		0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1
Perfluorononanesulfonic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1
Perfluorononanoic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1
Perfluorooctanesulfonamide	0.00061	U	0.0017	0.00061	ug/L		11/09/22 07:56	11/11/22 07:16	1
Perfluorooctanesulfonic acid	0.0045		0.0018	0.00087	ug/L		11/09/22 07:56	11/11/22 07:16	1
Perfluorooctanoic acid	0.0087		0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1
Perfluoropentanesulfonic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1
Perfluoropentanoic acid	0.0014	I	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1
Perfluorotetradecanoic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1
Perfluorotridecanoic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1
Perfluoroundecanoic acid	0.00044	U	0.0017	0.00044	ug/L		11/09/22 07:56	11/11/22 07:16	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C6 PFDA	7	*	50 - 150	11/09/22 07:56	11/11/22 07:16	1
13C2-PFDoDA	0.3	*	50 - 150	11/09/22 07:56	11/11/22 07:16	1
13C5 PFHxA	40	*	50 - 150	11/09/22 07:56	11/11/22 07:16	1
13C3 PFBS	43	*	50 - 150	11/09/22 07:56	11/11/22 07:16	1
13C8 FOSA	6	*	50 - 150	11/09/22 07:56	11/11/22 07:16	1
M2-6:2 FTS	47	*	50 - 150	11/09/22 07:56	11/11/22 07:16	1
M2-4:2 FTS	80	*	50 - 150	11/09/22 07:56	11/11/22 07:16	1
d5-NEtFOSAA	9	*	50 - 150	11/09/22 07:56	11/11/22 07:16	1
13C5 PFPeA	38	*	50 - 150	11/09/22 07:56	11/11/22 07:16	1
13C2 PFTeDA	0.04	*	50 - 150	11/09/22 07:56	11/11/22 07:16	1
13C7 PFUnA	2	*	50 - 150	11/09/22 07:56	11/11/22 07:16	1
d3-NMeFOSAA	12	*	50 - 150	11/09/22 07:56	11/11/22 07:16	1
13C8 PFOA	35	*	50 - 150	11/09/22 07:56	11/11/22 07:16	1
13C9 PFNA	21	*	50 - 150	11/09/22 07:56	11/11/22 07:16	1
d3-NMePFOSA	1	*	50 - 150	11/09/22 07:56	11/11/22 07:16	1
13C4 PFHpA	40	*	50 - 150	11/09/22 07:56	11/11/22 07:16	1
13C3 HFPO-DA	53	*	50 - 150	11/09/22 07:56	11/11/22 07:16	1
M2-8:2 FTS	13	*	50 - 150	11/09/22 07:56	11/11/22 07:16	1
13C3 PFHxS	41	*	50 - 150	11/09/22 07:56	11/11/22 07:16	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW08-20221027

Lab Sample ID: 670-8406-8

Date Collected: 10/27/22 14:45

Matrix: Water

Date Received: 10/28/22 14:15

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15 (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	21	*	50 - 150	11/09/22 07:56	11/11/22 07:16	1
13C4 PFBA	33	*	50 - 150	11/09/22 07:56	11/11/22 07:16	1

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as P (EPA 365.4)	150		100	40	ug/L		11/11/22 06:09	11/15/22 11:36	1

Client Sample ID: GSRY-IDW09-20221027

Lab Sample ID: 670-8406-9

Date Collected: 10/27/22 14:52

Matrix: Water

Date Received: 10/28/22 14:15

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 15:50	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 15:50	1
Benzene	0.50	U	1.0	0.50	ug/L			11/09/22 15:50	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 15:50	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 15:50	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 15:50	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 15:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 120		11/09/22 15:50	1
4-Bromofluorobenzene (Surr)	103		80 - 120		11/09/22 15:50	1
Dibromofluoromethane (Surr)	100		80 - 120		11/09/22 15:50	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.35	U	0.45	0.35	ug/L		11/03/22 08:46	11/05/22 13:06	1
PCB-1221	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 13:06	1
PCB-1232	0.11	U	0.45	0.11	ug/L		11/03/22 08:46	11/05/22 13:06	1
PCB-1242	0.12	U	0.45	0.12	ug/L		11/03/22 08:46	11/05/22 13:06	1
PCB-1248	0.088	U	0.45	0.088	ug/L		11/03/22 08:46	11/05/22 13:06	1
PCB-1254	0.11	U	0.45	0.11	ug/L		11/03/22 08:46	11/05/22 13:06	1
PCB-1260	0.22	U	0.45	0.22	ug/L		11/03/22 08:46	11/05/22 13:06	1
Polychlorinated biphenyls, Total	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 13:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	51		50 - 150	11/03/22 08:46	11/05/22 13:06	1
Tetrachloro-m-xylene	78		50 - 150	11/03/22 08:46	11/05/22 13:06	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	200	U Q	400	200	ug/L			10/30/22 02:25	1

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
11CI-PF3OUdS	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1
4:2 Fluorotelomer sulfonic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1
6:2 Fluorotelomer sulfonic acid	0.00088	U	0.0026	0.00088	ug/L		11/09/22 07:56	11/11/22 07:27	1
8:2 Fluorotelomer sulfonic acid	0.00088	U	0.0026	0.00088	ug/L		11/09/22 07:56	11/11/22 07:27	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW09-20221027

Lab Sample ID: 670-8406-9

Date Collected: 10/27/22 14:52

Matrix: Water

Date Received: 10/28/22 14:15

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15 (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
9CI-PF3ONS	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1
DONA	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1
HFPODA	0.00044	U	0.0026	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1
NEtFOSAA	0.00044	U	0.0026	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1
NMeFOSAA	0.00053	U	0.0018	0.00053	ug/L		11/09/22 07:56	11/11/22 07:27	1
NMeFOSA	0.00088	U	0.0026	0.00088	ug/L		11/09/22 07:56	11/11/22 07:27	1
Perfluorobutanesulfonic acid	0.00052	I	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1
Perfluorobutanoic acid	0.0018	U	0.0044	0.0018	ug/L		11/09/22 07:56	11/11/22 07:27	1
Perfluorodecanesulfonic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1
Perfluorodecanoic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1
Perfluorododecanoic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1
Perfluoroheptanesulfonic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1
Perfluoroheptanoic acid	0.0010	I	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1
Perfluorohexanesulfonic acid	0.0030		0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1
Perfluorohexanoic acid	0.0018		0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1
Perfluorononanesulfonic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1
Perfluorononanoic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1
Perfluorooctanesulfonamide	0.00061	U	0.0018	0.00061	ug/L		11/09/22 07:56	11/11/22 07:27	1
Perfluorooctanesulfonic acid	0.0044		0.0018	0.00088	ug/L		11/09/22 07:56	11/11/22 07:27	1
Perfluorooctanoic acid	0.0048		0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1
Perfluoropentanesulfonic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1
Perfluoropentanoic acid	0.0014	I	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1
Perfluorotetradecanoic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1
Perfluorotridecanoic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1
Perfluoroundecanoic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:27	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C6 PFDA	45	*	50 - 150	11/09/22 07:56	11/11/22 07:27	1
13C2-PFDoDA	25	*	50 - 150	11/09/22 07:56	11/11/22 07:27	1
13C5 PFHxA	49	*	50 - 150	11/09/22 07:56	11/11/22 07:27	1
13C3 PFBS	51		50 - 150	11/09/22 07:56	11/11/22 07:27	1
13C8 FOSA	41	*	50 - 150	11/09/22 07:56	11/11/22 07:27	1
M2-6:2 FTS	79		50 - 150	11/09/22 07:56	11/11/22 07:27	1
M2-4:2 FTS	108		50 - 150	11/09/22 07:56	11/11/22 07:27	1
d5-NEtFOSAA	44	*	50 - 150	11/09/22 07:56	11/11/22 07:27	1
13C5 PFPeA	43	*	50 - 150	11/09/22 07:56	11/11/22 07:27	1
13C2 PFTeDA	11	*	50 - 150	11/09/22 07:56	11/11/22 07:27	1
13C7 PFUnA	40	*	50 - 150	11/09/22 07:56	11/11/22 07:27	1
d3-NMeFOSAA	47	*	50 - 150	11/09/22 07:56	11/11/22 07:27	1
13C8 PFOA	55		50 - 150	11/09/22 07:56	11/11/22 07:27	1
13C9 PFNA	53		50 - 150	11/09/22 07:56	11/11/22 07:27	1
d3-NMePFOSA	15	*	50 - 150	11/09/22 07:56	11/11/22 07:27	1
13C4 PFHpA	53		50 - 150	11/09/22 07:56	11/11/22 07:27	1
13C3 HFPO-DA	66		50 - 150	11/09/22 07:56	11/11/22 07:27	1
M2-8:2 FTS	55		50 - 150	11/09/22 07:56	11/11/22 07:27	1
13C3 PFHxS	57		50 - 150	11/09/22 07:56	11/11/22 07:27	1
13C8 PFOS	52		50 - 150	11/09/22 07:56	11/11/22 07:27	1
13C4 PFBA	36	*	50 - 150	11/09/22 07:56	11/11/22 07:27	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW09-20221027

Lab Sample ID: 670-8406-9

Date Collected: 10/27/22 14:52

Matrix: Water

Date Received: 10/28/22 14:15

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as P (EPA 365.4)	40	U	100	40	ug/L		11/11/22 06:09	11/15/22 11:37	1

Client Sample ID: GSRY-IDW10-20221027

Lab Sample ID: 670-8406-10

Date Collected: 10/27/22 15:00

Matrix: Water

Date Received: 10/28/22 14:15

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 22:09	1
1,2,4-Trichlorobenzene	10		1.0	0.50	ug/L			11/09/22 22:09	1
Benzene	0.50	U	1.0	0.50	ug/L			11/09/22 22:09	1
Chlorobenzene	24		1.0	0.50	ug/L			11/09/22 22:09	1
m-Dichlorobenzene	130		2.0	1.0	ug/L			11/10/22 16:38	2
o-Dichlorobenzene	1.0		1.0	0.50	ug/L			11/09/22 22:09	1
para-Dichlorobenzene	54		1.0	0.50	ug/L			11/09/22 22:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		11/09/22 22:09	1
Toluene-d8 (Surr)	97		80 - 120		11/10/22 16:38	2
4-Bromofluorobenzene (Surr)	96		80 - 120		11/09/22 22:09	1
4-Bromofluorobenzene (Surr)	96		80 - 120		11/10/22 16:38	2
Dibromofluoromethane (Surr)	100		80 - 120		11/09/22 22:09	1
Dibromofluoromethane (Surr)	101		80 - 120		11/10/22 16:38	2

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.35	U	0.45	0.35	ug/L		11/03/22 08:46	11/05/22 13:34	1
PCB-1221	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 13:34	1
PCB-1232	0.11	U	0.45	0.11	ug/L		11/03/22 08:46	11/05/22 13:34	1
PCB-1242	0.12	U	0.45	0.12	ug/L		11/03/22 08:46	11/05/22 13:34	1
PCB-1248	0.088	U	0.45	0.088	ug/L		11/03/22 08:46	11/05/22 13:34	1
PCB-1254	0.11	U	0.45	0.11	ug/L		11/03/22 08:46	11/05/22 13:34	1
PCB-1260	0.23	U	0.45	0.23	ug/L		11/03/22 08:46	11/05/22 13:34	1
Polychlorinated biphenyls, Total	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 13:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	31	J1	50 - 150	11/03/22 08:46	11/05/22 13:34	1
Tetrachloro-m-xylene	74		50 - 150	11/03/22 08:46	11/05/22 13:34	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	200	U Q	400	200	ug/L			10/30/22 02:41	1

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
11CI-PF3OUdS	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1
4:2 Fluorotelomer sulfonic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1
6:2 Fluorotelomer sulfonic acid	0.0033		0.0027	0.00089	ug/L		11/09/22 07:56	11/11/22 07:38	1
8:2 Fluorotelomer sulfonic acid	0.00089	U	0.0027	0.00089	ug/L		11/09/22 07:56	11/11/22 07:38	1
9CI-PF3ONS	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1
DONA	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW10-20221027

Lab Sample ID: 670-8406-10

Date Collected: 10/27/22 15:00

Matrix: Water

Date Received: 10/28/22 14:15

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15 (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPODA	0.00044	U	0.0027	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1
NEtFOSAA	0.00044	U	0.0027	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1
NMeFOSAA	0.00053	U	0.0018	0.00053	ug/L		11/09/22 07:56	11/11/22 07:38	1
NMeFOSA	0.00089	U	0.0027	0.00089	ug/L		11/09/22 07:56	11/11/22 07:38	1
Perfluorobutanesulfonic acid	0.00070	I	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1
Perfluorobutanoic acid	0.0028	I	0.0044	0.0018	ug/L		11/09/22 07:56	11/11/22 07:38	1
Perfluorodecanesulfonic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1
Perfluorodecanoic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1
Perfluorododecanoic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1
Perfluoroheptanesulfonic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1
Perfluoroheptanoic acid	0.0014	I	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1
Perfluorohexanesulfonic acid	0.0034		0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1
Perfluorohexanoic acid	0.0028		0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1
Perfluorononanesulfonic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1
Perfluorononanoic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1
Perfluorooctanesulfonamide	0.00062	U	0.0018	0.00062	ug/L		11/09/22 07:56	11/11/22 07:38	1
Perfluorooctanesulfonic acid	0.0093		0.0019	0.00089	ug/L		11/09/22 07:56	11/11/22 07:38	1
Perfluorooctanoic acid	0.0021		0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1
Perfluoropentanesulfonic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1
Perfluoropentanoic acid	0.0025		0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1
Perfluorotetradecanoic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1
Perfluorotridecanoic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1
Perfluoroundecanoic acid	0.00044	U	0.0018	0.00044	ug/L		11/09/22 07:56	11/11/22 07:38	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C6 PFDA	14	*	50 - 150	11/09/22 07:56	11/11/22 07:38	1
13C2-PFDoDA	1	*	50 - 150	11/09/22 07:56	11/11/22 07:38	1
13C5 PFHxA	39	*	50 - 150	11/09/22 07:56	11/11/22 07:38	1
13C3 PFBS	42	*	50 - 150	11/09/22 07:56	11/11/22 07:38	1
13C8 FOSA	9	*	50 - 150	11/09/22 07:56	11/11/22 07:38	1
M2-6:2 FTS	68		50 - 150	11/09/22 07:56	11/11/22 07:38	1
M2-4:2 FTS	87		50 - 150	11/09/22 07:56	11/11/22 07:38	1
d5-NEtFOSAA	15	*	50 - 150	11/09/22 07:56	11/11/22 07:38	1
13C5 PFPeA	34	*	50 - 150	11/09/22 07:56	11/11/22 07:38	1
13C2 PFTeDA	0.3	*	50 - 150	11/09/22 07:56	11/11/22 07:38	1
13C7 PFUnA	5	*	50 - 150	11/09/22 07:56	11/11/22 07:38	1
d3-NMeFOSAA	20	*	50 - 150	11/09/22 07:56	11/11/22 07:38	1
13C8 PFOA	44	*	50 - 150	11/09/22 07:56	11/11/22 07:38	1
13C9 PFNA	31	*	50 - 150	11/09/22 07:56	11/11/22 07:38	1
d3-NMePFOSA	2	*	50 - 150	11/09/22 07:56	11/11/22 07:38	1
13C4 PFHpA	43	*	50 - 150	11/09/22 07:56	11/11/22 07:38	1
13C3 HFPO-DA	51		50 - 150	11/09/22 07:56	11/11/22 07:38	1
M2-8:2 FTS	22	*	50 - 150	11/09/22 07:56	11/11/22 07:38	1
13C3 PFHxS	46	*	50 - 150	11/09/22 07:56	11/11/22 07:38	1
13C8 PFOS	32	*	50 - 150	11/09/22 07:56	11/11/22 07:38	1
13C4 PFBA	24	*	50 - 150	11/09/22 07:56	11/11/22 07:38	1

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as P (EPA 365.4)	40	U	100	40	ug/L		11/11/22 06:09	11/15/22 15:49	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW11-20221028

Lab Sample ID: 670-8406-11

Date Collected: 10/28/22 12:15

Matrix: Water

Date Received: 10/28/22 14:15

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/10/22 04:34	1
1,2,4-Trichlorobenzene	3.2		1.0	0.50	ug/L			11/10/22 04:34	1
Benzene	0.50	U	1.0	0.50	ug/L			11/10/22 04:34	1
Chlorobenzene	7.3		1.0	0.50	ug/L			11/10/22 04:34	1
m-Dichlorobenzene	31		1.0	0.50	ug/L			11/10/22 04:34	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/10/22 04:34	1
para-Dichlorobenzene	14		1.0	0.50	ug/L			11/10/22 04:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 120		11/10/22 04:34	1
4-Bromofluorobenzene (Surr)	101		80 - 120		11/10/22 04:34	1
Dibromofluoromethane (Surr)	99		80 - 120		11/10/22 04:34	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.35	U	0.45	0.35	ug/L		11/03/22 08:46	11/05/22 14:02	1
PCB-1221	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 14:02	1
PCB-1232	0.11	U	0.45	0.11	ug/L		11/03/22 08:46	11/05/22 14:02	1
PCB-1242	0.12	U	0.45	0.12	ug/L		11/03/22 08:46	11/05/22 14:02	1
PCB-1248	0.089	U	0.45	0.089	ug/L		11/03/22 08:46	11/05/22 14:02	1
PCB-1254	0.11	U	0.45	0.11	ug/L		11/03/22 08:46	11/05/22 14:02	1
PCB-1260	0.23	U	0.45	0.23	ug/L		11/03/22 08:46	11/05/22 14:02	1
Polychlorinated biphenyls, Total	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 14:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	26	J1	50 - 150	11/03/22 08:46	11/05/22 14:02	1
Tetrachloro-m-xylene	78		50 - 150	11/03/22 08:46	11/05/22 14:02	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	200	U	400	200	ug/L			10/30/22 02:58	1

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
11CI-PF3OUdS	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1
4:2 Fluorotelomer sulfonic acid	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1
6:2 Fluorotelomer sulfonic acid	0.0066		0.0027	0.00091	ug/L		11/09/22 07:56	11/11/22 07:48	1
8:2 Fluorotelomer sulfonic acid	0.00091	U	0.0027	0.00091	ug/L		11/09/22 07:56	11/11/22 07:48	1
9CI-PF3ONS	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1
DONA	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1
HFPODA	0.00045	U	0.0027	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1
NEtFOSAA	0.00045	U	0.0027	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1
NMeFOSAA	0.00055	U	0.0018	0.00055	ug/L		11/09/22 07:56	11/11/22 07:48	1
NMeFOSA	0.00091	U	0.0027	0.00091	ug/L		11/09/22 07:56	11/11/22 07:48	1
Perfluorobutanesulfonic acid	0.011		0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1
Perfluorobutanoic acid	0.014		0.0045	0.0018	ug/L		11/09/22 07:56	11/11/22 07:48	1
Perfluorodecanesulfonic acid	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1
Perfluorodecanoic acid	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1
Perfluorododecanoic acid	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1
Perfluoroheptanesulfonic acid	0.00054	I	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1
Perfluoroheptanoic acid	0.010		0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW11-20221028

Lab Sample ID: 670-8406-11

Date Collected: 10/28/22 12:15

Matrix: Water

Date Received: 10/28/22 14:15

Method: DOD 5.4 QSM B15 - PFAS for QSM 5.4, Table B-15 (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid	0.046		0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1
Perfluorohexanoic acid	0.028		0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1
Perfluorononanesulfonic acid	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1
Perfluorononanoic acid	0.00092	I	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1
Perfluorooctanesulfonamide	0.00064	U	0.0018	0.00064	ug/L		11/09/22 07:56	11/11/22 07:48	1
Perfluorooctanesulfonic acid	0.035		0.0019	0.00091	ug/L		11/09/22 07:56	11/11/22 07:48	1
Perfluorooctanoic acid	0.0070		0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1
Perfluoropentanesulfonic acid	0.011		0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1
Perfluoropentanoic acid	0.019		0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1
Perfluorotetradecanoic acid	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1
Perfluorotridecanoic acid	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1
Perfluoroundecanoic acid	0.00045	U	0.0018	0.00045	ug/L		11/09/22 07:56	11/11/22 07:48	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C6 PFDA	3	*	50 - 150	11/09/22 07:56	11/11/22 07:48	1
13C2-PFDoDA	0.1	*	50 - 150	11/09/22 07:56	11/11/22 07:48	1
13C5 PFHxA	39	*	50 - 150	11/09/22 07:56	11/11/22 07:48	1
13C3 PFBS	42	*	50 - 150	11/09/22 07:56	11/11/22 07:48	1
13C8 FOSA	3	*	50 - 150	11/09/22 07:56	11/11/22 07:48	1
M2-6:2 FTS	52		50 - 150	11/09/22 07:56	11/11/22 07:48	1
M2-4:2 FTS	79		50 - 150	11/09/22 07:56	11/11/22 07:48	1
d5-NEtFOSAA	3	*	50 - 150	11/09/22 07:56	11/11/22 07:48	1
13C5 PFPeA	37	*	50 - 150	11/09/22 07:56	11/11/22 07:48	1
13C2 PFTeDA	0	*	50 - 150	11/09/22 07:56	11/11/22 07:48	1
13C7 PFUnA	0.6	*	50 - 150	11/09/22 07:56	11/11/22 07:48	1
d3-NMeFOSAA	5	*	50 - 150	11/09/22 07:56	11/11/22 07:48	1
13C8 PFOA	31	*	50 - 150	11/09/22 07:56	11/11/22 07:48	1
13C9 PFNA	14	*	50 - 150	11/09/22 07:56	11/11/22 07:48	1
d3-NMePFOSA	0.7	*	50 - 150	11/09/22 07:56	11/11/22 07:48	1
13C4 PFHpA	39	*	50 - 150	11/09/22 07:56	11/11/22 07:48	1
13C3 HFPO-DA	48	*	50 - 150	11/09/22 07:56	11/11/22 07:48	1
M2-8:2 FTS	7	*	50 - 150	11/09/22 07:56	11/11/22 07:48	1
13C3 PFHxS	42	*	50 - 150	11/09/22 07:56	11/11/22 07:48	1
13C8 PFOS	13	*	50 - 150	11/09/22 07:56	11/11/22 07:48	1
13C4 PFBA	29	*	50 - 150	11/09/22 07:56	11/11/22 07:48	1

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as P (EPA 365.4)	240		100	40	ug/L		11/11/22 06:09	11/15/22 15:50	1

Eurofins Orlando

Surrogate Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		TOL (80-120)	BFB (80-120)	DBFM (80-120)
660-124807-H-5 MS	Matrix Spike	105	100	100
660-124807-I-4 MS	Matrix Spike	105	102	100
670-8406-1	GSRY-IDW01-20221027	104	103	100
670-8406-1 MS	GSRY-IDW01-20221027	105	102	101
670-8406-2	GSRY-IDW02-20221027	103	103	100
670-8406-2 MS	GSRY-IDW02-20221027	105	102	100
670-8406-3	GSRY-IDW03-20221027	104	103	99
670-8406-4	GSRY-IDW04-20221027	105	102	100
670-8406-5	GSRY-IDW05-20221027	104	102	100
670-8406-6	GSRY-IDW06-20221027	104	103	99
670-8406-7	GSRY-IDW07-20221027	104	101	100
670-8406-8	GSRY-IDW08-20221027	104	104	100
670-8406-9	GSRY-IDW09-20221027	104	103	100
670-8406-10	GSRY-IDW10-20221027	98	96	100
670-8406-10	GSRY-IDW10-20221027	97	96	101
670-8406-11	GSRY-IDW11-20221028	104	101	99
670-8447-F-1 MS	Matrix Spike	111	92	92
670-8447-F-1 MSD	Matrix Spike Duplicate	98	103	96
670-8518-B-1 MS	Matrix Spike	97	99	93
670-8518-B-1 MSD	Matrix Spike Duplicate	98	100	93
LCS 670-10640/4	Lab Control Sample	104	101	100
LCS 670-10681/4	Lab Control Sample	100	98	92
LCS 670-10699/4	Lab Control Sample	105	102	100
LCS 670-10817/4	Lab Control Sample	98	97	95
MB 670-10640/6	Method Blank	104	103	100
MB 670-10681/6	Method Blank	92	99	91
MB 670-10699/6	Method Blank	103	101	99
MB 670-10817/6	Method Blank	98	100	99

Surrogate Legend

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		DCBP2 (50-150)	TCX2 (50-150)
670-8406-1	GSRY-IDW01-20221027	48 J1	74
670-8406-2	GSRY-IDW02-20221027	65	68
670-8406-3	GSRY-IDW03-20221027	48 J1	76
670-8406-4	GSRY-IDW04-20221027	44 J1	73
670-8406-5	GSRY-IDW05-20221027	51	81
670-8406-6	GSRY-IDW06-20221027	44 J1	75
670-8406-7	GSRY-IDW07-20221027	79	69
670-8406-8	GSRY-IDW08-20221027	12 J1	66
670-8406-9	GSRY-IDW09-20221027	51	78
670-8406-10	GSRY-IDW10-20221027	31 J1	74

Eurofins Orlando

Surrogate Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCBP2 (50-150)	TCX2 (50-150)
670-8406-11	GSRY-IDW11-20221028	26 J1	78
LCS 400-599009/2-A	Lab Control Sample	93	67
LCSD 400-599009/3-A	Lab Control Sample Dup	82	77
MB 400-599009/1-A	Method Blank	90	56

Surrogate Legend

DCBP = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Isotope Dilution Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Method: QSM B15 - PFAS for QSM 5.4, Table B-15

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	C6PFDA (50-150)	PFDODA (50-150)	13C5PHA (50-150)	C3PFBS (50-150)	PFOSA (50-150)	M262FTS (50-150)	M242FTS (50-150)	d5NEFOS (50-150)
670-8406-1	GSRY-IDW01-20221027	54	38 *	53	55	51	75	112	46 *
670-8406-2	GSRY-IDW02-20221027	19 *	2 *	44 *	47 *	14 *	66	102	22 *
670-8406-3	GSRY-IDW03-20221027	49 *	32 *	50	52	45 *	80	111	43 *
670-8406-4	GSRY-IDW04-20221027	37 *	14 *	46 *	48 *	37 *	72	102	38 *
670-8406-5	GSRY-IDW05-20221027	55	14 *	72	77	48 *	139	177 *	49 *
670-8406-6	GSRY-IDW06-20221027	43 *	23 *	50	53	42 *	81	112	43 *
670-8406-7	GSRY-IDW07-20221027	34 *	12 *	47 *	48 *	28 *	70	105	33 *
670-8406-8	GSRY-IDW08-20221027	7 *	0.3 *	40 *	43 *	6 *	47 *	80	9 *
670-8406-9	GSRY-IDW09-20221027	45 *	25 *	49 *	51	41 *	79	108	44 *
670-8406-10	GSRY-IDW10-20221027	14 *	1 *	39 *	42 *	9 *	68	87	15 *
670-8406-11	GSRY-IDW11-20221028	3 *	0.1 *	39 *	42 *	3 *	52	79	3 *
LCS 410-315557/3-A	Lab Control Sample	71	62	75	71	65	79	85	65
LCSD 410-315557/4-A	Lab Control Sample Dup	86	73	88	82	77	92	90	79
MB 410-315557/1-A	Method Blank	84	70	83	83	74	94	104	76

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFPeA (50-150)	PFTDA (50-150)	13C7PUA (50-150)	d3NMFS (50-150)	C8PFOA (50-150)	C9PFNA (50-150)	d3NMFSA (50-150)	C4PFHA (50-150)
670-8406-1	GSRY-IDW01-20221027	47 *	25 *	48 *	48 *	61	57	25 *	57
670-8406-2	GSRY-IDW02-20221027	40 *	0.1 *	7 *	27 *	45 *	36 *	3 *	48 *
670-8406-3	GSRY-IDW03-20221027	44 *	18 *	41 *	47 *	56	53	19 *	54
670-8406-4	GSRY-IDW04-20221027	42 *	2 *	26 *	38 *	49 *	47 *	16 *	49 *
670-8406-5	GSRY-IDW05-20221027	63	2 *	31 *	59	82	74	16 *	83
670-8406-6	GSRY-IDW06-20221027	44 *	7 *	35 *	46 *	53	51	18 *	52
670-8406-7	GSRY-IDW07-20221027	43 *	2 *	24 *	38 *	51	45 *	8 *	49 *
670-8406-8	GSRY-IDW08-20221027	38 *	0.04 *	2 *	12 *	35 *	21 *	1 *	40 *
670-8406-9	GSRY-IDW09-20221027	43 *	11 *	40 *	47 *	55	53	15 *	53
670-8406-10	GSRY-IDW10-20221027	34 *	0.3 *	5 *	20 *	44 *	31 *	2 *	43 *
670-8406-11	GSRY-IDW11-20221028	37 *	0 *	0.6 *	5 *	31 *	14 *	0.7 *	39 *
LCS 410-315557/3-A	Lab Control Sample	72	60	69	73	74	72	52	71
LCSD 410-315557/4-A	Lab Control Sample Dup	82	71	86	83	86	86	64	81
MB 410-315557/1-A	Method Blank	83	68	81	76	88	84	66	81

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (50-150)	M282FTS (50-150)	C3PFHS (50-150)	C8PFOS (50-150)	PFBA (50-150)
670-8406-1	GSRY-IDW01-20221027	73	63	61	55	38 *
670-8406-2	GSRY-IDW02-20221027	58	26 *	51	37 *	30 *
670-8406-3	GSRY-IDW03-20221027	62	60	56	53	37 *
670-8406-4	GSRY-IDW04-20221027	60	40 *	52	47 *	33 *
670-8406-5	GSRY-IDW05-20221027	102	71	90	73	47 *
670-8406-6	GSRY-IDW06-20221027	67	52	56	52	34 *
670-8406-7	GSRY-IDW07-20221027	63	45 *	55	45 *	35 *
670-8406-8	GSRY-IDW08-20221027	53	13 *	41 *	21 *	33 *
670-8406-9	GSRY-IDW09-20221027	66	55	57	52	36 *
670-8406-10	GSRY-IDW10-20221027	51	22 *	46 *	32 *	24 *
670-8406-11	GSRY-IDW11-20221028	48 *	7 *	42 *	13 *	29 *
LCS 410-315557/3-A	Lab Control Sample	89	73	75	72	71
LCSD 410-315557/4-A	Lab Control Sample Dup	107	90	84	90	82
MB 410-315557/1-A	Method Blank	104	88	87	85	80

Eurofins Orlando

Isotope Dilution Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Surrogate Legend

C6PFDA = 13C6 PFDA
PFDoDA = 13C2-PFDoDA
13C5PHA = 13C5 PFHxA
C3PFBS = 13C3 PFBS
PFOSA = 13C8 FOSA
M262FTS = M2-6:2 FTS
M242FTS = M2-4:2 FTS
d5NEFOS = d5-NEtFOSAA
PFPeA = 13C5 PFPeA
PFTDA = 13C2 PFTeDA
13C7PUA = 13C7 PFUnA
d3NMFOS = d3-NMeFOSAA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
d3NMFSA = d3-NMePFOSA
C4PFHA = 13C4 PFHpA
HFPODA = 13C3 HFPO-DA
M282FTS = M2-8:2 FTS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
PFBA = 13C4 PFBA

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 670-10640/6

Matrix: Water

Analysis Batch: 10640

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 09:10	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 09:10	1
Benzene	0.50	U	1.0	0.50	ug/L			11/09/22 09:10	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 09:10	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 09:10	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 09:10	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 09:10	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 120		11/09/22 09:10	1
4-Bromofluorobenzene (Surr)	103		80 - 120		11/09/22 09:10	1
Dibromofluoromethane (Surr)	100		80 - 120		11/09/22 09:10	1

Lab Sample ID: LCS 670-10640/4

Matrix: Water

Analysis Batch: 10640

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichlorobenzene	40.0	42.2		ug/L		105	50 - 150
1,2,4-Trichlorobenzene	40.0	38.4		ug/L		96	50 - 150
Benzene	40.0	36.9		ug/L		92	50 - 150
Chlorobenzene	40.0	36.0		ug/L		90	50 - 150
m-Dichlorobenzene	40.0	35.2		ug/L		88	50 - 150
o-Dichlorobenzene	40.0	35.9		ug/L		90	50 - 150
para-Dichlorobenzene	40.0	35.3		ug/L		88	50 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	104		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	100		80 - 120

Lab Sample ID: 670-8406-1 MS

Matrix: Water

Analysis Batch: 10640

Client Sample ID: GSRY-IDW01-20221027

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichlorobenzene	0.50	U	40.0	48.5		ug/L		121	50 - 150
1,2,4-Trichlorobenzene	0.50	U	40.0	42.2		ug/L		106	50 - 150
Benzene	0.50	U	40.0	41.2		ug/L		103	50 - 150
Chlorobenzene	0.50	U	40.0	39.7		ug/L		99	50 - 150
m-Dichlorobenzene	0.50	U	40.0	38.6		ug/L		96	50 - 150
o-Dichlorobenzene	0.50	U	40.0	38.5		ug/L		96	50 - 150
para-Dichlorobenzene	0.50	U	40.0	38.9		ug/L		97	50 - 150

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	105		80 - 120
4-Bromofluorobenzene (Surr)	102		80 - 120

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 670-8406-1 MS

Matrix: Water

Analysis Batch: 10640

Client Sample ID: GSRY-IDW01-20221027

Prep Type: Total/NA

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	101		80 - 120

Lab Sample ID: 670-8406-2 MS

Matrix: Water

Analysis Batch: 10640

Client Sample ID: GSRY-IDW02-20221027

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichlorobenzene	0.50	U	40.0	48.5		ug/L		121	50 - 150
1,2,4-Trichlorobenzene	0.50	U	40.0	45.4		ug/L		114	50 - 150
Benzene	0.50	U	40.0	43.4		ug/L		109	50 - 150
Chlorobenzene	0.50	U	40.0	42.0		ug/L		105	50 - 150
m-Dichlorobenzene	0.50	U	40.0	41.5		ug/L		104	50 - 150
o-Dichlorobenzene	0.50	U	40.0	41.6		ug/L		104	50 - 150
para-Dichlorobenzene	0.50	U	40.0	41.1		ug/L		103	50 - 150

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	105		80 - 120
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	100		80 - 120

Lab Sample ID: MB 670-10681/6

Matrix: Water

Analysis Batch: 10681

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 13:33	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 13:33	1
Benzene	0.50	U	1.0	0.50	ug/L			11/09/22 13:33	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 13:33	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 13:33	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 13:33	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 13:33	1

	MB	MB							
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Toluene-d8 (Surr)	92		80 - 120		11/09/22 13:33	1			
4-Bromofluorobenzene (Surr)	99		80 - 120		11/09/22 13:33	1			
Dibromofluoromethane (Surr)	91		80 - 120		11/09/22 13:33	1			

Lab Sample ID: LCS 670-10681/4

Matrix: Water

Analysis Batch: 10681

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichlorobenzene	50.0	51.1		ug/L		102	50 - 150
1,2,4-Trichlorobenzene	50.0	53.0		ug/L		106	50 - 150
Benzene	50.0	48.5		ug/L		97	50 - 150
Chlorobenzene	50.0	53.0		ug/L		106	50 - 150
m-Dichlorobenzene	50.0	52.7		ug/L		105	50 - 150

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 670-10681/4

Matrix: Water

Analysis Batch: 10681

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
o-Dichlorobenzene	50.0	51.9		ug/L		104	50 - 150
para-Dichlorobenzene	50.0	53.6		ug/L		107	50 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	92		80 - 120

Lab Sample ID: 670-8447-F-1 MS

Matrix: Water

Analysis Batch: 10681

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichlorobenzene	0.50	U	50.0	51.3		ug/L		103	50 - 150
1,2,4-Trichlorobenzene	0.50	U	50.0	45.0		ug/L		90	50 - 150
Benzene	1.2		50.0	47.2		ug/L		92	50 - 150
Chlorobenzene	0.50	U	50.0	50.0		ug/L		100	50 - 150
m-Dichlorobenzene	0.50	U	50.0	45.5		ug/L		91	50 - 150
o-Dichlorobenzene	0.50	U	50.0	46.7		ug/L		93	50 - 150
para-Dichlorobenzene	0.50	U	50.0	52.6		ug/L		105	50 - 150

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	111		80 - 120
4-Bromofluorobenzene (Surr)	92		80 - 120
Dibromofluoromethane (Surr)	92		80 - 120

Lab Sample ID: 670-8447-F-1 MSD

Matrix: Water

Analysis Batch: 10681

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,3-Trichlorobenzene	0.50	U	50.0	59.2		ug/L		118	50 - 150	14	30
1,2,4-Trichlorobenzene	0.50	U	50.0	58.6		ug/L		117	50 - 150	26	30
Benzene	1.2		50.0	56.5		ug/L		111	50 - 150	18	30
Chlorobenzene	0.50	U	50.0	59.3		ug/L		119	50 - 150	17	30
m-Dichlorobenzene	0.50	U	50.0	59.6		ug/L		119	50 - 150	27	30
o-Dichlorobenzene	0.50	U	50.0	59.5		ug/L		119	50 - 150	24	30
para-Dichlorobenzene	0.50	U	50.0	60.0		ug/L		120	50 - 150	13	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	98		80 - 120
4-Bromofluorobenzene (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	96		80 - 120

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 670-10699/6

Matrix: Water

Analysis Batch: 10699

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 20:19	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 20:19	1
Benzene	0.50	U	1.0	0.50	ug/L			11/09/22 20:19	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 20:19	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 20:19	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 20:19	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/09/22 20:19	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 120		11/09/22 20:19	1
4-Bromofluorobenzene (Surr)	101		80 - 120		11/09/22 20:19	1
Dibromofluoromethane (Surr)	99		80 - 120		11/09/22 20:19	1

Lab Sample ID: LCS 670-10699/4

Matrix: Water

Analysis Batch: 10699

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichlorobenzene	40.0	43.6		ug/L		109	50 - 150
1,2,4-Trichlorobenzene	40.0	40.1		ug/L		100	50 - 150
Benzene	40.0	38.9		ug/L		97	50 - 150
Chlorobenzene	40.0	37.8		ug/L		95	50 - 150
m-Dichlorobenzene	40.0	36.6		ug/L		91	50 - 150
o-Dichlorobenzene	40.0	37.8		ug/L		94	50 - 150
para-Dichlorobenzene	40.0	37.1		ug/L		93	50 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	105		80 - 120
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	100		80 - 120

Lab Sample ID: 660-124807-H-5 MS

Matrix: Water

Analysis Batch: 10699

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichlorobenzene	0.50	U	40.0	45.3		ug/L		113	50 - 150
1,2,4-Trichlorobenzene	0.50	U	40.0	43.3		ug/L		108	50 - 150
Benzene	0.50	U	40.0	44.6		ug/L		111	50 - 150
Chlorobenzene	0.50	U	40.0	42.9		ug/L		107	50 - 150
m-Dichlorobenzene	0.50	U	40.0	41.3		ug/L		103	50 - 150
o-Dichlorobenzene	0.50	U	40.0	41.8		ug/L		105	50 - 150
para-Dichlorobenzene	0.50	U	40.0	41.2		ug/L		103	50 - 150

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	105		80 - 120
4-Bromofluorobenzene (Surr)	100		80 - 120

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 660-124807-H-5 MS

Matrix: Water

Analysis Batch: 10699

Client Sample ID: Matrix Spike

Prep Type: Total/NA

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	100		80 - 120

Lab Sample ID: 660-124807-I-4 MS

Matrix: Water

Analysis Batch: 10699

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichlorobenzene	0.50	U	40.0	56.4		ug/L		141	50 - 150
1,2,4-Trichlorobenzene	0.50	U	40.0	51.2		ug/L		128	50 - 150
Benzene	0.50	U	40.0	50.6		ug/L		126	50 - 150
Chlorobenzene	0.50	U	40.0	48.5		ug/L		121	50 - 150
m-Dichlorobenzene	0.50	U	40.0	46.8		ug/L		117	50 - 150
o-Dichlorobenzene	0.50	U	40.0	47.3		ug/L		118	50 - 150
para-Dichlorobenzene	0.50	U	40.0	46.9		ug/L		117	50 - 150

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	105		80 - 120
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	100		80 - 120

Lab Sample ID: MB 670-10817/6

Matrix: Water

Analysis Batch: 10817

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/10/22 12:59	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/10/22 12:59	1
Benzene	0.50	U	1.0	0.50	ug/L			11/10/22 12:59	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			11/10/22 12:59	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/10/22 12:59	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/10/22 12:59	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/10/22 12:59	1

	MB	MB							
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Toluene-d8 (Surr)	98		80 - 120		11/10/22 12:59	1			
4-Bromofluorobenzene (Surr)	100		80 - 120		11/10/22 12:59	1			
Dibromofluoromethane (Surr)	99		80 - 120		11/10/22 12:59	1			

Lab Sample ID: LCS 670-10817/4

Matrix: Water

Analysis Batch: 10817

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichlorobenzene	50.0	47.1		ug/L		94	50 - 150
1,2,4-Trichlorobenzene	50.0	48.0		ug/L		96	50 - 150
Benzene	50.0	47.7		ug/L		95	50 - 150
Chlorobenzene	50.0	50.6		ug/L		101	50 - 150
m-Dichlorobenzene	50.0	48.9		ug/L		98	50 - 150

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 670-10817/4

Matrix: Water

Analysis Batch: 10817

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
o-Dichlorobenzene	50.0	48.2		ug/L		96	50 - 150
para-Dichlorobenzene	50.0	49.5		ug/L		99	50 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	98		80 - 120
4-Bromofluorobenzene (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	95		80 - 120

Lab Sample ID: 670-8518-B-1 MS

Matrix: Water

Analysis Batch: 10817

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichlorobenzene	0.50	U	50.0	56.7		ug/L		113	50 - 150
1,2,4-Trichlorobenzene	0.50	U	50.0	50.8		ug/L		102	50 - 150
Benzene	0.50	U	50.0	45.8		ug/L		92	50 - 150
Chlorobenzene	0.50	U	50.0	48.3		ug/L		97	50 - 150
m-Dichlorobenzene	0.50	U	50.0	48.7		ug/L		97	50 - 150
o-Dichlorobenzene	0.50	U	50.0	48.9		ug/L		98	50 - 150
para-Dichlorobenzene	0.50	U	50.0	49.4		ug/L		99	50 - 150

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	97		80 - 120
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	93		80 - 120

Lab Sample ID: 670-8518-B-1 MSD

Matrix: Water

Analysis Batch: 10817

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,3-Trichlorobenzene	0.50	U	50.0	51.5		ug/L		103	50 - 150	10	30
1,2,4-Trichlorobenzene	0.50	U	50.0	49.7		ug/L		99	50 - 150	2	30
Benzene	0.50	U	50.0	46.2		ug/L		92	50 - 150	1	30
Chlorobenzene	0.50	U	50.0	49.3		ug/L		99	50 - 150	2	30
m-Dichlorobenzene	0.50	U	50.0	49.7		ug/L		99	50 - 150	2	30
o-Dichlorobenzene	0.50	U	50.0	49.7		ug/L		99	50 - 150	2	30
para-Dichlorobenzene	0.50	U	50.0	50.2		ug/L		100	50 - 150	2	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	98		80 - 120
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	93		80 - 120

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 400-599009/1-A

Matrix: Water

Analysis Batch: 599347

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 599009

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.39	U	0.50	0.39	ug/L		11/03/22 08:46	11/05/22 06:09	1
PCB-1221	0.16	U	0.50	0.16	ug/L		11/03/22 08:46	11/05/22 06:09	1
PCB-1232	0.13	U	0.50	0.13	ug/L		11/03/22 08:46	11/05/22 06:09	1
PCB-1242	0.14	U	0.50	0.14	ug/L		11/03/22 08:46	11/05/22 06:09	1
PCB-1248	0.098	U	0.50	0.098	ug/L		11/03/22 08:46	11/05/22 06:09	1
PCB-1254	0.12	U	0.50	0.12	ug/L		11/03/22 08:46	11/05/22 06:09	1
PCB-1260	0.25	U	0.50	0.25	ug/L		11/03/22 08:46	11/05/22 06:09	1
Polychlorinated biphenyls, Total	0.16	U	0.50	0.16	ug/L		11/03/22 08:46	11/05/22 06:09	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	90		50 - 150	11/03/22 08:46	11/05/22 06:09	1
Tetrachloro-m-xylene	56		50 - 150	11/03/22 08:46	11/05/22 06:09	1

Lab Sample ID: LCS 400-599009/2-A

Matrix: Water

Analysis Batch: 599347

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 599009

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
PCB-1016	5.05	4.97		ug/L		98	41 - 150
PCB-1260	5.03	4.52		ug/L		90	31 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	93		50 - 150
Tetrachloro-m-xylene	67		50 - 150

Lab Sample ID: LCSD 400-599009/3-A

Matrix: Water

Analysis Batch: 599347

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 599009

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1016	5.05	4.58		ug/L		91	41 - 150	8	30
PCB-1260	5.03	4.03		ug/L		80	31 - 150	11	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl	82		50 - 150
Tetrachloro-m-xylene	77		50 - 150

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 670-9455/162

Matrix: Water

Analysis Batch: 9455

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	200	U	400	200	ug/L			10/29/22 20:41	1

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 670-9455/163

Matrix: Water

Analysis Batch: 9455

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4000	4060		ug/L		101	90 - 110

Lab Sample ID: LCS 670-9455/164

Matrix: Water

Analysis Batch: 9455

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4000	3830		ug/L		96	90 - 110

Lab Sample ID: 670-8400-G-1 MS

Matrix: Water

Analysis Batch: 9455

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	230	I	5000	4870		ug/L		93	80 - 120

Lab Sample ID: 670-8400-G-1 MSD

Matrix: Water

Analysis Batch: 9455

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	230	I	5000	4700		ug/L		89	80 - 120	4	20

Method: QSM B15 - PFAS for QSM 5.4, Table B-15

Lab Sample ID: MB 410-315557/1-A

Matrix: Water

Analysis Batch: 315983

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 315557

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
11CI-PF3OUdS	0.00050	U	0.0020	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1
4:2 Fluorotelomer sulfonic acid	0.00050	U	0.0020	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1
6:2 Fluorotelomer sulfonic acid	0.0010	U	0.0030	0.0010	ug/L		11/09/22 07:56	11/11/22 03:22	1
8:2 Fluorotelomer sulfonic acid	0.0010	U	0.0030	0.0010	ug/L		11/09/22 07:56	11/11/22 03:22	1
9CI-PF3ONS	0.00050	U	0.0020	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1
DONA	0.00050	U	0.0020	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1
HFPODA	0.00050	U	0.0030	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1
NEtFOSAA	0.00050	U	0.0030	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1
NMeFOSAA	0.00060	U	0.0020	0.00060	ug/L		11/09/22 07:56	11/11/22 03:22	1
NMeFOSA	0.0010	U	0.0030	0.0010	ug/L		11/09/22 07:56	11/11/22 03:22	1
Perfluorobutanesulfonic acid	0.00050	U	0.0020	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1
Perfluorobutanoic acid	0.0020	U	0.0050	0.0020	ug/L		11/09/22 07:56	11/11/22 03:22	1
Perfluorodecanesulfonic acid	0.00050	U	0.0020	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1
Perfluorodecanoic acid	0.00050	U	0.0020	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1
Perfluorododecanoic acid	0.00050	U	0.0020	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1
Perfluoroheptanesulfonic acid	0.00050	U	0.0020	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1
Perfluoroheptanoic acid	0.00050	U	0.0020	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1
Perfluorohexanesulfonic acid	0.00050	U	0.0020	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1
Perfluorohexanoic acid	0.00050	U	0.0020	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1
Perfluorononanesulfonic acid	0.00050	U	0.0020	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Method: QSM B15 - PFAS for QSM 5.4, Table B-15 (Continued)

Lab Sample ID: MB 410-315557/1-A

Matrix: Water

Analysis Batch: 315983

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 315557

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid	0.00050	U	0.0020	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1
Perfluorooctanesulfonamide	0.00070	U	0.0020	0.00070	ug/L		11/09/22 07:56	11/11/22 03:22	1
Perfluorooctanesulfonic acid	0.0010	U	0.0021	0.0010	ug/L		11/09/22 07:56	11/11/22 03:22	1
Perfluorooctanoic acid	0.00050	U	0.0020	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1
Perfluoropentanesulfonic acid	0.00050	U	0.0020	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1
Perfluoropentanoic acid	0.00050	U	0.0020	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1
Perfluorotetradecanoic acid	0.00050	U	0.0020	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1
Perfluorotridecanoic acid	0.00050	U	0.0020	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1
Perfluoroundecanoic acid	0.00050	U	0.0020	0.00050	ug/L		11/09/22 07:56	11/11/22 03:22	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C6 PFDA	84		50 - 150	11/09/22 07:56	11/11/22 03:22	1
13C2-PFDoDA	70		50 - 150	11/09/22 07:56	11/11/22 03:22	1
13C5 PFHxA	83		50 - 150	11/09/22 07:56	11/11/22 03:22	1
13C3 PFBS	83		50 - 150	11/09/22 07:56	11/11/22 03:22	1
13C8 FOSA	74		50 - 150	11/09/22 07:56	11/11/22 03:22	1
M2-6:2 FTS	94		50 - 150	11/09/22 07:56	11/11/22 03:22	1
M2-4:2 FTS	104		50 - 150	11/09/22 07:56	11/11/22 03:22	1
d5-NEtFOSAA	76		50 - 150	11/09/22 07:56	11/11/22 03:22	1
13C5 PFPeA	83		50 - 150	11/09/22 07:56	11/11/22 03:22	1
13C2 PFTeDA	68		50 - 150	11/09/22 07:56	11/11/22 03:22	1
13C7 PFUnA	81		50 - 150	11/09/22 07:56	11/11/22 03:22	1
d3-NMeFOSAA	76		50 - 150	11/09/22 07:56	11/11/22 03:22	1
13C8 PFOA	88		50 - 150	11/09/22 07:56	11/11/22 03:22	1
13C9 PFNA	84		50 - 150	11/09/22 07:56	11/11/22 03:22	1
d3-NMePFOSA	66		50 - 150	11/09/22 07:56	11/11/22 03:22	1
13C4 PFHpA	81		50 - 150	11/09/22 07:56	11/11/22 03:22	1
13C3 HFPO-DA	104		50 - 150	11/09/22 07:56	11/11/22 03:22	1
M2-8:2 FTS	88		50 - 150	11/09/22 07:56	11/11/22 03:22	1
13C3 PFHxS	87		50 - 150	11/09/22 07:56	11/11/22 03:22	1
13C8 PFOS	85		50 - 150	11/09/22 07:56	11/11/22 03:22	1
13C4 PFBA	80		50 - 150	11/09/22 07:56	11/11/22 03:22	1

Lab Sample ID: LCS 410-315557/3-A

Matrix: Water

Analysis Batch: 315983

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 315557

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11CI-PF3OUdS	0.0238	0.0241		ug/L		101	70 - 130
4:2 Fluorotelomer sulfonic acid	0.0239	0.0209		ug/L		87	63 - 143
6:2 Fluorotelomer sulfonic acid	0.0243	0.0228		ug/L		94	64 - 140
8:2 Fluorotelomer sulfonic acid	0.0245	0.0229		ug/L		94	67 - 138
9CI-PF3ONS	0.0238	0.0234		ug/L		98	70 - 130
DONA	0.0242	0.0241		ug/L		100	70 - 130
HFPODA	0.0256	0.0199		ug/L		78	70 - 130
NEtFOSAA	0.0256	0.0256		ug/L		100	61 - 135
NMeFOSAA	0.0256	0.0214		ug/L		84	65 - 136
NMeFOSA	0.0256	0.0248		ug/L		97	68 - 141
Perfluorobutanesulfonic acid	0.0227	0.0230		ug/L		102	72 - 130

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Method: QSM B15 - PFAS for QSM 5.4, Table B-15 (Continued)

Lab Sample ID: LCS 410-315557/3-A

Matrix: Water

Analysis Batch: 315983

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 315557

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid	0.0256	0.0221		ug/L		86	73 - 129
Perfluorodecanesulfonic acid	0.0247	0.0213		ug/L		86	53 - 142
Perfluorodecanoic acid	0.0256	0.0251		ug/L		98	71 - 129
Perfluorododecanoic acid	0.0256	0.0263		ug/L		103	72 - 134
Perfluoroheptanesulfonic acid	0.0244	0.0224		ug/L		92	69 - 134
Perfluoroheptanoic acid	0.0256	0.0261		ug/L		102	72 - 130
Perfluorohexanesulfonic acid	0.0233	0.0228		ug/L		98	68 - 131
Perfluorohexanoic acid	0.0256	0.0233		ug/L		91	72 - 129
Perfluorononanesulfonic acid	0.0246	0.0229		ug/L		93	69 - 127
Perfluorononanoic acid	0.0256	0.0250		ug/L		98	69 - 130
Perfluorooctanesulfonamide	0.0256	0.0257		ug/L		100	67 - 137
Perfluorooctanesulfonic acid	0.0237	0.0229		ug/L		97	65 - 140
Perfluorooctanoic acid	0.0256	0.0239		ug/L		93	71 - 133
Perfluoropentanesulfonic acid	0.0240	0.0225		ug/L		94	71 - 127
Perfluoropentanoic acid	0.0256	0.0237		ug/L		93	72 - 129
Perfluorotetradecanoic acid	0.0256	0.0255		ug/L		99	71 - 132
Perfluorotridecanoic acid	0.0256	0.0255		ug/L		99	65 - 144
Perfluoroundecanoic acid	0.0256	0.0250		ug/L		98	69 - 133

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C6 PFDA	71		50 - 150
13C2-PFDoDA	62		50 - 150
13C5 PFHxA	75		50 - 150
13C3 PFBS	71		50 - 150
13C8 FOSA	65		50 - 150
M2-6:2 FTS	79		50 - 150
M2-4:2 FTS	85		50 - 150
d5-NEtFOSAA	65		50 - 150
13C5 PFPeA	72		50 - 150
13C2 PFTeDA	60		50 - 150
13C7 PFUnA	69		50 - 150
d3-NMeFOSAA	73		50 - 150
13C8 PFOA	74		50 - 150
13C9 PFNA	72		50 - 150
d3-NMePFOSA	52		50 - 150
13C4 PFHpA	71		50 - 150
13C3 HFPO-DA	89		50 - 150
M2-8:2 FTS	73		50 - 150
13C3 PFHxS	75		50 - 150
13C8 PFOS	72		50 - 150
13C4 PFBA	71		50 - 150

Lab Sample ID: LCSD 410-315557/4-A

Matrix: Water

Analysis Batch: 315983

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 315557

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
11Cl-PF3OUdS	0.0238	0.0224		ug/L		94	70 - 130	8	30
4:2 Fluorotelomer sulfonic acid	0.0239	0.0229		ug/L		96	63 - 143	9	30

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Method: QSM B15 - PFAS for QSM 5.4, Table B-15 (Continued)

Lab Sample ID: LCSD 410-315557/4-A

Matrix: Water

Analysis Batch: 315983

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 315557

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
6:2 Fluorotelomer sulfonic acid	0.0243	0.0220		ug/L		91	64 - 140	4	30
8:2 Fluorotelomer sulfonic acid	0.0245	0.0220		ug/L		90	67 - 138	4	30
9CI-PF3ONS	0.0238	0.0218		ug/L		92	70 - 130	7	30
DONA	0.0242	0.0241		ug/L		100	70 - 130	0	30
HFPODA	0.0256	0.0197		ug/L		77	70 - 130	1	30
NEtFOSAA	0.0256	0.0239		ug/L		93	61 - 135	7	30
NMeFOSAA	0.0256	0.0228		ug/L		89	65 - 136	6	30
NMeFOSA	0.0256	0.0246		ug/L		96	68 - 141	1	30
Perfluorobutanesulfonic acid	0.0227	0.0224		ug/L		99	72 - 130	3	30
Perfluorobutanoic acid	0.0256	0.0220		ug/L		86	73 - 129	1	30
Perfluorodecanesulfonic acid	0.0247	0.0204		ug/L		83	53 - 142	4	30
Perfluorodecanoic acid	0.0256	0.0241		ug/L		94	71 - 129	4	30
Perfluorododecanoic acid	0.0256	0.0263		ug/L		103	72 - 134	0	30
Perfluoroheptanesulfonic acid	0.0244	0.0230		ug/L		95	69 - 134	3	30
Perfluoroheptanoic acid	0.0256	0.0267		ug/L		104	72 - 130	2	30
Perfluorohexanesulfonic acid	0.0233	0.0227		ug/L		97	68 - 131	1	30
Perfluorohexanoic acid	0.0256	0.0232		ug/L		91	72 - 129	0	30
Perfluorononanesulfonic acid	0.0246	0.0216		ug/L		88	69 - 127	6	30
Perfluorononanoic acid	0.0256	0.0246		ug/L		96	69 - 130	1	30
Perfluorooctanesulfonamide	0.0256	0.0249		ug/L		97	67 - 137	3	30
Perfluorooctanesulfonic acid	0.0237	0.0217		ug/L		92	65 - 140	5	30
Perfluorooctanoic acid	0.0256	0.0233		ug/L		91	71 - 133	2	30
Perfluoropentanesulfonic acid	0.0240	0.0231		ug/L		96	71 - 127	3	30
Perfluoropentanoic acid	0.0256	0.0242		ug/L		94	72 - 129	2	30
Perfluorotetradecanoic acid	0.0256	0.0259		ug/L		101	71 - 132	2	30
Perfluorotridecanoic acid	0.0256	0.0257		ug/L		100	65 - 144	1	30
Perfluoroundecanoic acid	0.0256	0.0239		ug/L		93	69 - 133	5	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	LCSD Limits
13C6 PFDA	86		50 - 150
13C2-PFDoDA	73		50 - 150
13C5 PFHxA	88		50 - 150
13C3 PFBS	82		50 - 150
13C8 FOSA	77		50 - 150
M2-6:2 FTS	92		50 - 150
M2-4:2 FTS	90		50 - 150
d5-NEtFOSAA	79		50 - 150
13C5 PFPeA	82		50 - 150
13C2 PFTeDA	71		50 - 150
13C7 PFUnA	86		50 - 150
d3-NMeFOSAA	83		50 - 150
13C8 PFOA	86		50 - 150
13C9 PFNA	86		50 - 150
d3-NMePFOSA	64		50 - 150
13C4 PFHpA	81		50 - 150
13C3 HFPO-DA	107		50 - 150
M2-8:2 FTS	90		50 - 150
13C3 PFHxS	84		50 - 150
13C8 PFOS	90		50 - 150

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Method: QSM B15 - PFAS for QSM 5.4, Table B-15 (Continued)

Lab Sample ID: LCSD 410-315557/4-A

Matrix: Water

Analysis Batch: 315983

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 315557

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
¹³ C4 PFBA	82		50 - 150

Method: 365.4 - Phosphorus, Total

Lab Sample ID: MB 670-10914/12-A

Matrix: Water

Analysis Batch: 11387

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 10914

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as P	40	U	100	40	ug/L		11/11/22 06:01	11/15/22 10:52	1

Lab Sample ID: LCS 670-10914/11-A

Matrix: Water

Analysis Batch: 11387

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 10914

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Phosphorus as P	1500	1540		ug/L		103	90 - 110

Lab Sample ID: 670-8373-C-1-A MS

Matrix: Water

Analysis Batch: 11387

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 10914

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Phosphorus as P	2900	J3	1500	4050	J3	ug/L		270	85 - 115

Lab Sample ID: 670-8373-C-1-B MSD

Matrix: Water

Analysis Batch: 11387

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 10914

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Total Phosphorus as P	2900	J3	1500	4090	J3	ug/L		272	85 - 115	1	20

Lab Sample ID: MB 670-10916/2-A

Matrix: Water

Analysis Batch: 11387

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 10916

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as P	40	U	100	40	ug/L		11/11/22 06:09	11/15/22 11:24	1

Lab Sample ID: LCS 670-10916/1-A

Matrix: Water

Analysis Batch: 11387

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 10916

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Phosphorus as P	1500	1490		ug/L		99	90 - 110

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV IDW

Job ID: 670-8406-1

Method: 365.4 - Phosphorus, Total (Continued)

Lab Sample ID: 670-7527-C-5-B MS

Matrix: Water

Analysis Batch: 11387

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 10916

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Phosphorus as P	180		1500	1390		ug/L		93	85 - 115

Lab Sample ID: 670-7527-C-5-C MSD

Matrix: Water

Analysis Batch: 11387

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 10916

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Phosphorus as P	180		1500	1410		ug/L		94	85 - 115	1	20

QC Association Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV IDW

Job ID: 670-8406-1

GC/MS VOA

Analysis Batch: 10640

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8406-1	GSRV-IDW01-20221027	Total/NA	Water	8260B	
670-8406-2	GSRV-IDW02-20221027	Total/NA	Water	8260B	
670-8406-3	GSRV-IDW03-20221027	Total/NA	Water	8260B	
670-8406-4	GSRV-IDW04-20221027	Total/NA	Water	8260B	
670-8406-5	GSRV-IDW05-20221027	Total/NA	Water	8260B	
670-8406-6	GSRV-IDW06-20221027	Total/NA	Water	8260B	
670-8406-7	GSRV-IDW07-20221027	Total/NA	Water	8260B	
670-8406-8	GSRV-IDW08-20221027	Total/NA	Water	8260B	
670-8406-9	GSRV-IDW09-20221027	Total/NA	Water	8260B	
MB 670-10640/6	Method Blank	Total/NA	Water	8260B	
LCS 670-10640/4	Lab Control Sample	Total/NA	Water	8260B	
670-8406-1 MS	GSRV-IDW01-20221027	Total/NA	Water	8260B	
670-8406-2 MS	GSRV-IDW02-20221027	Total/NA	Water	8260B	

Analysis Batch: 10681

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8406-10	GSRV-IDW10-20221027	Total/NA	Water	8260B	
MB 670-10681/6	Method Blank	Total/NA	Water	8260B	
LCS 670-10681/4	Lab Control Sample	Total/NA	Water	8260B	
670-8447-F-1 MS	Matrix Spike	Total/NA	Water	8260B	
670-8447-F-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 10699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8406-11	GSRV-IDW11-20221028	Total/NA	Water	8260B	
MB 670-10699/6	Method Blank	Total/NA	Water	8260B	
LCS 670-10699/4	Lab Control Sample	Total/NA	Water	8260B	
660-124807-H-5 MS	Matrix Spike	Total/NA	Water	8260B	
660-124807-I-4 MS	Matrix Spike	Total/NA	Water	8260B	

Analysis Batch: 10817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8406-10	GSRV-IDW10-20221027	Total/NA	Water	8260B	
MB 670-10817/6	Method Blank	Total/NA	Water	8260B	
LCS 670-10817/4	Lab Control Sample	Total/NA	Water	8260B	
670-8518-B-1 MS	Matrix Spike	Total/NA	Water	8260B	
670-8518-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

GC Semi VOA

Prep Batch: 599009

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8406-1	GSRV-IDW01-20221027	Total/NA	Water	3511	
670-8406-2	GSRV-IDW02-20221027	Total/NA	Water	3511	
670-8406-3	GSRV-IDW03-20221027	Total/NA	Water	3511	
670-8406-4	GSRV-IDW04-20221027	Total/NA	Water	3511	
670-8406-5	GSRV-IDW05-20221027	Total/NA	Water	3511	
670-8406-6	GSRV-IDW06-20221027	Total/NA	Water	3511	
670-8406-7	GSRV-IDW07-20221027	Total/NA	Water	3511	
670-8406-8	GSRV-IDW08-20221027	Total/NA	Water	3511	
670-8406-9	GSRV-IDW09-20221027	Total/NA	Water	3511	

Eurofins Orlando

QC Association Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

GC Semi VOA (Continued)

Prep Batch: 599009 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8406-10	GSRY-IDW10-20221027	Total/NA	Water	3511	
670-8406-11	GSRY-IDW11-20221028	Total/NA	Water	3511	
MB 400-599009/1-A	Method Blank	Total/NA	Water	3511	
LCS 400-599009/2-A	Lab Control Sample	Total/NA	Water	3511	
LCSD 400-599009/3-A	Lab Control Sample Dup	Total/NA	Water	3511	

Analysis Batch: 599347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8406-1	GSRY-IDW01-20221027	Total/NA	Water	8082A	599009
670-8406-2	GSRY-IDW02-20221027	Total/NA	Water	8082A	599009
670-8406-3	GSRY-IDW03-20221027	Total/NA	Water	8082A	599009
670-8406-4	GSRY-IDW04-20221027	Total/NA	Water	8082A	599009
670-8406-5	GSRY-IDW05-20221027	Total/NA	Water	8082A	599009
670-8406-6	GSRY-IDW06-20221027	Total/NA	Water	8082A	599009
670-8406-7	GSRY-IDW07-20221027	Total/NA	Water	8082A	599009
670-8406-8	GSRY-IDW08-20221027	Total/NA	Water	8082A	599009
670-8406-9	GSRY-IDW09-20221027	Total/NA	Water	8082A	599009
670-8406-10	GSRY-IDW10-20221027	Total/NA	Water	8082A	599009
670-8406-11	GSRY-IDW11-20221028	Total/NA	Water	8082A	599009
MB 400-599009/1-A	Method Blank	Total/NA	Water	8082A	599009
LCS 400-599009/2-A	Lab Control Sample	Total/NA	Water	8082A	599009
LCSD 400-599009/3-A	Lab Control Sample Dup	Total/NA	Water	8082A	599009

HPLC/IC

Analysis Batch: 9455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8406-1	GSRY-IDW01-20221027	Total/NA	Water	300.0	
670-8406-2	GSRY-IDW02-20221027	Total/NA	Water	300.0	
670-8406-3	GSRY-IDW03-20221027	Total/NA	Water	300.0	
670-8406-4	GSRY-IDW04-20221027	Total/NA	Water	300.0	
670-8406-5	GSRY-IDW05-20221027	Total/NA	Water	300.0	
670-8406-6	GSRY-IDW06-20221027	Total/NA	Water	300.0	
670-8406-7	GSRY-IDW07-20221027	Total/NA	Water	300.0	
670-8406-8	GSRY-IDW08-20221027	Total/NA	Water	300.0	
670-8406-9	GSRY-IDW09-20221027	Total/NA	Water	300.0	
670-8406-10	GSRY-IDW10-20221027	Total/NA	Water	300.0	
670-8406-11	GSRY-IDW11-20221028	Total/NA	Water	300.0	
MB 670-9455/162	Method Blank	Total/NA	Water	300.0	
LCS 670-9455/163	Lab Control Sample	Total/NA	Water	300.0	
LCS 670-9455/164	Lab Control Sample	Total/NA	Water	300.0	
670-8400-G-1 MS	Matrix Spike	Total/NA	Water	300.0	
670-8400-G-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

LCMS

Prep Batch: 315557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8406-1	GSRY-IDW01-20221027	Total/NA	Water	537 IDA	
670-8406-2	GSRY-IDW02-20221027	Total/NA	Water	537 IDA	
670-8406-3	GSRY-IDW03-20221027	Total/NA	Water	537 IDA	
670-8406-4	GSRY-IDW04-20221027	Total/NA	Water	537 IDA	

Eurofins Orlando

QC Association Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

LCMS (Continued)

Prep Batch: 315557 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8406-5	GSRY-IDW05-20221027	Total/NA	Water	537 IDA	
670-8406-6	GSRY-IDW06-20221027	Total/NA	Water	537 IDA	
670-8406-7	GSRY-IDW07-20221027	Total/NA	Water	537 IDA	
670-8406-8	GSRY-IDW08-20221027	Total/NA	Water	537 IDA	
670-8406-9	GSRY-IDW09-20221027	Total/NA	Water	537 IDA	
670-8406-10	GSRY-IDW10-20221027	Total/NA	Water	537 IDA	
670-8406-11	GSRY-IDW11-20221028	Total/NA	Water	537 IDA	
MB 410-315557/1-A	Method Blank	Total/NA	Water	537 IDA	
LCS 410-315557/3-A	Lab Control Sample	Total/NA	Water	537 IDA	
LCSD 410-315557/4-A	Lab Control Sample Dup	Total/NA	Water	537 IDA	

Analysis Batch: 315983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8406-1	GSRY-IDW01-20221027	Total/NA	Water	QSM B15	315557
670-8406-2	GSRY-IDW02-20221027	Total/NA	Water	QSM B15	315557
670-8406-3	GSRY-IDW03-20221027	Total/NA	Water	QSM B15	315557
670-8406-4	GSRY-IDW04-20221027	Total/NA	Water	QSM B15	315557
670-8406-5	GSRY-IDW05-20221027	Total/NA	Water	QSM B15	315557
670-8406-6	GSRY-IDW06-20221027	Total/NA	Water	QSM B15	315557
670-8406-7	GSRY-IDW07-20221027	Total/NA	Water	QSM B15	315557
670-8406-8	GSRY-IDW08-20221027	Total/NA	Water	QSM B15	315557
670-8406-9	GSRY-IDW09-20221027	Total/NA	Water	QSM B15	315557
670-8406-10	GSRY-IDW10-20221027	Total/NA	Water	QSM B15	315557
670-8406-11	GSRY-IDW11-20221028	Total/NA	Water	QSM B15	315557
MB 410-315557/1-A	Method Blank	Total/NA	Water	QSM B15	315557
LCS 410-315557/3-A	Lab Control Sample	Total/NA	Water	QSM B15	315557
LCSD 410-315557/4-A	Lab Control Sample Dup	Total/NA	Water	QSM B15	315557

Prep Batch: 317594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8406-1 - RE	GSRY-IDW01-20221027	Total/NA	Water	537 IDA	
670-8406-2 - RE	GSRY-IDW02-20221027	Total/NA	Water	537 IDA	
670-8406-3 - RE	GSRY-IDW03-20221027	Total/NA	Water	537 IDA	
670-8406-4 - RE	GSRY-IDW04-20221027	Total/NA	Water	537 IDA	
670-8406-5 - RE	GSRY-IDW05-20221027	Total/NA	Water	537 IDA	
670-8406-6 - RE	GSRY-IDW06-20221027	Total/NA	Water	537 IDA	
670-8406-7 - RE	GSRY-IDW07-20221027	Total/NA	Water	537 IDA	
670-8406-8 - RE	GSRY-IDW08-20221027	Total/NA	Water	537 IDA	
670-8406-9 - RE	GSRY-IDW09-20221027	Total/NA	Water	537 IDA	
670-8406-10 - RE	GSRY-IDW10-20221027	Total/NA	Water	537 IDA	
670-8406-11 - RE	GSRY-IDW11-20221028	Total/NA	Water	537 IDA	
MB 410-317594/1-A	Method Blank	Total/NA	Water	537 IDA	
LCS 410-317594/3-A	Lab Control Sample	Total/NA	Water	537 IDA	
LCSD 410-317594/4-A	Lab Control Sample Dup	Total/NA	Water	537 IDA	

Analysis Batch: 318375

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8406-1 - RE	GSRY-IDW01-20221027	Total/NA	Water	QSM B15	317594
670-8406-2 - RE	GSRY-IDW02-20221027	Total/NA	Water	QSM B15	317594
670-8406-3 - RE	GSRY-IDW03-20221027	Total/NA	Water	QSM B15	317594
670-8406-4 - RE	GSRY-IDW04-20221027	Total/NA	Water	QSM B15	317594

Eurofins Orlando

QC Association Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

LCMS (Continued)

Analysis Batch: 318375 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8406-5 - RE	GSRY-IDW05-20221027	Total/NA	Water	QSM B15	317594
670-8406-6 - RE	GSRY-IDW06-20221027	Total/NA	Water	QSM B15	317594
670-8406-7 - RE	GSRY-IDW07-20221027	Total/NA	Water	QSM B15	317594
670-8406-8 - RE	GSRY-IDW08-20221027	Total/NA	Water	QSM B15	317594
670-8406-9 - RE	GSRY-IDW09-20221027	Total/NA	Water	QSM B15	317594
670-8406-10 - RE	GSRY-IDW10-20221027	Total/NA	Water	QSM B15	317594
670-8406-11 - RE	GSRY-IDW11-20221028	Total/NA	Water	QSM B15	317594
MB 410-317594/1-A	Method Blank	Total/NA	Water	QSM B15	317594
LCS 410-317594/3-A	Lab Control Sample	Total/NA	Water	QSM B15	317594
LCSD 410-317594/4-A	Lab Control Sample Dup	Total/NA	Water	QSM B15	317594

General Chemistry

Prep Batch: 10914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8406-1	GSRY-IDW01-20221027	Total/NA	Water	365.2/365.3/365	
MB 670-10914/12-A	Method Blank	Total/NA	Water	365.2/365.3/365	
LCS 670-10914/11-A	Lab Control Sample	Total/NA	Water	365.2/365.3/365	
670-8373-C-1-A MS	Matrix Spike	Total/NA	Water	365.2/365.3/365	
670-8373-C-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	365.2/365.3/365	

Prep Batch: 10916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8406-2	GSRY-IDW02-20221027	Total/NA	Water	365.2/365.3/365	
670-8406-3	GSRY-IDW03-20221027	Total/NA	Water	365.2/365.3/365	
670-8406-4	GSRY-IDW04-20221027	Total/NA	Water	365.2/365.3/365	
670-8406-5	GSRY-IDW05-20221027	Total/NA	Water	365.2/365.3/365	
670-8406-6	GSRY-IDW06-20221027	Total/NA	Water	365.2/365.3/365	
670-8406-7	GSRY-IDW07-20221027	Total/NA	Water	365.2/365.3/365	
670-8406-8	GSRY-IDW08-20221027	Total/NA	Water	365.2/365.3/365	
670-8406-9	GSRY-IDW09-20221027	Total/NA	Water	365.2/365.3/365	
670-8406-10	GSRY-IDW10-20221027	Total/NA	Water	365.2/365.3/365	
670-8406-11	GSRY-IDW11-20221028	Total/NA	Water	365.2/365.3/365	
MB 670-10916/2-A	Method Blank	Total/NA	Water	365.2/365.3/365	
LCS 670-10916/1-A	Lab Control Sample	Total/NA	Water	365.2/365.3/365	
670-7527-C-5-B MS	Matrix Spike	Total/NA	Water	365.2/365.3/365	
670-7527-C-5-C MSD	Matrix Spike Duplicate	Total/NA	Water	365.2/365.3/365	

Analysis Batch: 11387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8406-1	GSRY-IDW01-20221027	Total/NA	Water	365.4	10914
670-8406-2	GSRY-IDW02-20221027	Total/NA	Water	365.4	10916
670-8406-3	GSRY-IDW03-20221027	Total/NA	Water	365.4	10916
670-8406-4	GSRY-IDW04-20221027	Total/NA	Water	365.4	10916
670-8406-5	GSRY-IDW05-20221027	Total/NA	Water	365.4	10916
670-8406-6	GSRY-IDW06-20221027	Total/NA	Water	365.4	10916
670-8406-7	GSRY-IDW07-20221027	Total/NA	Water	365.4	10916
670-8406-8	GSRY-IDW08-20221027	Total/NA	Water	365.4	10916
670-8406-9	GSRY-IDW09-20221027	Total/NA	Water	365.4	10916
670-8406-10	GSRY-IDW10-20221027	Total/NA	Water	365.4	10916
670-8406-11	GSRY-IDW11-20221028	Total/NA	Water	365.4	10916

Eurofins Orlando

QC Association Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV IDW

Job ID: 670-8406-1

General Chemistry (Continued)

Analysis Batch: 11387 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 670-10914/12-A	Method Blank	Total/NA	Water	365.4	10914
MB 670-10916/2-A	Method Blank	Total/NA	Water	365.4	10916
LCS 670-10914/11-A	Lab Control Sample	Total/NA	Water	365.4	10914
LCS 670-10916/1-A	Lab Control Sample	Total/NA	Water	365.4	10916
670-7527-C-5-B MS	Matrix Spike	Total/NA	Water	365.4	10916
670-7527-C-5-C MSD	Matrix Spike Duplicate	Total/NA	Water	365.4	10916
670-8373-C-1-A MS	Matrix Spike	Total/NA	Water	365.4	10914
670-8373-C-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	365.4	10914

Lab Chronicle

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW01-20221027

Lab Sample ID: 670-8406-1

Date Collected: 10/27/22 13:50

Matrix: Water

Date Received: 10/28/22 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	10640	K1P	EET ORL	11/09/22 10:40
Total/NA	Prep	3511			599009	JTC	EET PEN	11/03/22 08:46
Total/NA	Analysis	8082A		1	599347	JAW	EET PEN	11/05/22 09:24
Total/NA	Analysis	300.0		1	9455	YS	EET ORL	10/29/22 22:52
Total/NA	Prep	537 IDA			315557	RC3V	ELLE	11/09/22 07:56
Total/NA	Analysis	QSM B15		1	315983	ZG8V	ELLE	11/11/22 05:41
Total/NA	Prep	537 IDA	RE		317594	RC3V	ELLE	11/15/22 08:16
Total/NA	Analysis	QSM B15	RE	1	318375	I5JH	ELLE	11/17/22 12:39
Total/NA	Prep	365.2/365.3/365			10914	CB	EET ORL	11/11/22 06:01
Total/NA	Analysis	365.4		1	11387	AT	EET ORL	11/15/22 11:19

Client Sample ID: GSRY-IDW02-20221027

Lab Sample ID: 670-8406-2

Date Collected: 10/27/22 13:52

Matrix: Water

Date Received: 10/28/22 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	10640	K1P	EET ORL	11/09/22 11:01
Total/NA	Prep	3511			599009	JTC	EET PEN	11/03/22 08:46
Total/NA	Analysis	8082A		1	599347	JAW	EET PEN	11/05/22 09:51
Total/NA	Analysis	300.0		1	9455	YS	EET ORL	10/29/22 23:09
Total/NA	Prep	537 IDA			315557	RC3V	ELLE	11/09/22 07:56
Total/NA	Analysis	QSM B15		1	315983	ZG8V	ELLE	11/11/22 06:13
Total/NA	Prep	537 IDA	RE		317594	RC3V	ELLE	11/15/22 08:16
Total/NA	Analysis	QSM B15	RE	1	318375	I5JH	ELLE	11/17/22 13:02
Total/NA	Prep	365.2/365.3/365			10916	CB	EET ORL	11/11/22 06:09
Total/NA	Analysis	365.4		1	11387	AT	EET ORL	11/15/22 11:29

Client Sample ID: GSRY-IDW03-20221027

Lab Sample ID: 670-8406-3

Date Collected: 10/27/22 14:05

Matrix: Water

Date Received: 10/28/22 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	10640	K1P	EET ORL	11/09/22 13:46
Total/NA	Prep	3511			599009	JTC	EET PEN	11/03/22 08:46
Total/NA	Analysis	8082A		1	599347	JAW	EET PEN	11/05/22 10:19
Total/NA	Analysis	300.0		1	9455	YS	EET ORL	10/29/22 23:25
Total/NA	Prep	537 IDA			315557	RC3V	ELLE	11/09/22 07:56
Total/NA	Analysis	QSM B15		1	315983	ZG8V	ELLE	11/11/22 06:23
Total/NA	Prep	537 IDA	RE		317594	RC3V	ELLE	11/15/22 08:16
Total/NA	Analysis	QSM B15	RE	1	318375	I5JH	ELLE	11/17/22 13:13
Total/NA	Prep	365.2/365.3/365			10916	CB	EET ORL	11/11/22 06:09
Total/NA	Analysis	365.4		1	11387	AT	EET ORL	11/15/22 11:30

Eurofins Orlando

Lab Chronicle

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW04-20221027

Lab Sample ID: 670-8406-4

Date Collected: 10/27/22 14:15

Matrix: Water

Date Received: 10/28/22 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	10640	K1P	EET ORL	11/09/22 14:07
Total/NA	Prep	3511			599009	JTC	EET PEN	11/03/22 08:46
Total/NA	Analysis	8082A		1	599347	JAW	EET PEN	11/05/22 10:47
Total/NA	Analysis	300.0		1	9455	YS	EET ORL	10/29/22 23:41
Total/NA	Prep	537 IDA			315557	RC3V	ELLE	11/09/22 07:56
Total/NA	Analysis	QSM B15		1	315983	ZG8V	ELLE	11/11/22 06:34
Total/NA	Prep	537 IDA	RE		317594	RC3V	ELLE	11/15/22 08:16
Total/NA	Analysis	QSM B15	RE	1	318375	I5JH	ELLE	11/17/22 13:24
Total/NA	Prep	365.2/365.3/365			10916	CB	EET ORL	11/11/22 06:09
Total/NA	Analysis	365.4		1	11387	AT	EET ORL	11/15/22 11:32

Client Sample ID: GSRY-IDW05-20221027

Lab Sample ID: 670-8406-5

Date Collected: 10/27/22 14:22

Matrix: Water

Date Received: 10/28/22 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	10640	K1P	EET ORL	11/09/22 14:28
Total/NA	Prep	3511			599009	JTC	EET PEN	11/03/22 08:46
Total/NA	Analysis	8082A		1	599347	JAW	EET PEN	11/05/22 11:15
Total/NA	Analysis	300.0		1	9455	YS	EET ORL	10/29/22 23:58
Total/NA	Prep	537 IDA			315557	RC3V	ELLE	11/09/22 07:56
Total/NA	Analysis	QSM B15		1	315983	ZG8V	ELLE	11/11/22 06:45
Total/NA	Prep	537 IDA	RE		317594	RC3V	ELLE	11/15/22 08:16
Total/NA	Analysis	QSM B15	RE	1	318375	I5JH	ELLE	11/17/22 13:35
Total/NA	Prep	365.2/365.3/365			10916	CB	EET ORL	11/11/22 06:09
Total/NA	Analysis	365.4		1	11387	AT	EET ORL	11/15/22 11:33

Client Sample ID: GSRY-IDW06-20221027

Lab Sample ID: 670-8406-6

Date Collected: 10/27/22 14:30

Matrix: Water

Date Received: 10/28/22 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	10640	K1P	EET ORL	11/09/22 14:48
Total/NA	Prep	3511			599009	JTC	EET PEN	11/03/22 08:46
Total/NA	Analysis	8082A		1	599347	JAW	EET PEN	11/05/22 11:43
Total/NA	Analysis	300.0		1	9455	YS	EET ORL	10/30/22 00:14
Total/NA	Prep	537 IDA			315557	RC3V	ELLE	11/09/22 07:56
Total/NA	Analysis	QSM B15		1	315983	ZG8V	ELLE	11/11/22 06:55
Total/NA	Prep	537 IDA	RE		317594	RC3V	ELLE	11/15/22 08:16
Total/NA	Analysis	QSM B15	RE	1	318375	I5JH	ELLE	11/17/22 13:46
Total/NA	Prep	365.2/365.3/365			10916	CB	EET ORL	11/11/22 06:09
Total/NA	Analysis	365.4		1	11387	AT	EET ORL	11/15/22 11:34

Eurofins Orlando

Lab Chronicle

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW07-20221027

Lab Sample ID: 670-8406-7

Date Collected: 10/27/22 14:38

Matrix: Water

Date Received: 10/28/22 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	10640	K1P	EET ORL	11/09/22 14:48
Total/NA	Prep	3511			599009	JTC	EET PEN	11/03/22 08:46
Total/NA	Analysis	8082A		1	599347	JAW	EET PEN	11/05/22 12:10
Total/NA	Analysis	300.0		1	9455	YS	EET ORL	10/30/22 00:30
Total/NA	Prep	537 IDA			315557	RC3V	ELLE	11/09/22 07:56
Total/NA	Analysis	QSM B15		1	315983	ZG8V	ELLE	11/11/22 07:06
Total/NA	Prep	537 IDA	RE		317594	RC3V	ELLE	11/15/22 08:16
Total/NA	Analysis	QSM B15	RE	1	318375	I5JH	ELLE	11/17/22 13:57
Total/NA	Prep	365.2/365.3/365			10916	CB	EET ORL	11/11/22 06:09
Total/NA	Analysis	365.4		1	11387	AT	EET ORL	11/15/22 11:35

Client Sample ID: GSRY-IDW08-20221027

Lab Sample ID: 670-8406-8

Date Collected: 10/27/22 14:45

Matrix: Water

Date Received: 10/28/22 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	10640	K1P	EET ORL	11/09/22 15:30
Total/NA	Prep	3511			599009	JTC	EET PEN	11/03/22 08:46
Total/NA	Analysis	8082A		1	599347	JAW	EET PEN	11/05/22 12:38
Total/NA	Analysis	300.0		1	9455	YS	EET ORL	10/30/22 02:09
Total/NA	Prep	537 IDA			315557	RC3V	ELLE	11/09/22 07:56
Total/NA	Analysis	QSM B15		1	315983	ZG8V	ELLE	11/11/22 07:16
Total/NA	Prep	537 IDA	RE		317594	RC3V	ELLE	11/15/22 08:16
Total/NA	Analysis	QSM B15	RE	1	318375	I5JH	ELLE	11/17/22 14:08
Total/NA	Prep	365.2/365.3/365			10916	CB	EET ORL	11/11/22 06:09
Total/NA	Analysis	365.4		1	11387	AT	EET ORL	11/15/22 11:36

Client Sample ID: GSRY-IDW09-20221027

Lab Sample ID: 670-8406-9

Date Collected: 10/27/22 14:52

Matrix: Water

Date Received: 10/28/22 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	10640	K1P	EET ORL	11/09/22 15:50
Total/NA	Prep	3511			599009	JTC	EET PEN	11/03/22 08:46
Total/NA	Analysis	8082A		1	599347	JAW	EET PEN	11/05/22 13:06
Total/NA	Analysis	300.0		1	9455	YS	EET ORL	10/30/22 02:25
Total/NA	Prep	537 IDA			315557	RC3V	ELLE	11/09/22 07:56
Total/NA	Analysis	QSM B15		1	315983	ZG8V	ELLE	11/11/22 07:27
Total/NA	Prep	537 IDA	RE		317594	RC3V	ELLE	11/15/22 08:16
Total/NA	Analysis	QSM B15	RE	1	318375	I5JH	ELLE	11/17/22 14:19
Total/NA	Prep	365.2/365.3/365			10916	CB	EET ORL	11/11/22 06:09
Total/NA	Analysis	365.4		1	11387	AT	EET ORL	11/15/22 11:37

Eurofins Orlando

Lab Chronicle

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Client Sample ID: GSRY-IDW10-20221027

Lab Sample ID: 670-8406-10

Date Collected: 10/27/22 15:00

Matrix: Water

Date Received: 10/28/22 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	10681	K1P	EET ORL	11/09/22 22:09
Total/NA	Analysis	8260B		2	10817	K1P	EET ORL	11/10/22 16:38
Total/NA	Prep	3511			599009	JTC	EET PEN	11/03/22 08:46
Total/NA	Analysis	8082A		1	599347	JAW	EET PEN	11/05/22 13:34
Total/NA	Analysis	300.0		1	9455	YS	EET ORL	10/30/22 02:41
Total/NA	Prep	537 IDA			315557	RC3V	ELLE	11/09/22 07:56
Total/NA	Analysis	QSM B15		1	315983	ZG8V	ELLE	11/11/22 07:38
Total/NA	Prep	537 IDA	RE		317594	RC3V	ELLE	11/15/22 08:16
Total/NA	Analysis	QSM B15	RE	1	318375	I5JH	ELLE	11/17/22 14:30
Total/NA	Prep	365.2/365.3/365			10916	CB	EET ORL	11/11/22 06:09
Total/NA	Analysis	365.4		1	11387	AT	EET ORL	11/15/22 15:49

Client Sample ID: GSRY-IDW11-20221028

Lab Sample ID: 670-8406-11

Date Collected: 10/28/22 12:15

Matrix: Water

Date Received: 10/28/22 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	10699	K1P	EET ORL	11/10/22 04:34
Total/NA	Prep	3511			599009	JTC	EET PEN	11/03/22 08:46
Total/NA	Analysis	8082A		1	599347	JAW	EET PEN	11/05/22 14:02
Total/NA	Analysis	300.0		1	9455	YS	EET ORL	10/30/22 02:58
Total/NA	Prep	537 IDA			315557	RC3V	ELLE	11/09/22 07:56
Total/NA	Analysis	QSM B15		1	315983	ZG8V	ELLE	11/11/22 07:48
Total/NA	Prep	537 IDA	RE		317594	RC3V	ELLE	11/15/22 08:16
Total/NA	Analysis	QSM B15	RE	1	318375	I5JH	ELLE	11/17/22 14:41
Total/NA	Prep	365.2/365.3/365			10916	CB	EET ORL	11/11/22 06:09
Total/NA	Analysis	365.4		1	11387	AT	EET ORL	11/15/22 15:50

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

EET PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Eurofins Orlando

Accreditation/Certification Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV IDW

Job ID: 670-8406-1

Laboratory: Eurofins Orlando

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E83018	06-30-23

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-20-22
A2LA	ISO/IEC 17025	0001.01	11-20-22
Alaska	State	PA00009	12-08-22
Alaska (UST)	State	17-027	02-28-23
Arizona	State	AZ0780	03-12-23
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	11-30-22
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-23
Delaware (DW)	State	N/A	01-31-23
Florida	NELAP	E87997	06-30-23
Georgia (DW)	State	C048	01-31-23
Hawaii	State	N/A	11-27-22
Illinois	NELAP	200027	01-31-23
Iowa	State	361	11-21-22
Kansas	NELAP	E-10151	10-31-22 *
Kentucky (DW)	State	KY90088	12-31-22
Kentucky (UST)	State	0001.01	11-20-22
Kentucky (WW)	State	KY90088	12-31-22
Louisiana (All)	NELAP	02055	06-30-23
Maine	State	2019012	03-12-23
Maryland	State	100	06-30-23
Massachusetts	State	M-PA009	06-30-23
Michigan	State	9930	01-31-23
Minnesota	NELAP	042-999-487	12-31-22
Mississippi	State	022	01-31-23
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-23
Montana (UST)	State	<cert No.>	02-01-23
Nebraska	State	NE-OS-32-17	01-31-23
New Hampshire	NELAP	2730	01-10-23
New Jersey	NELAP	PA011	06-30-23
New York	NELAP	10670	11-21-22
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	12-31-22
North Dakota	State	R-205	01-31-23
Oklahoma	NELAP	R-205	11-22-22
Oregon	NELAP	PA200001	09-11-23
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-23
Rhode Island	State	LAO00338	12-30-22
South Carolina	State	89002	01-31-23
Tennessee	State	02838	01-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Orlando

Accreditation/Certification Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704194-22-45	11-21-22
USDA	US Federal Programs	P330-19-00197	08-09-23
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	11-27-22
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-22
West Virginia DEP	State	055	07-31-23
Wyoming	State	8TMS-L	01-31-23
Wyoming (UST)	A2LA	0001.01	11-20-22

Laboratory: Eurofins Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alabama	State	40150	06-30-23
ANAB	ISO/IEC 17025	L2471	02-23-23
Arkansas DEQ	State	88-0689	09-01-23
California	State	2510	06-30-23
Florida	NELAP	E81010	06-30-23
Georgia	State	E81010(FL)	06-30-23
Illinois	NELAP	200041	10-09-23
Kansas	NELAP	E-10253	10-31-23
Kentucky (UST)	State	53	06-30-23
Kentucky (WW)	State	KY98030	12-31-22
Louisiana (All)	NELAP	30976	06-30-23
Louisiana (DW)	State	LA017	12-31-22
Maryland	State	233	09-30-23
Michigan	State	9912	06-30-23
North Carolina (WW/SW)	State	314	12-31-22
Oklahoma	NELAP	9810	08-31-23
Pennsylvania	NELAP	68-00467	01-31-23
South Carolina	State	96026	06-30-23
Tennessee	State	TN02907	06-30-23
Texas	NELAP	T104704286	09-30-23
US Fish & Wildlife	US Federal Programs	A22340	06-30-23
USDA	US Federal Programs	P330-21-00056	05-17-24
Virginia	NELAP	460166	06-14-23
West Virginia DEP	State	136	03-31-23

Eurofins Orlando

Method Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY IDW

Job ID: 670-8406-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET ORL
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET PEN
300.0	Anions, Ion Chromatography	MCAWW	EET ORL
QSM B15	PFAS for QSM 5.4, Table B-15	DOD 5.4	ELLE
365.4	Phosphorus, Total	EPA	EET ORL
3511	Microextraction of Organic Compounds	SW846	EET PEN
365.2/365.3/365	Phosphorus, Total	MCAWW	EET ORL
5030C	Purge and Trap	SW846	EET ORL
537 IDA	EPA 537 Isotope Dilution	EPA	ELLE

Protocol References:

DOD 5.4 = Department of Defense Quality Systems Manual V5.4

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

EET PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV IDW

Job ID: 670-8406-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
670-8406-1	GSRV-IDW01-20221027	Water	10/27/22 13:50	10/28/22 14:15
670-8406-2	GSRV-IDW02-20221027	Water	10/27/22 13:52	10/28/22 14:15
670-8406-3	GSRV-IDW03-20221027	Water	10/27/22 14:05	10/28/22 14:15
670-8406-4	GSRV-IDW04-20221027	Water	10/27/22 14:15	10/28/22 14:15
670-8406-5	GSRV-IDW05-20221027	Water	10/27/22 14:22	10/28/22 14:15
670-8406-6	GSRV-IDW06-20221027	Water	10/27/22 14:30	10/28/22 14:15
670-8406-7	GSRV-IDW07-20221027	Water	10/27/22 14:38	10/28/22 14:15
670-8406-8	GSRV-IDW08-20221027	Water	10/27/22 14:45	10/28/22 14:15
670-8406-9	GSRV-IDW09-20221027	Water	10/27/22 14:52	10/28/22 14:15
670-8406-10	GSRV-IDW10-20221027	Water	10/27/22 15:00	10/28/22 14:15
670-8406-11	GSRV-IDW11-20221028	Water	10/28/22 12:15	10/28/22 14:15



eurofins

Eurofins Orlando
481 Newburyport Avenue
Altamonte Springs, FL 32701
Phone: 407-339-5984 Fax: 407-260-6110

Chain of Custody Record

Client Information (Sub Contract Lab)				Lab PM: Dylnicki, Kaitlin	Carrier Tracking No(s): 670-1144.1
Client Contact: Shipping/Receiving				E-Mail: kattlin.dylnicki@eurofinsus.com	State of Origin: Florida
Company: Eurofins Environment Testing Southeast,				Phone: kattlin.dylnicki@eurofinsus.com	Page 1 of 2
Address: 33355 McLenore Drive,				Accreditations Required (See note): NELAP - Florida	Job #: 670-8406-1
City: Pensacola				Preservation Codes:	
State, Zip: FL, 32514				A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
Phone: 850-474-1001(Tel) 850-478-2671(Fax)				M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)	
Email: Project Name: NASAS KSC GSRV DW				Total Number of containers	
Site: NASAS KSC GSRV DW				Special Instructions/Note:	

Sample Identification - Client ID (Lab ID)				Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=soil, BT=tissue, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Analysis Requested										Total Number of containers
GSRV-IDW01-20221027 (670-8406-1)				10/27/22	13:50 Eastern	Water	Water	X	X											2
GSRV-IDW02-20221027 (670-8406-2)				10/27/22	13:52 Eastern	Water	Water	X	X											2
GSRV-IDW03-20221027 (670-8406-3)				10/27/22	14:05 Eastern	Water	Water	X	X											2
GSRV-IDW04-20221027 (670-8406-4)				10/27/22	14:15 Eastern	Water	Water	X	X											2
GSRV-IDW05-20221027 (670-8406-5)				10/27/22	14:22 Eastern	Water	Water	X	X											2
GSRV-IDW06-20221027 (670-8406-6)				10/27/22	14:30 Eastern	Water	Water	X	X											2
GSRV-IDW07-20221027 (670-8406-7)				10/27/22	14:38 Eastern	Water	Water	X	X											2
GSRV-IDW08-20221027 (670-8406-8)				10/27/22	14:45 Eastern	Water	Water	X	X											2
GSRV-IDW09-20221027 (670-8406-9)				10/27/22	14:52 Eastern	Water	Water	X	X											2

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southeast, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southeast, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southeast, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Southeast, LLC.

Possible Hazard Identification	
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) _____	
Primary Deliverable Rank: 2	
Special Instructions/QC Requirements:	

Empty Kit Relinquished by: _____		Date: _____	Time: _____	Method of Shipment: _____
Relinquished by: _____	Date/Time: 10/31	1300	Company	Received by: _____
Relinquished by: _____	Date/Time: _____	_____	Company	Received by: _____
Relinquished by: _____	Date/Time: _____	_____	Company	Received by: _____
Custody Seal No.: _____		Cooler Temperature(s) °C and Other Remarks: 4.4 IRB		

481 Newburyport Avenue
Altamonte Springs, FL 32701
Phone: 407-339-5984 Fax: 407-

Chain of Custody Record

eurofins

[illegible]

481 Newburyport Avenue
Altamonte Springs, FL 32701
Phone: 407-339-5984 Fax: 407-260-6110

Chain of Custody Record



Phone: 407-339-9884 Fax: 407-260-8110						Sampler:		Lab PM: Dylnicki, Kaitlin		Carrier Tracking No(s):		COC No: 670-1140.1												
Client Information (Sub Contract Lab)						Phone:		E-Mail: kaitlin.dylnicki@et.eurofinsus.com		State of Origin: Florida		Page: Page 1 of 2												
Client Contact: Shipping/Receiving																								
Company: Eurofins Lancaster Laboratories Environm								Accreditations Required (See note): NELAP - Florida				Job #: 670-8406-1												
Address: 2425 New Holland Pike,						Due Date Requested: 11/10/2022				Analysis Requested		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Y - Trizma Z - other (specify)												
City: Lancaster						TAT Requested (days):																		
State, Zip: PA, 17601																								
Phone: 717-656-2300(Tel)						PO #:																		
Email:						WO #:						Other:												
Project Name: NASA KSC GSRY IDW						Project #: 67000867																		
Site: NASA KSC GSRY IDW						SSOW#:																		
Sample Identification - Client ID (Lab ID)						Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, Or waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Pertform MS/MSD (Yes or No)	PFC DA DS J35353_PFC NASA KCS WS#15-2 DOD											Total Number of containers	Special Instructions/Note:
										X	X												X	
GSRY-IDW01-20221027 (670-8406-1)						10/27/22	13:50 Eastern		Water			X											2	
GSRY-IDW02-20221027 (670-8406-2)						10/27/22	13:52 Eastern		Water			X											2	
GSRY-IDW03-20221027 (670-8406-3)						10/27/22	14:05 Eastern		Water			X											2	
GSRY-IDW04-20221027 (670-8406-4)						10/27/22	14:15 Eastern		Water			X											2	
GSRY-IDW05-20221027 (670-8406-5)						10/27/22	14:22 Eastern		Water			X											2	
GSRY-IDW06-20221027 (670-8406-6)						10/27/22	14:30 Eastern		Water			X											2	
GSRY-IDW07-20221027 (670-8406-7)						10/27/22	14:38 Eastern		Water			X											2	
GSRY-IDW08-20221027 (670-8406-8)						10/27/22	14:45 Eastern		Water			X											2	
GSRY-IDW09-20221027 (670-8406-9)						10/27/22	14:52 Eastern		Water			X											2	
Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southeast, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southeast, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southeast, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Southeast, LLC.																								
Possible Hazard Identification										Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)														
Unconfirmed										☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months														
Deliverable Requested: I, II, III, IV, Other (specify)										Primary Deliverable Rank: 2														
										Special Instructions/QC Requirements:														
Empty Kit Relinquished by:						Date:		Time:		Method of Shipment:														
Relinquished by: <u>[Signature]</u>						Date/Time: <u>10/31 1200</u>		Company:		Received by: <u>[Signature]</u>														
Relinquished by:						Date/Time:		Company:		Received by:														
Relinquished by:						Date/Time:		Company:		Received by: <u>[Signature]</u>														
Cooler Temperature(s) °C and Other Remarks: <u>1.5</u>																								
Custody Seals Intact: <u>A Yes A No</u>						Custody Seal No.:																		

 eurofins

DA

Login Sample Receipt Checklist

Client: AECOM Technical Services Inc.

Job Number: 670-8406-1

Login Number: 8406

List Source: Eurofins Orlando

List Number: 1

Creator: Betancourt, Luis I

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: AECOM Technical Services Inc.

Job Number: 670-8406-1

Login Number: 8406

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 2

List Creation: 11/01/22 03:07 PM

Creator: Bryan, Debra A

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace $> 6\text{mm}$ in diameter (none, if from WV)?	N/A	

Login Sample Receipt Checklist

Client: AECOM Technical Services Inc.

Job Number: 670-8406-1

Login Number: 8406

List Number: 3

Creator: Perez, Trina M

List Source: Eurofins Pensacola

List Creation: 11/02/22 08:35 AM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.4°C IR-8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



ANALYTICAL REPORT

PREPARED FOR

Attn: Teresa Amentt Jennings
AECOM Technical Services Inc.
150 North Orange Avenue
Suite 200
Orlando, Florida 32801

Generated 12/6/2022 4:40:15 PM Revision 2

JOB DESCRIPTION

NASA KSC GSRV PCB VOC Area

JOB NUMBER

670-8411-1

Eurofins Orlando

Job Notes

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. This report may not be reproduced, except in full, without the written approval of the laboratory. Questions should be directed to the person who signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

Authorization



Authorized for release by
Kaitlin Dylnicki, Project Manager
kaitlin.dylnicki@et.eurofinsus.com
(407)339-5984

Generated
12/6/2022 4:40:15 PM
Revision 2

Table of Contents

Cover Page 1

Table of Contents 3

Definitions/Glossary 4

Case Narrative 6

Detection Summary 8

Client Sample Results 9

Surrogate Summary 13

QC Sample Results 15

QC Association Summary 23

Lab Chronicle 25

Certification Summary 27

Method Summary 28

Sample Summary 29

Chain of Custody 30

Receipt Checklists 34



Definitions/Glossary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-8411-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.
U	Indicates that the compound was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
J1	Estimated value; value may not be accurate. Surrogate recovery outside of criteria.
U	Indicates that the compound was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U	Indicates that the compound was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)

Eurofins Orlando

Definitions/Glossary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-8411-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Case Narrative

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-8411-1

Job ID: 670-8411-1

Laboratory: Eurofins Orlando

Narrative

Job Narrative 670-8411-1

Comments

No additional comments.

Revision

The report being provided is a revision of the original report sent on 11/28/2022. The report (revision 2) is being revised to update units reported for multiple analytes.

Report revision history

Revision 1 - 11/29/2022 - Reason - update the report to include quality control data that was not initially included..

Receipt

The samples were received on 10/29/2022 2:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 5.8° C.

GC/MS VOA

Method 8260B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 670-9926 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC

Method 300.0: The matrix spike duplicate (MSD) recovery for analytical batch 670-11876 was outside control limit; however, the matrix spike, %RPD, and the associated laboratory control sample (LCS) recovery were within acceptance limits. Data has been qualified and reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method 8082A: Two surrogates are used for this analysis. The laboratory's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following samples contained an allowable number of surrogate compounds outside limits: GSRV-MW0049-027.5-20221028 (670-8411-2), GSRV-MW0062-035.0-20221028 (670-8411-3) and GSRV-MW0063-019.0-20221028 (670-8411-4). These results have been reported and qualified.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 6010D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 670-10364 and analytical batch 670-10488 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

Case Narrative

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-8411-1

Job ID: 670-8411-1 (Continued)

Laboratory: Eurofins Orlando (Continued)

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Detection Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-8411-1

Client Sample ID: GSRY-MW0046R-003.0-20221028

Lab Sample ID: 670-8411-1

No Detections.

Client Sample ID: GSRY-MW0049-027.5-20221028

Lab Sample ID: 670-8411-2

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3-Trichlorobenzene	3.2		1.0	0.50	ug/L	1		8260B	Total/NA
o-Dichlorobenzene	7.2		1.0	0.50	ug/L	1		8260B	Total/NA
1,2,4-Trichlorobenzene - DL	180		5.0	2.5	ug/L	5		8260B	Total/NA
Chlorobenzene - DL	200		5.0	2.5	ug/L	5		8260B	Total/NA
para-Dichlorobenzene - DL	460		5.0	2.5	ug/L	5		8260B	Total/NA
m-Dichlorobenzene - DL2	1100		25	13	ug/L	25		8260B	Total/NA
Sulfate - DL	3100000		200000	100000	ug/L	40		300.0	Total/NA
Iron	19000		22	11	ug/L	1		6010D	Total
Manganese	84		22	11	ug/L	1		6010D	Recoverable Total
Sodium	1100000		11000	5600	ug/L	5		6010D	Recoverable Total
Total Dissolved Solids	210000		5000	5000	ug/L	1		SM 2540C	Recoverable Total/NA

Client Sample ID: GSRY-MW0062-035.0-20221028

Lab Sample ID: 670-8411-3

No Detections.

Client Sample ID: GSRY-MW0063-019.0--20221028

Lab Sample ID: 670-8411-4

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	18		1.0	0.50	ug/L	1		8260B	Total/NA
m-Dichlorobenzene	56		1.0	0.50	ug/L	1		8260B	Total/NA
o-Dichlorobenzene	0.75	I	1.0	0.50	ug/L	1		8260B	Total/NA
para-Dichlorobenzene	36		1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: GSRY-TB01-20221027

Lab Sample ID: 670-8411-5

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
m-Dichlorobenzene	0.93	I	1.0	0.50	ug/L	1		8260B	Total/NA
para-Dichlorobenzene	0.54	I	1.0	0.50	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-8411-1

Client Sample ID: GSRY-MW0046R-003.0-20221028

Lab Sample ID: 670-8411-1

Date Collected: 10/28/22 11:12

Matrix: Ground Water

Date Received: 10/29/22 14:15

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/31/22 22:32	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/31/22 22:32	1
Benzene	0.50	U	1.0	0.50	ug/L			10/31/22 22:32	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/31/22 22:32	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/31/22 22:32	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/31/22 22:32	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/31/22 22:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		10/31/22 22:32	1
4-Bromofluorobenzene (Surr)	94		80 - 120		10/31/22 22:32	1
Dibromofluoromethane (Surr)	104		80 - 120		10/31/22 22:32	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.35	U	0.45	0.35	ug/L		11/03/22 08:46	11/05/22 07:32	1
PCB-1221	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 07:32	1
PCB-1232	0.11	U	0.45	0.11	ug/L		11/03/22 08:46	11/05/22 07:32	1
PCB-1242	0.12	U	0.45	0.12	ug/L		11/03/22 08:46	11/05/22 07:32	1
PCB-1248	0.088	U	0.45	0.088	ug/L		11/03/22 08:46	11/05/22 07:32	1
PCB-1254	0.11	U	0.45	0.11	ug/L		11/03/22 08:46	11/05/22 07:32	1
PCB-1260	0.23	U	0.45	0.23	ug/L		11/03/22 08:46	11/05/22 07:32	1
Polychlorinated biphenyls, Total	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 07:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	60		50 - 150	11/03/22 08:46	11/05/22 07:32	1
Tetrachloro-m-xylene	85		50 - 150	11/03/22 08:46	11/05/22 07:32	1

Client Sample ID: GSRY-MW0049-027.5-20221028

Lab Sample ID: 670-8411-2

Date Collected: 10/28/22 09:17

Matrix: Ground Water

Date Received: 10/29/22 14:15

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	3.2		1.0	0.50	ug/L			10/31/22 22:49	1
Benzene	0.50	U	1.0	0.50	ug/L			10/31/22 22:49	1
o-Dichlorobenzene	7.2		1.0	0.50	ug/L			10/31/22 22:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		10/31/22 22:49	1
4-Bromofluorobenzene (Surr)	87		80 - 120		10/31/22 22:49	1
Dibromofluoromethane (Surr)	103		80 - 120		10/31/22 22:49	1

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	180		5.0	2.5	ug/L			11/03/22 02:36	5
Chlorobenzene	200		5.0	2.5	ug/L			11/03/22 02:36	5
para-Dichlorobenzene	460		5.0	2.5	ug/L			11/03/22 02:36	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 120		11/03/22 02:36	5

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-8411-1

Client Sample ID: GSRY-MW0049-027.5-20221028

Lab Sample ID: 670-8411-2

Date Collected: 10/28/22 09:17

Matrix: Ground Water

Date Received: 10/29/22 14:15

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) - DL (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		80 - 120		11/03/22 02:36	5
Dibromofluoromethane (Surr)	104		80 - 120		11/03/22 02:36	5

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) - DL2

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Dichlorobenzene	1100		25	13	ug/L			11/03/22 02:56	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		11/03/22 02:56	25
4-Bromofluorobenzene (Surr)	98		80 - 120		11/03/22 02:56	25
Dibromofluoromethane (Surr)	102		80 - 120		11/03/22 02:56	25

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.35	U	0.45	0.35	ug/L		11/03/22 08:46	11/05/22 08:00	1
PCB-1221	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 08:00	1
PCB-1232	0.11	U	0.45	0.11	ug/L		11/03/22 08:46	11/05/22 08:00	1
PCB-1242	0.12	U	0.45	0.12	ug/L		11/03/22 08:46	11/05/22 08:00	1
PCB-1248	0.089	U	0.45	0.089	ug/L		11/03/22 08:46	11/05/22 08:00	1
PCB-1254	0.11	U	0.45	0.11	ug/L		11/03/22 08:46	11/05/22 08:00	1
PCB-1260	0.23	U	0.45	0.23	ug/L		11/03/22 08:46	11/05/22 08:00	1
Polychlorinated biphenyls, Total	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 08:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	16	J1	50 - 150	11/03/22 08:46	11/05/22 08:00	1
Tetrachloro-m-xylene	88		50 - 150	11/03/22 08:46	11/05/22 08:00	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	310000		200000	100000	ug/L			11/24/22 20:13	40

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	19000		22	11	ug/L		11/07/22 09:25	11/07/22 17:31	1
Manganese	84		22	11	ug/L		11/07/22 09:25	11/07/22 17:31	1
Sodium	1100000		11000	5600	ug/L		11/07/22 09:25	11/08/22 12:51	5

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	210000		5000	5000	ug/L			11/03/22 10:42	1

Client Sample ID: GSRY-MW0062-035.0-20221028

Lab Sample ID: 670-8411-3

Date Collected: 10/28/22 08:48

Matrix: Ground Water

Date Received: 10/29/22 14:15

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/31/22 23:06	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/02/22 19:22	1
Benzene	0.50	U	1.0	0.50	ug/L			10/31/22 23:06	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/31/22 23:06	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-8411-1

Client Sample ID: GSRY-MW0062-035.0-20221028

Lab Sample ID: 670-8411-3

Date Collected: 10/28/22 08:48

Matrix: Ground Water

Date Received: 10/29/22 14:15

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/02/22 19:22	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/31/22 23:06	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/02/22 19:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		10/31/22 23:06	1
Toluene-d8 (Surr)	101		80 - 120		11/02/22 19:22	1
4-Bromofluorobenzene (Surr)	98		80 - 120		10/31/22 23:06	1
4-Bromofluorobenzene (Surr)	101		80 - 120		11/02/22 19:22	1
Dibromofluoromethane (Surr)	102		80 - 120		10/31/22 23:06	1
Dibromofluoromethane (Surr)	103		80 - 120		11/02/22 19:22	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.35	U	0.45	0.35	ug/L		11/03/22 08:46	11/05/22 08:28	1
PCB-1221	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 08:28	1
PCB-1232	0.11	U	0.45	0.11	ug/L		11/03/22 08:46	11/05/22 08:28	1
PCB-1242	0.12	U	0.45	0.12	ug/L		11/03/22 08:46	11/05/22 08:28	1
PCB-1248	0.088	U	0.45	0.088	ug/L		11/03/22 08:46	11/05/22 08:28	1
PCB-1254	0.11	U	0.45	0.11	ug/L		11/03/22 08:46	11/05/22 08:28	1
PCB-1260	0.23	U	0.45	0.23	ug/L		11/03/22 08:46	11/05/22 08:28	1
Polychlorinated biphenyls, Total	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 08:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	35	J1	50 - 150	11/03/22 08:46	11/05/22 08:28	1
Tetrachloro-m-xylene	98		50 - 150	11/03/22 08:46	11/05/22 08:28	1

Client Sample ID: GSRY-MW0063-019.0--20221028

Lab Sample ID: 670-8411-4

Date Collected: 10/28/22 10:20

Matrix: Ground Water

Date Received: 10/29/22 14:15

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/31/22 23:23	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/02/22 19:39	1
Benzene	0.50	U	1.0	0.50	ug/L			10/31/22 23:23	1
Chlorobenzene	18		1.0	0.50	ug/L			10/31/22 23:23	1
m-Dichlorobenzene	56		1.0	0.50	ug/L			10/31/22 23:23	1
o-Dichlorobenzene	0.75	I	1.0	0.50	ug/L			10/31/22 23:23	1
para-Dichlorobenzene	36		1.0	0.50	ug/L			10/31/22 23:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		10/31/22 23:23	1
Toluene-d8 (Surr)	101		80 - 120		11/02/22 19:39	1
4-Bromofluorobenzene (Surr)	94		80 - 120		10/31/22 23:23	1
4-Bromofluorobenzene (Surr)	97		80 - 120		11/02/22 19:39	1
Dibromofluoromethane (Surr)	106		80 - 120		10/31/22 23:23	1
Dibromofluoromethane (Surr)	103		80 - 120		11/02/22 19:39	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-8411-1

Client Sample ID: GSRV-MW0063-019.0--20221028

Lab Sample ID: 670-8411-4

Date Collected: 10/28/22 10:20

Matrix: Ground Water

Date Received: 10/29/22 14:15

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.35	U	0.45	0.35	ug/L		11/03/22 08:46	11/05/22 08:56	1
PCB-1221	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 08:56	1
PCB-1232	0.11	U	0.45	0.11	ug/L		11/03/22 08:46	11/05/22 08:56	1
PCB-1242	0.12	U	0.45	0.12	ug/L		11/03/22 08:46	11/05/22 08:56	1
PCB-1248	0.088	U	0.45	0.088	ug/L		11/03/22 08:46	11/05/22 08:56	1
PCB-1254	0.11	U	0.45	0.11	ug/L		11/03/22 08:46	11/05/22 08:56	1
PCB-1260	0.22	U	0.45	0.22	ug/L		11/03/22 08:46	11/05/22 08:56	1
Polychlorinated biphenyls, Total	0.14	U	0.45	0.14	ug/L		11/03/22 08:46	11/05/22 08:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	15	J1	50 - 150				11/03/22 08:46	11/05/22 08:56	1
Tetrachloro-m-xylene	93		50 - 150				11/03/22 08:46	11/05/22 08:56	1

Client Sample ID: GSRV-TB01-20221027

Lab Sample ID: 670-8411-5

Date Collected: 10/27/22 08:00

Matrix: Ground Water

Date Received: 10/29/22 14:15

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/31/22 23:40	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/31/22 23:40	1
Benzene	0.50	U	1.0	0.50	ug/L			10/31/22 23:40	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/31/22 23:40	1
m-Dichlorobenzene	0.93	I	1.0	0.50	ug/L			10/31/22 23:40	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/31/22 23:40	1
para-Dichlorobenzene	0.54	I	1.0	0.50	ug/L			10/31/22 23:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120					10/31/22 23:40	1
4-Bromofluorobenzene (Surr)	92		80 - 120					10/31/22 23:40	1
Dibromofluoromethane (Surr)	105		80 - 120					10/31/22 23:40	1

Eurofins Orlando

Surrogate Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-8411-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Ground Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		TOL (80-120)	BFB (80-120)	DBFM (80-120)
670-8411-1	GSRV-MW0046R-003.0-202210	101	94	104
670-8411-2	GSRV-MW0049-027.5-202210	101	87	103
670-8411-2 - DL	GSRV-MW0049-027.5-202210	103	91	104
670-8411-2 - DL2	GSRV-MW0049-027.5-202210	100	98	102
670-8411-3	GSRV-MW0062-035.0-202210	100	98	102
670-8411-3	GSRV-MW0062-035.0-202210	101	101	103
670-8411-4	GSRV-MW0063-019.0-202210	101	94	106
670-8411-4	GSRV-MW0063-019.0-202210	101	97	103
670-8411-5	GSRV-TB01-20221027	101	92	105
670-8411-5 MS	GSRV-TB01-20221027	102	96	106
670-8411-5 MSD	GSRV-TB01-20221027	102	92	102
Surrogate Legend				
TOL = Toluene-d8 (Surr)				
BFB = 4-Bromofluorobenzene (Surr)				
DBFM = Dibromofluoromethane (Surr)				

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		TOL (80-120)	BFB (80-120)	DBFM (80-120)
670-7789-B-1 MS	Matrix Spike	103	97	101
670-7789-B-1 MSD	Matrix Spike Duplicate	100	99	101
670-8330-E-2 MS	Matrix Spike	100	101	101
670-8330-E-2 MSD	Matrix Spike Duplicate	101	98	104
LCS 670-9627/4	Lab Control Sample	101	94	103
LCS 670-9878/4	Lab Control Sample	101	100	102
LCS 670-9926/4	Lab Control Sample	101	88	100
MB 670-9627/6	Method Blank	101	95	105
MB 670-9878/6	Method Blank	98	82	101
MB 670-9926/6	Method Blank	100	100	103
Surrogate Legend				
TOL = Toluene-d8 (Surr)				
BFB = 4-Bromofluorobenzene (Surr)				
DBFM = Dibromofluoromethane (Surr)				

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Ground Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		DCBP1 (50-150)	TCX1 (50-150)
670-8411-1	GSRV-MW0046R-003.0-202210	60	85

Eurofins Orlando

Surrogate Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-8411-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Matrix: Ground Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCBP1 (50-150)	TCX1 (50-150)
670-8411-2	GSRY-MW0049-027.5-2022102	16 J1	88
670-8411-3	GSRY-MW0062-035.0-202210 28	35 J1	98
670-8411-4	GSRY-MW0063-019.0--202210 28	15 J1	93

Surrogate Legend

DCBP = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCBP1 (50-150)	TCX1 (50-150)
LCS 400-599009/2-A	Lab Control Sample	87	85
LCSD 400-599009/3-A	Lab Control Sample Dup	78	92
MB 400-599009/1-A	Method Blank	79	76

Surrogate Legend

DCBP = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-8411-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 670-9627/6

Matrix: Water

Analysis Batch: 9627

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/31/22 21:57	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/31/22 21:57	1
Benzene	0.50	U	1.0	0.50	ug/L			10/31/22 21:57	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/31/22 21:57	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/31/22 21:57	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/31/22 21:57	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/31/22 21:57	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		10/31/22 21:57	1
4-Bromofluorobenzene (Surr)	95		80 - 120		10/31/22 21:57	1
Dibromofluoromethane (Surr)	105		80 - 120		10/31/22 21:57	1

Lab Sample ID: LCS 670-9627/4

Matrix: Water

Analysis Batch: 9627

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichlorobenzene	20.0	20.3		ug/L		102	50 - 150
1,2,4-Trichlorobenzene	20.0	21.0		ug/L		105	50 - 150
Benzene	20.0	22.1		ug/L		110	50 - 150
Chlorobenzene	20.0	22.3		ug/L		112	50 - 150
m-Dichlorobenzene	20.0	22.8		ug/L		114	50 - 150
o-Dichlorobenzene	20.0	22.9		ug/L		115	50 - 150
para-Dichlorobenzene	20.0	22.6		ug/L		113	50 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	94		80 - 120
Dibromofluoromethane (Surr)	103		80 - 120

Lab Sample ID: 670-8411-5 MS

Matrix: Ground Water

Analysis Batch: 9627

Client Sample ID: GSRV-TB01-20221027

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichlorobenzene	0.50	U	10.0	7.95		ug/L		80	50 - 150
1,2,4-Trichlorobenzene	0.50	U	10.0	8.50		ug/L		85	50 - 150
Benzene	0.50	U	10.0	9.11		ug/L		91	50 - 150
Chlorobenzene	0.50	U	10.0	8.98		ug/L		90	50 - 150
m-Dichlorobenzene	0.93	I	10.0	9.35		ug/L		84	50 - 150
o-Dichlorobenzene	0.50	U	10.0	8.91		ug/L		89	50 - 150
para-Dichlorobenzene	0.54	I	10.0	9.36		ug/L		88	50 - 150

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 120
4-Bromofluorobenzene (Surr)	96		80 - 120

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-8411-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 670-8411-5 MS

Matrix: Ground Water

Analysis Batch: 9627

Client Sample ID: GSRV-TB01-20221027

Prep Type: Total/NA

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	106		80 - 120

Lab Sample ID: 670-8411-5 MSD

Matrix: Ground Water

Analysis Batch: 9627

Client Sample ID: GSRV-TB01-20221027

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,3-Trichlorobenzene	0.50	U	10.0	9.77		ug/L		98	50 - 150	21	30
1,2,4-Trichlorobenzene	0.50	U	10.0	10.7		ug/L		107	50 - 150	23	30
Benzene	0.50	U	10.0	11.7		ug/L		117	50 - 150	25	30
Chlorobenzene	0.50	U	10.0	11.6		ug/L		116	50 - 150	26	30
m-Dichlorobenzene	0.93	I	10.0	11.6		ug/L		107	50 - 150	22	30
o-Dichlorobenzene	0.50	U	10.0	11.2		ug/L		112	50 - 150	23	30
para-Dichlorobenzene	0.54	I	10.0	11.4		ug/L		109	50 - 150	20	30

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 120
4-Bromofluorobenzene (Surr)	92		80 - 120
Dibromofluoromethane (Surr)	102		80 - 120

Lab Sample ID: MB 670-9878/6

Matrix: Water

Analysis Batch: 9878

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/02/22 14:51	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/02/22 14:51	1
Benzene	0.50	U	1.0	0.50	ug/L			11/02/22 14:51	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			11/02/22 14:51	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/02/22 14:51	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/02/22 14:51	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/02/22 14:51	1

	MB	MB							
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Toluene-d8 (Surr)	98		80 - 120		11/02/22 14:51	1			
4-Bromofluorobenzene (Surr)	82		80 - 120		11/02/22 14:51	1			
Dibromofluoromethane (Surr)	101		80 - 120		11/02/22 14:51	1			

Lab Sample ID: LCS 670-9878/4

Matrix: Water

Analysis Batch: 9878

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichlorobenzene	20.0	19.0		ug/L		95	50 - 150
1,2,4-Trichlorobenzene	20.0	21.6		ug/L		108	50 - 150
Benzene	20.0	20.3		ug/L		101	50 - 150
Chlorobenzene	20.0	20.4		ug/L		102	50 - 150
m-Dichlorobenzene	20.0	20.9		ug/L		104	50 - 150

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-8411-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 670-9878/4

Matrix: Water

Analysis Batch: 9878

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
o-Dichlorobenzene	20.0	21.0		ug/L		105	50 - 150
para-Dichlorobenzene	20.0	20.8		ug/L		104	50 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	102		80 - 120

Lab Sample ID: 670-7789-B-1 MS

Matrix: Water

Analysis Batch: 9878

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichlorobenzene	0.50	U	20.0	20.9		ug/L		104	50 - 150
1,2,4-Trichlorobenzene	0.50	U	20.0	22.3		ug/L		112	50 - 150
Benzene	0.50	U	20.0	22.0		ug/L		110	50 - 150
Chlorobenzene	3.6		20.0	25.3		ug/L		108	50 - 150
m-Dichlorobenzene	0.50	U	20.0	22.5		ug/L		112	50 - 150
o-Dichlorobenzene	0.50	U	20.0	22.9		ug/L		114	50 - 150
para-Dichlorobenzene	0.50	U	20.0	22.3		ug/L		112	50 - 150

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	103		80 - 120
4-Bromofluorobenzene (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120

Lab Sample ID: 670-7789-B-1 MSD

Matrix: Water

Analysis Batch: 9878

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,3-Trichlorobenzene	0.50	U	20.0	20.5		ug/L		103	50 - 150	2	30
1,2,4-Trichlorobenzene	0.50	U	20.0	22.8		ug/L		114	50 - 150	2	30
Benzene	0.50	U	20.0	21.1		ug/L		106	50 - 150	4	30
Chlorobenzene	3.6		20.0	24.2		ug/L		103	50 - 150	4	30
m-Dichlorobenzene	0.50	U	20.0	22.0		ug/L		110	50 - 150	2	30
o-Dichlorobenzene	0.50	U	20.0	22.7		ug/L		113	50 - 150	1	30
para-Dichlorobenzene	0.50	U	20.0	21.8		ug/L		109	50 - 150	2	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-8411-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 670-9926/6

Matrix: Water

Analysis Batch: 9926

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/02/22 23:52	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/02/22 23:52	1
Benzene	0.50	U	1.0	0.50	ug/L			11/02/22 23:52	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			11/02/22 23:52	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/02/22 23:52	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/02/22 23:52	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/02/22 23:52	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120					11/02/22 23:52	1
4-Bromofluorobenzene (Surr)	100		80 - 120					11/02/22 23:52	1
Dibromofluoromethane (Surr)	103		80 - 120					11/02/22 23:52	1

Lab Sample ID: LCS 670-9926/4

Matrix: Water

Analysis Batch: 9926

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichlorobenzene	20.0	18.4		ug/L		92	50 - 150
1,2,4-Trichlorobenzene	20.0	20.6		ug/L		103	50 - 150
Benzene	20.0	20.4		ug/L		102	50 - 150
Chlorobenzene	20.0	21.3		ug/L		106	50 - 150
m-Dichlorobenzene	20.0	20.8		ug/L		104	50 - 150
o-Dichlorobenzene	20.0	21.3		ug/L		107	50 - 150
para-Dichlorobenzene	20.0	20.8		ug/L		104	50 - 150
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
Toluene-d8 (Surr)	101		80 - 120				
4-Bromofluorobenzene (Surr)	88		80 - 120				
Dibromofluoromethane (Surr)	100		80 - 120				

Lab Sample ID: 670-8330-E-2 MS

Matrix: Water

Analysis Batch: 9926

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichlorobenzene	0.50	U	20.0	3.56	J3	ug/L		18	50 - 150
1,2,4-Trichlorobenzene	0.50	U	20.0	4.04	J3	ug/L		20	50 - 150
Benzene	0.50	U	20.0	4.47	J3	ug/L		22	50 - 150
Chlorobenzene	0.50	U	20.0	4.32	J3	ug/L		22	50 - 150
m-Dichlorobenzene	0.50	U	20.0	4.41	J3	ug/L		22	50 - 150
o-Dichlorobenzene	0.50	U	20.0	4.47	J3	ug/L		22	50 - 150
para-Dichlorobenzene	0.50	U	20.0	4.29	J3	ug/L		21	50 - 150
Surrogate	MS %Recovery	MS Qualifier	Limits						
Toluene-d8 (Surr)	100		80 - 120						
4-Bromofluorobenzene (Surr)	101		80 - 120						

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-8411-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 670-8330-E-2 MS

Matrix: Water

Analysis Batch: 9926

Client Sample ID: Matrix Spike

Prep Type: Total/NA

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	101		80 - 120

Lab Sample ID: 670-8330-E-2 MSD

Matrix: Water

Analysis Batch: 9926

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,3-Trichlorobenzene	0.50	U	20.0	10.3	J3	ug/L		51	50 - 150	97	30
1,2,4-Trichlorobenzene	0.50	U	20.0	11.6	J3	ug/L		58	50 - 150	97	30
Benzene	0.50	U	20.0	14.0	J3	ug/L		70	50 - 150	103	30
Chlorobenzene	0.50	U	20.0	13.0	J3	ug/L		65	50 - 150	100	30
m-Dichlorobenzene	0.50	U	20.0	12.3	J3	ug/L		62	50 - 150	95	30
o-Dichlorobenzene	0.50	U	20.0	12.6	J3	ug/L		63	50 - 150	95	30
para-Dichlorobenzene	0.50	U	20.0	12.3	J3	ug/L		62	50 - 150	97	30

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	104		80 - 120

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 400-599009/1-A

Matrix: Water

Analysis Batch: 599347

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 599009

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.39	U	0.50	0.39	ug/L		11/03/22 08:46	11/05/22 06:09	1
PCB-1221	0.16	U	0.50	0.16	ug/L		11/03/22 08:46	11/05/22 06:09	1
PCB-1232	0.13	U	0.50	0.13	ug/L		11/03/22 08:46	11/05/22 06:09	1
PCB-1242	0.14	U	0.50	0.14	ug/L		11/03/22 08:46	11/05/22 06:09	1
PCB-1248	0.098	U	0.50	0.098	ug/L		11/03/22 08:46	11/05/22 06:09	1
PCB-1254	0.12	U	0.50	0.12	ug/L		11/03/22 08:46	11/05/22 06:09	1
PCB-1260	0.25	U	0.50	0.25	ug/L		11/03/22 08:46	11/05/22 06:09	1
Polychlorinated biphenyls, Total	0.16	U	0.50	0.16	ug/L		11/03/22 08:46	11/05/22 06:09	1

	MB	MB				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	79		50 - 150	11/03/22 08:46	11/05/22 06:09	1
Tetrachloro-m-xylene	76		50 - 150	11/03/22 08:46	11/05/22 06:09	1

Lab Sample ID: LCS 400-599009/2-A

Matrix: Water

Analysis Batch: 599347

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 599009

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
PCB-1016	5.05	4.69		ug/L		93	41 - 150
PCB-1260	5.03	4.65		ug/L		92	31 - 150

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-8411-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 400-599009/2-A

Matrix: Water

Analysis Batch: 599347

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 599009

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
DCB Decachlorobiphenyl	87		50 - 150
Tetrachloro-m-xylene	85		50 - 150

Lab Sample ID: LCSD 400-599009/3-A

Matrix: Water

Analysis Batch: 599347

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 599009

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1016	5.05	4.35		ug/L		86	41 - 150	8	30
PCB-1260	5.03	4.25		ug/L		85	31 - 150	9	30

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
DCB Decachlorobiphenyl	78		50 - 150
Tetrachloro-m-xylene	92		50 - 150

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 670-12299/185

Matrix: Water

Analysis Batch: 12299

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2500	U	5000	2500	ug/L			11/24/22 17:29	1

Lab Sample ID: LCS 670-12299/186

Matrix: Water

Analysis Batch: 12299

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	4000	3910	I	ug/L		98	90 - 110

Lab Sample ID: LCSD 670-12299/187

Matrix: Water

Analysis Batch: 12299

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	4000	4040	I	ug/L		101	90 - 110	3	20

Lab Sample ID: 660-124709-F-1 MS

Matrix: Water

Analysis Batch: 12299

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	2500	U	5000	5070		ug/L		101	80 - 120

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-8411-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 660-124709-F-1 MSD

Matrix: Water

Analysis Batch: 12299

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	2500	U	5000	5210		ug/L		104	80 - 120	3	20

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 670-10364/3-A

Matrix: Water

Analysis Batch: 10488

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 10364

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	10	U	20	10	ug/L		11/07/22 09:25	11/07/22 17:17	1
Manganese	10	U	20	10	ug/L		11/07/22 09:25	11/07/22 17:17	1
Sodium	1000	U	2000	1000	ug/L		11/07/22 09:25	11/07/22 17:17	1

Lab Sample ID: LCS 670-10364/1-A

Matrix: Water

Analysis Batch: 10488

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 10364

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	10000	10300		ug/L		103	80 - 120
Manganese	10000	9660		ug/L		97	80 - 120
Sodium	10000	11200		ug/L		112	80 - 120

Lab Sample ID: LCSD 670-10364/2-A

Matrix: Water

Analysis Batch: 10488

Client Sample ID: Lab Control Sample Dup

Prep Type: Total Recoverable

Prep Batch: 10364

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Iron	10000	10300		ug/L		103	80 - 120	0	20
Manganese	10000	9540		ug/L		95	80 - 120	1	20
Sodium	10000	11100		ug/L		111	80 - 120	1	20

Lab Sample ID: 670-8923-A-1-A MS

Matrix: Water

Analysis Batch: 10488

Client Sample ID: Matrix Spike

Prep Type: Total Recoverable

Prep Batch: 10364

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	0.00744		11100	3610		ug/L		32	70 - 120
Manganese	0.000889		11100	3460		ug/L		31	70 - 120
Sodium	4.49		11100	8330		ug/L		35	70 - 120

Lab Sample ID: 670-8923-A-1-B MSD

Matrix: Water

Analysis Batch: 10488

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total Recoverable

Prep Batch: 10364

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Iron	0.00744		11100	6240		ug/L		56	70 - 120	53	20
Manganese	0.000889		11100	5900		ug/L		53	70 - 120	52	20
Sodium	4.49		11100	14400		ug/L		89	70 - 120	53	20

Eurofins Orlando

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-8411-1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 670-10002/1

Matrix: Water

Analysis Batch: 10002

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	5000	U	5000	5000	ug/L			11/03/22 10:42	1

Lab Sample ID: LCS 670-10002/2

Matrix: Water

Analysis Batch: 10002

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1500000	1490000		ug/L		99	80 - 120

Lab Sample ID: 670-8304-B-1 DU

Matrix: Water

Analysis Batch: 10002

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	280000		276000		ug/L		0	20

QC Association Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-8411-1

GC/MS VOA

Analysis Batch: 9627

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8411-1	GSRV-MW0046R-003.0-20221028	Total/NA	Ground Water	8260B	
670-8411-2	GSRV-MW0049-027.5-20221028	Total/NA	Ground Water	8260B	
670-8411-3	GSRV-MW0062-035.0-20221028	Total/NA	Ground Water	8260B	
670-8411-4	GSRV-MW0063-019.0--20221028	Total/NA	Ground Water	8260B	
670-8411-5	GSRV-TB01-20221027	Total/NA	Ground Water	8260B	
MB 670-9627/6	Method Blank	Total/NA	Water	8260B	
LCS 670-9627/4	Lab Control Sample	Total/NA	Water	8260B	
670-8411-5 MS	GSRV-TB01-20221027	Total/NA	Ground Water	8260B	
670-8411-5 MSD	GSRV-TB01-20221027	Total/NA	Ground Water	8260B	

Analysis Batch: 9878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8411-3	GSRV-MW0062-035.0-20221028	Total/NA	Ground Water	8260B	
670-8411-4	GSRV-MW0063-019.0--20221028	Total/NA	Ground Water	8260B	
MB 670-9878/6	Method Blank	Total/NA	Water	8260B	
LCS 670-9878/4	Lab Control Sample	Total/NA	Water	8260B	
670-7789-B-1 MS	Matrix Spike	Total/NA	Water	8260B	
670-7789-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 9926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8411-2 - DL	GSRV-MW0049-027.5-20221028	Total/NA	Ground Water	8260B	
670-8411-2 - DL2	GSRV-MW0049-027.5-20221028	Total/NA	Ground Water	8260B	
MB 670-9926/6	Method Blank	Total/NA	Water	8260B	
LCS 670-9926/4	Lab Control Sample	Total/NA	Water	8260B	
670-8330-E-2 MS	Matrix Spike	Total/NA	Water	8260B	
670-8330-E-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

GC Semi VOA

Prep Batch: 599009

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8411-1	GSRV-MW0046R-003.0-20221028	Total/NA	Ground Water	3511	
670-8411-2	GSRV-MW0049-027.5-20221028	Total/NA	Ground Water	3511	
670-8411-3	GSRV-MW0062-035.0-20221028	Total/NA	Ground Water	3511	
670-8411-4	GSRV-MW0063-019.0--20221028	Total/NA	Ground Water	3511	
MB 400-599009/1-A	Method Blank	Total/NA	Water	3511	
LCS 400-599009/2-A	Lab Control Sample	Total/NA	Water	3511	
LCSD 400-599009/3-A	Lab Control Sample Dup	Total/NA	Water	3511	

Analysis Batch: 599347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8411-1	GSRV-MW0046R-003.0-20221028	Total/NA	Ground Water	8082A	599009
670-8411-2	GSRV-MW0049-027.5-20221028	Total/NA	Ground Water	8082A	599009
670-8411-3	GSRV-MW0062-035.0-20221028	Total/NA	Ground Water	8082A	599009
670-8411-4	GSRV-MW0063-019.0--20221028	Total/NA	Ground Water	8082A	599009
MB 400-599009/1-A	Method Blank	Total/NA	Water	8082A	599009
LCS 400-599009/2-A	Lab Control Sample	Total/NA	Water	8082A	599009
LCSD 400-599009/3-A	Lab Control Sample Dup	Total/NA	Water	8082A	599009

Eurofins Orlando

QC Association Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-8411-1

HPLC/IC

Analysis Batch: 12299

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8411-2 - DL	GSRY-MW0049-027.5-20221028	Total/NA	Ground Water	300.0	
MB 670-12299/185	Method Blank	Total/NA	Water	300.0	
LCS 670-12299/186	Lab Control Sample	Total/NA	Water	300.0	
LCSD 670-12299/187	Lab Control Sample Dup	Total/NA	Water	300.0	
660-124709-F-1 MS	Matrix Spike	Total/NA	Water	300.0	
660-124709-F-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Metals

Prep Batch: 10364

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8411-2	GSRY-MW0049-027.5-20221028	Total Recoverable	Ground Water	3005A	
MB 670-10364/3-A	Method Blank	Total Recoverable	Water	3005A	
LCS 670-10364/1-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 670-10364/2-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	
670-8923-A-1-A MS	Matrix Spike	Total Recoverable	Water	3005A	
670-8923-A-1-B MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 10488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8411-2	GSRY-MW0049-027.5-20221028	Total Recoverable	Ground Water	6010D	10364
MB 670-10364/3-A	Method Blank	Total Recoverable	Water	6010D	10364
LCS 670-10364/1-A	Lab Control Sample	Total Recoverable	Water	6010D	10364
LCSD 670-10364/2-A	Lab Control Sample Dup	Total Recoverable	Water	6010D	10364
670-8923-A-1-A MS	Matrix Spike	Total Recoverable	Water	6010D	10364
670-8923-A-1-B MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010D	10364

Analysis Batch: 10660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8411-2	GSRY-MW0049-027.5-20221028	Total Recoverable	Ground Water	6010D	10364

General Chemistry

Analysis Batch: 10002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-8411-2	GSRY-MW0049-027.5-20221028	Total/NA	Ground Water	SM 2540C	
MB 670-10002/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 670-10002/2	Lab Control Sample	Total/NA	Water	SM 2540C	
670-8304-B-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-8411-1

Client Sample ID: GSRY-MW0046R-003.0-20221028

Lab Sample ID: 670-8411-1

Date Collected: 10/28/22 11:12

Matrix: Ground Water

Date Received: 10/29/22 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	9627	K1P	EET ORL	10/31/22 22:32
Total/NA	Prep	3511			599009	JTC	EET PEN	11/03/22 08:46
Total/NA	Analysis	8082A		1	599347	JAW	EET PEN	11/05/22 07:32

Client Sample ID: GSRY-MW0049-027.5-20221028

Lab Sample ID: 670-8411-2

Date Collected: 10/28/22 09:17

Matrix: Ground Water

Date Received: 10/29/22 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	9627	K1P	EET ORL	10/31/22 22:49
Total/NA	Analysis	8260B	DL	5	9926	K1P	EET ORL	11/03/22 02:36
Total/NA	Analysis	8260B	DL2	25	9926	K1P	EET ORL	11/03/22 02:56
Total/NA	Prep	3511			599009	JTC	EET PEN	11/03/22 08:46
Total/NA	Analysis	8082A		1	599347	JAW	EET PEN	11/05/22 08:00
Total/NA	Analysis	300.0	DL	40	12299	UT	EET ORL	11/24/22 20:13
Total Recoverable	Prep	3005A			10364	JR	EET ORL	11/07/22 09:25
Total Recoverable	Analysis	6010D		1	10488	NB	EET ORL	11/07/22 17:31
Total Recoverable	Prep	3005A			10364	JR	EET ORL	11/07/22 09:25
Total Recoverable	Analysis	6010D		5	10660	NB	EET ORL	11/08/22 12:51
Total/NA	Analysis	SM 2540C		1	10002	IF	EET ORL	11/03/22 10:42

Client Sample ID: GSRY-MW0062-035.0-20221028

Lab Sample ID: 670-8411-3

Date Collected: 10/28/22 08:48

Matrix: Ground Water

Date Received: 10/29/22 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	9627	K1P	EET ORL	10/31/22 23:06
Total/NA	Analysis	8260B		1	9878	K1P	EET ORL	11/02/22 19:22
Total/NA	Prep	3511			599009	JTC	EET PEN	11/03/22 08:46
Total/NA	Analysis	8082A		1	599347	JAW	EET PEN	11/05/22 08:28

Client Sample ID: GSRY-MW0063-019.0--20221028

Lab Sample ID: 670-8411-4

Date Collected: 10/28/22 10:20

Matrix: Ground Water

Date Received: 10/29/22 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	9627	K1P	EET ORL	10/31/22 23:23
Total/NA	Analysis	8260B		1	9878	K1P	EET ORL	11/02/22 19:39
Total/NA	Prep	3511			599009	JTC	EET PEN	11/03/22 08:46
Total/NA	Analysis	8082A		1	599347	JAW	EET PEN	11/05/22 08:56

Eurofins Orlando

Lab Chronicle

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-8411-1

Client Sample ID: GSRY-TB01-20221027

Lab Sample ID: 670-8411-5

Date Collected: 10/27/22 08:00

Matrix: Ground Water

Date Received: 10/29/22 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	9627	K1P	EET ORL	10/31/22 23:40

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

EET PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Accreditation/Certification Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-8411-1

Laboratory: Eurofins Orlando

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E83018	06-30-23

Laboratory: Eurofins Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alabama	State	40150	06-30-23
ANAB	ISO/IEC 17025	L2471	02-23-23
Arkansas DEQ	State	88-0689	09-01-23
California	State	2510	06-30-23
Florida	NELAP	E81010	06-30-23
Georgia	State	E81010(FL)	06-30-23
Illinois	NELAP	200041	10-09-23
Kansas	NELAP	E-10253	10-31-23
Kentucky (UST)	State	53	06-30-23
Kentucky (WW)	State	KY98030	12-31-22
Louisiana (All)	NELAP	30976	06-30-23
Louisiana (DW)	State	LA017	12-31-22
Maryland	State	233	09-30-23
Michigan	State	9912	06-30-23
North Carolina (WW/SW)	State	314	12-31-22
Oklahoma	NELAP	9810	08-31-23
Pennsylvania	NELAP	68-00467	01-31-23
South Carolina	State	96026	06-30-23
Tennessee	State	TN02907	06-30-23
Texas	NELAP	T104704286	09-30-23
US Fish & Wildlife	US Federal Programs	A22340	06-30-23
USDA	US Federal Programs	P330-21-00056	05-17-24
Virginia	NELAP	460166	06-14-23
West Virginia DEP	State	136	03-31-23

Eurofins Orlando

Method Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRY PCB VOC Area

Job ID: 670-8411-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET ORL
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET PEN
300.0	Anions, Ion Chromatography	MCAWW	EET ORL
6010D	Metals (ICP)	SW846	EET ORL
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET ORL
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET ORL
3511	Microextraction of Organic Compounds	SW846	EET PEN
5030C	Purge and Trap	SW846	EET ORL

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

EET PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC GSRV PCB VOC Area

Job ID: 670-8411-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
670-8411-1	GSRV-MW0046R-003.0-20221028	Ground Water	10/28/22 11:12	10/29/22 14:15
670-8411-2	GSRV-MW0049-027.5-20221028	Ground Water	10/28/22 09:17	10/29/22 14:15
670-8411-3	GSRV-MW0062-035.0-20221028	Ground Water	10/28/22 08:48	10/29/22 14:15
670-8411-4	GSRV-MW0063-019.0-20221028	Ground Water	10/28/22 10:20	10/29/22 14:15
670-8411-5	GSRV-TB01-20221027	Ground Water	10/27/22 08:00	10/29/22 14:15

CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD

Project Name: NASA KSC - GSA Reclamation Yard

Site Location: GSRV - PCB VOC Area

TO No.: 80KSC019F0078

Greg Kusek / (772) 631-7426

Lab Name: ENCO

Page: 1 of 3

Project No. 60614327.4

Send Invoice To: Instructions in MSA# 215-27172-GV03

Deliver Sample Kits To: AECOM Depot, 523 18th Street, Orlando

Deliver Samples To: ENCO Orlando

EDD to: Jennifer Chastain

Report to: Jennifer Chastain

Site-Specific WS# 15 from QAPP: 15-17A

COC No.

PO No. 138535

Standard 14 day

Turnaround Time(specify):

Lab ID	Sample ID (sys_samp_code)	Location ID (sys_loc_code)	Date (YYYYMMDD)	Time (hhmm)	Matrix Code (1)	Sample Type (2)	G=Grab C=Comp	Total No. of Containers	4 DEG	4 DEG	4 DEG	4 DEG	4 DEG	4 DEG	Comments
6K	GSRV-MW00115		2022		WG	N	G	2							
6K	GSRV-MW0030K		2022		WG	N	G	5							
6K	GSRV-MW0031		2022		WG	N	G	5							
6K	GSRV-MW0036R		2022		WG	N	G	5							
6K	GSRV-MW0040		2022		WG	N	G	5							
6K	GSRV-MW0041		2022		WG	N	G	5							
6K	GSRV-MW0042R		2022		WG	N	G	5							
6K	GSRV-MW0043		2022		WG	N	G	5							
6K	GSRV-MW0044		2022		WG	N	G	5							
	GSRV-MW0046R		2022 10 28	1112	WG	N	G	5							
	GSRV-MW0049		2022 10 28	0917	WG	N	G	5							
	GSRV-MW0050		2022		WG	N	G	5							

Field Comments: Two preserved 800 vials included for backup. Analyze Non-preserved.

Report only per QAPP WS #15

Relinquished by (signature) *Dreg Anna* Date 10/28/22

Received by (signature) *[Signature]* Date 10/28/22

Lab Comments: 5.8

Number of coolers in shipment: 5.8

Samples Iced?(check) Yes ☒ No ☐

Shipping Company: 670-8411 Chain of Custody

Tracking No:

Date Shipped:

(1) AA= Ambient air, AQ= Air quality control, ASB= Asbestos, CK= Caulk, DS= Storm drain sediment, GS= Soil gas, IC= IDW Concrete, IDO= IDW Solid, IDS= IDW Soil, IDW= IDW Water, LF= Free Product, MA= Mastic, PC= Paint Chips, SC= Cement/Concrete, SE= Sediment, SL= Sludge, SO= Soil, SQ= Soil/Solid quality control, SSD= Subsurface sediment, SU= Surface soil (<6 in), SW= Swab or wipe, TA= Animal tissue, TP= Tissue quality control, WG= Ground water, WL= Leachate, WO= Ocean water, WP= Drinking water, WQ= Water quality control, WR= Ground water effluent, WS= Surface water, WU= Storm water, WW= Waste water

(2) Sample Type: AB= Ambient Blk, EB= Equipment Blk, FB= Field Blk, FD= Field Duplicate Sample, IDW= Investigative-Derived Waste, MIS= Incremental Sampling Methodology, N= Normal Environmental Sample, TB= Trip Blk

(3) Preservative added: 4 DEG C= Cool to 4 degrees, Dark= Store in Darkness, store cool at 4 degrees C H2SO4= Hydrogen sulfate, H2SO4 <2= Adjust to pH < 2 with sulfuric acid, H3PO4= Phosphoric acid, H3PO4 <2= Adjust to pH < 2 with phosphoric acid, HCl <2= Adjust to pH < 2 with hydrochloric acid, HNO3= Sodium bisulfate preservation, HNO3 <2= Adjust to pH < 2 with nitric acid, MeOH= Methanol preservation, Na2O3S2= Sodium thiosulfate, Na2O3S2 3/gal= Add 3 mL 10% sodium thiosulfate, Na2O3S2 4/4oz= 4 drops of 10% sodium thiosulfate to 4 oz, NaHSO4 <2= Adjust to pH < 2 with sodium hydrogen sulfate, NaOH >12= Adjust to pH > 12 with sodium hydroxide, NaOH >9= Adjust to pH > 9 with sodium hydroxide, VRC 0.6/500= 0.6 g of ascorbic acid to 500mLs, ZnAct 2/500= Add 2 mL of zinc acetate to 500mLs, ZnAct+NaOH >9= Zinc acetate and NaOH to pH > 9; Store cool at 4C. If NO preservative added leave blank

Rev 8/19

CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD									
Project Name: NASA ISC - GSA Reclamation Yard		COC No.		Page: 2 of 3		Project No. 60614327.4		Phase:	
Site Location: GSRV - PCB VOC Area		Send Invoice To: Instructions in MSA# 21S-27172-GV03		EDD to: Jennifer Chastain		Cc: Teresa Anent Jennings			
TO No.: 80KSC019F0078		AECOM Project Manager: Chad Lee cc: Jennifer Joyal		Deliver Sample Kits To: AECOM Depot, 523 18th Street, Orlando		Cc: Teresa Anent Jennings			
Greg Kusel / (772) 631-7426		Dustin Slater / (407) 766-0747		Deliver Samples To: ENCO Orlando		Site-Specific WS# 15 from QAPP: 15-17A			
Lab Name: ENCO		Turnaround Time(specific): Standard 14 day		Sample Analysis Requested (Enter number of containers for each test)					
Lab ID	Sample ID (sys_samp_code)	Location ID (sys_loc_code)	Date (YYYYMMDD)	Time (Military) (hhmm)	Matrix Code (1)	Sample Type (2)	G-Grab C=Comp	(3) Total No. of Containers	Comments
GK GSRV-MW0051	GSRV-MW0051		202112		WG	N	G	5	
GK GSRV-MW0052	GSRV-MW0052		202112		WG	N	G	3	
GK GSRV-MW0053	GSRV-MW0053		202112		WG	N	G	5	
GK GSRV-MW0054	GSRV-MW0054		202112		WG	N	G	3	
GK GSRV-MW0055	GSRV-MW0055		202112		WG	N	G	3	
GK GSRV-MW0056	GSRV-MW0056		202112		WG	N	G	3	
GK GSRV-MW0057	GSRV-MW0057		202112		WG	N	G	3	
GK GSRV-MW0058	GSRV-MW0058		202112		WG	N	G	3	
GK GSRV-MW0059	GSRV-MW0059		202112		WG	N	G	3	
GK GSRV-MW0060	GSRV-MW0060		202112		WG	N	G	3	
GK GSRV-MW0061	GSRV-MW0061		202112		WG	N	G	3	
GK GSRV-MW0062	GSRV-MW0062		2021121028	0848	WG	N	G	14	
Field Comments: two preserved 8260 vials included Lab Comments:									
Report only per QAPP WS #15 For backup. Analyze non-preserved.									
Relinquished by (signature)		Date		Time		Received by (signature)		Time	
1. Greg Amul		10/28/22		1415		1. [Signature]		1415	
2.						2.			
3.						3.			
Sample Shipment and Delivery Details									
Number of coolers in shipment: _____									
Samples tested (check) Yes _____ No _____									
Shipping Company: _____									
Tracking No: _____									
Date Shipped: _____									

(1) AA= Ambient air, AQ= Air quality control, ASB= Asbestos, CK= Caulk, DS= Storm drain sediment, GS= Soil gas, IC= IDW Concrete, IDD= IDW Solid, IDS= IDW Soil, IDW= IDW Water, LF= Free Product, MA= Mastic, PC= Paint Chips, SC= Cement/Concrete, SE= Sediment, SL= Sludge, SO= Soil, SQ= Soil/Solid quality control, SSD= Subsurface sediment, SU= Surface soil (<6 in), SW= Swab or wipe, TA= Animal tissue, TQ= Tissue quality control, WG= Ground water, WL= Leachate, WO= Ocean water, WP= Drinking water, WQ= Water quality control, WR= Ground water effluent, WS= Surface water, WU= Storm water, WW= Waste water

(2) Sample Type: AB= Ambient Bk, EB= Equipment Bk, FB= Field Bk, FD= Field Duplicate Sample, IDW= Investigative-Derived Waste, MIS= Incremental Sampling Methodology, N= Normal Environmental Sample, TB= Trip Bk

(3) Preservative added: 4 DEG C= Cool to 4 degrees, Dark= Store in Darkness, store cool at 4 degrees C H2SO4= Hydrogen sulfate, H2SO4 <2= Adjust to pH < 2 with sulfuric acid, H3PO4 <2= Adjust to pH < 2 with phosphoric acid, HCl <2= Adjust to pH < 2 with hydrochloric acid, HNO3= Sodium bisulfate preservation, HNO3 <2= Adjust to pH < 2 with nitric acid, MeOH= Methanol preservation, Na2O3S2= Sodium thiosulfate, Na2O3S2 3/gal= Add 3 ml. 10% sodium thiosulfate per gal. Na2O3S2 4/4oz= 4 drops of 10% sodium thiosulfate to 4 oz. NaHSO4 <2= Adjust to pH < 2 with sodium hydrogen sulfate, NaOH >9= Adjust to pH > 9 with sodium hydroxide, NaOH >9= Adjust to pH > 9 with sodium hydroxide, VRC 0.6/500= 0.6 g of ascorbic acid to 500mL, ZnAct 2/500= Add 2 ml. of zinc acetate to 500mL, ZnAct+NaOH >9= Zinc acetate and NaOH to pH > 9, store cool at 4C. If NO preservative added leave blank

Rev 8/19

CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD														
Project Name: NASA KSC - GSA Reclamation Yard		COC No.		Page: 3 of 3										
Site Location: GSRV - PCB VOC Area		PO No. 138535		Project No. 60614327-4		Phase:								
TO No.: 80KSC019F0078		AECOM Project Manager: Chad Lee cc: Jennifer Joyal		Send Invoice To: Instructions in MSA# 215-27172-GV03		EDD to: Jennifer Chastain Cc: Teresa Ametti Jennings								
Greg Kusel / (772) 631-7426		Dustin Slater / (407) 766-0747		Deliver Sample Kits To: AECOM Depot, 523 18th Street, Orlando		Report to Jennifer Chastain Cc: Teresa Ametti Jennings								
Lab Name: ENCO		Turnaround Time(specific): Standard 14 day		Deliver Samples To: ENCO Orlando		Site-Specific WS# 15 from QAPP: 15-17A								
Lab ID	Sample ID (sys_samp_code)	Location ID (sys_loc_code)	Date (YYYYMMDD)	Time (Military) (hhmm)	Matrix Code (1)	Sample Type (2)	G-Grab C=Comp	(3) Total No. of Containers	4 DEG (Not Preserved) Select VOCs by SW826B	4 DEG PCBs by SW8082A	4 DEG Sulfate by SW9056A	4 DEG Fe, Mn, Na by SW610B	4 DEG TDS by SM2540C	Comments
	GSRV-MW0063-010-20221028	GSRV-MW0063	20221028	1020	WG	N	G	14022						
	GSRV-MW0064	GSRV-MW0064	2022		WG	N	G	3						
	GSRV-MW0065	GSRV-MW0065	2022		WG	N	G	3						
	GSRV-MW0075	GSRV-MW0075	2022		WG	N	G	3						
	GSRV-MW0081	GSRV-MW0081	2022		WG	N	G	3						
	GSRV-TB01-20221027	GSRV-TB01	20221027	0800	WQ	TB	G	27612						
Field Comments: two preserved 8260 vials included Report only per QAPP WS #15 for backup. Analyze non-preserved.														
Lab Comments:														
Relinquished by (Signature) _____ Date 10/28/22 1415 1. _____ 2. _____ 3. _____														
Number of coolers in shipment: _____ Samples tested (check) Yes _____ No _____ Shipping Company: _____ Tracking No.: _____ Date Shipped: _____														

(1) AA=Ambient air, AQ=Air quality control, ASB=Asbestos, CK=Caulk, DS=Storm drain sediment, GS=Soil gas, IC=IDW Concrete, IDD=IDW Solid, IDS=IDW Soil, IDW=IDW Water, LF=Free Product, MA=Mastic, PC=Paint Chips, SC=Cement/Concrete, SE=Sediment, SL=Sludge, SQ=Soil/Solid quality control, SSD=Subsurface sediment, SU=Surface soil (<6 in), SW=Swab or wipe, TA=Animal tissue, TP=Plant tissue, TQ=Tissue quality control, WG=Ground water, WL=Leachate, WO=Ocean water, WP=Drinking water, WQ=Water quality control, WR=Ground water effluent, WS=Surface water, WU=Storm water, WW=Waste water

(2) Sample Type: AB=Ambient Bk, EB=Equipment Bk, FB=Field Bk, FD=Field Duplicate Sample, IDW=Investigative-Derived Waste, MIS=Incremental Sampling Methodology, N=Normal Environmental Sample, TB=Trip Bk

(3) Preservative added: 4 DEG C=Cool to 4 degrees, Dark=Store in Darkness, store cool at 4 degrees C H2SO4 <2=Adjust to pH <2 with sulfuric acid, H3PO4 <2=Adjust to pH <2 with phosphoric acid, HCl <2=Adjust to pH <2 with hydrochloric acid, HNO3 <2=Adjust to pH <2 with nitric acid, MeOH=Methanol preservation, Na2O3S2 3/gal=Add 3 ml. 10% sodium thiosulfate per gal, Na2O3S2 4/4oz=4 drops of 10% sodium thiosulfate to 4 oz, NaHSO4 <2=Adjust to pH <2 with sodium hydrogen sulfate, NaOH >9=Adjust to pH >9 with sodium hydroxide, NaOH >9=Adjust to pH >9 with sodium hydroxide, VRC 0.6/500=0.6 g of ascorbic acid to 500mLs, ZnAct+NaOH >9=Zinc acetate and NaOH to pH>9; store cool at 4C. IF NO preservative added leave blank

Rev 8/19

481 Newburyport Avenue
Altamonte Springs, FL 32701
Phone: 407-339-5984 Fax: 407-

Chain of Custody Record



eurofins

[illegible]

Login Sample Receipt Checklist

Client: AECOM Technical Services Inc.

Job Number: 670-8411-1

Login Number: 8411

List Number: 1

Creator: Clerisier, Meline

List Source: Eurofins Orlando

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: AECOM Technical Services Inc.

Job Number: 670-8411-1

Login Number: 8411

List Number: 2

Creator: Perez, Trina M

List Source: Eurofins Pensacola

List Creation: 11/02/22 08:36 AM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.4°C IR-8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX D

RIS COMPLETION TICKETS

This page intentionally left blank.

Data Checker

Completion Ticket

On 5/18/2023 at 1:17 PM the following files were submitted to Tetra Tech

COMPLETION_AECOM_GSRY_20230518.txt

LITHOLOGY_AECOM_GSRY_20230518.txt

LOCATION_AECOM_GSRY_20230518.txt

PROJECT_AECOM_GSRY_20230518.txt

RESULT_AECOM_GSRY_20230518.txt

SAMPLE_AECOM_GSRY_20230518.txt

WATER_AECOM_GSRY_20230518.txt

The following comment was provided with this submission:

Hello TT! Attached are the GSRY soil samples from Jan, Mar, and June 2022. If there are any issues please let me know. thank you! Jennifer Chastain

If you need to identify this session at a later date you may use the Ticket Key:

TetraTechExternalClientsProtectedDataRepository2023518_220878725_kedd_AECOM

You may print this page by clicking on the "Print This Page" button

Thank you for using the Data Checker, to upload more files click the "Data Checker" link in the menu.

Print this Page

Data Checker

Completion Ticket

On 5/19/2023 at 11:46 AM the following files were submitted to Tetra Tech

COMPLETION_AECOM_GSRY_20230519.txt

LITHOLOGY_AECOM_GSRY_20230519.txt

LOCATION_AECOM_GSRY_20230519.txt

PROJECT_AECOM_GSRY_20230519.txt

RESULT_AECOM_GSRY_20230519.txt

SAMPLE_AECOM_GSRY_20230519.txt

WATER_AECOM_GSRY_20230519.txt

The following comment was provided with this submission:

Hello TT and Happy Friday! Attached are GSRY files from Sept/Oct 2022. Please let me know if there are any issues. thanks! Jennifer

If you need to identify this session at a later date you may use the Ticket Key:

TetraTechExternalClientsProtectedDataRepository2023519_6502449142_kedd_AECOM

You may print this page by clicking on the "Print This Page" button

Thank you for using the Data Checker, to upload more files click the "Data Checker" link in the menu.

Print this Page