March 1, 2017

Mr. Brian Jankauskas
New York State Department of Environmental Conservation (NYSDEC)
Division of Environmental Remediation, Remedial Bureau A
625 Broadway, 11th Floor
Albany, NY 12233-7015

REFERENCE: **National Guard Bureau Contract No. W9133L-14-D-0007, Task Order 0004, Eastern Region Installation Restoration Program Activities at Multiple Air National Guard Installations, Project #ANG2015EASTIRP**

SUBJECT: **Final Remedial Action Completion Report for Installation Restoration Program Site 6 (Suspected Spill Area), 109th Airlift Wing, Stratton Air National Guard Base (SANGB), Scotia, New York, dated March 2017**

Dear Mr. Jankauskas,

The above-referenced document will be submitted on a compact disk for your records per Task 9.1 of Task Order 0004.

Should you have any questions, please do not hesitate to contact me at 865-481-8749 or by email at Michael.D.Poligone@leidos.com. Thank you.

Sincerely,

LEIDOS

M. Poligone

Michael Poligone
Project Manager

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FINAL

REMEDIAL ACTION COMPLETION REPORT
FOR
INSTALLATION RESTORATION PROGRAM
SITE 6 (SUSPECTED SPILL AREA)

109th Airlift Wing
New York Air National Guard
Stratton Air National Guard Base
Scotia, New York

March 2017

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REMEDIAL ACTION COMPLETION REPORT
FOR
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SITE 6 (SUSPECTED SPILL AREA)

109th Airlift Wing
New York Air National Guard
Stratton Air National Guard Base
Scotia, New York

March 2017

Contract Number W9133L-14-D-0007
Task Order Number 0004

Prepared for
NGB/A4OR
3501 Fetchet Avenue
Joint Base Andrews, Maryland 20762

Prepared by
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Oak Ridge, Tennessee 37831

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Remedial Action Completion Report Certification

I, Michael Poligone, certify that I am currently a New York State-registered professional engineer, as defined in 6 New York Codes, Rules, and Regulations Part 375, and that this Remedial Action Completion Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the Division of Environmental Remediation Technical Guidance for Site Investigation and Remediation (DER-10).

Signature:

Name (print): **Michael Poligone**

New York State Professional Engineer License Number: **096083**

Date: **03/01/17**

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CONTENTS

TABLES

FIGURES

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ACRONYMS

AGWQS	Ambient Groundwater Quality Standards
ANG	Air National Guard
AW	Airlift Wing
BGS	below ground surface
COC	chemical of concern
DCE	dichloroethene
DERP	Defense Environmental Restoration Program
DHC	*Dehalococcoides* sp.
DO	dissolved oxygen
DoD	U.S. Department of Defense
DPT	direct-push technology
EOS®	edible oil substrate®
ERD	enhanced reductive dechlorination
EVO	emulsified vegetable oil
FCR	field change request
IRM	interim remedial measure
IRP	Installation Restoration Program
ISCO	in-situ chemical oxidation
NFA	no further action
NGB	National Guard Bureau
NYANG	New York Air National Guard
NYSDEC	New York State Department of Environmental Conservation
ORP	oxidation-reduction potential
PCE	tetrachloroethene
PCO	project closeout
PID	photoionization detector
ppm	parts per million
PVC	polyvinyl chloride
RA	remedial action
RACR	Remedial Action Completion Report
RAO	remedial action objective
RA-O	remedial action-operation
RAWP	Remedial Action Work Plan
RI	remedial investigation
ROD	Record of Decision
RSCO	recommended soil cleanup objective
S.U.	standard unit
SANGB	Stratton Air National Guard Base
SCA	Schenectady County Airport
SDC	supplemental data collection
TCE	trichloroethene
TOC	total organic carbon
VC	vinyl chloride
VOC	volatile organic compound

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EXECUTIVE SUMMARY

The Air National Guard (ANG) Restoration Branch manages the Installation Restoration Program (IRP) and related activities for the U.S. Department of Defense ANG Installation. Leidos has been retained by ANG to complete remedial action-operations (RA-Os), groundwater monitoring, and project closeout (PCO) activities at Site 6 – Suspected Spill Area for the 109th Airlift Wing of the New York Air National Guard, Stratton Air National Guard Base (SANGB) in Scotia, New York. Remedial action (RA) is being conducted under National Guard Bureau Contract Number W9133L-14-D-0007, Task Order Number 0004 in accordance with the selected remedy for Site 6 groundwater, as dictated by the approved *Record of Decision for Sites 3 and 6 for the 109th Airlift Wing, Schenectady Air National Guard Base, Scotia, New York* (ANG 2012).

Following RA activities, including soil excavation in 2013 and two rounds of in-situ chemical oxidation treatment (June 2013 and May 2014) to address the elevated concentrations of dissolved-phase chlorinated volatile organic compounds (VOCs) in groundwater, chlorinated VOCs in groundwater from 4 to 9 ft below ground surface continue to exceed New York State Department of Environmental Conservation (NYSDEC) Ambient Groundwater Quality Standards in six monitoring wells.

As agreed upon by ANG and NYSDEC, and detailed in the Final *Work Plan for Remedial Action-Operations, Monitoring, and Project Closeout at Site 6 (Suspected Spill Area)*, herein referred to as the Remedial Action Work Plan (RAWP) (Leidos 2016), RA-O activities were conducted at SANGB as follows:

- Conduct a baseline groundwater sampling event to establish current contaminant conditions.
- Install permanent injection wells and an interceptor trench, and conduct a pilot study.
- Perform biostimulation and bioaugmentation injections to treat groundwater.

Following the completion of the biostimulation and bioaugmentation injections documented herein, the following activities will be conducted and reported in periodic groundwater monitoring reports and a final PCO Report:

- Conduct groundwater performance monitoring, additional biostimulation and bioaugmentation injections as necessary, and closure monitoring events.

- Perform PCO by abandoning vertical infusion wells, horizontal infusion points, injection wells, and site monitoring wells.

A baseline groundwater sampling event was conducted May 11 and 12, 2016. Six wells at IRP Site 6 (6MW-20, 6MW-22, 6MW-23, 6MW-24, 6MW-25, and 6MW-26) were sampled for VOCs, anions, and total organic carbon. Well 6MW-25 was also sampled for the bacteria *Dehalococcoides* sp. (DHC). Inspections of the Site 6 monitoring wells being sampled were also conducted at this time.

Based on the baseline sampling event, which showed a decline in VOC contaminant concentrations in 6MW-22 and 6MW-23, a field change request was initiated to reduce the number of injection wells to be installed from 16 to 13, revise the sequencing, and increase the volume of emulsified vegetable oil (EVO) that was specified in the RAWP.

A total of 13 permanent injection wells were installed between June 28 and 30, 2016. Additionally, an interceptor trench was installed between the Site 6 injection network and a drainage ditch running parallel to the western edge of Site 6. A pilot test was conducted injecting a dye tracer into the newly installed

injection wells. The adjacent monitoring wells, interceptor trench, and drainage ditch were monitored for signs of dye. No dye was observed in any of the wells, interceptor trench, or ditch.

The biostimulation and bioaugmentation injections were performed between July 25 and 29, 2016. Between 600 and 750 gal of EVO mixed with water was injected at each of the 13 new injection wells, and approximately 300 gal was injected at 5 infusion points in the existing horizontal infusion network. The EVO injections were followed with 2 L of KB-1 Dechlorinator™ in injection wells and 1 L in infusion points to encourage growth of DHC, increasing the likelihood of complete degradation of the chlorinated solvents. Monitoring wells, the interceptor trench, and the drainage ditch were continuously monitored during the injections for any sign of breakthrough. Some cloudiness was observed at the interceptor trench during the first 2 days, which was likely from the recent placement of gravel in the trench. There was no sign of EVO in any of the monitoring wells or in the drainage ditch, signifying there were no negative impacts to the drainage ditch from the injections.

1.0 INTRODUCTION

The Defense Environmental Restoration Program (DERP) was established in 1984 to promote and coordinate efforts for the evaluation and cleanup of contamination at U.S. Department of Defense (DoD) Installations. In 1987, DERP became part of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and the Superfund Amendments and Reauthorization Act of 1986. The Installation Restoration Program (IRP) was established under DERP to identify, investigate, and clean up contamination at DoD Installations. The IRP is focused on cleanup of contamination associated with past DoD activities to ensure that threats to public health are eliminated and to restore natural resources for future use following applicable, relevant, and appropriate federal, state, and local cleanup standards.

Leidos was contracted by the Air National Guard (ANG) to perform remedial action-operations (RA-Os), groundwater monitoring, and project closeout (PCO) activities at IRP Site 6 (Suspected Spill Area) at the 109th Airlift Wing (AW), New York Air National Guard (NYANG), Stratton Air National Guard Base (SANGB) in Scotia, New York. This work is being performed under National Guard Bureau (NGB) Contract Number W9133L-14-D-0007, Task Order Number 0004 in accordance with the selected remedy for Site 6 groundwater, as dictated by the approved *Record of Decision for Sites 3 and 6 for the 109th Airlift Wing, Schenectady Air National Guard Base, Scotia, New York* (ANG 2012).

This document serves as the Remedial Action Completion Report (RACR) for remedial actions (RAs) conducted at SANGB IRP Site 6. The purpose of the actions described in this RACR is to reduce volatile organic compounds (VOCs) in groundwater and to achieve site closure within the 56-month period of performance. The specific scope for Site 6 is to optimize in-situ enhanced reductive dechlorination (ERD) through biostimulation and bioaugmentation to biologically degrade low levels of chlorinated VOCs to below New York State Department of Environmental Conservation (NYSDEC) groundwater standards to achieve site closure, as outlined in the approved Final *Work Plan for Remedial Action-Operations Monitoring, and Project Closeout at Site 6 (Suspected Spill Area)*, herein referred to as the Remedial Action Work Plan (RAWP) (Leidos 2016).

1.1 PROJECT PURPOSE AND SCOPE

The primary purpose of this RACR is to document field activities conducted from May 11, 2016, through injection completion on July 29, 2016, associated with RAs for IRP Site 6.

1.1.1 Remedial Action Objectives

The RA described in this RACR was intended to increase remedial efficiencies and close the site in the most expedient and efficient way possible, and to protect public health, welfare, or the environment from actual or threatened releases of pollutants or contaminants from this site, which may present an imminent and substantial endangerment to public health or welfare. Remedial action objectives (RAOs) provide a general description of what the cleanup will accomplish. RAOs identified for Site 6 groundwater were developed in the Record of Decision (ROD) and include the following:

- Prevent contact with, or inhalation of, VOCs from contaminated groundwater.
- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Restore the groundwater aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Prevent impacts to biota from ingestion/direct contact.

Groundwater is the only medium of concern requiring RA at Site 6. ANG requested no further action (NFA) for site soil in March 2015 (ANG 2015), which was approved by NYSDEC in April 2015 (NYSDEC 2015).

1.1.2 Groundwater Remedial Action Objectives

The ROD for Sites 3 and 6 identified site-related chemicals of concern (COCs) in soil and groundwater that pose a potential risk to human health and the environment (ANG 2012). Tetrachloroethene (PCE); trichloroethene (TCE); cis-1,2-dichloroethene (DCE); and vinyl chloride (VC) were identified as primary groundwater COCs with concentrations exceeding established NYSDEC Class GA Ambient Groundwater Quality Standards (AGWQS). Remedial levels for groundwater are NYSDEC Class GA AGWQS. Table 1-1 lists the remedial levels for Site 6.

Table 1-1. Remedial Levels for Site 6 Groundwater COCs

COC	Remedial Level (µg/L)
Tetrachloroethene	5
Trichloroethene	5
cis-1,2-Dichloroethene	5
Vinyl Chloride	2

COC = Chemical of concern.

1.2 GENERAL REMEDIAL APPROACH

Field activities were completed in accordance with the RAWP and included the following (discussed in detail in Chapter 3.0):

- Conduct a baseline groundwater sampling event to establish current contaminant conditions.
- Install permanent injection wells and an interceptor trench, and conduct a pilot study.
- Perform biostimulation and bioaugmentation injections to treat groundwater.

Following the completion of the biostimulation and bioaugmentation injections documented herein, the following activities will be conducted and reported in periodic groundwater monitoring reports and a final PCO Report:

- Conduct groundwater performance monitoring, additional biostimulation and bioaugmentation injections as necessary, and closure monitoring events.

- Perform PCO by abandoning vertical infusion points, horizontal infusion wells, injection wells, and site monitoring wells.

1.3 DEVIATION FROM WORK PLAN

Based on the baseline sampling event, which showed a decline in concentrations in wells 6MW-22 and 6MW-23, a field change request (FCR) was initiated to reduce the number of injection wells to be installed, revise the sequencing, and increase the volume of emulsified vegetable oil (EVO) that was specified in the RAWP. Increasing EVO volume per well increased effectiveness, and revising sequencing improved field logistics and provided an additional measure to mitigate releases to the drainage ditch. Reducing the number of injection wells had no impact. FCR-01 is included in Appendix A.

1.4 REPORT ORGANIZATION

This RACR is organized as follows:

- Executive Summary,
- Chapter 1.0 – Introduction,
- Chapter 2.0 – Installation Background and Site Description,
- Chapter 3.0 – RA at IRP Site 6,
- Chapter 4.0 – Groundwater Monitoring,
- Chapter 5.0 – Conclusions, and
- Chapter 6.0 – References.

The following appendices are also included in this document:

- Appendix A – FCR-01,
- Appendix B – Well Inspection Notes and Photograph Log,
- Appendix C – Baseline Groundwater Monitoring Event: Purge Logs and Analytical Results,
- Appendix D – SANGB Work Clearance Request Form,
- Appendix E – Permanent Injection Well Soil Boring Logs, and
- Appendix F – RA Photograph Log.

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2.0 INSTALLATION BACKGROUND AND SITE DESCRIPTION

2.1 INSTALLATION LOCATION

The 109th AW of NYANG is located at SANGB in the southeast portion of Schenectady County Airport (SCA) in Scotia, New York (inset, Figure 2-1). The federal government leases the land from the SCA and licenses the land back to NYANG. The Base is comprised of approximately 126 acres, designated for exclusive use by NYANG. Land to the north, east, and west of the Base is agricultural and residential. The Mohawk River lies to the south of the Base, along with a railway and commercial and residential properties.

2.2 INSTALLATION AND SITE HISTORY

Site 6 (Suspected Spill Area), located near the southern corner of the Base, covers an area of approximately 0.96 acres and is bounded by the drainage ditch to the west, to the north by monitoring well 6MW-21, and to the south by monitoring well 6MW-20 (Figure 2-1). Soil and groundwater have been impacted at this site by past releases from aircraft fueling, maintenance, operation activities, and training exercises. Cleanup of contaminated areas has taken place over the last decade to prevent further environmental impacts.

2.3 PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIVITIES

Previous investigations and remedial activities at Site 6 are summarized below.

2.3.1 Remedial Investigation (1999)

A remedial investigation (RI) was completed at the Base in June 1999 (Aneptek 2000). The RI initially included installation of groundwater monitoring wells, hydraulic conductivity testing of the shallow overburden, and two rounds of groundwater sampling. The investigation at Site 3 also included collecting soil and sediment samples and excavating 49 test pits to identify the types and extent of buried debris/wastes. During the RI, VOCs were detected in groundwater samples collected from monitoring wells upgradient of Site 3. Subsequent investigations reported a distinct dissolved VOC plume in the groundwater that was determined to be unrelated to historical activity at Site 3. This area was added to the Environmental Restoration Program and designated as IRP Site 6.

2.3.2 Supplemental Data Collection (2002)

A supplemental data collection (SDC) program for Site 6 was conducted in 2002 that consisted of monitoring well installation, collection and analysis of subsurface soil samples, and collection and analysis of groundwater samples (ANG 2003). Results from the SDC indicated that VOCs in excess of soil cleanup goals remained in the soils and that a dissolved-phase VOC plume existed at Site 6. The SDC report recommended that further remedial measures be performed for Site 6 soils and groundwater.

2.3.3 Interim Remedial Measures (2007)

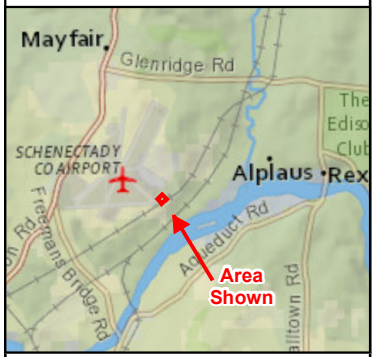
Between May and September 2007, ANG completed interim remedial measures (IRMs) at Site 6 (Earth Tech Northeast, Inc. 2007). The objectives of the IRMs were to remove and treat all unconsolidated material and perform an in-situ pilot test to evaluate the use of enhanced bioremediation to treat the VOC plume at Site 6.

Legend

- Monitoring Well
- Infusion Point
- Collection Sump
- Horizontal Infusion Well
- Approximate Location of Stormwater Drain
- Drainage Ditch
- Stormwater Outfall
- 2007 Soil Excavation
- 2013 Soil Excavation
- Site 6 Boundary
- General Groundwater Flow Direction

Notes:
Background: ESRI World Imagery (USDA NAIP, May 2015)

0 10 20 40 Feet
1 inch = 45 feet



leidos

SITE FEATURES AND PREVIOUS REMEDIAL ACTIONS AT IRP SITE 6

NEW YORK AIR NATIONAL GUARD
109TH AIRLIFT WING
SCOTIA, NEW YORK

PROJECT: \Eastern_IRP\6. GIS Files\Schenectady\Projects\RACR\Figure 2-1 Site Features at Site 6.mxd

FIGURE: 2-1 | DATE: 10/31/2016

2.3.3.1 Soil Removal Activities (2007)

As determined by previous investigations, the groundwater plume was delineated by chlorinated VOCs in exceedance of 50 parts per billion. Site 6 soils within the delineated groundwater plume were excavated (Figure 2-1). All of the soil in the area was removed from the ground surface to the top of competent bedrock, encountered at a depth interval of 5 to 7 ft below ground surface (BGS), and field screened. Six sections of Site 6 were excavated sequentially, tested, and backfilled beginning with the furthest upgradient area and advancing downgradient towards the drainage ditch. The total volume of soil excavated in Site 6 for field screening of VOCs was 4,790 yd^3, based on measured in-situ volume. A mechanical screener was brought onto the site to physically separate material larger than 2 in. from the smaller material. Smaller material (less than 2 in.) was segregated into stockpiles based on photoionization detector (PID) readings. The total estimated volume of soil with PID readings less than 5 parts per million (ppm) was approximately 2,870 yd^3. The volume of soil removed with PID measurements greater than 5 ppm but less than 50 ppm was approximately 1,920 yd^3. No stockpiled soil reported PID readings greater than 50 ppm. Using these procedures and subsequent Environmental Laboratory Accreditation Program confirmation sampling, all 4,790 yd^3 of stockpiled soils were screened, sampled, and returned to the excavation as backfill based on the analytical results, which indicated all analyzed chlorinated VOCs were below NYSDEC recommended soil cleanup objective (RSCO) standards criteria and guidance values. The 2007 Site 6 excavation areas are shown on Figure 2-1.

During the soil removal activities at Site 6, a horizontal infusion gallery was constructed to perform in-situ chemical oxidation (ISCO) injections. The layout of the infusion gallery is shown in Figure 2-1. The infusion gallery consists of four horizontal laterals (Lateral 1 through 4) constructed of slotted polyvinyl chloride (PVC) pipe aligned somewhat perpendicular to the assumed groundwater flow direction.

Based on the sequencing and final limits of the excavation and apparent local groundwater flow direction, the final length of the lateral piping sections varied from 45 to 120 ft, with the longer laterals located near the center of Site 6.

The laterals were constructed of 4-in.-diameter, Schedule 40 PVC 0.010-slot screen placed along the top of competent bedrock at the base of the excavation with solid vertical risers to grade at each end and in the middle of the horizontal well. The lateral well screens were covered with an approximately 1-ft-thick layer of the highly permeable material (2 in. plus aggregate) that had been screened from the excavation materials. A permeable woven geotextile liner was placed over the aggregate, and the remaining excavation(s) were backfilled to grade with the screened stockpiled soils that were less than 2-in. diameter.

2.3.3.2 Enhanced Bioremediation Pilot Test (2007)

An enhanced bioremediation pilot test was conducted at Site 6 on August 8, 2007. Edible oil substrate® (EOS®) and Vitamin B12 supplement were gravity-fed sequentially into each of the 12 vertical riser pipes of the infusion gallery constructed as part of the Site 6 interim RAs, beginning with the furthest upgradient riser and advancing progressively downgradient. The infusion was prepared by mixing one drum of EOS® and 1 qt of Vitamin B12 supplement with 10,000 gal of treated groundwater. The objectives of the pilot test were to decrease concentrations of chlorinated VOCs in groundwater and prevent VOC plume migration through increased biological activity.

Five groundwater monitoring events were performed to assess groundwater quality. One round of groundwater samples was collected prior to enhanced bioremediation injections, while four quarterly rounds of groundwater samples were collected post-injection to evaluate ERD progress. It was concluded

that the injection of EOS® and the Vitamin B12 supplement had a beneficial effect and decreased chlorinated VOC concentrations in groundwater at Site 6. As a result of the initial infusion, the substrate contamination at Site 6 was reduced. During the final sampling event in September 2008, an increase in COC concentrations was identified in two wells (6MW-22 and 6MW-25) located within the infusion gallery treatment area. This suggests the increase is likely attributable to VOCs being flushed from the coarse aggregate, which was separated by screening from the fine-grained material, then reintroduced into the excavation. Despite this increase in COC concentrations, an overall decreasing trend was established and breakdown occurred through anaerobic dechlorination. COC reductions, attributable to the biostimulation pilot study, range from 34 to 83%, with an average of 63%.

2.3.3.3 Soil Gas Sampling (2007)

Two soil gas samples were collected to characterize the potential for soil vapor migration from the dissolved VOC plume at Site 6 to the closest indoor air receptor. The closest indoor air receptor is Building 18, located 475 ft cross-gradient to the Site 6 groundwater plume. The soil gas samples were analyzed using modified Method TO-15 (chlorinated hydrocarbons only). No VOCs were reported above their respective laboratory method detection limit for either soil gas sample. While there were no detections for the soil gas samples, indicating there is not a vapor intrusion concern for Building 18, if a building is constructed closer to Site 6 while groundwater indicates VOC impacts persist, soil gas will need to be re-evaluated.

2.3.4 Data Gap Investigation (2011)

A data gap investigation was conducted on October 31, 2011, to delineate the soil at Site 6 impacted with VOCs above screening criteria that would require future excavation. Soil borings were advanced at each site using direct-push technology (DPT). Site 6 delineation results indicated that soil samples obtained from two of the five boring locations were reported above the NYSDEC RSCO for unrestricted use for multiple VOCs in soil (BEM 2012).

2.3.5 Remedial Action (2013 and 2014)

2.3.5.1 Soil Excavation (2013)

Soils contaminated with chlorinated VOCs on the western portion of Site 6, and along the eastern bank of the drainage ditch, were removed on June 13, 2013. Soil was removed to a depth of 5 ft BGS at the eastern extent of the excavation, while the depth of excavation on the west was flush with the drainage ditch. All soils were removed down to bedrock within the extent of the excavation. The excavation limits were approximately 12 ft wide by 64 ft long (Figure 2-1). Soils excavated from Site 6 were stockpiled on a concrete pad with polyethylene sheeting beneath it to collect any water leaching from the soil. The soil was stockpiled for 5 days until it was loaded into trucks and taken offsite for thermal treatment prior to disposal. A total of 73.30 tons of excavated soil was disposed offsite at a soil management location in Fort Edwards, New York, on June 17, 2013.

Two post-excavation soil samples were collected from sidewalls in accordance with the RAWP. In addition, one post-excavation soil sample was collected from the limits of excavation, along the southwest perimeter. No exceedances of RSCOs were detected in any post-excavation soil samples. The excavation will filled with imported, clean backfill and restored to pre-existing conditions.

Soil excavation activities at Site 6 were completed in June 2013. ANG requested NFA for site soil in March 2015 (ANG 2015), which was approved by NYSDEC in April 2015 (NYSDEC 2015). RA for groundwater consisted of two rounds of ISCO injections in June 2013 and May 2014; however, dissolved-phase COCs linger in site groundwater at concentrations exceeding NYSDEC AGWQS.

2.3.5.2 ISCO Injections (2013 and 2014)

Utilizing sodium permanganate, two rounds (June 2013 and May 2014) of ISCO were conducted to address the elevated concentrations of dissolved-phase chlorinated VOCs in groundwater at Site 6. RA consisted of direct injection of sodium permanganate using the existing horizontal infusion gallery, as well as 25 DPT borings (11 during the first round and 14 during the second round). An 18-in. collection sump was installed downgradient of the injection area to collect groundwater containing the permanganate so that it could be recirculated to the injection gallery.

Seven rounds of post-injection groundwater sampling were conducted between September 2013 and January 2015. COC reductions between September 2013 and January 2015 ranged from 8 to 56%, with an overall average of 41%. Based on the December 2014 and January 2015 data, rebound is evident at 6MW-25. The remaining monitoring wells located within the active treatment zone did not show rebound and had stable to a slightly decreasing trend in COCs.

2.4 SITE CONDITIONS AND CONTAMINANT CONCENTRATIONS PRIOR TO THE REMEDIAL ACTION COMPLETION REPORT

Based on the results of the soil RA and post-excavation samples collected at Site 6, soil contamination resulting from historical operations at Site 6 has been removed. No soil contamination remains at Site 6 above the NYSDEC unrestricted use regulatory levels. Soil remediation is complete for Site 6, and NYSDEC approved the RACR (ANG 2015) that recommended an NFA determination for soil.

Chlorinated VOCs (PCE; TCE; cis-1,2-DCE; and VC) in groundwater from 4 to 9 ft BGS continue to exceed NYSDEC AGWQS in six monitoring wells at Site 6. The last groundwater sampling event, which occurred in January 2015, showed some evidence of rebound in VOC concentrations. The following is a brief summary of the January 2015 groundwater sample data.

PCE: PCE was detected in five of six monitoring wells sampled, with concentrations ranging from 2.7 to 47 µg/L. Of these, PCE concentrations in four of the monitoring wells exceeded the NYSDEC AGWQS for PCE of 5 µg/L. The maximum detection of PCE was in monitoring well 6MW-25.

TCE: TCE was detected in all six monitoring wells sampled at concentrations ranging from 1.9 to 10 µg/L. Of these, TCE concentrations in four of the monitoring wells exceeded the NYSDEC AGWQS for TCE of 5 µg/L. The maximum detection of TCE was in monitoring well 6MW-25.

cis-1,2-DCE: cis-1,2-DCE was detected in all six monitoring wells sampled at concentrations ranging from 5.2 to 68 µg/L. All detected concentrations exceeded the NYSDEC AGWQS for cis-1,2-DCE of 5 µg/L. The maximum detection of cis-1,2-DCE was in monitoring well 6MW-25.

VC: VC was detected in three of six monitoring wells sampled, with concentrations ranging from 0.61J µg/L to 5.8 µg/L. Of these, only the maximum detection (5.8 µg/L) exceeded the NYSDEC AGWQS for VC (2 µg/L). The maximum detection of VC was in monitoring well 6MW-25.

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3.0 REMEDIAL ACTION AT INSTALLATION RESTORATION PROGRAM SITE 6

3.1 BASELINE GROUNDWATER SAMPLING EVENT

3.1.1 Monitoring Well Inventory

In accordance with Policies A7O 11-01 and A7O 14-01 (ANG 2011 and 2014, respectively), Leidos inspected six monitoring wells within the Site 6 well network as part of the baseline groundwater sampling event (Figure 3-1). All wells were labeled, and any missing bolts were replaced. It was noted that frost heave or heavy traffic appeared to move the well casing and pad at several wells, preventing the lid from closing properly and being bolted down. This was especially notable at wells 6MW-23, 6MW-25, and 6MW-26. The well casing and pad at 6MW-22 had moved slightly, but not enough to impact function. The well plugs at wells 6MW-23, 6MW-25, and 6MW-26 were replaced with a PVC pipe plug or cap to allow the lid to be bolted down.

It was also noted that the well gasket was missing or damaged at several wells: 6MW-23, 6WM-24, 6MW-25, and 6MW-26. It is recommended the missing or damaged well gaskets be replaced during the next groundwater sampling event.

Photographs were taken to document the initial overall condition of each monitoring well. This information is used to update the monitoring well inventory for IRP Site 6. The monitoring well inventory, well construction information, inspection notes, and photographs are provided in Appendix B.

3.1.2 Baseline Monitoring Event

A baseline sampling event was conducted May 11 through 13, 2016, prior to remedial activities. The purpose was to provide current subsurface conditions and verify amendment quantities based on current contaminant concentrations and distribution. Baseline sampling results were used to complete the final remedial design (i.e., chemical quantities and distribution).

Samples were analyzed for VOCs, total organic carbon (TOC), sulfate, nitrate, and field parameters from six wells (6MW-20, 6MW-22, 6MW-23, 6MW-24, 6MW-25, and 6MW-26). Samples were submitted for analysis to TestAmerica Laboratories, Inc., in Denver, Colorado (sulfate, nitrate, and TOC), and St. Louis, Missouri (VOCs). Additionally, one sample was collected from well 6MW-25 and analyzed for *Dehalococcoides* sp. (DHC) by Microbial Insights, in Knoxville, Tennessee. Purge logs (including field parameters) and the complete analytical data reports are included in Appendix C.

The following constituents were detected in at least one sample: cis-1,2-DCE; PCE; TCE; VC; nitrate; sulfate; and TOC. Table 3-1 shows the concentrations of detected chemicals and field parameters in each of the wells sampled during the baseline event. Figure 3-1 shows the results of the baseline sampling in addition to analytical data from historical (2008 through pre-injection) and recent (2013 through 2015) sampling events. The baseline sampling event results showed decreases in contaminant concentrations at wells 6MW-22 and 6MW-23. The sample from well 6MW-25 contained 357 DHC cells per mL.

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NYSDEC CLASS GA GROUNDWATER STANDARDS (6 NYCRR 703.5)	
PCE (µg/L)	5
TCE (µg/L)	5
cis-1,2-DCE (µg/L)	5
VC (µg/L)	2

6MW-21 (3'-8') µg/L

Sample Date	2008 Aug	2013 Sep	2014 Aug	2014 Sep	2014 Oct	2014 Dec
PCE	ND	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
TCE	0.34	0.33 J	1.0	2.9	4.5	0.25 U
cis-1,2-DCE	0.20	0.19 J	0.49 J	0.73 J	1.1	0.25 U
VC	ND	0.50 U	0.50U	0.50 U	0.50 U	0.50 U

6MW-24 (4'-9') µg/L

Sample Date	2008 Aug	2013 Sep	2014 Aug	2014 Sep	2014 Oct	2014 Nov	2014 Dec	2015 Jan	2016 May
PCE	ND	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	1.0 U	1.0 U
TCE	**14.0**	**12.0**	**10.0**	**12.0**	**11.0**	**9.1**	**9.3**	**6.8**	**5.9**
cis-1,2-DCE	**42.0**	**14.0**	**9.7**	**11.0**	**11.0**	**6.4**	**7.6**	**5.2**	4.8 J
VC	ND	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U

6MW-23 (4'-9') µg/L

Sample Date	2008 Aug	2013 Sep	2014 Aug	2014 Sep	2014 Oct	2014 Nov	2014 Dec	2015 Jan	2016 May
PCE	3.5	**5.9**	**16.0**	**7.5**	**10.0**	**7.5**	**5.9**	**7.7**	3.0 J
TCE	3.0	3.0	**5.4**	**6.9**	**5.0**	4.2	3.3	3.8	1.7 J
cis-1,2-DCE	**45.0**	**18.0**	**18.0**	**21.0**	**15.0**	**14.0**	**12.0**	**15.0**	**13**
VC	**27.0**	**3.2**	**2.0**	**2.6**	1.8	1.5	1.8	1.2	1.0 U

6MW-22 (4'-9') µg/L

Sample Date	2008 Aug	2014 Dec	2015 Jan	2016 May
PCE	2.5	**6.5**	**6.8**	3.4 J
TCE	**6.8**	**7.0**	**7.0**	3.6 J
cis-1,2-DCE	**390.0**	**16.0**	**19.0**	**16**
VC	**35.0**	0.50 U	0.61 J	1.0 U

6MW-25 (4'-9') µg/L

Sample Date	2008 Aug	2013 Sep	2014 Sep	2014 Oct	2014 Nov	2014 Dec	2015 Jan	2016 May
PCE	2.0	4.5	**52.0**	4.7	**5.6**	**81.0**	**47.0**	**20**
TCE	1.8	**5.0**	**8.1**	0.27 J	0.93 J	**19.0**	**10.0**	**5.8**
cis-1,2-DCE	**580.0**	**220.0**	**36.0**	1.9	2.7	**120.0**	**68.0**	**58**
VC	**370.0**	**79.0**	0.50 U	0.50 U	0.50 U	**12.0**	**5.8**	**21**

6MW-26 (4'-9') µg/L

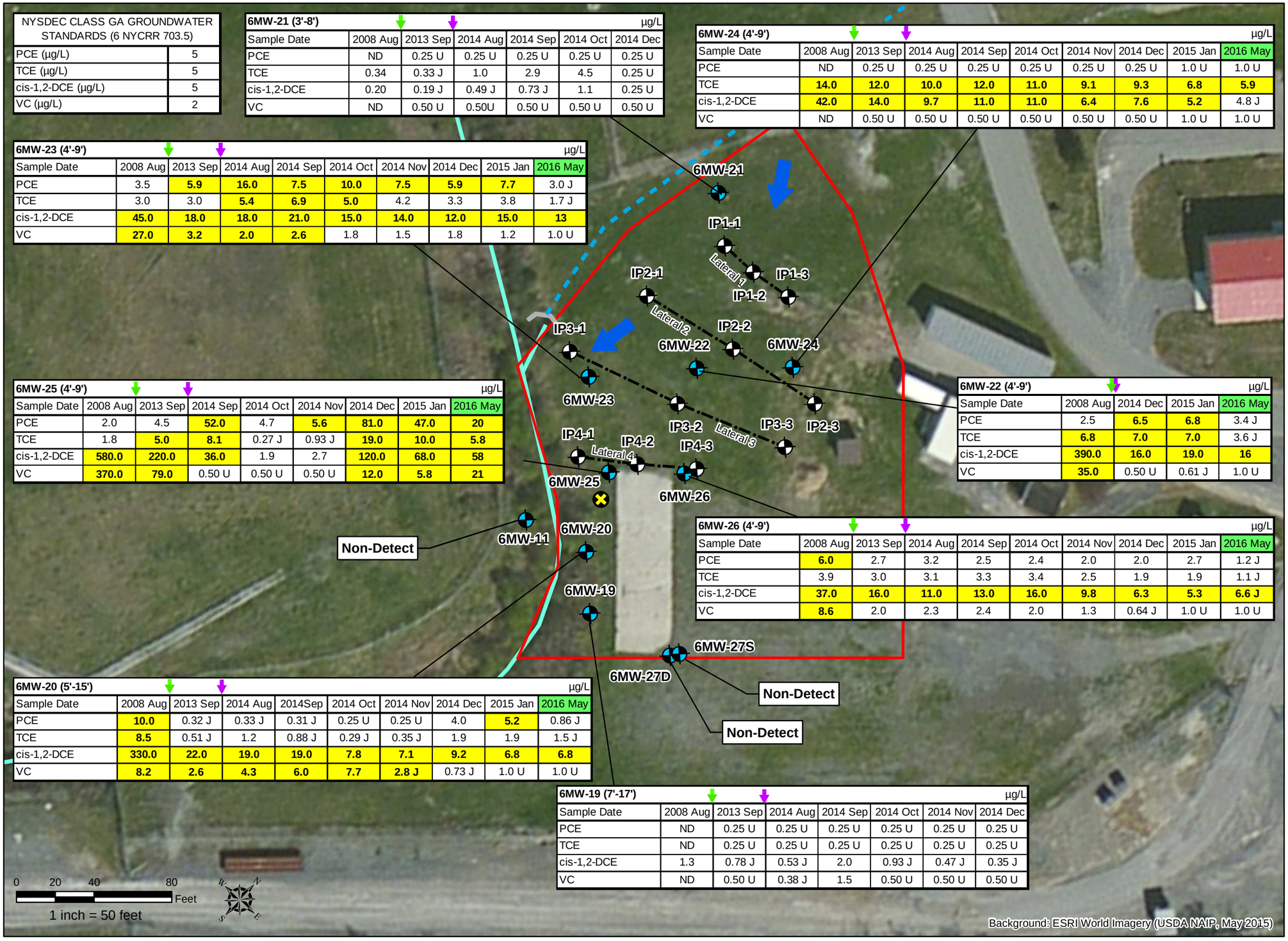
Sample Date	2008 Aug	2013 Sep	2014 Aug	2014 Sep	2014 Oct	2014 Nov	2014 Dec	2015 Jan	2016 May
PCE	**6.0**	2.7	3.2	2.5	2.4	2.0	2.0	2.7	1.2 J
TCE	3.9	3.0	3.1	3.3	3.4	2.5	1.9	1.9	1.1 J
cis-1,2-DCE	**37.0**	**16.0**	**11.0**	**13.0**	**16.0**	**9.8**	**6.3**	**5.3**	**6.6 J**
VC	**8.6**	2.0	2.3	2.4	2.0	1.3	0.64 J	1.0 U	1.0 U

6MW-20 (5'-15') µg/L

Sample Date	2008 Aug	2013 Sep	2014 Aug	2014Sep	2014 Oct	2014 Nov	2014 Dec	2015 Jan	2016 May
PCE	**10.0**	0.32 J	0.33 J	0.31 J	0.25 U	0.25 U	4.0	**5.2**	0.86 J
TCE	**8.5**	0.51 J	1.2	0.88 J	0.29 J	0.35 J	1.9	1.9	1.5 J
cis-1,2-DCE	**330.0**	**22.0**	**19.0**	**19.0**	**7.8**	**7.1**	**9.2**	**6.8**	**6.8**
VC	**8.2**	**2.6**	**4.3**	**6.0**	**7.7**	**2.8 J**	0.73 J	1.0 U	1.0 U

6MW-19 (7'-17') µg/L

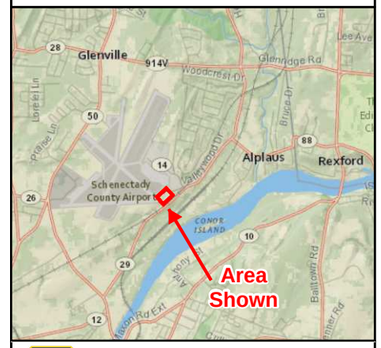
Sample Date	2008 Aug	2013 Sep	2014 Aug	2014 Sep	2014 Oct	2014 Nov	2014 Dec
PCE	ND	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
TCE	ND	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
cis-1,2-DCE	1.3	0.78 J	0.53 J	2.0	0.93 J	0.47 J	0.35 J
VC	ND	0.50 U	0.38 J	1.5	0.50 U	0.50 U	0.50 U



Legend

- Monitoring Well
- Infusion Point
- Collection Sump
- Horizontal Infusion Well
- Approximate Location of Stormwater Drain
- Drainage Ditch
- Stormwater Outfall
- Site 6 Boundary
- General Groundwater Flow Direction
- June 2013 Injection Event
- May 2014 Injection Event
- 2016 — Baseline Sampling Event for Task Order 0004

Notes:
DCE- Dichloroethene
PCE- Tetrachloroethene
TCE- Trichloroethylene
VC- Vinyl Chloride
J- Results are an estimated concentration
U- Results are below detection limit
ND- Non-Detect
XXX- Concentration exceeds NYSDEC GA Groundwater Standards
(1) In-situ chemical oxidation involving injection of sodium permanganate conducted June 17-21, 2013 and May 6-8, 2014.
(2) Biostimulation and bioaugmentation injection conducted July 25-29, 2016.



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GROUNDWATER CONCENTRATIONS AND PAST REMEDIAL ACTIONS AT SITE 6

NEW YORK AIR NATIONAL GUARD
109TH AIRLIFT WING
SCOTIA, NEW YORK

PROJECT: \Eastern_IRP\6. GIS Files\Schenectady\Projects\RACR\Figure 3-1 GW Concentrations at Site 6_11x17.mxd

FIGURE: 3-1 | DATE: 10/31/2016

Table 3-1. Detected Constituents in the May 2016 Baseline Groundwater Monitoring Event

Well Identifier		6MW-20	6MW-20	6MW-22	6MW-23	6MW-24	6MW-25	6MW-26
Sample Identifier		6MW-2001	6MW-2001D	6MW-2201	6MW-2301	6MW-2401	6MW-2501	6MW-2601
Date Collected		05/11/16	05/11/16	05/11/16	05/12/16	05/12/16	05/11/16	05/11/16
Sample Type		Grab	Field Duplicate	Grab	Grab	Grab	Grab	Grab
Analyte	NYSDEC AGWQS							
Volatile Organic Compounds (µg/L)								
cis-1,2-Dichloroethene	5	**6.8**	**7**	**16**	**13**	4.8 J	**58**	**6.6**
Tetrachloroethene	5	0.86 J	1.3 J	3.4 J	3 J	ND	**20**	1.2 J
Trichloroethene	5	1.5 J	1.5 J	3.6 J	1.7 J	**5.9**	**5.8**	1.1 J
Vinyl chloride	2	ND	ND	ND	ND	ND	**21**	ND
Anions (mg/L)								
Nitrate		ND	0.06 J	0.16 J	ND	1.2	ND	0.28 J
Sulfate		270	270	290	200	360	820	320
Carbon (mg/L)								
Total organic carbon		2.8	2.6	2.5	2.8	5.3	2.3	2.6
Dechlorinating Bacteria (cells/mL)								
Dehalococcoides sp.		NA	NS	NA	NA	NA	357	NA
Water Quality Parameters[a]								
pH (S.U.)		6.75	6.75	6.87	6.81	7.24	6.87	7.01
Temperature (°C)		17.91	17.91	18.78	13.84	9.54	14.49	13.73
Conductivity (mS/cm)		1.31	1.31	1.40	1.12	1.26	1.92	1.43
ORP (mV)		173	173	194	-37	237	12.0	43
DO (mg/L)		3.83	3.83	4.78	3.20	7.59	3.41	3.77
Turbidity (NTU)		0.9	0.9	0.0	14.1	1.9	40.6	3.0
Water level (ft BGS)		7.33	7.33	6.89	6.31	7.82	4.13	4.97

[a] Water quality parameters listed are the final reading prior to sampling.
Bold values exceed the NYSDEC AGWQS.
AGWQS = NYSDEC Class GA Ambient Groundwater Quality Standards.
BGS = Below ground surface.
DO = Dissolved oxygen.
J =Estimated value.
mS/cm = MilliSiemens per centimeter.
NA = Not analyzed.
ND = Not detected.
NS = Not sampled.
NTU = Nephelometric turbidity unit.
NYSDEC = New York State Department of Environmental Conservation.
ORP = Oxidation-reduction potential.
S.U. = Standard unit.

Chlorinated VOCs (PCE; TCE; cis-1,2-DCE; and VC) in groundwater from 4 to 9 ft BGS continue to exceed NYSDEC AGWQS in one or more monitoring well at Site 6. The following is a summary of the May 2016 baseline groundwater sample data.

cis-1,2-DCE: cis-1,2-DCE was detected in all six samples during the baseline monitoring event, at concentrations ranging from 4.8J µg/L (6MW-24) to 58 µg/L (6MW-25). Only the sample from well 6MW-24 was below the NYSDEC AGWQS of 5 µg/L.

PCE: PCE was detected in five of six samples during the baseline event but only exceeded the NYSDEC AGWQS of 5 µg/L in one well (6MW-25) with a concentration of 20 µg/L.

TCE: TCE was detected in all six samples, with concentrations ranging from 1.1J µg/L in well 6MW-26 to 5.9 µg/L in 6MW-24. Samples from wells 6MW-24 and 6MW-25 were slightly above the NYSDEC AGWQS of 5 µg/L.

VC: VC was detected in well 6MW-25 at a concentration of 21 µg/L, which exceeds the NYSDEC AGWQS of 2 µg/L. VC was not detected in any other well during the baseline groundwater sampling event.

DHC: Well 6MW-25 was sampled for DHC and contained 357 DHC cells/mL. The detected concentration is considered to be in the moderate range (100 to less than 10,000 cells/mL), with concentrations greater than or equal to 10,000 cells/mL considered ideal (Lu et al., 2006). However, the addition of an electron donor such as EVO may stimulate DHC growth and enhance anaerobic bioremediation when DHC concentrations are in the moderate range.

Nitrate: Nitrate was detected in three of the six groundwater monitoring wells (6MW-22, 6MW-23, and 6MW-26), with concentrations ranging from 0.16J mg/L in 6MW-22 to 1.2 mg/L in 6MW-24. Nitrate levels less than 1.0 mg/L are desirable for anaerobic in-situ bioremediation.

Sulfate: Sulfate was detected in all samples during the baseline groundwater sampling event, with concentrations ranging from 200 mg/L (well 6MW-23) to 820 mg/L (well 6MW-25). With the exception of the maximum concentration, detected concentrations ranged from 200 to 360 mg/L, which is considered moderate. Higher sulfate concentrations represent a higher demand level for organic material and require additional organic substrate (i.e., EVO) during bioremediation.

TOC: TOC concentrations ranged from 2.3 mg/L at well 6MW-25 to 5.3 mg/L at well 6MW-24, with an average concentration of 3.1 mg/L. The detected concentrations are typical background levels of TOC for a site with relatively low remaining groundwater contamination and below the 20- to 50-mg/L TOC concentration desired in the anaerobic treatment zone.

Field Parameters: Field parameters, including pH, temperature, conductivity, oxidation-reduction potential (ORP), dissolved oxygen (DO), and turbidity, were recorded during the baseline groundwater sampling event (Table 3-1). Of particular interest to Site 6 are the following parameters:

- **ORP:** ORP is a measure of electron activity and an indicator of the relative tendency of a solution to accept or transfer electrons. Values less than -100 mV are optimal for anaerobic dechlorination to occur (AFCEE 2004). In this pre-treatment baseline sampling event, ORP values ranged from -37 mV (well 6MW-23) to 237 mV (well 6MW-24). Values in five of the six wells were greater than 0 mV, indicating the groundwater at Site 6 is oxidizing.

- **DO:** DO is a measure of oxygen dissolved in a solution. Concentrations equal to 1.0 mg/L or less are indicative of an environment conducive to anaerobic dechlorination (AFCEE 2004). During the pre-treatment baseline sampling event, concentrations ranged from 3.2 mg/L at well 6MW-23 to 7.59 mg/L at well 6MW-24. All DO readings were greater than 2 mg/L, indicating the groundwater is aerobic.

- **pH:** The optimal pH range for microbial activity is between 6 and 8 standard units (S.U.), and biological activity is not likely to occur if the pH is below 5 or above 9 S.U. (AFCEE 2004). During the pre-treatment baseline sampling event, pH ranged from 6.75 S.U. in well 6MW-20 to 7.24 S.U. in well 6MW-24, thus indicating a suitable environment for biological activity.

ORP concentrations ranging from -37 to 237 mV and DO concentrations ranging from 3.2 to 7.59 mg/L indicate aerobic or borderline aerobic/anaerobic starting conditions considered optimal for ERD. The higher-than-desirable baseline ORP and DO levels indicate that additional substrate (i.e., EVO) will be required to provoke anaerobic dechlorination.

3.2 FIELD CHANGE REQUEST

Based on the results of the baseline sampling in May 2016, an FCR was initiated prior to the installation of permanent injection wells (Appendix A) to revise the number of injection wells and sequencing specified in the RAWP as follows:

- Two injection wells were deleted from 6MW-22 and 1 injection well was deleted from 6MW-23, resulting in 13 injection wells and 5 infusion points for injection during the RA.

- The sequencing was revised from the proposed injection event described in the RAWP; instead, injection wells at 6MW-22, 6MW-23, and 6MW-24 and all infusion points could be injected at any time during field activities.

- Injection wells 8, 9, and 13 should be injected 1 day prior to injection wells 7 and 12. The adjacent monitoring wells, and injection wells 7 and 12, should be monitored in between injections.

- The total volume of water to be injected at injection wells 12 and 13 (6MW-20) was reduced from 750 to 600 gal.

- The RAWP indicated that injection wells will be injected with 30 to 40 gal of EVO; however, due to moderately high sulfate levels observed in the baseline monitoring event, a minimum of 40 gal will be injected in each injection well.

3.3 STRATTON AIR NATIONAL GUARD BASE PERMITS

A Base Civil Engineering Work Clearance Request (dig permit) was initiated for IRP Site 6. The SANGB dig permit contained the required Dig Safely New York documentation and identified any public utilities that may exist within or immediately adjacent to the remediation area. The dig permit was signed and approved on June 28, 2016. The complete SANG Base Civil Engineering Work Clearance Request Form for IRP Site 6 is provided in Appendix D. No other permits related to the remediation activities were required.

3.4 INSTALLATION OF PERMANENT INJECTION WELLS

A total of 13 injection wells were installed between June 28 and 30, 2016, in areas where chlorinated groundwater continues to exceed groundwater criteria. The wells were installed surrounding monitoring wells 6MW-20, 6MW-22, 6MW-23, 6MW-24, 6MW-25, and 6MW-26 (Table 3-2 and Figure 3-2). The 1-in.-diameter PVC injection wells were installed using a DPT rig to eliminate soil cuttings. As indicated in Table 3-2, each injection well includes 3- or 5-ft screened intervals with a slot size of 0.010 in. to provide complete vertical treatment coverage. The well annulus was backfilled with sand from the bottom of the borehole to approximately 6 in. above the top of the well screen. A bentonite seal was installed to a thickness of 1 to 3 ft above the sand pack, and the balance of the well casing was filled with a cement grout to ground surface. Injection well completions were flush-mounted with a 6-in. PVC manhole. All injection wells were installed to the top of bedrock. Soil boring logs for the 13 injection wells are included in Appendix E.

Table 3-2. Injection Well Construction Details

Injection Well ID	Soil Boring Log ID	Associated Monitoring Well	Distance from Monitoring Well (ft)	Total Depth[a] (ft BGS)	Screen Interval (ft BGS)	Filter Pack Length (ft)	Annular Seal Thickness (ft)	Grout Thickness to Surface (ft)
1	SB-1	6MW-23	8	9	4 - 9	5.5	2.5	1
2	SB-2	6MW-23	8	8.7	3.7 - 8.7	5.7	2	1
3	SB-4	6MW-22	8	8.8	3.8 - 5.8	6.3	1.5	1
4	SB-5	6MW-22	8	8.2	3.2 - 8.2	5.7	1.5	1
5	SB-8	6MW-24	8	8.3	3.3 - 8.3	5.3	2	1
6	SB-9	6MW-24	8	7.9	2.9 - 7.9	4.9	2	1
7	SB-10	6MW-25	8	7.8	4.8 - 7.8	3.8	2	2
8	SB-11	6MW-25	8	7.6	4.6 - 7.6	4.1	2	1.5
9	SB-12	6MW-25	8	7	4 - 7	3.5	2.5	1
10	SB-13	6MW-26	8	9.3	4.3 - 9.3	6.3	2	1
11	SB-14	6MW-26	8	8.7	3.7 - 8.7	6.7	1	1
12	SB-15	6MW-20	8	8.7	3.7 - 8.7	6.2	1.5	1
13	SB-16	6MW-20	8	8.3	5.3 - 8.3	4.3	3	1

[a] Wells were installed to bedrock.
BGS = Below ground surface.
ID = Identifier.

A temporary interceptor trench was also installed on June 28, 2016. The trench runs between the existing sump and IP4-1 of the horizontal infusion gallery (Figure 3-2). The trench was excavated to bedrock (approximately 8 ft BGS) and is approximately 2-ft wide. Excavated soil was stockpiled onsite for reuse as backfill. The trench wall was lined with geotextile material from 6 to 10 ft BGS. Three interceptor pipes, each constructed of 4-in.-diameter, 8-ft length, and 2 Hole Triplewall Pipe, were installed to the bottom of the trench to monitor for injection solution. Each pipe was wrapped in a single layer of geotextile material and bound in together using zip ties. Gravel was backfilled to 6 ft BGS, and the gravel was covered with geotextile material The native saturated soil was backfilled to 1 ft BGS, and the remaining unsaturated soils were backfilled to ground surface and spread in the surrounding area to a thickness of less than 6 in. and vegetated. The photograph log for the inceptor trench installation is in Appendix F.

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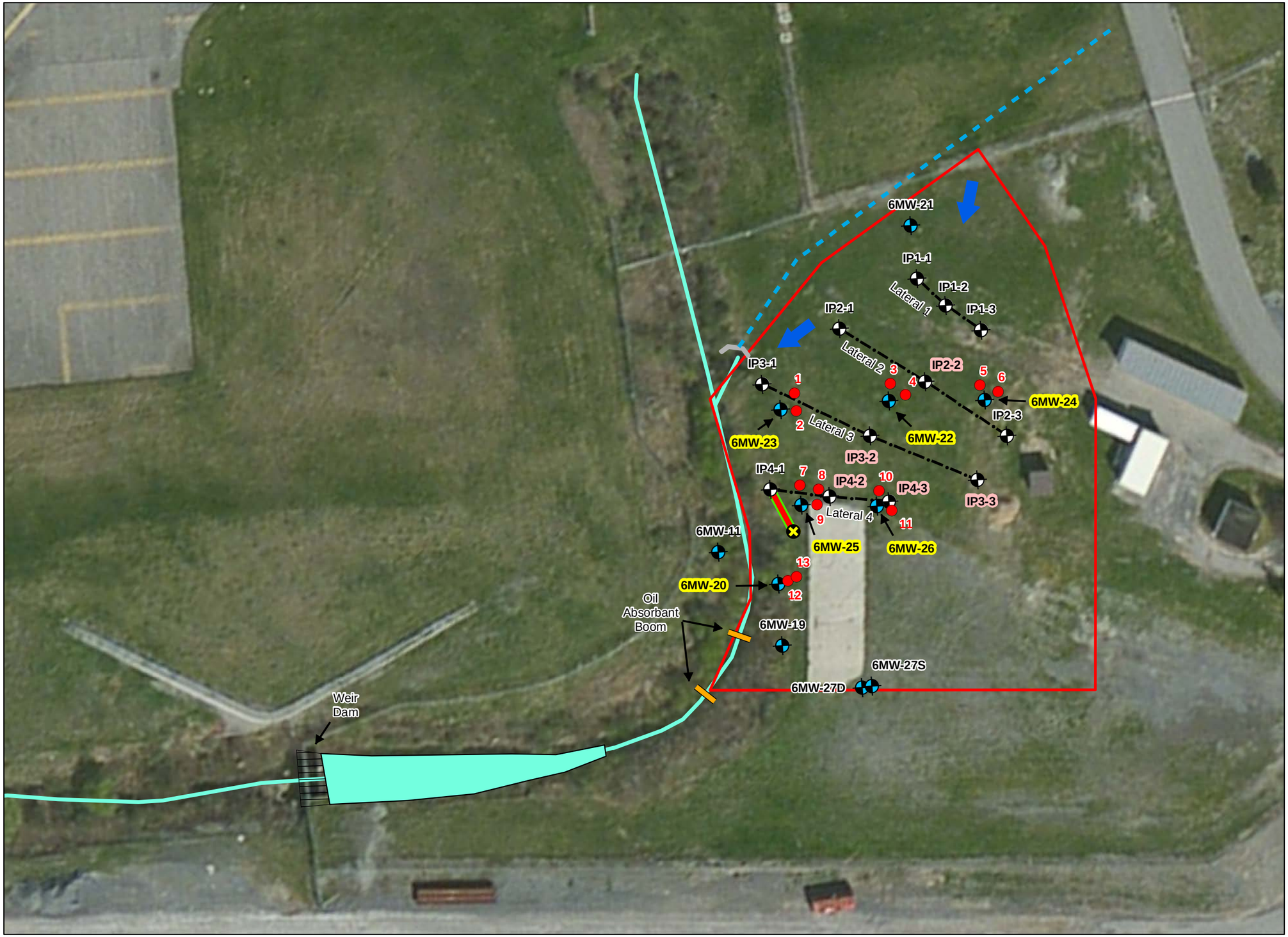

LEGEND

- Injection Well
- Monitoring Well
- Infusion Point
- Collection Sump
- Interceptor Trench
- Horizontal Infusion Well
- Approximate Location of Stormwater Drain
- Drainage Ditch
- Oil Absorbant Boom
- Stormwater Outfall
- Site 6 Boundary
- General Groundwater Flow Direction
- 6MW-24 Performance Monitoring Well
- IP2-2 2016 Infusion Injection Location

NOTES

1. Oil booms were placed in the drainage ditch downstream from southernmost injection point. Pumps and tanks were in place as a contingency measure downstream from the northernmost oil boom. The drainage ditch was monitored for 48 hours and no releases were observed.

0 20 40 80 Feet

1 inch = 50 feet

Data Sources:
Background: ESRI World Imagery (USDA NAIP, May 2015)

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INJECTION WELLS
AND SAMPLE LOCATIONS FOR
SITE 6 REMEDIAL ACTION

NEW YORK AIR NATIONAL GUARD
109TH AIRLIFT WING
SCOTIA, NEW YORK

FIGURE: 3-2 | DATE: 2/16/2017

PROJECT: \Eastern_IRP\6. GIS Files\Schenectady\Projects\RACR\Figure 3-2 Sample Locations For Site 6_11x17.mxd

3.4.1 Pilot Test

After the permanent injection wells and interceptor trench were installed, a pilot test was conducted June 28 through July 1, 2016. Approximately 700 gal of dye tracer was injected in injection wells associated with 6MW-20 and 6MW-25. After 48 hr, there was no dye present in the monitoring wells, interceptor trench, or drainage ditch, providing a higher level of confidence that the injection materials will not travel to the drainage ditch. The pilot test indicated that the initial radius of influence was less than 8 ft and more than 5 ft based on injections at injection well 13 showing dye in injection well 12.

3.5 ENHANCED ANEROBIC BIOREMEDIATION INJECTION

The rationale for the RA is that injection of a long-lasting, slow-release carbon amendment into existing infusion wells and new permanent injection wells will facilitate anaerobic biodegradation and abiotic degradation of PCE, TCE, and associated daughter products. EVO was diluted with sufficient injection water to provide for dispersion of this organic substrate through the subsurface. The bioaugment KB-1 Dechlorinator™, which contains DHC bacteria, was then injected to assist indigenous bacteria that may not be independently capable of complete degradation of the chlorinated solvents.

3.5.1 Pre-Construction Teleconference

A pre-construction teleconference was held with NGB/A4OR, SANGB, and Leidos personnel on July 15, 2016, prior to mobilization for the RA. The purpose of the pre-construction meeting was to outline the scope of the RA; the anticipated field schedule; and site logistics, including EVO delivery, sanitary waste, water supply, and other Installation requirements and concerns.

3.5.2 Mobilization

The field team arrived onsite on July 25, 2016, and set up for injection activities. Remedial control measures outlined in the RAWP were implemented, including placement of two oil-absorbing containment booms in the drainage ditch on the western edge of Site 6 (Figure 3-2). At the northernmost oil boom, sand bags, PVC piping functioning as a scupper across the drainage ditch, and a pump were installed as a contingency measure to remove any product reaching the drainage ditch. Potable water tanks, garden hoses, and a diaphragm pump for mixing EVO and water were mobilized onsite. Suction hoses were run to a storage tank as part of the contingency plan. The photograph log for the injection field activities is included in Appendix F.

3.5.3 Emulsified Vegetable Oil/*Dehalococcoides* sp. Injection

The EVO and DHC injection activities took place from July 25 through 29, 2016, with injections conducted in accordance with the RAWP. Approximately 40 gal of Terra Systems SRS-FRL Large Droplet EVO was combined with potable water and injected using between 600 gal (at injection wells 12 and 13) and 750 gal of potable water per injection well. Injections into the horizontal infusion wells typically yield two to three times greater dispersion in groundwater than injections into vertical wells. Therefore, one-half the volumes (approximately 20 gal of EVO and up to 350 gal of potable water) were injected into each infusion point.. The biostimulation amendment was injected into the 13 new injection wells and 5 infusion points (IP2-2, IP3-2, IP3-3, IP4-2, and IP4-3) using temporary hoses. The water was gravity-fed into injection wells and infusions points. A summary of the approximate injection quantities is provided in Table 3-3.

Table 3-3. Summary of Injection Quantities at Site 6

Well Identifier	Associated Monitoring Well	EVO (gal)	Water (gal)	DHC (L)
Permanent Injection Wells				
1	6MW-23	40	750	2
2	6MW-23	40	750	2
3	6MW-22	40	750	2
4	6MW-22	40	750	2
5	6MW-24	40	750	2
6	6MW-24	40	750	2
7	6MW-25	40	750	2
8	6MW-25	40	750	2
9	6MW-25	40	750	2
10	6MW-26	40	750	2
11	6MW-26	40	750	2
12	6MW-20	40	600	2
13	6MW-20	40	600	2
Subtotal Injected Volume		**520**	**9,450**	**26**
Horizontal Infusion Points				
IP2-2	6MW-22	20	350	1
IP3-2	6MW-25 and 6MW-26	20	350	1
IP3-3	6MW-26	20	350	1
IP4-2	6MW-25 and 6MW-26	20	350	1
IP4-3	6MW-26	20	350	1
Subtotal Injected Volume		**100**	**1,750**	**5**
Total		**620**	**11,200**	**31**

DHC = *Dehalococcoides* sp.
EVO = Emulsified vegetable oil.

Continuous visual monitoring was conducted during the biostimulation amendment injection to mitigate surfacing and promote distribution across the treatment area while minimizing excessive volume, so as to not create immediate impacts to nearby surface water. Visual observations (EVO typically has a distinctive milky white appearance) at adjacent injection and monitoring wells, as well as the two wells nearest the drainage ditch (6MW-20 and 6MW-25), the interceptor trench, and the drainage ditch, confirmed there was no breakthrough. Water in the trench was noted as "cloudy" on July 25 and 26, 2016, which may have been caused by the recent placement of gravel in the trench. There were no signs of EVO in the trench on the following days, nor in wells 6MW-20 or 6MW-25, nor in the drainage ditch at any time during the injection event.

The baseline sampling event results indicated aerobic, oxidizing conditions at the site. DO concentrations ranged from 3.2 to 7.59 mg/L (values greater than 2 mg/L indicate aerobic conditions), and ORP values ranged from -37 to 237 mV (values greater than 0 mV indicate oxidizing conditions; all values were greater than 0 mV except at well 6MW-23). DHC cannot survive in oxygenated environments, and chlorine is a bactericide. Because onsite potable water is chlorinated and typically has a DO concentration up to 10 ppm, which will temporarily inhibit anaerobic reductive dechlorination, the potable water was deoxygenated and dechlorinated prior to use as injection water. Twenty gal of deoxygenated water was injected immediately before and after the injection of KB-1 Dechlorinator™ for a total of 40 gal per well. Water was deoxygenated by adding 4 lb of sodium ascorbate powder (Vitamin C) per 1,000 gal of water approximately 24 to 48 hr prior to use.

The potable water was monitored for DO and ORP using a water quality meter to ensure that the water becomes anoxic. DO and ORP measurements were the primary parameters to monitor anoxic (i.e., reducing) conditions. A reducing condition (anoxic), as measured by a DO of less than 1 mg/L and an ORP of less than -50 mV, indicates the makeup water is ready for injection with DHC. DO readings were noted to be higher than 1 mg/L (average 3.34 mg/L), but ORP levels were significantly less than -50 mV (average -262 mV). This was brought to the attention of the EVO and DHC vendor (Terra Systems), who confirmed that the DO readings may not be accurate, but if the ORP is -262 mV, the water is ready for injection with DHC.

Approximately 2 L of KB-1 Dechlorinator™ was injected at the 13 injection wells and 1 L was injected at infusion points to encourage a microbial population greater than 10^4 (10,000) DHC per mL, which increases the likelihood of complete degradation of the chlorinated solvents. Nitrogen gas was used as a carrier gas during injections.

Subsequent biostimulation or bioaugmentation injections will be recommended and detailed in periodic groundwater monitoring reports. Groundwater monitoring, as detailed in the RAWP, is summarized in Chapter 4.0.

4.0 GROUNDWATER MONITORING

Post-injection groundwater monitoring will consist of performance monitoring and closure monitoring, as discussed below. The monitoring network consists of six monitoring wells: 6MW-20, 6MW-22, 6MW-23, 6MW-24, 6MW-25, and 6MW-26 (Figure 3-2). The monitoring well construction details for wells within the monitoring network are summarized in Appendix B (Table B-1).

Groundwater sampling will be conducted to evaluate the progress of reductive dechlorination via bioremediation and to determine the progress of natural attenuation on decreasing the chlorinated solvent plume. Table 4-1 summarizes the well sampling plan for the monitoring well network.

Table 4-1. Groundwater Monitoring Plan for Site 6

Event[a]	Frequency	Field Parameters	VOC	TOC	Sulfate	Nitrate	DHC
Baseline Monitoring	1	X	X	X	X	X	X
Field Parameter Measurements	4	X					
Performance Monitoring	6[b]	X	X	X			X[c]
Closure Monitoring	4	X	X				

[a] The monitoring network consists of six monitoring wells: 6MW-20, 6MW-22, 6MW-23, 6MW-24, 6MW-25, and 6MW-26. All six wells within the monitoring network will be sampled during each event.
[b] Performance monitoring is anticipated to consist of three quarterly events and three semiannual events before initiating closure monitoring; however, the required frequency will be dependent on the plume's rate of degradation.
[c] DHC will be collected from well 6MW-25 during the third quarterly performance monitoring event.
DHC = *Dehalococcoides* sp.
TOC = Total organic carbon.
VOC = Volatile organic compound.

4.1 FIELD PARAMETER MEASUREMENT EVENTS

Field parameters will be collected on a monthly basis between performance monitoring events for up to 6 months after completing biostimulation injections from the six wells within the monitoring well network (Figure 3-2). DO, ORP, and pH will be used as a guide to confirm that a suitable environment exists for anaerobic dechlorination to occur.

DO is a measurement of the presence or absence of oxygen within groundwater. DO levels less than 1.0 mg/L are optimum for microbial populations to thrive.

Negative ORP within the treatment zone is an indicator that anaerobic degradation is occurring. ORP values between -100 and -50 mV are optimal.

A relatively neutral pH is required for dechlorinating bacteria to survive. Optimum pH range is between 6 and 8 S.U. pH levels outside the optimal range indicate that a buffering agent may be required to sustain high rates of anaerobic degradation.

4.2 PERFORMANCE MONITORING EVENTS

Three quarterly performance monitoring events will be conducted after completing the biostimulation and bioaugmentation injections. Samples will be analyzed for field parameters, VOCs, and TOC from six monitoring wells (6MW-20, 6MW-22, 6MW-23, 6MW-24, 6MW-25, and 6MW-26). During the third quarterly event, one sample will be collected from well 6MW-25 for analysis of DHC. The third

performance monitoring event will verify that anaerobic bioremediation zones have been established within the treated plume. Field parameters and TOC concentrations outside the optimum range for anaerobic bioremediation will be used to guide any supplemental amendment injections as required.

Additionally, the injection wells installed during the RA will be field-surveyed during the December 2016 monitoring event using a Trimble GeoXH™ handheld Global Positioning System or measured from existing monitoring wells using a transit level and tape measurer to determine coordinates.

4.3 SEMIANNUAL MONITORING EVENTS

Groundwater monitoring will continue on a semiannual basis following the quarterly performance monitoring events. Samples will continue to be analyzed for VOCs and TOC from six monitoring wells within the RA monitoring network (Figure 3-2). Semiannual monitoring will continue until the NYSDEC AGWQS for PCE; TCE; cis-1,2-DCE; and VC are achieved.

4.4 CLOSURE MONITORING EVENTS

Compliance monitoring for closure status will begin once groundwater sampling results from Site 6 indicate successful remediation and degradation of the groundwater plume. Quarterly groundwater sampling will commence to demonstrate compliance for progression towards site closure in accordance with NYSDEC regulations. Up to six monitoring wells (6MW-20, 6MW-22, 6MW-23, 6MW-24, 6MW-25, and 6MW-26) will be sampled quarterly and analyzed for VOCs.

4.5 PROJECT CLOSEOUT

PCO will be conducted once NYSDEC approves NFA for Site 6. A total of 11 monitoring wells (3 stick-up and 8 flush-mount), 12 vertical infusion points to horizontal infusion wells, 4 horizontal infusion wells, 13 permanent injection wells, and the interceptor trench wells will require abandonment to fulfill PCO requirements at Site 6. Full details of the PCO activities are provided in the RAWP.

5.0 CONCLUSIONS

As agreed upon by ANG and NYSDEC, and detailed in the Final RAWP (Leidos 2016), RA-O activities were conducted at SANGB as follows:

- Conduct a baseline groundwater sampling event to establish current contaminant conditions.
- Install permanent injection wells and an interceptor trench, and conduct a pilot study.
- Perform biostimulation and bioaugmentation injections to treat groundwater.

Following the completion of the biostimulation and bioaugmentation injections documented herein, the following activities will be conducted and reported in periodic groundwater monitoring reports and a final PCO Report:

- Conduct groundwater performance monitoring, additional biostimulation and bioaugmentation injections as necessary, and closure monitoring events.

- Perform PCO by abandoning vertical infusion wells, horizontal infusion points, injection wells, and site monitoring wells.

A baseline groundwater sampling event was conducted May 11 and 12, 2016. Six wells at IRP Site 6 (6MW-20, 6MW-22, 6MW-23, 6MW-24, 6MW-25, and 6MW-26) were sampled for VOCs, anions, and TOC. Well 6MW-25 was also sampled for the bacteria DHC. Inspections of the Site 6 monitoring wells being sampled were also conducted at this time.

Based on the baseline sampling event, which showed a decline in concentrations in wells 6MW-22 and 6MW-23, an FCR was initiated to reduce the number of injection wells to be installed, revise the sequencing, and increase the volume of EVO that was specified in the RAWP.

A total of 13 permanent injection wells were installed between June 28 and 30, 2016. Additionally, an interceptor trench was installed between the Site 6 injection network and a drainage ditch running parallel to the western edge of Site 6. A pilot test was conducted injecting a dye tracer into the newly installed injection wells. The adjacent monitoring wells, interceptor trench, and drainage ditch were monitored for signs of dye. No dye was observed in any of the monitoring wells or interceptor trench.

The biostimulation and bioaugmentation injections were performed between July 25 and 29, 2016. Between 600 and 750 gal of EVO mixed with water was injected at each of the 13 new injection wells, and approximately 300 gal was injected at 5 infusion points in the existing horizontal infusion network. The EVO injections were followed with 2 L of KB-1 Dechlorinator™ in injection wells and 1 L in infusion points to encourage growth of DHC, increasing the likelihood of complete degradation of the chlorinated solvents. Monitoring wells, the interceptor trench, and the drainage ditch were continuously monitored during the injections for any sign of breakthrough. Some cloudiness was observed at the interceptor trench during the first 2 days, which was likely from the recent placement of gravel in the trench. There was no sign of EVO in any of the monitoring wells or in the drainage ditch, signifying there were no negative impacts to the drainage ditch from the injections.

Subsequent biostimulation or bioaugmentation injections will be recommended and detailed in periodic groundwater monitoring reports.

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6.0 REFERENCES

AFCEE (Air Force Center for Environmental Excellence) 2004. *Principles and Practices of Enhanced Anaerobic Bioremediation of Chlorinated Solvents*, Final, August.

Aneptek (Aneptek Corporation) 2000. *Remedial Investigation Report Site 2 – Site 3 – Site 6, Stratton Air National Guard Base*, Final, September.

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Earth Tech Northeast, Inc. 2007. *Interim Removal Action Completion Report Site 3 and Site 6, New York Air National Guard, Schenectady Air National Guard Base, Scotia, New York*, Final, December.

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APPENDIX A – FIELD CHANGE REQUEST-01

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leidos

Field Change Request Form

FIELD CHANGE REQUEST (FCR)			
FCR Number:	Schenectady Site 6 - FCR 01	Date Initiated:	7-12-16
Project:	NGB Eastern IRP 2016 - Schenectady Site 6 RA Field Activities		
Contract Number (CRN):	314561		
Requestor Name:	Mike Poligone	Organization:	H&I
Phone Number:	865-405-8332	Title/Project Role:	Project Manager
Requestor Signature:	michael.d.poligone@leidos.com Digitally signed by michael.d.poligone@leidos.com DN: cn=michael.d.poligone@leidos.com Date: 2016.07.13 09:12:35 -04'00'		

Baselines Affected:	☐Cost ▣Scope ☐Milestone ▣Method of Accomplishment		
Document(s) Affected (full title, revision no., page, section):	Work Plan for Remedial Action-Operations, Monitoring, And Project Closeout At Site 6 (Suspected Spill Area), Schenectady Air National Guard Base, Scotia, New York, January 2016		
Description of Change:	Revise number of injection points and sequencing.		
Justification:	See attached		
Impact of Not Implementing the Request:	Reducing number of injection wells has no impact. Increasing EVO volume per well will increase effectiveness. Revising sequencing will improve field logistics and provide additional measure to mitigate releases to creek.		
Participants Affected by Implementing the Request:	NGB and field staff		
Cost Estimate ($):	$0		
Estimator Name:	Mike Poligone	Phone Number:	865-405-8332
Estimator Signature:	michael.d.poligone@leidos.com Digitally signed by michael.d.poligone@leidos.com DN: cn=michael.d.poligone@leidos.com Date: 2016.07.13 09:12:44 -04'00'		
Previous FCR Affected:	☐ Yes ▣ No	If yes, FCR number:	

APPROVAL SIGNATURES			
Client Project Manager:	Jody Murata	Date:	
Client QA Manager (if applicable):	N/A	Date:	
Leidos Site Safety & Health Officer (if H&S related):	N/A	Date:	

Justification:

The baseline sampling event results showed decreases in contaminant concentrations at 6MW-22 and 6MW-23. Two injection points were deleted from 6MW-22 and one injection point from 6MW-23. There are now 13 vertical injection wells and 5 horizontal infusion points that will be injected (See Figure 4-1).

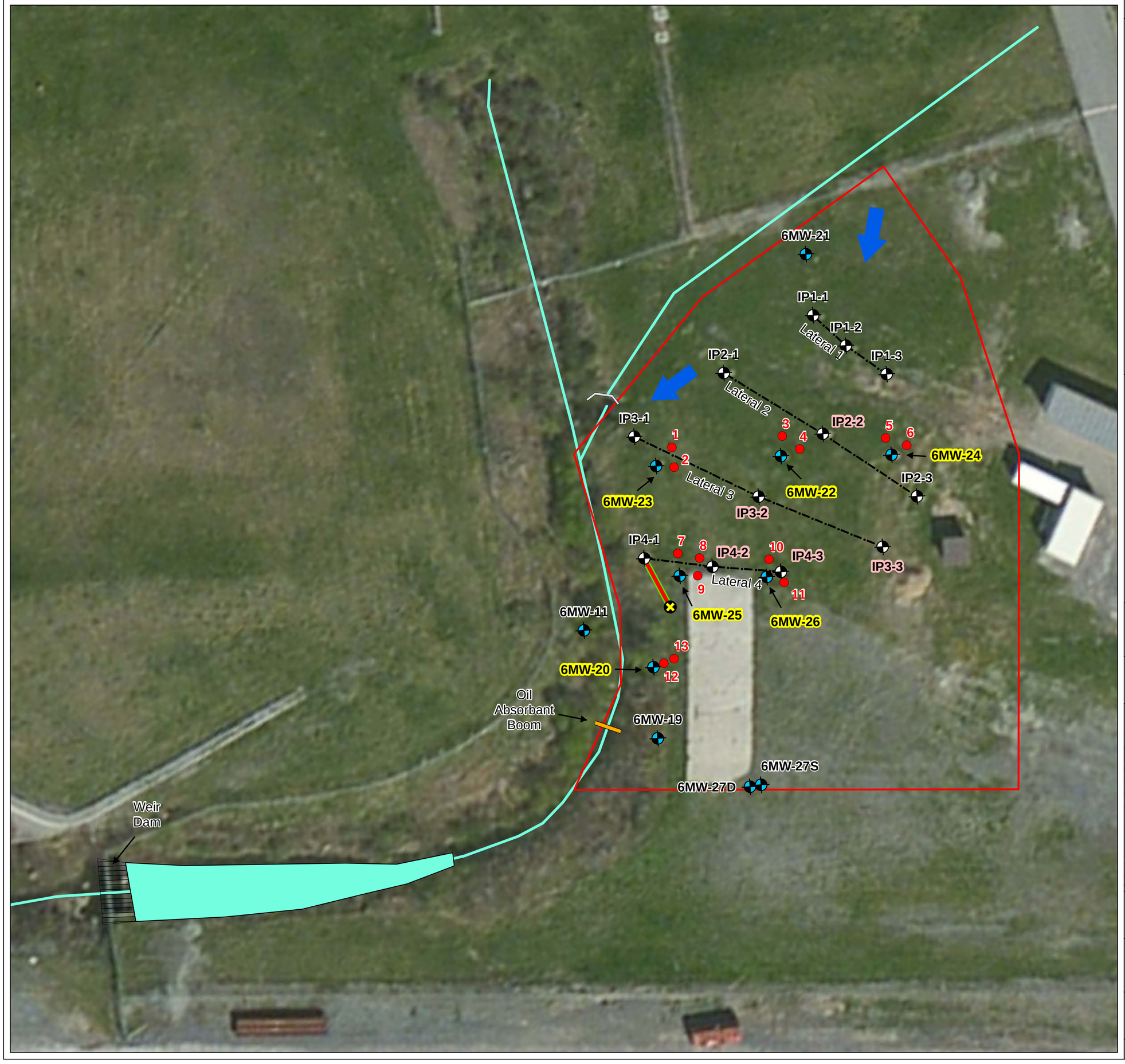
The work plan currently states vertical injection well will injected with 30-40 gallons of EVO. Due to elevated sulfate levels, a minimum of 40 gallons will be injected into each well.

Table 4-1 (see attached) has been updated with new injection well identifiers and the sequencing has been removed. Injection wells at 6MW-22, 6MW-23, 6MW-24, and all infusion points can be injected at any time during field activities. Injection points 8, 9, and 13 should be injected a day prior to injecting points 7 and 12. The adjacent monitoring wells and injection points 7 and 12 should be monitored in between injections. The total volume of water to be injected at injection points 12 and 13 (6MW-20) will be reduced from 750 gallons to 600 gallons.

Table 4-1. Injection Well Construction Details

Injection Sequence	Injection Well ID	Associated Monitoring Well	Distance from Monitoring Well (ft)	Total Depth[a] (ft BGS)	Screen Interval[b] (ft BGS)	Filter Pack Length (ft)	Annular Seal Thickness (ft)	Grout Thickness to Surface (ft)
	1	6MW-23	8	9	4 - 9	5.5	2	1.5
	2	6MW-23	8	9	4 - 9	5.5	2	1.5
	3	6MW-22	8	9	4 - 9	5.5	2	1.5
	4	6MW-22	8	9	4 - 9	5.5	2	1.5
	5	6MW-24	8	9	4 - 9	5.5	2	1.5
	6	6MW-24	8	9	4 - 9	5.5	2	1.5
	7	6MW-25	8	9	6 - 9	3.5	2	3.5
	8	6MW-25	8	9	6 - 9	3.5	2	3.5
	9	6MW-25	8	9	6 - 9	3.5	2	3.5
	10	6MW-26	8	9	4 - 9	5.5	2	3.5
	11	6MW-26	8	9	4 - 9	5.5	2	3.5
	12	6MW-20	8	15	12 - 15	3.5	2	9.5
	13	6MW-20	8	15	12 - 15	3.5	2	9.5

[a] Wells will be installed to bedrock. Exact depths are expected to vary slightly based on the observed depth to bedrock at each location.
[b] For locations in which bedrock is determined to be less than 7 ft BGS, a 3 ft screen interval will be used.
BGS = Below ground surface
ID = Identification



LEGEND

- Proposed Permanent Injection Well
- Monitoring Well
- Infusion Delivery Point
- Collection Sump
- Interceptor Trench
- Horizontal Infusion Well
- Stream
- Surface Water
- Stormwater Outfall
- Site 6 Boundary
- General Groundwater Flow Direction
- 6MW-24 Performance Monitoring Well
- IP2-2 Proposed 2015 Infusion Location

NOTES

1. Oil boom shall be placed a minimum of 20 ft from the southernmost injection point. Oil boom shall be Sheen Clean Oil-Only Boom (Item#BOM600) as manufactured by New Pig or equal. There shall be 1 primary boom installed and two backup booms.
2. There shall be a pump (i.e., trash pump or whale pump) capable of pumping a minimum of 2 gal/minute available during all work activities. A 275 gal poly tank shall be available onsite to temporarily hold water based on volumes generated. Generated water will be recirculated into upgradient access point, IP2-2. There shall be adequate hose to pump from oil boom area to IP2-2. A sealed connection at IP2-2 will prevent water leakage.

0 20 40 80 Feet

1 inch = 30 feet

Data Sources:
Background: ESRI World Imagery
(USDA NAIP, May 2015)

PROPOSED INJECTION WELLS AND SAMPLE LOCATIONS FOR SITE 6 REMEDIAL ACTION

NEW YORK AIR NATIONAL GUARD
109TH AIRLIFT WING
SCOTIA, NEW YORK

FIGURE: 4-1 | DATE: 7/12/2016

PROJECT: \Eastern_IRP\6. GIS Files\Schenectady\Projects\RAWP\Figure 4-1 Proposed Sample Locations For Site 6_Csized.mxd

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APPENDIX B – WELL INSPECTION NOTES AND PHOTOGRAPH LOG

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SITE 6 MONITORING WELL INVENTORY AND WELL INSPECTION NOTES

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Table B-1. Groundwater Monitoring Network and Inspection Details at IRP Site 6

Well ID	Well Construction							Condition/Note	Date Checked
	Northing[a] (ft)	Easting[a] (ft)	TOC Elevation (ft AMSL)	Total Depth (ft BTOC)	Screened Interval (ft BGS)	Well Material	Completion Method		
6MW-20	4744646.706	588169.0988	305.44	18.0	5.0 - 15.0	2-in. PVC	Stick-up	Concrete pad and well plug in place. Labeled well	05/11 – 05/12/16
6MW-22	4744679.543	588163.2882	309.83	8.72	4.0 - 9.0	4-in. PVC	Flushmount	Concrete pad in place. Frost heave has moved well casing and pad slightly but has not impacted function. Well plug and gasket in place. Replaced missing bolts and labeled well	05/11 – 05/12/16
6MW-23	4744667.365	588151.3442	308.37	8.73	4.0 - 9.0	4-in. PVC	Flushmount	Concrete pad in place but undersized. Frost heave has moved well casing and pad prohibiting lid from bolting down. Well plug and damaged gasket in place. Replaced well plug with PVC cap to allow lid closure. Replaced missing bolts and labeled well. Well gasket needs to be replaced	05/11 – 05/12/16
6MW-24	4744689.912	588174.0884	310.60	8.54	4.0 - 9.0	4-in. PVC	Flushmount	Concrete pad in place. Well plug in place, but gasket is missing. Replaced missing bolts and labeled well. Well gasket needs to be replaced	05/11 – 05/12/16
6MW-25	4744658.403	588163.688	306.12	8.68	4.0 - 9.0	4-in. PVC	Flushmount	Concrete pad in place but undersized. Frost heave has moved well casing and pad prohibiting lid from bolting down. Well plug and damaged gasket in place. Replaced well plug with pipe plug to allow lid closure. Replaced missing bolts and labeled well. Well gasket needs to be replaced	05/11 – 05/12/16

Table B-1. Groundwater Monitoring Network and Inspection Details at IRP Site 6 (continued)

Well ID	Well Construction							Condition/Note	Date Checked
	Northing[a] (ft)	Easting[a] (ft)	TOC Elevation (ft AMSL)	Total Depth (ft BTOC)	Screened Interval (ft BGS)	Well Material	Completion Method		
6MW-26	4744666.032	588172.6357	307.05	8.59	4.0 - 9.0	4-in. PVC	Flushmount	Concrete pad in place but undersized. Frost heave has moved well casing and pad prohibiting lid from bolting down. Well plug and damaged gasket in place. Replaced well plug with PVC cap to allow lid closure. Replaced missing bolts and labeled well. Well gasket needs to be replaced	05/11 – 05/12/16

[a] Horizontal coordinates shown are WGS84 UTM zone 18 north-meters.
AMSL = Above mean sea level.
BGS = Below ground surface.
BTOC = Below top of casing.
ID = Identifier.
IRP = Installation Restoration Program.
PVC = Polyvinyl chloride.
TOC = Top of casing.

SITE 6 MONITORING WELL INSPECTION
PHOTOGRAPH LOG

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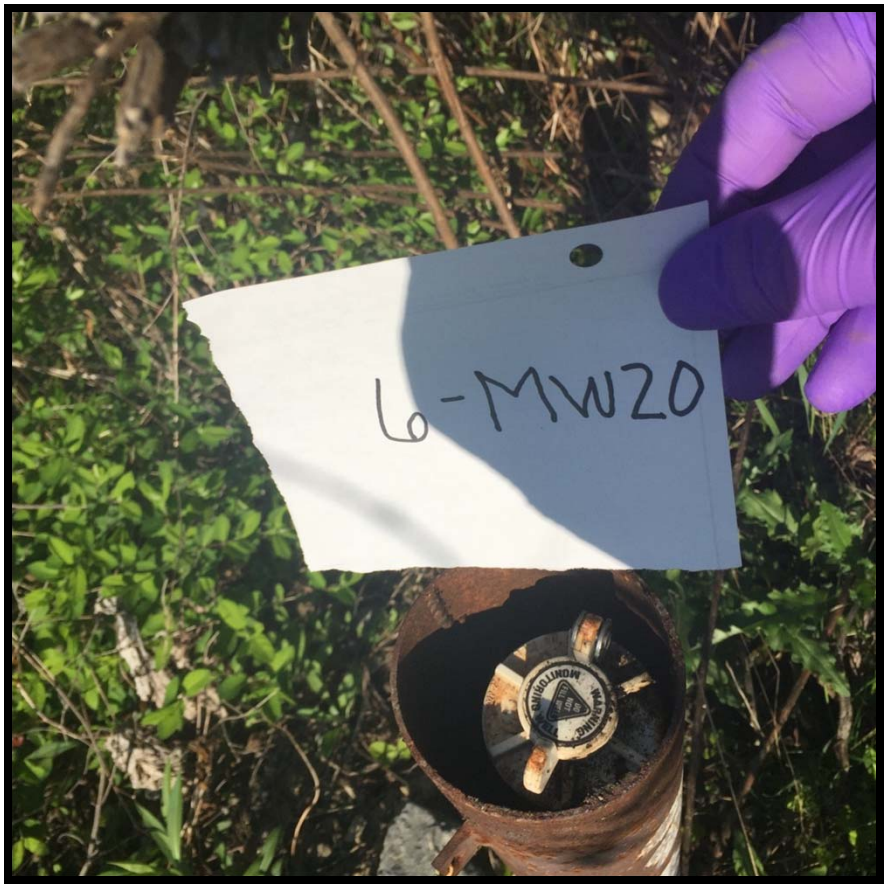
6MW-20



6MW-20

6MW-22

6MW-22

6MW-22 with replaced bolts (typical)

6MW-23

6MW-23

6MW-23

6MW-24

6MW-24

6MW-24

6MW-25

6MW-25

6MW-25 with new pipe plug

6MW-25 with new bolts (typical)

6MW-26

6MW-26

6MW-26

6MW-26 with new end cap

6MW-26

APPENDIX C – BASELINE GROUNDWATER MONITORING EVENT: PURGE LOGS AND ANALYTICAL RESULTS

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SITE 6 BASELINE GROUNDWATER EVENT
PURGE LOGS AND FIELD PARAMETERS

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GROUND WATER MICRO PURGE SHEET

PROJECT NAME: SCHENECTADY SITE 6 TASK ORDER 0004

DATE (mm/dd/yy): 5-11-16 TIME: 13 : 06

WELL ID NUMBER: 6MW-20 WELL LOCATION: SITE 6

DEPTH OF SCREENED INTERVAL (toc notch): 5 ft. to 15 ft.

INNER CASING: TYPE: (PVC) or Steel ID: 0.75 inches (2 inches) 4 inches

WATER QUALITY METER ID: 0066010

WATER LEVEL INDICATOR ID: GABMP30

PUMP ID: 16356

TURBIDITY ID: 0066010

PID ID: n/a

DEPTH TO WATER: 5.92' FT FROM MEASURE POINT

DEPTH TO TOP OF SCREEN: 5 FT FROM MEASURE POINT

DEPTH TO PUMP INTAKE: 11.0' ~~10~~ 38 (see note) FT FROM MEASURE POINT

Note: If the water table is below the top of screen, the pump should be positioned in the middle of the water column.

PURGE/SAMPLE METHOD: [ ] Bailer [ ] Bladder Pump [X] Other Pump Type Peristaltic

PURGE START TIME: 1235 PURGE END TIME: 1306

TOTAL VOLUME PURGED: 1.85

S&A PLAN SAMPLING PROCEDURE FOLLOWED: [X] Yes [ ] No IF NO, WHY WAS A DEVIATION NECESSARY:

RECORDED BY: SS (Signature)

QA CHECKED BY: (Signature)

C-5

GROUND WATER MICRO PURGE LOG

WELL ID: GMW-20

PROJECT NAME: SCHENECTADY SITE 6

TASK ORDER 0004

TIME	LITERS REMOVED	PURGE RATE (mL/min)	ORP (mv)	TEMP (Celsius)	pH (s.u.)	COND (**RECORD UNITS**)	DO (mg/L)	TURBIDITY (NTU)	DEPTH TO WATER (FT BTOC)	COMMENTS
1235	0	80	190	18.33	6.77	1.34 ms/cm or S/m	7.74	11.4	5.92'	
1245	0.8	80	186	18.76	6.75	1.31 ms/cm or S/m	5.42	0.0	6.91	
1248	0.95	50	182	18.95	6.75	1.30 ms/cm or S/m	5.14	0.0	7.07	
1251	1.10	50	180	18.63	6.75	1.31 ms/cm or S/m	4.78	0.0	7.12	
1254	1.25	50	176	18.45	6.75	1.30 ms/cm or S/m	4.38	0.1	7.19	
1257	1.40	50	176	18.60	6.75	1.30 ms/cm or S/m	4.07	0.0	7.26	
1300	1.55	50	174	18.53	6.75	1.29 ms/cm or S/m	3.72	0.0	7.29	
1303	1.70	50	174	18.28	6.75	1.31 ms/cm or S/m	3.77	0.0	7.28	
1306	1.85	50	173	17.91	6.75	1.31 ms/cm or S/m	3.83	0.9	7.33	
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				

RECORDED BY: _____ (Signature)

QA CHECKED BY: _____ (Signature)

C-6

GROUND WATER MICRO PURGE SHEET

PROJECT NAME: SCHENECTADY SITE 6 TASK ORDER 0004

DATE (mm/dd/yy): 5-11-16 TIME: 15 : 01

WELL ID NUMBER: 6MW-22 WELL LOCATION: SITE 6

DEPTH OF SCREENED INTERVAL (toc notch): 4 ft. to 9 ft.

INNER CASING: TYPE: (PVC) or Steel ID: O.75 inches 2 inches (4 inches)

WATER QUALITY METER ID: 0066010

WATER LEVEL INDICATOR ID: GABMP30

PUMP ID: 16356

TURBIDITY ID: 0066010

PID ID: n/a

DEPTH TO WATER: 6.71 FT FROM MEASURE POINT

DEPTH TO TOP OF SCREEN: 4 FT FROM MEASURE POINT

DEPTH TO PUMP INTAKE: ~~6.90~~ 6.5 (see note) FT FROM MEASURE POINT

~~6.90~~ - DM 5/27/16

Note: If the water table is below the top of screen, the pump should be positioned in the middle of the water column.

PURGE/SAMPLE METHOD: [ ] Bailer [ ] Bladder Pump [X] Other Pump Type Peristaltic

PURGE START TIME: 1440 PURGE END TIME: 1501

TOTAL VOLUME PURGED: 1.68 L

S&A PLAN SAMPLING PROCEDURE FOLLOWED: [X] Yes [ ] No IF NO, WHY WAS A DEVIATION NECESSARY:

(DM on behalf of) 5/27/16

RECORDED BY: Zach Steele (Signature)

QA CHECKED BY: Dina Mercer (Signature)

C-7

GROUND WATER MICRO PURGE LOG

WELL ID: 6MW-22

PROJECT NAME: SCHENECTADY SITE 6

TASK ORDER 0004

TIME	LITERS REMOVED	PURGE RATE (mL/min)	ORP (mv)	TEMP (Celsius)	pH (s.u.)	COND **(RECORD UNITS)**	DO (mg/L)	TURBIDITY (NTU)	DEPTH TO WATER (FT BTOC)	COMMENTS
1440	0.0	80	217	18.55	6.64	1.54 (ms/cm) or S/m	12.32	25.5	6.71	
1443	0.24	80	214	18.42	4.84	1.40 ms/cm or S/m	7.65	14.2	6.79	
1446	0.48	80	211	18.52	6.87	1.42 ms/cm or S/m	6.34	7.5	6.84	
1449	0.72	80	205	18.75	6.87	1.42 ms/cm or S/m	5.44	0.0	6.87	
1452	0.96	80	201	18.73	6.87	1.42 ms/cm or S/m	5.38	0.0	6.87	
1455	1.20	80	198	18.71	6.87	1.41 ms/cm or S/m	5.19	0.7	6.88	
1458	1.44	80	197	18.73	6.87	1.41 ms/cm or S/m	5.13	0.0	6.88	
1501	1.68	80	194	18.78	6.87	1.40 ms/cm or S/m	4.78	0.0	6.88	
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				

RECORDED BY: _____ (Signature)

QA CHECKED BY: _____ (Signature)

GROUND WATER MICRO PURGE SHEET

PROJECT NAME: SCHENECTADY SITE 6 TASK ORDER 0004

DATE (mm/dd/yy): 5-12-26 TIME: 09:55

WELL ID NUMBER: 6MW-23 WELL LOCATION: SITE 6

DEPTH OF SCREENED INTERVAL (toc notch): 4 ft. to 9 ft.

INNER CASING: TYPE: (PVC) or Steel ID: 0.75 inches 2 inches (4 inches)

WATER QUALITY METER ID: 0066010

WATER LEVEL INDICATOR ID: GARMP38

PUMP ID: 16356

TURBIDITY ID: 0066058

PID ID: n/a

DEPTH TO WATER: 6.31 FT FROM MEASURE POINT

DEPTH TO TOP OF SCREEN: 4 FT FROM MEASURE POINT

DEPTH TO PUMP INTAKE: 72' ~~6.5~~ (see note) FT FROM MEASURE POINT

Note: If the water table is below the top of screen, the pump should be positioned in the middle of the water column.

PURGE/SAMPLE METHOD: [ ] Bailer [ ] Bladder Pump [X] Other Pump Type Peristaltic

PURGE START TIME: 0925 PURGE END TIME: 0955

TOTAL VOLUME PURGED: 3.1L

S&A PLAN SAMPLING PROCEDURE FOLLOWED: [X] Yes [ ] No IF NO, WHY WAS A DEVIATION NECESSARY: _____

RECORDED BY: _____ (Signature)

QA CHECKED BY: _____ (Signature)

C-9

GROUND WATER MICRO PURGE LOG

WELL ID: GMW-23

PROJECT NAME: SCHENECTADY SITE 6

TASK ORDER 0004

TIME	LITERS REMOVED	PURGE RATE (mL/min)	ORP (mv)	TEMP (Celsius)	pH (s.u.)	COND **(RECORD UNITS)**	DO (mg/L)	TURBIDITY (NTU)	DEPTH TO WATER (FT BTOC)	COMMENTS
0925	0	100	245	14.41	6.33	1.16 ~~ms/cm~~ or S/m	8.72	15.7	6.31	
0928	.30	100	165	13.62	6.88	1.17 ms/cm or S/m	4.25	18.6	6.31	
0931	.60	100	123	13.77	6.86	1.16 ms/cm or S/m	4.05	12.2	6.31	
0934	.90	100	98	13.78	6.85	1.16 ms/cm or S/m	3.98	10.9	6.31	
0937	1.20	100	59	13.90	6.85	1.15 ms/cm or S/m	3.73	11.3	6.31	
0940	1.5	100	23	14.06	6.85	1.15 ms/cm or S/m	3.54	11.5	6.31	
0943	1.8	100	11	14.00	6.85	1.17 ms/cm or S/m	3.41	11.9	6.31	
0946	2.2	100	-17	13.74	6.89	1.15 ms/cm or S/m	3.29	11.4	6.31	
0949	2.5	100	-29	13.74	6.85	1.13 ms/cm or S/m	3.27	11.9	6.31	
0952	2.8	100	-33	13.79	6.82	1.13 ms/cm or S/m	3.24	13.5	6.31	
0955	3.1	100	-37	13.84	6.81	1.12 ms/cm or S/m	3.20	14.1	6.31	
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				

RECORDED BY: _____ (Signature)

QA CHECKED BY: _____ (Signature)

C-10

GROUND WATER MICRO PURGE SHEET

PROJECT NAME: SCHENECTADY SITE 6 DELIVERY ORDER NO: 187 AND 190

DATE (mm/dd/yy): 05-12-16 TIME: 08:30

WELL ID NUMBER: 6MW-24 WELL LOCATION: SITE 6

DEPTH OF SCREENED INTERVAL (toc notch): 4.0 ft. to 9.0 ft.

INNER CASING: TYPE: (PVC) or Steel ID: O.75 inches 2 inches (4 inches)

WATER QUALITY METER ID: 00640/0

WATER LEVEL INDICATOR ID: GABMP30

PUMP ID: 16356

TURBIDITY ID: 0066010

PID ID: n/a

DEPTH TO WATER: 7.45 FT FROM MEASURE POINT

DEPTH TO TOP OF SCREEN: 4 FT FROM MEASURE POINT

DEPTH TO PUMP INTAKE: 7.9 ~~6.5~~ (see note) FT FROM MEASURE POINT

Note: If the water table is below the top of screen, the pump should be positioned in the middle of the water column.

PURGE/SAMPLE METHOD: [ ] Bailer [ ] Bladder Pump [X] Other Pump Type Peristaltic

PURGE START TIME: 0816 PURGE END TIME: 0830

TOTAL VOLUME PURGED: 1.39L

S&A PLAN SAMPLING PROCEDURE FOLLOWED: [X] Yes [ ] No IF NO, WHY WAS A DEVIATION NECESSARY:

RECORDED BY: (Signature)

QA CHECKED BY: (Signature)

C-11

GROUND WATER MICRO PURGE LOG

WELL ID: GMW-24

PROJECT NAME: SCHENECTADY SITE 6

TASK ORDER 0004

TIME	LITERS REMOVED	PURGE RATE (mL/min)	ORP (mv)	TEMP (Celsius)	pH (s.u.)	COND **(RECORD UNITS)**	DO (mg/L)	TURBIDITY (NTU)	DEPTH TO WATER (FT BTOC)	COMMENTS
0816	0	90	258	9.64	6.82	1.31 (ms/cm) or S/m	9.71	38.2	7.45	
0821	.49	90	255	9.52	7.14	1.28 ms/cm or S/m	9.02	20.7	7.70	
0824	.79	100	249	9.49	7.19	1.27 ms/cm or S/m	8.40	12.7	7.77	
0827	1.09	100	244	9.54	7.21	1.27 ms/cm or S/m	8.12	3.7	7.80	
0830	1.39	100	237	9.54	7.24	1.26 ms/cm or S/m	7.59	1.9	7.82	
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				

RECORDED BY: _____ (Signature)

QA CHECKED BY: _____ (Signature)

GROUND WATER MICRO PURGE SHEET

PROJECT NAME: SCHENECTADY SITE 6 TASK ORDER 0004

DATE (mm/dd/yy): 05-11-16 TIME: 11 : 40

WELL ID NUMBER: 6MW-25 WELL LOCATION: SITE 6

DEPTH OF SCREENED INTERVAL (toc notch): 4 ft. to 9 ft.

INNER CASING: TYPE: (PVC) or Steel ID: O.75 inches 2 inches (4 inches)

WATER QUALITY METER ID: 0066010

WATER LEVEL INDICATOR ID: 163566

PUMP ID: GABMP30 38

TURBIDITY ID: 0066010

PID ID: n/a

DEPTH TO WATER: 4.13 FT FROM MEASURE POINT

DEPTH TO TOP OF SCREEN: 4 FT FROM MEASURE POINT

DEPTH TO PUMP INTAKE: 6.2 ~~6.5~~ 38 (see note) FT FROM MEASURE POINT

Note: If the water table is below the top of screen, the pump should be positioned in the middle of the water column.

PURGE/SAMPLE METHOD: [ ] Bailer [ ] Bladder Pump [X] Other Pump Type Peristaltic

PURGE START TIME: 1054 PURGE END TIME: 1140

TOTAL VOLUME PURGED: 4.749 L

S&A PLAN SAMPLING PROCEDURE FOLLOWED: [X] Yes [ ] No IF NO, WHY WAS A DEVIATION NECESSARY:

RECORDED BY: [signature] (Signature)

QA CHECKED BY: David Mullis (Signature)

GROUND WATER MICRO PURGE LOG

WELL ID: GMW-25

PROJECT NAME: SCHENECTADY SITE 6

TASK ORDER 0004

TIME	LITERS REMOVED	PURGE RATE (mL/min)	ORP (mv)	TEMP (Celsius)	pH (s.u.)	COND **(RECORD UNITS)**	DO (mg/L)	TURBIDITY (NTU)	DEPTH TO WATER (FT BTOC)	COMMENTS
1054	0	110	144	14,38	6.86	1.89 (ms/cm) or S/m	5.29	51.9	4,13	
1104	1.1	110	101	14.42	6.87	1.90 ms/cm or S/m	4.52	44.9	4.13	
1109	1.65	110	72	14,33	6.87	1.91 ms/cm or S/m	4.22	39.9	4.13	
1114	2.20	110	47	14,47	6.87	1.91 ms/cm or S/m	3.83	42.0	4.13	
1119	2.65	110	39	14,29	6.87	1.92 ms/cm or S/m	3.76	39.8	4,13	
1124	3.20	110	30	14.33	6.87	1.92 ms/cm or S/m	3.65	39.7	4,13	
1129	3.75	110	15	14,40	6.87	1.92 ms/cm or S/m	3.62	40.4	4,13	
1132	4.08	110	14	14.62	6.87	1.92 ms/cm or S/m	3.42	38.9	4.13	
1137	4.41	110	13	14,58	6.87	1.92 ms/cm or S/m	3.40	42.0	4,13	
1140	4.74	110	12	14,49	6.87	1.92 ms/cm or S/m	3.41	40.6	4,13	
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				

RECORDED BY: _____ (Signature)

QA CHECKED BY: _____ (Signature)

GROUND WATER MICRO PURGE SHEET

PROJECT NAME: SCHENECTADY SITE 6 TASK ORDER 0004

DATE (mm/dd/yy): 05-11-16 TIME: 10 : 23

WELL ID NUMBER: 6MW-26 WELL LOCATION: SITE 6

DEPTH OF SCREENED INTERVAL (toc notch): 4.0 ft. to 9.0 ft.

INNER CASING: TYPE: (PVC) or Steel ID: O.75 inches 2 inches (4 inches)

WATER QUALITY METER ID: 0066010

WATER LEVEL INDICATOR ID: GABMP30

PUMP ID: n/a PP2 16356

TURBIDITY ID: 0066010

PID ID: n/a

DEPTH TO WATER: 4.95 FT FROM MEASURE POINT

DEPTH TO TOP OF SCREEN: 4 FT FROM MEASURE POINT

DEPTH TO PUMP INTAKE: 6.5 (see note) FT FROM MEASURE POINT

Note: If the water table is below the top of screen, the pump should be positioned in the middle of the water column.

PURGE/SAMPLE METHOD: [ ] Bailer [ ] Bladder Pump [X] Other Pump Type Peristaltic

PURGE START TIME: 0938 PURGE END TIME: 1023

TOTAL VOLUME PURGED: 4.95 L

S&A PLAN SAMPLING PROCEDURE FOLLOWED: [X] Yes [ ] No IF NO, WHY WAS A DEVIATION NECESSARY:

RECORDED BY: [signature] (Signature)

QA CHECKED BY: [signature] (Signature)

C-15

GROUND WATER MICRO PURGE LOG

WELL ID: 6MW-26

PROJECT NAME: SCHENECTADY SITE 6

TASK ORDER 0004

TIME	LITERS REMOVED	PURGE RATE (mL/min)	ORP (mv)	TEMP (Celsius)	pH (s.u.)	COND **(RECORD UNITS)**	DO (mg/L)	TURBIDITY (NTU)	DEPTH TO WATER (FT BTOC)	COMMENTS
0938	0	110	151	13.24	7.07	1.53 ms/cm or S/m	5.94	25.3	4.95'	
0948	1.1	110	123	12.82	7.06	1.50 ms/cm or S/m	4.61	2.5	4.95'	
0953	1.65	110	97	13.33	7.04	1.47 ms/cm or S/m	4.25	0.8	4.95'	
0958	2.2	110	77	13.40	7.03	1.45 ms/cm or S/m	4.04	0.0	4.95'	
1003	2.75	110	60	13.56	7.05	1.52 ms/cm or S/m	4.27	3.9	4.97'	
1008	3.3	110	44	13.56	7.06	1.48 ms/cm or S/m	4.55	3.1	4.97'	
1013	3.85	110	42	13.69	7.05	1.47 ms/cm or S/m	3.92	3.2	4.97'	
1018	4.40	110	43	13.70	7.02	1.44 ms/cm or S/m	3.79	3.1	4.97'	
1023	4.95	110	43	13.73	7.01	1.43 ms/cm or S/m	3.77	3.0	4.97'	
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				
						ms/cm or S/m				

RECORDED BY: _____ (Signature)

QA CHECKED BY: _____ (Signature)

SITE 6 BASELINE GROUNDWATER EVENT
ANALYTICAL DATA REPORTS

(FOR HARD COPY VERSIONS OF THIS REPORT, THIS PORTION OF APPENDIX C IS INCLUDED ON THE COMPLETE DOCUMENT COMPACT DISC)

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ANALYTICAL REPORT

Job Number: 280-83161-1

Job Description: Schenectady ANGB, NY

For:
Leidos, Inc.
301 Laboratory Road
Leidos SSC-AP
LOC #47, MS 2113-03
Oak Ridge, TN 37830

Attention: Mr. Michael Poligone

Approved for release.
Jessica H DeHerrera
Project Manager I
5/31/2016 5:22 PM

Jessica H DeHerrera, Project Manager I
4955 Yarrow Street, Arvada, CO, 80002
jessica.deherrera@testamericainc.com
05/31/2016

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

NOTE - All references to Schenectady ANGB
in this report should be Stratton ANGB

CASE NARRATIVE
Client: Leidos, Inc.
Project: Schenectady ANGB, NY
Report Number: 280-83161-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 05/13/2016; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.1ºC and 1.8º C.

One of two coolers for this job was received without custody seal present, however packing tape was intact upon arrival. The laboratory will continue with analysis unless instructed otherwise by the client. The client was notified on 5/16/16.

One of three containers for the following sample was received broken: FB01 (280-83161-10). Sufficient volume was available to proceed with analysis for the sample. The client was notified on 5/16/16.

Due to a shipping delay, the following samples were received expired or with less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the Nitrate by IC analysis within holding time: 6MW2601 (280-83161-4), 6MW2501 (280-83161-5), 6MW2001 (280-83161-6), 6MW2001MS (280-83161-6[MS]), 6MW2001MSD (280-83161-6[MSD]), 6MW2201 (280-83161-7) and 6MW2001D (280-83161-8). The client was contacted and the laboratory was instructed to proceed with analysis as long as it was performed within two times of the holding time. The client was notified on 5/16/16.

The Chain-of-Custody (COC) was incomplete as received. No analyses are marked on the Chain-of-Custody for sample FB01 (280-83161-10). The sample was logged for VOC analysis per the volume received.

The requested 8260C VOC analysis was subcontracted to TestAmerica's St. Louis laboratory.

VOLATILE ORGANIC COMPOUNDS (GC/MS)

Samples 6MW2301 (280-83161-1), 6MW2401 (280-83161-2), TB02 (280-83161-3), 6MW2601 (280-83161-4), 6MW2501 (280-83161-5), 6MW2001 (280-83161-6), 6MW2201 (280-83161-7), 6MW2001D (280-83161-8), TB01 (280-83161-9) and FB01 (280-83161-10) were analyzed for Volatile Organic Compounds (GC/MS) in accordance with 8260C_DOD5. The samples were analyzed on 05/22/2016, 05/23/2016 and 05/24/2016.

The continuing calibration verification (CCV) associated with batch 160-252275 recovered above the upper control limit for 2,2-Dichloropropane. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The associated results have been flagged "Q".

The following compounds did not meet the minimum relative response factor limits in the continuing calibration verification (CCV) associated with batch 160-252275: Acetone and 2-Butanone (MEK). A low-level LOQV was analyzed at the reporting limit (5ug/L) and the affected analytes were detected. Target analytes recovering above the reporting limit will be qualified and reported.

The standard mix used to spike the CCVC for batch 160-252275 expired at the end of the day, 5/22/2016. The CCVC was spiked on 5/22 but did not inject on the instrument until after midnight, causing it to be flagged as using an expired standard. Analyte recoveries are within acceptance limits, indicating the standard had not degraded.

The continuing calibration verifications (CCV/CCVC) associated with batch 160-252588 recovered above the upper control limit for Chloromethane, Dichlorodifluoromethane and/or 2,2-Dichloropropane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated results have been flagged "Q".

The continuing calibration verification (CCV) associated with batch 160-252588 recovered above the upper control limit for Vinyl chloride. Vinyl chloride was detected above the Reporting Limit in sample Sample 6MW2501 (280-83161-5); this sample will be re-analyzed for Vinyl Chloride only, in a batch with an acceptable CCV for this analyte (160-25287). All other samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The following compounds did not meet the minimum relative response factor limits in the continuing calibration verifications (CCV/CCVC) associated with batch 160-252588: Acetone and 2-Butanone (MEK). A low-level LOQV was analyzed at the reporting limit (5ug/L) and

the affected analytes were detected. Target analytes recovering above the reporting limit will be qualified and reported.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with analytical batch 160-252878. A laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) were analyzed within this batch for QC purposes.

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

ANIONS (28 DAYS)

Samples 6MW2301 (280-83161-1), 6MW2401 (280-83161-2), 6MW2601 (280-83161-4), 6MW2501 (280-83161-5), 6MW2001 (280-83161-6), 6MW2201 (280-83161-7) and 6MW2001D (280-83161-8) were analyzed for anions (28 days) in accordance with 9056A. The samples were analyzed on 05/13/2016 and 05/14/2016.

Samples 6MW2301 (280-83161-1)[5X], 6MW2401 (280-83161-2)[5X], 6MW2601 (280-83161-4)[5X], 6MW2501 (280-83161-5)[5X], 6MW2001 (280-83161-6)[5X], 6MW2201 (280-83161-7)[5X] and 6MW2001D (280-83161-8)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Sulfate was detected in method blank MB 280-325180/6 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged “J”. However, because the result concentration was less than ½ the reporting limit, no corrective action was necessary.

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

ANIONS (48 HOURS)

Samples 6MW2301 (280-83161-1), 6MW2401 (280-83161-2), 6MW2601 (280-83161-4), 6MW2501 (280-83161-5), 6MW2001 (280-83161-6), 6MW2201 (280-83161-7) and 6MW2001D (280-83161-8) were analyzed for anions (48 hours) in accordance with 9056A. The samples were analyzed on 05/13/2016 and 05/14/2016.

Nitrate was detected in method blank MB 280-325179/6 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged “J”. However, because the result concentration was less than ½ the reporting limit, no corrective action was necessary.

As noted above, the following samples was received outside of holding time or with insufficient time remaining for analysis: 6MW2601 (280-83161-4), 6MW2501 (280-83161-5), 6MW2001 (280-83161-6), 6MW2001MS (280-83161-6[MS]), 6MW2001MSD (280-83161-6[MSD]), 6MW2201 (280-83161-7) and 6MW2001D (280-83161-8). The samples were analyzed outside of the analytical holding time per client request.

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

TOTAL ORGANIC CARBON

Samples 6MW2301 (280-83161-1), 6MW2401 (280-83161-2), 6MW2601 (280-83161-4), 6MW2501 (280-83161-5), 6MW2001 (280-83161-6), 6MW2201 (280-83161-7) and 6MW2001D (280-83161-8) were analyzed for total organic carbon in accordance with EPA SW-846 Method 9060A. The samples were analyzed on 05/24/2016 and 05/25/2016.

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

EXECUTIVE SUMMARY - Detections

Client: Leidos, Inc. Job Number: 280-83161-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
280-83161-1	**6MW2301**					
cis-1,2-Dichloroethene		13		5.0	ug/L	8260C DOD
Tetrachloroethene		3.0	J	5.0	ug/L	8260C DOD
Trichloroethene		1.7	J	5.0	ug/L	8260C DOD
Sulfate		200	D	25	mg/L	9056A
Total Organic Carbon - Quad		2.8		1.0	mg/L	9060A
280-83161-2	**6MW2401**					
cis-1,2-Dichloroethene		4.8	J	5.0	ug/L	8260C DOD
Trichloroethene		5.9		5.0	ug/L	8260C DOD
Nitrate		1.2		0.50	mg/L	9056A
Sulfate		360	D	25	mg/L	9056A
Total Organic Carbon - Quad		5.3		1.0	mg/L	9060A
280-83161-4	**6MW2601**					
cis-1,2-Dichloroethene		6.6		5.0	ug/L	8260C DOD
Tetrachloroethene		1.2	J	5.0	ug/L	8260C DOD
Trichloroethene		1.1	J	5.0	ug/L	8260C DOD
Nitrate		0.28	J H	0.50	mg/L	9056A
Sulfate		320	D	25	mg/L	9056A
Total Organic Carbon - Quad		2.6		1.0	mg/L	9060A
280-83161-5	**6MW2501**					
cis-1,2-Dichloroethene		58		5.0	ug/L	8260C DOD
Tetrachloroethene		20		5.0	ug/L	8260C DOD
Trichloroethene		5.8		5.0	ug/L	8260C DOD
Vinyl chloride		21		5.0	ug/L	8260C DOD
Sulfate		820	D	25	mg/L	9056A
Total Organic Carbon - Quad		2.3		1.0	mg/L	9060A
280-83161-6	**6MW2001**					
cis-1,2-Dichloroethene		6.8		5.0	ug/L	8260C DOD
Tetrachloroethene		0.86	J	5.0	ug/L	8260C DOD
Trichloroethene		1.5	J	5.0	ug/L	8260C DOD
Sulfate		270	D	25	mg/L	9056A
Total Organic Carbon - Quad		2.8		1.0	mg/L	9060A

EXECUTIVE SUMMARY - Detections

Client: Leidos, Inc. Job Number: 280-83161-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
280-83161-7	**6MW2201**					
cis-1,2-Dichloroethene		16		5.0	ug/L	8260C DOD
Tetrachloroethene		3.4	J	5.0	ug/L	8260C DOD
Trichloroethene		3.6	J	5.0	ug/L	8260C DOD
Nitrate		0.16	J H	0.50	mg/L	9056A
Sulfate		290	D	25	mg/L	9056A
Total Organic Carbon - Quad		2.5		1.0	mg/L	9060A
280-83161-8FD	**6MW2001D**					
cis-1,2-Dichloroethene		7.0		5.0	ug/L	8260C DOD
Tetrachloroethene		1.3	J	5.0	ug/L	8260C DOD
Trichloroethene		1.5	J	5.0	ug/L	8260C DOD
Nitrate		0.060	J H	0.50	mg/L	9056A
Sulfate		270	D	25	mg/L	9056A
Total Organic Carbon - Quad		2.6		1.0	mg/L	9060A

METHOD SUMMARY

Client: Leidos, Inc. Job Number: 280-83161-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Anions, Ion Chromatography	TAL DEN	SW846 9056A	
Organic Carbon, Total (TOC)	TAL DEN	SW846 9060A	
Volatile Organic Compounds (GC/MS)	TAL SL	SW846 8260C DOD	
Purge and Trap	TAL SL		SW846 5030C

Lab References:

TAL DEN = TestAmerica Denver

TAL SL = TestAmerica St. Louis

Method References:

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

METHOD / ANALYST SUMMARY

Client: Leidos, Inc. Job Number: 280-83161-1

Method	Analyst	Analyst ID
SW846 8260C DOD	Hann, John D	JDH
SW846 8260C DOD	Rhoades, Stephanie M	SMR
SW846 9056A	Benson, Alex F	AFB
SW846 9060A	Jewell, Connie C	CCJ

SAMPLE SUMMARY

Client: Leidos, Inc. Job Number: 280-83161-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-83161-1	6MW2301	Water	05/12/2016 0955	05/13/2016 0950
280-83161-2	6MW2401	Water	05/12/2016 0830	05/13/2016 0950
280-83161-3TB	TB02	Water	05/12/2016 0800	05/13/2016 0950
280-83161-4	6MW2601	Water	05/11/2016 1023	05/13/2016 0950
280-83161-5	6MW2501	Water	05/11/2016 1140	05/13/2016 0950
280-83161-6	6MW2001	Water	05/11/2016 1306	05/13/2016 0950
280-83161-6MS	6MW2001MS	Water	05/11/2016 1306	05/13/2016 0950
280-83161-6MSD	6MW2001MSD	Water	05/11/2016 1306	05/13/2016 0950
280-83161-7	6MW2201	Water	05/11/2016 1501	05/13/2016 0950
280-83161-8FD	6MW2001D	Water	05/11/2016 1306	05/13/2016 0950
280-83161-9TB	TB01	Water	05/11/2016 0815	05/13/2016 0950
280-83161-10FB	FB01	Water	05/11/2016 1030	05/13/2016 0950

SAMPLE RESULTS

Client Sample ID: 6MW2301

Lab Sample ID: 280-83161-1 Date Sampled: 05/12/2016 0955
Client Matrix: Water Date Received: 05/13/2016 0950

8260C DOD Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C DOD	Analysis Batch:	160-252275	Instrument ID:	VMSF
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	FSMP6618.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 2127			Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 2127				

Analyte	Result (ug/L)	Qualifier	DL	LOQ
1,1,1,2-Tetrachloroethane	2.0	U	0.25	5.0
1,1,1-Trichloroethane	1.0	U	0.29	5.0
1,1,2,2-Tetrachloroethane	2.0	U	0.43	5.0
1,1,2-Trichloroethane	1.0	U	0.57	5.0
1,1-Dichloroethane	1.0	U	0.39	5.0
1,1-Dichloroethene	1.0	U	0.37	5.0
1,1-Dichloropropene	1.0	U	0.30	5.0
1,2,3-Trichlorobenzene	2.0	U	0.65	5.0
1,2,3-Trichloropropane	1.0	U	0.56	5.0
1,2,4-Trimethylbenzene	2.0	U	0.40	5.0
1,2-Dibromo-3-Chloropropane	2.0	U	1.2	10
1,2-Dibromoethane	2.0	U	0.44	5.0
1,2-Dichloroethane	1.0	U	0.37	5.0
1,2-Dichloropropane	1.0	U	0.32	5.0
1,3,5-Trimethylbenzene	2.0	U	0.28	5.0
1,3-Dichloropropane	1.0	U	0.24	5.0
2,2-Dichloropropane	2.0	U Q	0.54	5.0
2-Butanone (MEK)	5.0	U	0.39	20
2-Chlorotoluene	2.0	U	0.34	5.0
2-Hexanone	2.0	U	0.59	20
4-Chlorotoluene	2.0	U	0.31	5.0
4-Methyl-2-pentanone (MIBK)	2.0	U	0.33	20
Acetone	10	U	6.7	20
Benzene	1.0	U	0.25	5.0
Bromobenzene	2.0	U	0.33	5.0
Bromochloromethane	2.0	U	0.55	5.0
Bromodichloromethane	2.0	U	0.25	5.0
Bromoform	1.0	U	0.37	5.0
Bromomethane	2.0	U	0.40	10
Carbon disulfide	1.0	U	0.37	5.0
Carbon tetrachloride	1.0	U	0.36	5.0
Chlorobenzene	1.0	U	0.38	5.0
Chloroethane	1.0	U	0.38	10
Chloroform	1.0	U	0.15	5.0
Chloromethane	2.0	U	0.55	10
cis-1,2-Dichloroethene	13		0.16	5.0
cis-1,3-Dichloropropene	1.0	U	0.34	5.0
Dibromochloromethane	1.0	U	0.33	5.0
Dibromomethane	2.0	U	0.41	5.0
Dichlorodifluoromethane	2.0	U	0.45	10
Ethylbenzene	1.0	U	0.30	5.0
Isopropylbenzene	2.0	U	0.26	5.0
m,p-Xylenes	1.0	U	0.57	5.0
Methyl tert-butyl ether	2.0	U	0.40	5.0
Methylene Chloride	5.0	U	1.7	7.5
Naphthalene	2.0	U	0.85	5.0

Client: Leidos, Inc. Job Number: 280-83161-1

Client Sample ID: **6MW2301**

Lab Sample ID: 280-83161-1 Date Sampled: 05/12/2016 0955
Client Matrix: Water Date Received: 05/13/2016 0950

8260C DOD Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C DOD	Analysis Batch:	160-252275	Instrument ID:	VMSF
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	FSMP6618.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 2127			Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 2127				

Analyte	Result (ug/L)	Qualifier	DL	LOQ
n-Butylbenzene	2.0	U	0.23	5.0
N-Propylbenzene	2.0	U	0.30	5.0
o-Xylene	1.0	U	0.32	5.0
p-Isopropyltoluene	2.0	U	0.32	5.0
sec-Butylbenzene	2.0	U	0.31	5.0
Styrene	1.0	U	0.35	5.0
tert-Butylbenzene	2.0	U	0.31	5.0
Tetrachloroethene	3.0	J	0.28	5.0
Toluene	1.0	U	1.0	5.0
trans-1,2-Dichloroethene	1.0	U	0.18	5.0
trans-1,3-Dichloropropene	1.0	U	0.35	5.0
Trichloroethene	1.7	J	0.29	5.0
Trichlorofluoromethane	2.0	U	0.22	5.0
Vinyl chloride	1.0	U	0.43	5.0
Xylenes (total)	5.0	U	0.85	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	117		81 - 118
4-Bromofluorobenzene (Surr)	101		85 - 114
Dibromofluoromethane (Surr)	103		80 - 119
Toluene-d8 (Surr)	100		89 - 112

Client: Leidos, Inc. Job Number: 280-83161-1

Client Sample ID: **6MW2401**

Lab Sample ID: 280-83161-2 Date Sampled: 05/12/2016 0830
Client Matrix: Water Date Received: 05/13/2016 0950

8260C DOD Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C DOD	Analysis Batch:	160-252275	Instrument ID:	VMSF
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	FSMP6619.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 2152			Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 2152				

Analyte	Result (ug/L)	Qualifier	DL	LOQ
1,1,1,2-Tetrachloroethane	2.0	U	0.25	5.0
1,1,1-Trichloroethane	1.0	U	0.29	5.0
1,1,2,2-Tetrachloroethane	2.0	U	0.43	5.0
1,1,2-Trichloroethane	1.0	U	0.57	5.0
1,1-Dichloroethane	1.0	U	0.39	5.0
1,1-Dichloroethene	1.0	U	0.37	5.0
1,1-Dichloropropene	1.0	U	0.30	5.0
1,2,3-Trichlorobenzene	2.0	U	0.65	5.0
1,2,3-Trichloropropane	1.0	U	0.56	5.0
1,2,4-Trimethylbenzene	2.0	U	0.40	5.0
1,2-Dibromo-3-Chloropropane	2.0	U	1.2	10
1,2-Dibromoethane	2.0	U	0.44	5.0
1,2-Dichloroethane	1.0	U	0.37	5.0
1,2-Dichloropropane	1.0	U	0.32	5.0
1,3,5-Trimethylbenzene	2.0	U	0.28	5.0
1,3-Dichloropropane	1.0	U	0.24	5.0
2,2-Dichloropropane	2.0	U Q	0.54	5.0
2-Butanone (MEK)	5.0	U	0.39	20
2-Chlorotoluene	2.0	U	0.34	5.0
2-Hexanone	2.0	U	0.59	20
4-Chlorotoluene	2.0	U	0.31	5.0
4-Methyl-2-pentanone (MIBK)	2.0	U	0.33	20
Acetone	10	U	6.7	20
Benzene	1.0	U	0.25	5.0
Bromobenzene	2.0	U	0.33	5.0
Bromochloromethane	2.0	U	0.55	5.0
Bromodichloromethane	2.0	U	0.25	5.0
Bromoform	1.0	U	0.37	5.0
Bromomethane	2.0	U	0.40	10
Carbon disulfide	1.0	U	0.37	5.0
Carbon tetrachloride	1.0	U	0.36	5.0
Chlorobenzene	1.0	U	0.38	5.0
Chloroethane	1.0	U	0.38	10
Chloroform	1.0	U	0.15	5.0
Chloromethane	2.0	U	0.55	10
cis-1,2-Dichloroethene	4.8	J	0.16	5.0
cis-1,3-Dichloropropene	1.0	U	0.34	5.0
Dibromochloromethane	1.0	U	0.33	5.0
Dibromomethane	2.0	U	0.41	5.0
Dichlorodifluoromethane	2.0	U	0.45	10
Ethylbenzene	1.0	U	0.30	5.0
Isopropylbenzene	2.0	U	0.26	5.0
m,p-Xylenes	1.0	U	0.57	5.0
Methyl tert-butyl ether	2.0	U	0.40	5.0
Methylene Chloride	5.0	U	1.7	7.5
Naphthalene	2.0	U	0.85	5.0

Client: Leidos, Inc. Job Number: 280-83161-1

Client Sample ID: **6MW2401**

Lab Sample ID: 280-83161-2 Date Sampled: 05/12/2016 0830
Client Matrix: Water Date Received: 05/13/2016 0950

8260C DOD Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C DOD	Analysis Batch:	160-252275	Instrument ID:	VMSF
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	FSMP6619.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 2152			Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 2152				

Analyte	Result (ug/L)	Qualifier	DL	LOQ
n-Butylbenzene	2.0	U	0.23	5.0
N-Propylbenzene	2.0	U	0.30	5.0
o-Xylene	1.0	U	0.32	5.0
p-Isopropyltoluene	2.0	U	0.32	5.0
sec-Butylbenzene	2.0	U	0.31	5.0
Styrene	1.0	U	0.35	5.0
tert-Butylbenzene	2.0	U	0.31	5.0
Tetrachloroethene	1.0	U	0.28	5.0
Toluene	1.0	U	1.0	5.0
trans-1,2-Dichloroethene	1.0	U	0.18	5.0
trans-1,3-Dichloropropene	1.0	U	0.35	5.0
Trichloroethene	5.9		0.29	5.0
Trichlorofluoromethane	2.0	U	0.22	5.0
Vinyl chloride	1.0	U	0.43	5.0
Xylenes (total)	5.0	U	0.85	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	105		81 - 118
4-Bromofluorobenzene (Surr)	101		85 - 114
Dibromofluoromethane (Surr)	99		80 - 119
Toluene-d8 (Surr)	99		89 - 112

Client: Leidos, Inc. Job Number: 280-83161-1

Client Sample ID: TB02

Lab Sample ID: 280-83161-3TB Date Sampled: 05/12/2016 0800
Client Matrix: Water Date Received: 05/13/2016 0950

8260C DOD Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C DOD	Analysis Batch:	160-252275	Instrument ID:	VMSF
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	FSMP6615.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 2010			Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 2010				

Analyte	Result (ug/L)	Qualifier	DL	LOQ
1,1,1,2-Tetrachloroethane	2.0	U	0.25	5.0
1,1,1-Trichloroethane	1.0	U	0.29	5.0
1,1,2,2-Tetrachloroethane	2.0	U	0.43	5.0
1,1,2-Trichloroethane	1.0	U	0.57	5.0
1,1-Dichloroethane	1.0	U	0.39	5.0
1,1-Dichloroethene	1.0	U	0.37	5.0
1,1-Dichloropropene	1.0	U	0.30	5.0
1,2,3-Trichlorobenzene	2.0	U	0.65	5.0
1,2,3-Trichloropropane	1.0	U	0.56	5.0
1,2,4-Trimethylbenzene	2.0	U	0.40	5.0
1,2-Dibromo-3-Chloropropane	2.0	U	1.2	10
1,2-Dibromoethane	2.0	U	0.44	5.0
1,2-Dichloroethane	1.0	U	0.37	5.0
1,2-Dichloropropane	1.0	U	0.32	5.0
1,3,5-Trimethylbenzene	2.0	U	0.28	5.0
1,3-Dichloropropane	1.0	U	0.24	5.0
2,2-Dichloropropane	2.0	U Q	0.54	5.0
2-Butanone (MEK)	5.0	U	0.39	20
2-Chlorotoluene	2.0	U	0.34	5.0
2-Hexanone	2.0	U	0.59	20
4-Chlorotoluene	2.0	U	0.31	5.0
4-Methyl-2-pentanone (MIBK)	2.0	U	0.33	20
Acetone	10	U	6.7	20
Benzene	1.0	U	0.25	5.0
Bromobenzene	2.0	U	0.33	5.0
Bromochloromethane	2.0	U	0.55	5.0
Bromodichloromethane	2.0	U	0.25	5.0
Bromoform	1.0	U	0.37	5.0
Bromomethane	2.0	U	0.40	10
Carbon disulfide	1.0	U	0.37	5.0
Carbon tetrachloride	1.0	U	0.36	5.0
Chlorobenzene	1.0	U	0.38	5.0
Chloroethane	1.0	U	0.38	10
Chloroform	1.0	U	0.15	5.0
Chloromethane	2.0	U	0.55	10
cis-1,2-Dichloroethene	1.0	U	0.16	5.0
cis-1,3-Dichloropropene	1.0	U	0.34	5.0
Dibromochloromethane	1.0	U	0.33	5.0
Dibromomethane	2.0	U	0.41	5.0
Dichlorodifluoromethane	2.0	U	0.45	10
Ethylbenzene	1.0	U	0.30	5.0
Isopropylbenzene	2.0	U	0.26	5.0
m,p-Xylenes	1.0	U	0.57	5.0
Methyl tert-butyl ether	2.0	U	0.40	5.0
Methylene Chloride	5.0	U	1.7	7.5
Naphthalene	2.0	U	0.85	5.0

Client: Leidos, Inc. Job Number: 280-83161-1

Client Sample ID: TB02

Lab Sample ID: 280-83161-3TB Date Sampled: 05/12/2016 0800
Client Matrix: Water Date Received: 05/13/2016 0950

8260C DOD Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C DOD	Analysis Batch:	160-252275	Instrument ID:	VMSF
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	FSMP6615.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 2010			Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 2010				

Analyte	Result (ug/L)	Qualifier	DL	LOQ
n-Butylbenzene	2.0	U	0.23	5.0
N-Propylbenzene	2.0	U	0.30	5.0
o-Xylene	1.0	U	0.32	5.0
p-Isopropyltoluene	2.0	U	0.32	5.0
sec-Butylbenzene	2.0	U	0.31	5.0
Styrene	1.0	U	0.35	5.0
tert-Butylbenzene	2.0	U	0.31	5.0
Tetrachloroethene	1.0	U	0.28	5.0
Toluene	1.0	U	1.0	5.0
trans-1,2-Dichloroethene	1.0	U	0.18	5.0
trans-1,3-Dichloropropene	1.0	U	0.35	5.0
Trichloroethene	1.0	U	0.29	5.0
Trichlorofluoromethane	2.0	U	0.22	5.0
Vinyl chloride	1.0	U	0.43	5.0
Xylenes (total)	5.0	U	0.85	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	108		81 - 118
4-Bromofluorobenzene (Surr)	99		85 - 114
Dibromofluoromethane (Surr)	96		80 - 119
Toluene-d8 (Surr)	98		89 - 112

Client Sample ID: 6MW2601

Lab Sample ID: 280-83161-4 Date Sampled: 05/11/2016 1023
Client Matrix: Water Date Received: 05/13/2016 0950

8260C DOD Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C DOD	Analysis Batch:	160-252275	Instrument ID:	VMSF
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	FSMP6624.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/23/2016 0015			Final Weight/Volume:	5 mL
Prep Date:	05/23/2016 0015				

Analyte	Result (ug/L)	Qualifier	DL	LOQ
1,1,1,2-Tetrachloroethane	2.0	U	0.25	5.0
1,1,1-Trichloroethane	1.0	U	0.29	5.0
1,1,2,2-Tetrachloroethane	2.0	U	0.43	5.0
1,1,2-Trichloroethane	1.0	U	0.57	5.0
1,1-Dichloroethane	1.0	U	0.39	5.0
1,1-Dichloroethene	1.0	U	0.37	5.0
1,1-Dichloropropene	1.0	U	0.30	5.0
1,2,3-Trichlorobenzene	2.0	U	0.65	5.0
1,2,3-Trichloropropane	1.0	U	0.56	5.0
1,2,4-Trimethylbenzene	2.0	U	0.40	5.0
1,2-Dibromo-3-Chloropropane	2.0	U	1.2	10
1,2-Dibromoethane	2.0	U	0.44	5.0
1,2-Dichloroethane	1.0	U	0.37	5.0
1,2-Dichloropropane	1.0	U	0.32	5.0
1,3,5-Trimethylbenzene	2.0	U	0.28	5.0
1,3-Dichloropropane	1.0	U	0.24	5.0
2,2-Dichloropropane	2.0	U Q	0.54	5.0
2-Butanone (MEK)	5.0	U	0.39	20
2-Chlorotoluene	2.0	U	0.34	5.0
2-Hexanone	2.0	U	0.59	20
4-Chlorotoluene	2.0	U	0.31	5.0
4-Methyl-2-pentanone (MIBK)	2.0	U	0.33	20
Acetone	10	U	6.7	20
Benzene	1.0	U	0.25	5.0
Bromobenzene	2.0	U	0.33	5.0
Bromochloromethane	2.0	U	0.55	5.0
Bromodichloromethane	2.0	U	0.25	5.0
Bromoform	1.0	U	0.37	5.0
Bromomethane	2.0	U	0.40	10
Carbon disulfide	1.0	U	0.37	5.0
Carbon tetrachloride	1.0	U	0.36	5.0
Chlorobenzene	1.0	U	0.38	5.0
Chloroethane	1.0	U	0.38	10
Chloroform	1.0	U	0.15	5.0
Chloromethane	2.0	U	0.55	10
cis-1,2-Dichloroethene	6.6		0.16	5.0
cis-1,3-Dichloropropene	1.0	U	0.34	5.0
Dibromochloromethane	1.0	U	0.33	5.0
Dibromomethane	2.0	U	0.41	5.0
Dichlorodifluoromethane	2.0	U	0.45	10
Ethylbenzene	1.0	U	0.30	5.0
Isopropylbenzene	2.0	U	0.26	5.0
m,p-Xylenes	1.0	U	0.57	5.0
Methyl tert-butyl ether	2.0	U	0.40	5.0
Methylene Chloride	5.0	U	1.7	7.5
Naphthalene	2.0	U	0.85	5.0

Client: Leidos, Inc. Job Number: 280-83161-1

Client Sample ID: 6MW2601

Lab Sample ID: 280-83161-4 Date Sampled: 05/11/2016 1023
Client Matrix: Water Date Received: 05/13/2016 0950

8260C DOD Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C DOD	Analysis Batch:	160-252275	Instrument ID:	VMSF
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	FSMP6624.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/23/2016 0015			Final Weight/Volume:	5 mL
Prep Date:	05/23/2016 0015				

Analyte	Result (ug/L)	Qualifier	DL	LOQ
n-Butylbenzene	2.0	U	0.23	5.0
N-Propylbenzene	2.0	U	0.30	5.0
o-Xylene	1.0	U	0.32	5.0
p-Isopropyltoluene	2.0	U	0.32	5.0
sec-Butylbenzene	2.0	U	0.31	5.0
Styrene	1.0	U	0.35	5.0
tert-Butylbenzene	2.0	U	0.31	5.0
Tetrachloroethene	1.2	J	0.28	5.0
Toluene	1.0	U	1.0	5.0
trans-1,2-Dichloroethene	1.0	U	0.18	5.0
trans-1,3-Dichloropropene	1.0	U	0.35	5.0
Trichloroethene	1.1	J	0.29	5.0
Trichlorofluoromethane	2.0	U	0.22	5.0
Vinyl chloride	1.0	U	0.43	5.0
Xylenes (total)	5.0	U	0.85	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	110		81 - 118
4-Bromofluorobenzene (Surr)	102		85 - 114
Dibromofluoromethane (Surr)	102		80 - 119
Toluene-d8 (Surr)	102		89 - 112

Client Sample ID: 6MW2501

Lab Sample ID: 280-83161-5 Date Sampled: 05/11/2016 1140
Client Matrix: Water Date Received: 05/13/2016 0950

8260C DOD Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C DOD	Analysis Batch:	160-252588	Instrument ID:	VMSF
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	FSMP6656.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/23/2016 1847			Final Weight/Volume:	5 mL
Prep Date:	05/23/2016 1847				

Analyte	Result (ug/L)	Qualifier	DL	LOQ
1,1,1,2-Tetrachloroethane	2.0	U	0.25	5.0
1,1,1-Trichloroethane	1.0	U	0.29	5.0
1,1,2,2-Tetrachloroethane	2.0	U	0.43	5.0
1,1,2-Trichloroethane	1.0	U	0.57	5.0
1,1-Dichloroethane	1.0	U	0.39	5.0
1,1-Dichloroethene	1.0	U	0.37	5.0
1,1-Dichloropropene	1.0	U	0.30	5.0
1,2,3-Trichlorobenzene	2.0	U	0.65	5.0
1,2,3-Trichloropropane	1.0	U	0.56	5.0
1,2,4-Trimethylbenzene	2.0	U	0.40	5.0
1,2-Dibromo-3-Chloropropane	2.0	U	1.2	10
1,2-Dibromoethane	2.0	U	0.44	5.0
1,2-Dichloroethane	1.0	U	0.37	5.0
1,2-Dichloropropane	1.0	U	0.32	5.0
1,3,5-Trimethylbenzene	2.0	U	0.28	5.0
1,3-Dichloropropane	1.0	U	0.24	5.0
2,2-Dichloropropane	2.0	U Q	0.54	5.0
2-Butanone (MEK)	5.0	U	0.39	20
2-Chlorotoluene	2.0	U	0.34	5.0
2-Hexanone	2.0	U	0.59	20
4-Chlorotoluene	2.0	U	0.31	5.0
4-Methyl-2-pentanone (MIBK)	2.0	U	0.33	20
Acetone	10	U	6.7	20
Benzene	1.0	U	0.25	5.0
Bromobenzene	2.0	U	0.33	5.0
Bromochloromethane	2.0	U	0.55	5.0
Bromodichloromethane	2.0	U	0.25	5.0
Bromoform	1.0	U	0.37	5.0
Bromomethane	2.0	U	0.40	10
Carbon disulfide	1.0	U	0.37	5.0
Carbon tetrachloride	1.0	U	0.36	5.0
Chlorobenzene	1.0	U	0.38	5.0
Chloroethane	1.0	U	0.38	10
Chloroform	1.0	U	0.15	5.0
Chloromethane	2.0	U Q	0.55	10
cis-1,2-Dichloroethene	58		0.16	5.0
cis-1,3-Dichloropropene	1.0	U	0.34	5.0
Dibromochloromethane	1.0	U	0.33	5.0
Dibromomethane	2.0	U	0.41	5.0
Dichlorodifluoromethane	2.0	U Q	0.45	10
Ethylbenzene	1.0	U	0.30	5.0
Isopropylbenzene	2.0	U	0.26	5.0
m,p-Xylenes	1.0	U	0.57	5.0
Methyl tert-butyl ether	2.0	U	0.40	5.0
Methylene Chloride	5.0	U	1.7	7.5
Naphthalene	2.0	U	0.85	5.0

Client Sample ID: **6MW2501**

Lab Sample ID: 280-83161-5 Date Sampled: 05/11/2016 1140
Client Matrix: Water Date Received: 05/13/2016 0950

8260C DOD Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C DOD	Analysis Batch:	160-252588	Instrument ID:	VMSF
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	FSMP6656.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/23/2016 1847			Final Weight/Volume:	5 mL
Prep Date:	05/23/2016 1847				

Analyte	Result (ug/L)	Qualifier	DL	LOQ
n-Butylbenzene	2.0	U	0.23	5.0
N-Propylbenzene	2.0	U	0.30	5.0
o-Xylene	1.0	U	0.32	5.0
p-Isopropyltoluene	2.0	U	0.32	5.0
sec-Butylbenzene	2.0	U	0.31	5.0
Styrene	1.0	U	0.35	5.0
tert-Butylbenzene	2.0	U	0.31	5.0
Tetrachloroethene	20		0.28	5.0
Toluene	1.0	U	1.0	5.0
trans-1,2-Dichloroethene	1.0	U	0.18	5.0
trans-1,3-Dichloropropene	1.0	U	0.35	5.0
Trichloroethene	5.8		0.29	5.0
Trichlorofluoromethane	2.0	U	0.22	5.0
Xylenes (total)	5.0	U	0.85	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	107		81 - 118
4-Bromofluorobenzene (Surr)	97		85 - 114
Dibromofluoromethane (Surr)	95		80 - 119
Toluene-d8 (Surr)	100		89 - 112

Client Sample ID: **6MW2501**

Lab Sample ID: 280-83161-5 Date Sampled: 05/11/2016 1140
Client Matrix: Water Date Received: 05/13/2016 0950

8260C DOD Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C DOD	Analysis Batch:	160-252878	Instrument ID:	VMSF
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	FSMP6692.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/24/2016 1807			Final Weight/Volume:	5 mL
Prep Date:	05/24/2016 1807				

Analyte	Result (ug/L)	Qualifier	DL	LOQ
Vinyl chloride	21		0.43	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	116		81 - 118
4-Bromofluorobenzene (Surr)	101		85 - 114
Dibromofluoromethane (Surr)	102		80 - 119
Toluene-d8 (Surr)	99		89 - 112

Client Sample ID: 6MW2001

Lab Sample ID: 280-83161-6 Date Sampled: 05/11/2016 1306
Client Matrix: Water Date Received: 05/13/2016 0950

8260C DOD Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C DOD	Analysis Batch:	160-252275	Instrument ID:	VMSF
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	FSMP6620.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 2233			Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 2233				

Analyte	Result (ug/L)	Qualifier	DL	LOQ
1,1,1,2-Tetrachloroethane	2.0	U	0.25	5.0
1,1,1-Trichloroethane	1.0	U	0.29	5.0
1,1,2,2-Tetrachloroethane	2.0	U	0.43	5.0
1,1,2-Trichloroethane	1.0	U	0.57	5.0
1,1-Dichloroethane	1.0	U	0.39	5.0
1,1-Dichloroethene	1.0	U	0.37	5.0
1,1-Dichloropropene	1.0	U	0.30	5.0
1,2,3-Trichlorobenzene	2.0	U	0.65	5.0
1,2,3-Trichloropropane	1.0	U	0.56	5.0
1,2,4-Trimethylbenzene	2.0	U	0.40	5.0
1,2-Dibromo-3-Chloropropane	2.0	U	1.2	10
1,2-Dibromoethane	2.0	U	0.44	5.0
1,2-Dichloroethane	1.0	U	0.37	5.0
1,2-Dichloropropane	1.0	U	0.32	5.0
1,3,5-Trimethylbenzene	2.0	U	0.28	5.0
1,3-Dichloropropane	1.0	U	0.24	5.0
2,2-Dichloropropane	2.0	U Q	0.54	5.0
2-Butanone (MEK)	5.0	U	0.39	20
2-Chlorotoluene	2.0	U	0.34	5.0
2-Hexanone	2.0	U	0.59	20
4-Chlorotoluene	2.0	U	0.31	5.0
4-Methyl-2-pentanone (MIBK)	2.0	U	0.33	20
Acetone	10	U	6.7	20
Benzene	1.0	U	0.25	5.0
Bromobenzene	2.0	U	0.33	5.0
Bromochloromethane	2.0	U	0.55	5.0
Bromodichloromethane	2.0	U	0.25	5.0
Bromoform	1.0	U	0.37	5.0
Bromomethane	2.0	U	0.40	10
Carbon disulfide	1.0	U	0.37	5.0
Carbon tetrachloride	1.0	U	0.36	5.0
Chlorobenzene	1.0	U	0.38	5.0
Chloroethane	1.0	U	0.38	10
Chloroform	1.0	U	0.15	5.0
Chloromethane	2.0	U	0.55	10
cis-1,2-Dichloroethene	6.8		0.16	5.0
cis-1,3-Dichloropropene	1.0	U	0.34	5.0
Dibromochloromethane	1.0	U	0.33	5.0
Dibromomethane	2.0	U	0.41	5.0
Dichlorodifluoromethane	2.0	U	0.45	10
Ethylbenzene	1.0	U	0.30	5.0
Isopropylbenzene	2.0	U	0.26	5.0
m,p-Xylenes	1.0	U	0.57	5.0
Methyl tert-butyl ether	2.0	U	0.40	5.0
Methylene Chloride	5.0	U	1.7	7.5
Naphthalene	2.0	U	0.85	5.0

Client: Leidos, Inc. Job Number: 280-83161-1

Client Sample ID: 6MW2001

Lab Sample ID: 280-83161-6 Date Sampled: 05/11/2016 1306
Client Matrix: Water Date Received: 05/13/2016 0950

8260C DOD Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C DOD	Analysis Batch:	160-252275	Instrument ID:	VMSF
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	FSMP6620.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 2233			Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 2233				

Analyte	Result (ug/L)	Qualifier	DL	LOQ
n-Butylbenzene	2.0	U	0.23	5.0
N-Propylbenzene	2.0	U	0.30	5.0
o-Xylene	1.0	U	0.32	5.0
p-Isopropyltoluene	2.0	U	0.32	5.0
sec-Butylbenzene	2.0	U	0.31	5.0
Styrene	1.0	U	0.35	5.0
tert-Butylbenzene	2.0	U	0.31	5.0
Tetrachloroethene	0.86	J	0.28	5.0
Toluene	1.0	U	1.0	5.0
trans-1,2-Dichloroethene	1.0	U	0.18	5.0
trans-1,3-Dichloropropene	1.0	U	0.35	5.0
Trichloroethene	1.5	J	0.29	5.0
Trichlorofluoromethane	2.0	U	0.22	5.0
Vinyl chloride	1.0	U	0.43	5.0
Xylenes (total)	5.0	U	0.85	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	111		81 - 118
4-Bromofluorobenzene (Surr)	101		85 - 114
Dibromofluoromethane (Surr)	99		80 - 119
Toluene-d8 (Surr)	100		89 - 112

Client Sample ID: 6MW2201

Lab Sample ID: 280-83161-7 Date Sampled: 05/11/2016 1501
Client Matrix: Water Date Received: 05/13/2016 0950

8260C DOD Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C DOD	Analysis Batch:	160-252588	Instrument ID:	VMSF
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	FSMP6657.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/23/2016 1913			Final Weight/Volume:	5 mL
Prep Date:	05/23/2016 1913				

Analyte	Result (ug/L)	Qualifier	DL	LOQ
1,1,1,2-Tetrachloroethane	2.0	U	0.25	5.0
1,1,1-Trichloroethane	1.0	U	0.29	5.0
1,1,2,2-Tetrachloroethane	2.0	U	0.43	5.0
1,1,2-Trichloroethane	1.0	U	0.57	5.0
1,1-Dichloroethane	1.0	U	0.39	5.0
1,1-Dichloroethene	1.0	U	0.37	5.0
1,1-Dichloropropene	1.0	U	0.30	5.0
1,2,3-Trichlorobenzene	2.0	U	0.65	5.0
1,2,3-Trichloropropane	1.0	U	0.56	5.0
1,2,4-Trimethylbenzene	2.0	U	0.40	5.0
1,2-Dibromo-3-Chloropropane	2.0	U	1.2	10
1,2-Dibromoethane	2.0	U	0.44	5.0
1,2-Dichloroethane	1.0	U	0.37	5.0
1,2-Dichloropropane	1.0	U	0.32	5.0
1,3,5-Trimethylbenzene	2.0	U	0.28	5.0
1,3-Dichloropropane	1.0	U	0.24	5.0
2,2-Dichloropropane	2.0	U Q	0.54	5.0
2-Butanone (MEK)	5.0	U	0.39	20
2-Chlorotoluene	2.0	U	0.34	5.0
2-Hexanone	2.0	U	0.59	20
4-Chlorotoluene	2.0	U	0.31	5.0
4-Methyl-2-pentanone (MIBK)	2.0	U	0.33	20
Acetone	10	U	6.7	20
Benzene	1.0	U	0.25	5.0
Bromobenzene	2.0	U	0.33	5.0
Bromochloromethane	2.0	U	0.55	5.0
Bromodichloromethane	2.0	U	0.25	5.0
Bromoform	1.0	U	0.37	5.0
Bromomethane	2.0	U	0.40	10
Carbon disulfide	1.0	U	0.37	5.0
Carbon tetrachloride	1.0	U	0.36	5.0
Chlorobenzene	1.0	U	0.38	5.0
Chloroethane	1.0	U	0.38	10
Chloroform	1.0	U	0.15	5.0
Chloromethane	2.0	U Q	0.55	10
cis-1,2-Dichloroethene	16		0.16	5.0
cis-1,3-Dichloropropene	1.0	U	0.34	5.0
Dibromochloromethane	1.0	U	0.33	5.0
Dibromomethane	2.0	U	0.41	5.0
Dichlorodifluoromethane	2.0	U Q	0.45	10
Ethylbenzene	1.0	U	0.30	5.0
Isopropylbenzene	2.0	U	0.26	5.0
m,p-Xylenes	1.0	U	0.57	5.0
Methyl tert-butyl ether	2.0	U	0.40	5.0
Methylene Chloride	5.0	U	1.7	7.5
Naphthalene	2.0	U	0.85	5.0

Client: Leidos, Inc. Job Number: 280-83161-1

Client Sample ID: 6MW2201

Lab Sample ID: 280-83161-7 Date Sampled: 05/11/2016 1501
Client Matrix: Water Date Received: 05/13/2016 0950

8260C DOD Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C DOD	Analysis Batch:	160-252588	Instrument ID:	VMSF
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	FSMP6657.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/23/2016 1913			Final Weight/Volume:	5 mL
Prep Date:	05/23/2016 1913				

Analyte	Result (ug/L)	Qualifier	DL	LOQ
n-Butylbenzene	2.0	U	0.23	5.0
N-Propylbenzene	2.0	U	0.30	5.0
o-Xylene	1.0	U	0.32	5.0
p-Isopropyltoluene	2.0	U	0.32	5.0
sec-Butylbenzene	2.0	U	0.31	5.0
Styrene	1.0	U	0.35	5.0
tert-Butylbenzene	2.0	U	0.31	5.0
Tetrachloroethene	3.4	J	0.28	5.0
Toluene	1.0	U	1.0	5.0
trans-1,2-Dichloroethene	1.0	U	0.18	5.0
trans-1,3-Dichloropropene	1.0	U	0.35	5.0
Trichloroethene	3.6	J	0.29	5.0
Trichlorofluoromethane	2.0	U	0.22	5.0
Vinyl chloride	1.0	U Q	0.43	5.0
Xylenes (total)	5.0	U	0.85	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	111		81 - 118
4-Bromofluorobenzene (Surr)	102		85 - 114
Dibromofluoromethane (Surr)	98		80 - 119
Toluene-d8 (Surr)	100		89 - 112

Client Sample ID: 6MW2001D

Lab Sample ID: 280-83161-8FD
Client Matrix: Water

Date Sampled: 05/11/2016 1306
Date Received: 05/13/2016 0950

8260C DOD Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C DOD	Analysis Batch:	160-252588	Instrument ID:	VMSF
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	FSMP6658.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/23/2016 1938			Final Weight/Volume:	5 mL
Prep Date:	05/23/2016 1938				

Analyte	Result (ug/L)	Qualifier	DL	LOQ
1,1,1,2-Tetrachloroethane	2.0	U	0.25	5.0
1,1,1-Trichloroethane	1.0	U	0.29	5.0
1,1,2,2-Tetrachloroethane	2.0	U	0.43	5.0
1,1,2-Trichloroethane	1.0	U	0.57	5.0
1,1-Dichloroethane	1.0	U	0.39	5.0
1,1-Dichloroethene	1.0	U	0.37	5.0
1,1-Dichloropropene	1.0	U	0.30	5.0
1,2,3-Trichlorobenzene	2.0	U	0.65	5.0
1,2,3-Trichloropropane	1.0	U	0.56	5.0
1,2,4-Trimethylbenzene	2.0	U	0.40	5.0
1,2-Dibromo-3-Chloropropane	2.0	U	1.2	10
1,2-Dibromoethane	2.0	U	0.44	5.0
1,2-Dichloroethane	1.0	U	0.37	5.0
1,2-Dichloropropane	1.0	U	0.32	5.0
1,3,5-Trimethylbenzene	2.0	U	0.28	5.0
1,3-Dichloropropane	1.0	U	0.24	5.0
2,2-Dichloropropane	2.0	U Q	0.54	5.0
2-Butanone (MEK)	5.0	U	0.39	20
2-Chlorotoluene	2.0	U	0.34	5.0
2-Hexanone	2.0	U	0.59	20
4-Chlorotoluene	2.0	U	0.31	5.0
4-Methyl-2-pentanone (MIBK)	2.0	U	0.33	20
Acetone	10	U	6.7	20
Benzene	1.0	U	0.25	5.0
Bromobenzene	2.0	U	0.33	5.0
Bromochloromethane	2.0	U	0.55	5.0
Bromodichloromethane	2.0	U	0.25	5.0
Bromoform	1.0	U	0.37	5.0
Bromomethane	2.0	U	0.40	10
Carbon disulfide	1.0	U	0.37	5.0
Carbon tetrachloride	1.0	U	0.36	5.0
Chlorobenzene	1.0	U	0.38	5.0
Chloroethane	1.0	U	0.38	10
Chloroform	1.0	U	0.15	5.0
Chloromethane	2.0	U Q	0.55	10
cis-1,2-Dichloroethene	7.0		0.16	5.0
cis-1,3-Dichloropropene	1.0	U	0.34	5.0
Dibromochloromethane	1.0	U	0.33	5.0
Dibromomethane	2.0	U	0.41	5.0
Dichlorodifluoromethane	2.0	U Q	0.45	10
Ethylbenzene	1.0	U	0.30	5.0
Isopropylbenzene	2.0	U	0.26	5.0
m,p-Xylenes	1.0	U	0.57	5.0
Methyl tert-butyl ether	2.0	U	0.40	5.0
Methylene Chloride	5.0	U	1.7	7.5
Naphthalene	2.0	U	0.85	5.0

Client: Leidos, Inc. Job Number: 280-83161-1

Client Sample ID: **6MW2001D**

Lab Sample ID: 280-83161-8FD Date Sampled: 05/11/2016 1306
Client Matrix: Water Date Received: 05/13/2016 0950

8260C DOD Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C DOD	Analysis Batch:	160-252588	Instrument ID:	VMSF
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	FSMP6658.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/23/2016 1938			Final Weight/Volume:	5 mL
Prep Date:	05/23/2016 1938				

Analyte	Result (ug/L)	Qualifier	DL	LOQ
n-Butylbenzene	2.0	U	0.23	5.0
N-Propylbenzene	2.0	U	0.30	5.0
o-Xylene	1.0	U	0.32	5.0
p-Isopropyltoluene	2.0	U	0.32	5.0
sec-Butylbenzene	2.0	U	0.31	5.0
Styrene	1.0	U	0.35	5.0
tert-Butylbenzene	2.0	U	0.31	5.0
Tetrachloroethene	1.3	J	0.28	5.0
Toluene	1.0	U	1.0	5.0
trans-1,2-Dichloroethene	1.0	U	0.18	5.0
trans-1,3-Dichloropropene	1.0	U	0.35	5.0
Trichloroethene	1.5	J	0.29	5.0
Trichlorofluoromethane	2.0	U	0.22	5.0
Vinyl chloride	1.0	U Q	0.43	5.0
Xylenes (total)	5.0	U	0.85	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	106		81 - 118
4-Bromofluorobenzene (Surr)	100		85 - 114
Dibromofluoromethane (Surr)	95		80 - 119
Toluene-d8 (Surr)	99		89 - 112

Client Sample ID: **TB01**

Lab Sample ID: 280-83161-9TB
Client Matrix: Water

Date Sampled: 05/11/2016 0815
Date Received: 05/13/2016 0950

8260C DOD Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C DOD	Analysis Batch:	160-252275	Instrument ID:	VMSF
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	FSMP6616.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 2036			Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 2036				

Analyte	Result (ug/L)	Qualifier	DL	LOQ
1,1,1,2-Tetrachloroethane	2.0	U	0.25	5.0
1,1,1-Trichloroethane	1.0	U	0.29	5.0
1,1,2,2-Tetrachloroethane	2.0	U	0.43	5.0
1,1,2-Trichloroethane	1.0	U	0.57	5.0
1,1-Dichloroethane	1.0	U	0.39	5.0
1,1-Dichloroethene	1.0	U	0.37	5.0
1,1-Dichloropropene	1.0	U	0.30	5.0
1,2,3-Trichlorobenzene	2.0	U	0.65	5.0
1,2,3-Trichloropropane	1.0	U	0.56	5.0
1,2,4-Trimethylbenzene	2.0	U	0.40	5.0
1,2-Dibromo-3-Chloropropane	2.0	U	1.2	10
1,2-Dibromoethane	2.0	U	0.44	5.0
1,2-Dichloroethane	1.0	U	0.37	5.0
1,2-Dichloropropane	1.0	U	0.32	5.0
1,3,5-Trimethylbenzene	2.0	U	0.28	5.0
1,3-Dichloropropane	1.0	U	0.24	5.0
2,2-Dichloropropane	2.0	U Q	0.54	5.0
2-Butanone (MEK)	5.0	U	0.39	20
2-Chlorotoluene	2.0	U	0.34	5.0
2-Hexanone	2.0	U	0.59	20
4-Chlorotoluene	2.0	U	0.31	5.0
4-Methyl-2-pentanone (MIBK)	2.0	U	0.33	20
Acetone	10	U	6.7	20
Benzene	1.0	U	0.25	5.0
Bromobenzene	2.0	U	0.33	5.0
Bromochloromethane	2.0	U	0.55	5.0
Bromodichloromethane	2.0	U	0.25	5.0
Bromoform	1.0	U	0.37	5.0
Bromomethane	2.0	U	0.40	10
Carbon disulfide	1.0	U	0.37	5.0
Carbon tetrachloride	1.0	U	0.36	5.0
Chlorobenzene	1.0	U	0.38	5.0
Chloroethane	1.0	U	0.38	10
Chloroform	1.0	U	0.15	5.0
Chloromethane	2.0	U	0.55	10
cis-1,2-Dichloroethene	1.0	U	0.16	5.0
cis-1,3-Dichloropropene	1.0	U	0.34	5.0
Dibromochloromethane	1.0	U	0.33	5.0
Dibromomethane	2.0	U	0.41	5.0
Dichlorodifluoromethane	2.0	U	0.45	10
Ethylbenzene	1.0	U	0.30	5.0
Isopropylbenzene	2.0	U	0.26	5.0
m,p-Xylenes	1.0	U	0.57	5.0
Methyl tert-butyl ether	2.0	U	0.40	5.0
Methylene Chloride	5.0	U	1.7	7.5
Naphthalene	2.0	U	0.85	5.0

Client: Leidos, Inc. Job Number: 280-83161-1

Client Sample ID: **TB01**

Lab Sample ID: 280-83161-9TB Date Sampled: 05/11/2016 0815
Client Matrix: Water Date Received: 05/13/2016 0950

8260C DOD Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C DOD	Analysis Batch:	160-252275	Instrument ID:	VMSF
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	FSMP6616.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 2036			Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 2036				

Analyte	Result (ug/L)	Qualifier	DL	LOQ
n-Butylbenzene	2.0	U	0.23	5.0
N-Propylbenzene	2.0	U	0.30	5.0
o-Xylene	1.0	U	0.32	5.0
p-Isopropyltoluene	2.0	U	0.32	5.0
sec-Butylbenzene	2.0	U	0.31	5.0
Styrene	1.0	U	0.35	5.0
tert-Butylbenzene	2.0	U	0.31	5.0
Tetrachloroethene	1.0	U	0.28	5.0
Toluene	1.0	U	1.0	5.0
trans-1,2-Dichloroethene	1.0	U	0.18	5.0
trans-1,3-Dichloropropene	1.0	U	0.35	5.0
Trichloroethene	1.0	U	0.29	5.0
Trichlorofluoromethane	2.0	U	0.22	5.0
Vinyl chloride	1.0	U	0.43	5.0
Xylenes (total)	5.0	U	0.85	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	107		81 - 118
4-Bromofluorobenzene (Surr)	101		85 - 114
Dibromofluoromethane (Surr)	101		80 - 119
Toluene-d8 (Surr)	102		89 - 112

Client Sample ID: **FB01**

Lab Sample ID: 280-83161-10FB
Client Matrix: Water

Date Sampled: 05/11/2016 1030
Date Received: 05/13/2016 0950

8260C DOD Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C DOD	Analysis Batch:	160-252275	Instrument ID:	VMSF
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	FSMP6617.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 2101			Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 2101				

Analyte	Result (ug/L)	Qualifier	DL	LOQ
1,1,1,2-Tetrachloroethane	2.0	U	0.25	5.0
1,1,1-Trichloroethane	1.0	U	0.29	5.0
1,1,2,2-Tetrachloroethane	2.0	U	0.43	5.0
1,1,2-Trichloroethane	1.0	U	0.57	5.0
1,1-Dichloroethane	1.0	U	0.39	5.0
1,1-Dichloroethene	1.0	U	0.37	5.0
1,1-Dichloropropene	1.0	U	0.30	5.0
1,2,3-Trichlorobenzene	2.0	U	0.65	5.0
1,2,3-Trichloropropane	1.0	U	0.56	5.0
1,2,4-Trimethylbenzene	2.0	U	0.40	5.0
1,2-Dibromo-3-Chloropropane	2.0	U	1.2	10
1,2-Dibromoethane	2.0	U	0.44	5.0
1,2-Dichloroethane	1.0	U	0.37	5.0
1,2-Dichloropropane	1.0	U	0.32	5.0
1,3,5-Trimethylbenzene	2.0	U	0.28	5.0
1,3-Dichloropropane	1.0	U	0.24	5.0
2,2-Dichloropropane	2.0	U Q	0.54	5.0
2-Butanone (MEK)	5.0	U	0.39	20
2-Chlorotoluene	2.0	U	0.34	5.0
2-Hexanone	2.0	U	0.59	20
4-Chlorotoluene	2.0	U	0.31	5.0
4-Methyl-2-pentanone (MIBK)	2.0	U	0.33	20
Acetone	10	U	6.7	20
Benzene	1.0	U	0.25	5.0
Bromobenzene	2.0	U	0.33	5.0
Bromochloromethane	2.0	U	0.55	5.0
Bromodichloromethane	2.0	U	0.25	5.0
Bromoform	1.0	U	0.37	5.0
Bromomethane	2.0	U	0.40	10
Carbon disulfide	1.0	U	0.37	5.0
Carbon tetrachloride	1.0	U	0.36	5.0
Chlorobenzene	1.0	U	0.38	5.0
Chloroethane	1.0	U	0.38	10
Chloroform	1.0	U	0.15	5.0
Chloromethane	2.0	U	0.55	10
cis-1,2-Dichloroethene	1.0	U	0.16	5.0
cis-1,3-Dichloropropene	1.0	U	0.34	5.0
Dibromochloromethane	1.0	U	0.33	5.0
Dibromomethane	2.0	U	0.41	5.0
Dichlorodifluoromethane	2.0	U	0.45	10
Ethylbenzene	1.0	U	0.30	5.0
Isopropylbenzene	2.0	U	0.26	5.0
m,p-Xylenes	1.0	U	0.57	5.0
Methyl tert-butyl ether	2.0	U	0.40	5.0
Methylene Chloride	5.0	U	1.7	7.5
Naphthalene	2.0	U	0.85	5.0

Client: Leidos, Inc. Job Number: 280-83161-1

Client Sample ID: FB01

Lab Sample ID: 280-83161-10FB Date Sampled: 05/11/2016 1030
Client Matrix: Water Date Received: 05/13/2016 0950

8260C DOD Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C DOD	Analysis Batch:	160-252275	Instrument ID:	VMSF
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	FSMP6617.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 2101			Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 2101				

Analyte	Result (ug/L)	Qualifier	DL	LOQ
n-Butylbenzene	2.0	U	0.23	5.0
N-Propylbenzene	2.0	U	0.30	5.0
o-Xylene	1.0	U	0.32	5.0
p-Isopropyltoluene	2.0	U	0.32	5.0
sec-Butylbenzene	2.0	U	0.31	5.0
Styrene	1.0	U	0.35	5.0
tert-Butylbenzene	2.0	U	0.31	5.0
Tetrachloroethene	1.0	U	0.28	5.0
Toluene	1.0	U	1.0	5.0
trans-1,2-Dichloroethene	1.0	U	0.18	5.0
trans-1,3-Dichloropropene	1.0	U	0.35	5.0
Trichloroethene	1.0	U	0.29	5.0
Trichlorofluoromethane	2.0	U	0.22	5.0
Vinyl chloride	1.0	U	0.43	5.0
Xylenes (total)	5.0	U	0.85	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	107		81 - 118
4-Bromofluorobenzene (Surr)	104		85 - 114
Dibromofluoromethane (Surr)	97		80 - 119
Toluene-d8 (Surr)	98		89 - 112

General Chemistry

Client Sample ID: 6MW2301

Lab Sample ID: 280-83161-1 Date Sampled: 05/12/2016 0955
Client Matrix: Water Date Received: 05/13/2016 0950

Analyte	Result	Qual	Units	DL	LOQ	Dil	Method
Nitrate	0.10	U	mg/L	0.042	0.50	1.0	9056A
Analysis Batch: 280-325179	Analysis Date: 05/13/2016 2200						
Sulfate	200	D	mg/L	1.2	25	5.0	9056A
Analysis Batch: 280-325180	Analysis Date: 05/13/2016 2220						
Total Organic Carbon - Quad	2.8		mg/L	0.16	1.0	1.0	9060A
Analysis Batch: 280-326937	Analysis Date: 05/24/2016 2151						

General Chemistry

Client Sample ID: **6MW2401**

Lab Sample ID: 280-83161-2 Date Sampled: 05/12/2016 0830
Client Matrix: Water Date Received: 05/13/2016 0950

Analyte	Result	Qual	Units	DL	LOQ	Dil	Method
Nitrate	1.2		mg/L	0.042	0.50	1.0	9056A
Analysis Batch: 280-325179	Analysis Date: 05/13/2016 2240						
Sulfate	360	D	mg/L	1.2	25	5.0	9056A
Analysis Batch: 280-325180	Analysis Date: 05/13/2016 2300						
Total Organic Carbon - Quad	5.3		mg/L	0.16	1.0	1.0	9060A
Analysis Batch: 280-326937	Analysis Date: 05/24/2016 2206						

General Chemistry

Client Sample ID: **6MW2601**

Lab Sample ID: 280-83161-4 Date Sampled: 05/11/2016 1023
Client Matrix: Water Date Received: 05/13/2016 0950

Analyte	Result	Qual	Units	DL	LOQ	Dil	Method
Nitrate	0.28	J H	mg/L	0.042	0.50	1.0	9056A
Analysis Batch: 280-325179	Analysis Date: 05/14/2016 0000						
Sulfate	320	D	mg/L	1.2	25	5.0	9056A
Analysis Batch: 280-325180	Analysis Date: 05/14/2016 0019						
Total Organic Carbon - Quad	2.6		mg/L	0.16	1.0	1.0	9060A
Analysis Batch: 280-326937	Analysis Date: 05/24/2016 2250						

General Chemistry

Client Sample ID: **6MW2501**

Lab Sample ID: 280-83161-5 Date Sampled: 05/11/2016 1140
Client Matrix: Water Date Received: 05/13/2016 0950

Analyte	Result	Qual	Units	DL	LOQ	Dil	Method
Nitrate	0.10	U H	mg/L	0.042	0.50	1.0	9056A
Analysis Batch: 280-325179	Analysis Date: 05/14/2016 0039						
Sulfate	820	D	mg/L	1.2	25	5.0	9056A
Analysis Batch: 280-325180	Analysis Date: 05/14/2016 0059						
Total Organic Carbon - Quad	2.3		mg/L	0.16	1.0	1.0	9060A
Analysis Batch: 280-326937	Analysis Date: 05/24/2016 2304						

General Chemistry

Client Sample ID: **6MW2001**

Lab Sample ID: 280-83161-6 Date Sampled: 05/11/2016 1306
Client Matrix: Water Date Received: 05/13/2016 0950

Analyte	Result	Qual	Units	DL	LOQ	Dil	Method
Nitrate	0.10	U H	mg/L	0.042	0.50	1.0	9056A
Analysis Batch: 280-325179	Analysis Date: 05/14/2016 0119						
Sulfate	270	D	mg/L	1.2	25	5.0	9056A
Analysis Batch: 280-325180	Analysis Date: 05/14/2016 0438						
Total Organic Carbon - Quad	2.8		mg/L	0.16	1.0	1.0	9060A
Analysis Batch: 280-326937	Analysis Date: 05/24/2016 2319						

General Chemistry

Client Sample ID: **6MW2201**

Lab Sample ID: 280-83161-7 Date Sampled: 05/11/2016 1501
Client Matrix: Water Date Received: 05/13/2016 0950

Analyte	Result	Qual	Units	DL	LOQ	Dil	Method
Nitrate	0.16	J H	mg/L	0.042	0.50	1.0	9056A
Analysis Batch: 280-325179	Analysis Date: 05/14/2016 0239						
Sulfate	290	D	mg/L	1.2	25	5.0	9056A
Analysis Batch: 280-325180	Analysis Date: 05/14/2016 0259						
Total Organic Carbon - Quad	2.5		mg/L	0.16	1.0	1.0	9060A
Analysis Batch: 280-326937	Analysis Date: 05/25/2016 0048						

Client: Leidos, Inc. Job Number: 280-83161-1

General Chemistry

Client Sample ID: 6MW2001D

Lab Sample ID: 280-83161-8FD Date Sampled: 05/11/2016 1306
Client Matrix: Water Date Received: 05/13/2016 0950

Analyte	Result	Qual	Units	DL	LOQ	Dil	Method
Nitrate	0.060	J H	mg/L	0.042	0.50	1.0	9056A
Analysis Batch: 280-325179	Analysis Date: 05/14/2016 0358						
Sulfate	270	D	mg/L	1.2	25	5.0	9056A
Analysis Batch: 280-325180	Analysis Date: 05/14/2016 0418						
Total Organic Carbon - Quad	2.6		mg/L	0.16	1.0	1.0	9060A
Analysis Batch: 280-326937	Analysis Date: 05/25/2016 0102						

DATA REPORTING QUALIFIERS

Client: Leidos, Inc. Job Number: 280-83161-1

Lab Section	Qualifier	Description
GC/MS VOA		
	J	Estimated: The analyte was positively identified; the quantitation is an estimation
	Q	One or more quality control criteria failed.
	U	Undetected at the Limit of Detection.
General Chemistry		
	J	Estimated: The analyte was positively identified; the quantitation is an estimation
	H	Sample was prepped or analyzed beyond the specified holding time
	D	The reported value is from a dilution.
	U	Undetected at the Limit of Detection.

QUALITY CONTROL RESULTS

Client: Leidos, Inc. Job Number: 280-83161-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:160-252275					
LCS 160-252275/3	Lab Control Sample	T	Water	8260C DOD	
LCSD 160-252275/4	Lab Control Sample Duplicate	T	Water	8260C DOD	
MB 160-252275/6	Method Blank	T	Water	8260C DOD	
280-83161-1	6MW2301	T	Water	8260C DOD	
280-83161-2	6MW2401	T	Water	8260C DOD	
280-83161-3TB	TB02	T	Water	8260C DOD	
280-83161-4	6MW2601	T	Water	8260C DOD	
280-83161-6	6MW2001	T	Water	8260C DOD	
280-83161-6MS	Matrix Spike	T	Water	8260C DOD	
280-83161-6MSD	Matrix Spike Duplicate	T	Water	8260C DOD	
280-83161-9TB	TB01	T	Water	8260C DOD	
280-83161-10FB	FB01	T	Water	8260C DOD	
Analysis Batch:160-252588					
LCS 160-252588/4	Lab Control Sample	T	Water	8260C DOD	
LCSD 160-252588/5	Lab Control Sample Duplicate	T	Water	8260C DOD	
MB 160-252588/7	Method Blank	T	Water	8260C DOD	
280-83161-5	6MW2501	T	Water	8260C DOD	
280-83161-7	6MW2201	T	Water	8260C DOD	
280-83161-8FD	6MW2001D	T	Water	8260C DOD	
280-83161-8MS	Matrix Spike	T	Water	8260C DOD	
280-83161-8MSD	Matrix Spike Duplicate	T	Water	8260C DOD	
Analysis Batch:160-252878					
LCS 160-252878/3	Lab Control Sample	T	Water	8260C DOD	
LCSD 160-252878/4	Lab Control Sample Duplicate	T	Water	8260C DOD	
MB 160-252878/6	Method Blank	T	Water	8260C DOD	
280-83161-5	6MW2501	T	Water	8260C DOD	

Report Basis
T = Total

Client: Leidos, Inc. Job Number: 280-83161-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:280-325179					
LCS 280-325179/4	Lab Control Sample	T	Water	9056A	
LCSD 280-325179/5	Lab Control Sample Duplicate	T	Water	9056A	
MB 280-325179/6	Method Blank	T	Water	9056A	
280-83161-1	6MW2301	T	Water	9056A	
280-83161-2	6MW2401	T	Water	9056A	
280-83161-4	6MW2601	T	Water	9056A	
280-83161-5	6MW2501	T	Water	9056A	
280-83161-6	6MW2001	T	Water	9056A	
280-83161-6DU	Duplicate	T	Water	9056A	
280-83161-6MS	Matrix Spike	T	Water	9056A	
280-83161-6MSD	Matrix Spike Duplicate	T	Water	9056A	
280-83161-7	6MW2201	T	Water	9056A	
280-83161-8FD	6MW2001D	T	Water	9056A	
Analysis Batch:280-325180					
LCS 280-325180/4	Lab Control Sample	T	Water	9056A	
LCSD 280-325180/5	Lab Control Sample Duplicate	T	Water	9056A	
MB 280-325180/6	Method Blank	T	Water	9056A	
280-83161-1	6MW2301	T	Water	9056A	
280-83161-2	6MW2401	T	Water	9056A	
280-83161-4	6MW2601	T	Water	9056A	
280-83161-5	6MW2501	T	Water	9056A	
280-83161-6	6MW2001	T	Water	9056A	
280-83161-6DU	Duplicate	T	Water	9056A	
280-83161-6MS	Matrix Spike	T	Water	9056A	
280-83161-6MSD	Matrix Spike Duplicate	T	Water	9056A	
280-83161-7	6MW2201	T	Water	9056A	
280-83161-8FD	6MW2001D	T	Water	9056A	
Analysis Batch:280-326937					
LCS 280-326937/35	Lab Control Sample	T	Water	9060A	
LCS 280-326937/4	Lab Control Sample	T	Water	9060A	
MB 280-326937/36	Method Blank	T	Water	9060A	
MB 280-326937/5	Method Blank	T	Water	9060A	
280-83161-1	6MW2301	T	Water	9060A	
280-83161-2	6MW2401	T	Water	9060A	
280-83161-4	6MW2601	T	Water	9060A	
280-83161-5	6MW2501	T	Water	9060A	
280-83161-6	6MW2001	T	Water	9060A	
280-83161-6MS	Matrix Spike	T	Water	9060A	
280-83161-6MSD	Matrix Spike Duplicate	T	Water	9060A	
280-83161-7	6MW2201	T	Water	9060A	
280-83161-8FD	6MW2001D	T	Water	9060A	

Client: Leidos, Inc. Job Number: 280-83161-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch

Report Basis
T = Total

Client: Leidos, Inc. Job Number: 280-83161-1

Surrogate Recovery Report

8260C DOD Volatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	DBFM %Rec	TOL %Rec
280-83161-1	6MW2301	117	101	103	100
280-83161-2	6MW2401	105	101	99	99
280-83161-3	TB02	108	99	96	98
280-83161-4	6MW2601	110	102	102	102
280-83161-5	6MW2501	107	97	95	100
280-83161-5	6MW2501	116	101	102	99
280-83161-6	6MW2001	111	101	99	100
280-83161-7	6MW2201	111	102	98	100
280-83161-8	6MW2001D	106	100	95	99
280-83161-9	TB01	107	101	101	102
280-83161-10	FB01	107	104	97	98
MB 160-252275/6		102	101	95	100
MB 160-252588/7		106	98	96	100
MB 160-252878/6		110	105	99	105
LCS 160-252275/3		102	95	99	98
LCS 160-252588/4		106	95	99	98
LCS 160-252878/3		108	97	99	102
LCSD 160-252275/4		103	95	99	95
LCSD 160-252588/5		105	93	97	100
LCSD 160-252878/4		107	95	101	99
280-83161-6 MS	6MW2001MS MS	107	89	97	92
280-83161-8 MS	6MW2001D MS	111	93	97	95
280-83161-6 MSD	6MW2001MSD MSD	110	95	100	94
280-83161-8 MSD	6MW2001D MSD	100	88	94	91

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	81-118
BFB = 4-Bromofluorobenzene (Surr)	85-114
DBFM = Dibromofluoromethane (Surr)	80-119
TOL = Toluene-d8 (Surr)	89-112

Client: Leidos, Inc. Job Number: 280-83161-1

Method Blank - Batch: 160-252275

Method: 8260C DOD
Preparation: 5030C

Lab Sample ID:	MB 160-252275/6	Analysis Batch:	160-252275	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FBLK6614.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 1859	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 1859				
Leach Date:	N/A				

Analyte	Result	Qual	DL	LOQ
1,1,1,2-Tetrachloroethane	2.0	U	0.25	5.0
1,1,1-Trichloroethane	1.0	U	0.29	5.0
1,1,2,2-Tetrachloroethane	2.0	U	0.43	5.0
1,1,2-Trichloroethane	1.0	U	0.57	5.0
1,1-Dichloroethane	1.0	U	0.39	5.0
1,1-Dichloroethene	1.0	U	0.37	5.0
1,1-Dichloropropene	1.0	U	0.30	5.0
1,2,3-Trichlorobenzene	2.0	U	0.65	5.0
1,2,3-Trichloropropane	1.0	U	0.56	5.0
1,2,4-Trimethylbenzene	2.0	U	0.40	5.0
1,2-Dibromo-3-Chloropropane	2.0	U	1.2	10
1,2-Dibromoethane	2.0	U	0.44	5.0
1,2-Dichloroethane	1.0	U	0.37	5.0
1,2-Dichloropropane	1.0	U	0.32	5.0
1,3,5-Trimethylbenzene	2.0	U	0.28	5.0
1,3-Dichloropropane	1.0	U	0.24	5.0
2,2-Dichloropropane	2.0	U	0.54	5.0
2-Butanone (MEK)	5.0	U	0.39	20
2-Chlorotoluene	2.0	U	0.34	5.0
2-Hexanone	2.0	U	0.59	20
4-Chlorotoluene	2.0	U	0.31	5.0
4-Methyl-2-pentanone (MIBK)	2.0	U	0.33	20
Acetone	10	U	6.7	20
Benzene	1.0	U	0.25	5.0
Bromobenzene	2.0	U	0.33	5.0
Bromochloromethane	2.0	U	0.55	5.0
Bromodichloromethane	2.0	U	0.25	5.0
Bromoform	1.0	U	0.37	5.0
Bromomethane	2.0	U	0.40	10
Carbon disulfide	1.0	U	0.37	5.0
Carbon tetrachloride	1.0	U	0.36	5.0
Chlorobenzene	1.0	U	0.38	5.0
Chloroethane	1.0	U	0.38	10
Chloroform	1.0	U	0.15	5.0
Chloromethane	2.0	U	0.55	10
cis-1,2-Dichloroethene	1.0	U	0.16	5.0
cis-1,3-Dichloropropene	1.0	U	0.34	5.0
Dibromochloromethane	1.0	U	0.33	5.0
Dibromomethane	2.0	U	0.41	5.0
Dichlorodifluoromethane	2.0	U	0.45	10
Ethylbenzene	1.0	U	0.30	5.0
Isopropylbenzene	2.0	U	0.26	5.0
m,p-Xylenes	1.0	U	0.57	5.0
Methyl tert-butyl ether	2.0	U	0.40	5.0
Methylene Chloride	5.0	U	1.7	7.5

Client: Leidos, Inc. Job Number: 280-83161-1

Method Blank - Batch: 160-252275

Method: 8260C DOD
Preparation: 5030C

Lab Sample ID:	MB 160-252275/6	Analysis Batch:	160-252275	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FBLK6614.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 1859	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 1859				
Leach Date:	N/A				

Analyte	Result	Qual	DL	LOQ
Naphthalene	2.0	U	0.85	5.0
n-Butylbenzene	2.0	U	0.23	5.0
N-Propylbenzene	2.0	U	0.30	5.0
o-Xylene	1.0	U	0.32	5.0
p-Isopropyltoluene	2.0	U	0.32	5.0
sec-Butylbenzene	2.0	U	0.31	5.0
Styrene	1.0	U	0.35	5.0
tert-Butylbenzene	2.0	U	0.31	5.0
Tetrachloroethene	1.0	U	0.28	5.0
Toluene	1.0	U	1.0	5.0
trans-1,2-Dichloroethene	1.0	U	0.18	5.0
trans-1,3-Dichloropropene	1.0	U	0.35	5.0
Trichloroethene	1.0	U	0.29	5.0
Trichlorofluoromethane	2.0	U	0.22	5.0
Vinyl chloride	1.0	U	0.43	5.0
Xylenes (total)	5.0	U	0.85	10

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102	81 - 118
4-Bromofluorobenzene (Surr)	101	85 - 114
Dibromofluoromethane (Surr)	95	80 - 119
Toluene-d8 (Surr)	100	89 - 112

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 160-252275

Method: 8260C DOD
Preparation: 5030C

LCS Lab Sample ID:	LCS 160-252275/3	Analysis Batch:	160-252275	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FLCS6611.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 1742	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 1742				5 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 160-252275/4	Analysis Batch:	160-252275	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FLCS6612.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 1808	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 1808				5 mL
Leach Date:	N/A				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,1,1,2-Tetrachloroethane	105	103	78 - 124	2	20		
1,1,1-Trichloroethane	111	110	74 - 131	1	20		
1,1,2,2-Tetrachloroethane	100	101	71 - 121	1	20		
1,1,2-Trichloroethane	101	99	80 - 119	2	20		
1,1-Dichloroethane	107	107	77 - 125	0	20		
1,1-Dichloroethene	98	98	71 - 131	0	20		
1,1-Dichloropropene	100	99	79 - 125	0	20		
1,2,3-Trichlorobenzene	101	102	69 - 129	1	20		
1,2,3-Trichloropropane	99	100	73 - 122	1	20		
1,2,4-Trimethylbenzene	104	104	76 - 124	0	20		
1,2-Dibromo-3-Chloropropane	104	99	62 - 128	4	20		
1,2-Dibromoethane	97	95	80 - 120	2	20		
1,2-Dichloroethane	104	105	73 - 128	1	20		
1,2-Dichloropropane	107	108	78 - 122	1	20		
1,3,5-Trimethylbenzene	103	105	75 - 124	2	20		
1,3-Dichloropropane	101	99	80 - 119	2	20		
2,2-Dichloropropane	119	119	60 - 139	0	20		
2-Butanone (MEK)	97	90	56 - 143	7	20		
2-Chlorotoluene	103	106	79 - 122	3	20		
2-Hexanone	106	101	57 - 139	5	20		
4-Chlorotoluene	102	104	78 - 122	2	20		
4-Methyl-2-pentanone (MIBK)	103	100	67 - 130	3	20		
Acetone	85	95	39 - 160	12	20		
Benzene	101	102	79 - 120	1	20		
Bromobenzene	95	96	80 - 120	1	20		
Bromochloromethane	97	97	78 - 123	0	20		
Bromodichloromethane	108	109	79 - 125	1	20		
Bromoform	103	104	66 - 130	1	20		
Bromomethane	102	100	53 - 141	2	20		
Carbon disulfide	100	99	64 - 133	1	20		
Carbon tetrachloride	112	111	72 - 136	1	20		
Chlorobenzene	99	99	82 - 118	0	20		
Chloroethane	103	101	60 - 138	2	20		
Chloroform	108	107	79 - 124	0	20		
Chloromethane	120	120	50 - 139	1	20		

Client: Leidos, Inc. Job Number: 280-83161-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 160-252275

Method: 8260C DOD
Preparation: 5030C

LCS Lab Sample ID:	LCS 160-252275/3	Analysis Batch:	160-252275	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FLCS6611.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 1742	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 1742				5 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 160-252275/4	Analysis Batch:	160-252275	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FLCS6612.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 1808	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 1808				5 mL
Leach Date:	N/A				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
cis-1,2-Dichloroethene	103	104	78 - 123	1	20		
cis-1,3-Dichloropropene	103	104	75 - 124	0	20		
Dibromochloromethane	105	105	74 - 126	0	20		
Dibromomethane	99	101	79 - 123	2	20		
Dichlorodifluoromethane	112	110	32 - 152	2	20		
Ethylbenzene	106	105	79 - 121	0	20		
Isopropylbenzene	102	104	72 - 131	2	20		
m,p-Xylenes	100	100	80 - 121	1	20		
Methyl tert-butyl ether	103	100	71 - 124	3	20		
Methylene Chloride	102	103	74 - 124	0	20		
Naphthalene	106	105	61 - 128	0	20		
n-Butylbenzene	100	100	75 - 128	1	20		
N-Propylbenzene	106	107	76 - 126	1	20		
o-Xylene	101	102	78 - 122	1	20		
p-Isopropyltoluene	104	106	77 - 127	2	20		
sec-Butylbenzene	107	108	77 - 126	1	20		
Styrene	99	98	78 - 123	0	20		
tert-Butylbenzene	103	104	78 - 124	1	20		
Tetrachloroethene	91	91	74 - 129	0	20		
Toluene	100	99	80 - 121	0	20		
trans-1,2-Dichloroethene	101	101	75 - 124	0	20		
trans-1,3-Dichloropropene	106	103	73 - 127	3	20		
Trichloroethene	94	93	79 - 123	1	20		
Trichlorofluoromethane	105	101	65 - 141	3	20		
Vinyl chloride	118	116	58 - 137	2	20		
Xylenes (total)	101	101	79 - 121	0	20		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102	103	81 - 118
4-Bromofluorobenzene (Surr)	95	95	85 - 114
Dibromofluoromethane (Surr)	99	99	80 - 119
Toluene-d8 (Surr)	98	95	89 - 112

Client: Leidos, Inc. Job Number: 280-83161-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 160-252275

Method: 8260C DOD
Preparation: 5030C

MS Lab Sample ID:	280-83161-6	Analysis Batch:	160-252275	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FSMP6621.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 2259			Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 2259				5 mL
Leach Date:	N/A				

MSD Lab Sample ID:	280-83161-6	Analysis Batch:	160-252275	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FSMP6622.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 2324			Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 2324				5 mL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1,1,2-Tetrachloroethane	107	107	78 - 124	0	20		
1,1,1-Trichloroethane	116	114	74 - 131	1	20		
1,1,2,2-Tetrachloroethane	100	111	71 - 121	10	20		
1,1,2-Trichloroethane	102	108	80 - 119	6	20		
1,1-Dichloroethane	109	110	77 - 125	0	20		
1,1-Dichloroethene	99	99	71 - 131	0	20		
1,1-Dichloropropene	102	105	79 - 125	3	20		
1,2,3-Trichlorobenzene	109	109	69 - 129	0	20		
1,2,3-Trichloropropane	101	111	73 - 122	10	20		
1,2,4-Trimethylbenzene	104	108	76 - 124	3	20		
1,2-Dibromo-3-Chloropropane	107	113	62 - 128	6	20		
1,2-Dibromoethane	97	103	80 - 120	7	20		
1,2-Dichloroethane	112	115	73 - 128	2	20		
1,2-Dichloropropane	111	112	78 - 122	1	20		
1,3,5-Trimethylbenzene	104	107	75 - 124	3	20		
1,3-Dichloropropane	104	106	80 - 119	2	20		
2,2-Dichloropropane	132	124	60 - 139	6	20		
2-Butanone (MEK)	96	107	56 - 143	10	20		
2-Chlorotoluene	105	107	79 - 122	2	20		
2-Hexanone	103	111	57 - 139	8	20		
4-Chlorotoluene	102	108	78 - 122	5	20		
4-Methyl-2-pentanone (MIBK)	102	112	67 - 130	10	20		
Acetone	100	103	39 - 160	3	20		
Benzene	103	106	79 - 120	3	20		
Bromobenzene	90	98	80 - 120	8	20		
Bromochloromethane	97	101	78 - 123	4	20		
Bromodichloromethane	114	116	79 - 125	2	20		
Bromoform	102	111	66 - 130	8	20		
Bromomethane	93	91	53 - 141	3	20		
Carbon disulfide	100	99	64 - 133	1	20		
Carbon tetrachloride	118	116	72 - 136	2	20		
Chlorobenzene	101	103	82 - 118	3	20		

Client: Leidos, Inc. Job Number: 280-83161-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 160-252275

Method: 8260C DOD
Preparation: 5030C

MS Lab Sample ID:	280-83161-6	Analysis Batch:	160-252275	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FSMP6621.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 2259			Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 2259				5 mL
Leach Date:	N/A				

MSD Lab Sample ID:	280-83161-6	Analysis Batch:	160-252275	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FSMP6622.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/22/2016 2324			Final Weight/Volume:	5 mL
Prep Date:	05/22/2016 2324				5 mL
Leach Date:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Chloroethane	98	100	60 - 138	2	20		
Chloroform	111	112	79 - 124	1	20		
Chloromethane	117	111	50 - 139	5	20		
cis-1,2-Dichloroethene	105	106	78 - 123	1	20		
cis-1,3-Dichloropropene	108	111	75 - 124	3	20		
Dibromochloromethane	106	110	74 - 126	4	20		
Dibromomethane	104	107	79 - 123	3	20		
Dichlorodifluoromethane	112	105	32 - 152	7	20		
Ethylbenzene	108	109	79 - 121	1	20		
Isopropylbenzene	101	107	72 - 131	5	20		
m,p-Xylenes	101	101	80 - 121	0	20		
Methyl tert-butyl ether	104	110	71 - 124	6	20		
Methylene Chloride	103	103	74 - 124	0	20		
Naphthalene	111	114	61 - 128	3	20		
n-Butylbenzene	103	103	75 - 128	0	20		
N-Propylbenzene	108	111	76 - 126	3	20		
o-Xylene	104	103	78 - 122	1	20		
p-Isopropyltoluene	106	109	77 - 127	3	20		
sec-Butylbenzene	108	111	77 - 126	3	20		
Styrene	100	102	78 - 123	2	20		
tert-Butylbenzene	102	107	78 - 124	5	20		
Tetrachloroethene	93	96	74 - 129	4	20		
Toluene	100	103	80 - 121	3	20		
trans-1,2-Dichloroethene	101	103	75 - 124	2	20		
trans-1,3-Dichloropropene	109	112	73 - 127	3	20		
Trichloroethene	97	98	79 - 123	1	20		
Trichlorofluoromethane	103	102	65 - 141	2	20		
Vinyl chloride	119	115	58 - 137	4	20		
Xylenes (total)	103	102	79 - 121	0	20		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	107	110	81 - 118

Client: Leidos, Inc. Job Number: 280-83161-1

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
4-Bromofluorobenzene (Surr)	89	95	85 - 114
Dibromofluoromethane (Surr)	97	100	80 - 119
Toluene-d8 (Surr)	92	94	89 - 112

Client: Leidos, Inc. Job Number: 280-83161-1

Method Blank - Batch: 160-252588

Method: 8260C DOD
Preparation: 5030C

Lab Sample ID:	MB 160-252588/7	Analysis Batch:	160-252588	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FBLK6655.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/23/2016 1822	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	05/23/2016 1822				
Leach Date:	N/A				

Analyte	Result	Qual	DL	LOQ
1,1,1,2-Tetrachloroethane	2.0	U	0.25	5.0
1,1,1-Trichloroethane	1.0	U	0.29	5.0
1,1,2,2-Tetrachloroethane	2.0	U	0.43	5.0
1,1,2-Trichloroethane	1.0	U	0.57	5.0
1,1-Dichloroethane	1.0	U	0.39	5.0
1,1-Dichloroethene	1.0	U	0.37	5.0
1,1-Dichloropropene	1.0	U	0.30	5.0
1,2,3-Trichlorobenzene	2.0	U	0.65	5.0
1,2,3-Trichloropropane	1.0	U	0.56	5.0
1,2,4-Trimethylbenzene	2.0	U	0.40	5.0
1,2-Dibromo-3-Chloropropane	2.0	U	1.2	10
1,2-Dibromoethane	2.0	U	0.44	5.0
1,2-Dichloroethane	1.0	U	0.37	5.0
1,2-Dichloropropane	1.0	U	0.32	5.0
1,3,5-Trimethylbenzene	2.0	U	0.28	5.0
1,3-Dichloropropane	1.0	U	0.24	5.0
2,2-Dichloropropane	2.0	U	0.54	5.0
2-Butanone (MEK)	5.0	U	0.39	20
2-Chlorotoluene	2.0	U	0.34	5.0
2-Hexanone	2.0	U	0.59	20
4-Chlorotoluene	2.0	U	0.31	5.0
4-Methyl-2-pentanone (MIBK)	2.0	U	0.33	20
Acetone	10	U	6.7	20
Benzene	1.0	U	0.25	5.0
Bromobenzene	2.0	U	0.33	5.0
Bromochloromethane	2.0	U	0.55	5.0
Bromodichloromethane	2.0	U	0.25	5.0
Bromoform	1.0	U	0.37	5.0
Bromomethane	2.0	U	0.40	10
Carbon disulfide	1.0	U	0.37	5.0
Carbon tetrachloride	1.0	U	0.36	5.0
Chlorobenzene	1.0	U	0.38	5.0
Chloroethane	1.0	U	0.38	10
Chloroform	1.0	U	0.15	5.0
Chloromethane	2.0	U	0.55	10
cis-1,2-Dichloroethene	1.0	U	0.16	5.0
cis-1,3-Dichloropropene	1.0	U	0.34	5.0
Dibromochloromethane	1.0	U	0.33	5.0
Dibromomethane	2.0	U	0.41	5.0
Dichlorodifluoromethane	2.0	U	0.45	10
Ethylbenzene	1.0	U	0.30	5.0
Isopropylbenzene	2.0	U	0.26	5.0
m,p-Xylenes	1.0	U	0.57	5.0
Methyl tert-butyl ether	2.0	U	0.40	5.0
Methylene Chloride	5.0	U	1.7	7.5

Client: Leidos, Inc. Job Number: 280-83161-1

Method Blank - Batch: 160-252588

Method: 8260C DOD
Preparation: 5030C

Lab Sample ID:	MB 160-252588/7	Analysis Batch:	160-252588	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FBLK6655.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/23/2016 1822	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	05/23/2016 1822				
Leach Date:	N/A				

Analyte	Result	Qual	DL	LOQ
Naphthalene	2.0	U	0.85	5.0
n-Butylbenzene	2.0	U	0.23	5.0
N-Propylbenzene	2.0	U	0.30	5.0
o-Xylene	1.0	U	0.32	5.0
p-Isopropyltoluene	2.0	U	0.32	5.0
sec-Butylbenzene	2.0	U	0.31	5.0
Styrene	1.0	U	0.35	5.0
tert-Butylbenzene	2.0	U	0.31	5.0
Tetrachloroethene	1.0	U	0.28	5.0
Toluene	1.0	U	1.0	5.0
trans-1,2-Dichloroethene	1.0	U	0.18	5.0
trans-1,3-Dichloropropene	1.0	U	0.35	5.0
Trichloroethene	1.0	U	0.29	5.0
Trichlorofluoromethane	2.0	U	0.22	5.0
Vinyl chloride	1.0	U	0.43	5.0
Xylenes (total)	5.0	U	0.85	10

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	106	81 - 118
4-Bromofluorobenzene (Surr)	98	85 - 114
Dibromofluoromethane (Surr)	96	80 - 119
Toluene-d8 (Surr)	100	89 - 112

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 160-252588

Method: 8260C DOD
Preparation: 5030C

LCS Lab Sample ID:	LCS 160-252588/4	Analysis Batch:	160-252588	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FLCS6652.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/23/2016 1705	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	05/23/2016 1705				5 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 160-252588/5	Analysis Batch:	160-252588	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FLCS6653.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/23/2016 1730	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	05/23/2016 1730				5 mL
Leach Date:	N/A				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,1,1,2-Tetrachloroethane	104	103	78 - 124	1	20		
1,1,1-Trichloroethane	108	110	74 - 131	2	20		
1,1,2,2-Tetrachloroethane	105	99	71 - 121	6	20		
1,1,2-Trichloroethane	106	102	80 - 119	4	20		
1,1-Dichloroethane	105	104	77 - 125	1	20		
1,1-Dichloroethene	96	97	71 - 131	1	20		
1,1-Dichloropropene	100	101	79 - 125	1	20		
1,2,3-Trichlorobenzene	102	99	69 - 129	3	20		
1,2,3-Trichloropropane	100	101	73 - 122	2	20		
1,2,4-Trimethylbenzene	103	103	76 - 124	0	20		
1,2-Dibromo-3-Chloropropane	104	102	62 - 128	3	20		
1,2-Dibromoethane	100	99	80 - 120	1	20		
1,2-Dichloroethane	105	106	73 - 128	1	20		
1,2-Dichloropropane	104	105	78 - 122	1	20		
1,3,5-Trimethylbenzene	103	104	75 - 124	1	20		
1,3-Dichloropropane	103	101	80 - 119	3	20		
2,2-Dichloropropane	116	120	60 - 139	4	20		
2-Butanone (MEK)	97	97	56 - 143	0	20		
2-Chlorotoluene	105	103	79 - 122	1	20		
2-Hexanone	110	102	57 - 139	7	20		
4-Chlorotoluene	102	102	78 - 122	0	20		
4-Methyl-2-pentanone (MIBK)	107	103	67 - 130	4	20		
Acetone	101	90	39 - 160	11	20		
Benzene	101	100	79 - 120	1	20		
Bromobenzene	94	94	80 - 120	1	20		
Bromochloromethane	95	94	78 - 123	0	20		
Bromodichloromethane	107	106	79 - 125	1	20		
Bromoform	107	107	66 - 130	1	20		
Bromomethane	97	97	53 - 141	0	20		
Carbon disulfide	98	99	64 - 133	0	20		
Carbon tetrachloride	111	113	72 - 136	2	20		
Chlorobenzene	100	100	82 - 118	0	20		
Chloroethane	101	101	60 - 138	0	20		
Chloroform	105	105	79 - 124	0	20		
Chloromethane	119	121	50 - 139	2	20		

Client: Leidos, Inc. Job Number: 280-83161-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 160-252588

Method: 8260C DOD
Preparation: 5030C

LCS Lab Sample ID:	LCS 160-252588/4	Analysis Batch:	160-252588	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FLCS6652.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/23/2016 1705	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	05/23/2016 1705				5 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 160-252588/5	Analysis Batch:	160-252588	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FLCS6653.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/23/2016 1730	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	05/23/2016 1730				5 mL
Leach Date:	N/A				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
cis-1,2-Dichloroethene	100	99	78 - 123	1	20		
cis-1,3-Dichloropropene	103	105	75 - 124	2	20		
Dibromochloromethane	110	104	74 - 126	5	20		
Dibromomethane	101	100	79 - 123	2	20		
Dichlorodifluoromethane	122	124	32 - 152	1	20		
Ethylbenzene	106	106	79 - 121	0	20		
Isopropylbenzene	103	103	72 - 131	1	20		
m,p-Xylenes	99	101	80 - 121	2	20		
Methyl tert-butyl ether	100	99	71 - 124	2	20		
Methylene Chloride	100	99	74 - 124	2	20		
Naphthalene	107	104	61 - 128	2	20		
n-Butylbenzene	101	99	75 - 128	2	20		
N-Propylbenzene	107	106	76 - 126	1	20		
o-Xylene	100	102	78 - 122	1	20		
p-Isopropyltoluene	105	104	77 - 127	1	20		
sec-Butylbenzene	106	107	77 - 126	1	20		
Styrene	98	98	78 - 123	0	20		
tert-Butylbenzene	102	100	78 - 124	2	20		
Tetrachloroethene	94	96	74 - 129	2	20		
Toluene	99	102	80 - 121	4	20		
trans-1,2-Dichloroethene	100	99	75 - 124	1	20		
trans-1,3-Dichloropropene	107	106	73 - 127	1	20		
Trichloroethene	94	95	79 - 123	2	20		
Trichlorofluoromethane	103	107	65 - 141	4	20		
Vinyl chloride	118	119	58 - 137	1	20		
Xylenes (total)	100	102	79 - 121	2	20		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	106	105	81 - 118
4-Bromofluorobenzene (Surr)	95	93	85 - 114
Dibromofluoromethane (Surr)	99	97	80 - 119
Toluene-d8 (Surr)	98	100	89 - 112

Client: Leidos, Inc. Job Number: 280-83161-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 160-252588

Method: 8260C DOD
Preparation: 5030C

MS Lab Sample ID:	280-83161-8	Analysis Batch:	160-252588	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FSMP6659.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/23/2016 2004			Final Weight/Volume:	5 mL
Prep Date:	05/23/2016 2004				5 mL
Leach Date:	N/A				

MSD Lab Sample ID:	280-83161-8	Analysis Batch:	160-252588	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FSMP6660.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/23/2016 2030			Final Weight/Volume:	5 mL
Prep Date:	05/23/2016 2030				5 mL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1,1,2-Tetrachloroethane	104	103	78 - 124	2	20		
1,1,1-Trichloroethane	116	110	74 - 131	5	20		
1,1,2,2-Tetrachloroethane	104	100	71 - 121	4	20		
1,1,2-Trichloroethane	108	99	80 - 119	9	20		
1,1-Dichloroethane	108	104	77 - 125	4	20		
1,1-Dichloroethene	99	97	71 - 131	2	20		
1,1-Dichloropropene	105	100	79 - 125	5	20		
1,2,3-Trichlorobenzene	103	99	69 - 129	3	20		
1,2,3-Trichloropropane	100	97	73 - 122	4	20		
1,2,4-Trimethylbenzene	105	103	76 - 124	2	20		
1,2-Dibromo-3-Chloropropane	107	102	62 - 128	5	20		
1,2-Dibromoethane	99	95	80 - 120	4	20		
1,2-Dichloroethane	113	103	73 - 128	9	20		
1,2-Dichloropropane	108	104	78 - 122	4	20		
1,3,5-Trimethylbenzene	104	102	75 - 124	2	20		
1,3-Dichloropropane	105	99	80 - 119	5	20		
2,2-Dichloropropane	128	119	60 - 139	8	20		
2-Butanone (MEK)	99	90	56 - 143	9	20		
2-Chlorotoluene	106	103	79 - 122	3	20		
2-Hexanone	101	100	57 - 139	1	20		
4-Chlorotoluene	105	102	78 - 122	3	20		
4-Methyl-2-pentanone (MIBK)	103	96	67 - 130	7	20		
Acetone	89	84	39 - 160	5	20		
Benzene	105	100	79 - 120	4	20		
Bromobenzene	93	93	80 - 120	0	20		
Bromochloromethane	97	94	78 - 123	3	20		
Bromodichloromethane	116	105	79 - 125	10	20		
Bromoform	105	100	66 - 130	5	20		
Bromomethane	92	93	53 - 141	2	20		
Carbon disulfide	103	99	64 - 133	4	20		
Carbon tetrachloride	118	112	72 - 136	6	20		
Chlorobenzene	101	98	82 - 118	4	20		

Client: Leidos, Inc. Job Number: 280-83161-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 160-252588

Method: 8260C DOD
Preparation: 5030C

MS Lab Sample ID:	280-83161-8	Analysis Batch:	160-252588	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FSMP6659.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/23/2016 2004			Final Weight/Volume:	5 mL
Prep Date:	05/23/2016 2004				5 mL
Leach Date:	N/A				

MSD Lab Sample ID:	280-83161-8	Analysis Batch:	160-252588	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FSMP6660.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/23/2016 2030			Final Weight/Volume:	5 mL
Prep Date:	05/23/2016 2030				5 mL
Leach Date:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Chloroethane	97	99	60 - 138	2	20		
Chloroform	109	106	79 - 124	3	20		
Chloromethane	126	116	50 - 139	8	20		
cis-1,2-Dichloroethene	104	100	78 - 123	4	20		
cis-1,3-Dichloropropene	109	101	75 - 124	8	20		
Dibromochloromethane	107	103	74 - 126	4	20		
Dibromomethane	108	102	79 - 123	5	20		
Dichlorodifluoromethane	134	123	32 - 152	9	20		
Ethylbenzene	110	105	79 - 121	4	20		
Isopropylbenzene	104	102	72 - 131	2	20		
m,p-Xylenes	102	99	80 - 121	3	20		
Methyl tert-butyl ether	103	99	71 - 124	4	20		
Methylene Chloride	99	100	74 - 124	1	20		
Naphthalene	107	104	61 - 128	3	20		
n-Butylbenzene	102	99	75 - 128	3	20		
N-Propylbenzene	109	106	76 - 126	2	20		
o-Xylene	102	100	78 - 122	3	20		
p-Isopropyltoluene	107	104	77 - 127	2	20		
sec-Butylbenzene	110	106	77 - 126	3	20		
Styrene	101	96	78 - 123	5	20		
tert-Butylbenzene	105	101	78 - 124	3	20		
Tetrachloroethene	95	93	74 - 129	2	20		
Toluene	102	101	80 - 121	1	20		
trans-1,2-Dichloroethene	99	99	75 - 124	0	20		
trans-1,3-Dichloropropene	110	105	73 - 127	5	20		
Trichloroethene	97	94	79 - 123	2	20		
Trichlorofluoromethane	106	102	65 - 141	4	20		
Vinyl chloride	126	118	58 - 137	7	20		
Xylenes (total)	102	99	79 - 121	3	20		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	111	100	81 - 118

Client: Leidos, Inc. Job Number: 280-83161-1

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
4-Bromofluorobenzene (Surr)	93	88	85 - 114
Dibromofluoromethane (Surr)	97	94	80 - 119
Toluene-d8 (Surr)	95	91	89 - 112

Client: Leidos, Inc. Job Number: 280-83161-1

Method Blank - Batch: 160-252878 **Method: 8260C DOD**
Preparation: 5030C

Lab Sample ID:	MB 160-252878/6	Analysis Batch:	160-252878	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FBLK6691.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/24/2016 1741	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	05/24/2016 1741				
Leach Date:	N/A				

Analyte	Result	Qual	DL	LOQ
Vinyl chloride	1.0	U	0.43	5.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	110	81 - 118
4-Bromofluorobenzene (Surr)	105	85 - 114
Dibromofluoromethane (Surr)	99	80 - 119
Toluene-d8 (Surr)	105	89 - 112

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 160-252878 **Method: 8260C DOD**
Preparation: 5030C

LCS Lab Sample ID:	LCS 160-252878/3	Analysis Batch:	160-252878	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FLCS6688.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/24/2016 1625	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	05/24/2016 1625				5 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 160-252878/4	Analysis Batch:	160-252878	Instrument ID:	VMSF
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	FLCS6689.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/24/2016 1651	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	05/24/2016 1651				5 mL
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Vinyl chloride	112	111	58 - 137	1	20		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	108	107	81 - 118
4-Bromofluorobenzene (Surr)	97	95	85 - 114
Dibromofluoromethane (Surr)	99	101	80 - 119
Toluene-d8 (Surr)	102	99	89 - 112

Method Blank - Batch: 280-325179

Method: 9056A
Preparation: N/A

Lab Sample ID:	MB 280-325179/6	Analysis Batch:	280-325179	Instrument ID:	WC_IonChrom11
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0006.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/13/2016 1141	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	DL	LOQ
Nitrate	0.0869	J	0.042	0.50

Method Reporting Limit Check - Batch: 280-325179

Method: 9056A
Preparation: N/A

Lab Sample ID:	MRL 280-325179/3	Analysis Batch:	280-325179	Instrument ID:	WC_IonChrom11
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0003.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/13/2016 1041	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate	0.200	0.278	139	50 - 150	J

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 280-325179

Method: 9056A
Preparation: N/A

LCS Lab Sample ID:	LCS 280-325179/4	Analysis Batch:	280-325179	Instrument ID:	WC_IonChrom11
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0004.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/13/2016 1101	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				10 uL
Leach Date:	N/A				
LCSD Lab Sample ID:	LCSD 280-325179/5	Analysis Batch:	280-325179	Instrument ID:	WC_IonChrom11
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0005.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/13/2016 1121	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				10 uL
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Nitrate	96	96	88 - 111	0	10		

Client: Leidos, Inc. Job Number: 280-83161-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-325179

Method: 9056A
Preparation: N/A

MS Lab Sample ID:	280-83161-6	Analysis Batch:	280-325179	Instrument ID:	WC_IonChrom11
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0035.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/14/2016 0159			Final Weight/Volume:	5 mL
Prep Date:	N/A				10 uL
Leach Date:	N/A				

MSD Lab Sample ID:	280-83161-6	Analysis Batch:	280-325179	Instrument ID:	WC_IonChrom11
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0036.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/14/2016 0219			Final Weight/Volume:	5 mL
Prep Date:	N/A				10 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrate	102	103	88 - 111	1	10	H	H

Duplicate - Batch: 280-325179

Method: 9056A
Preparation: N/A

Lab Sample ID:	280-83161-6	Analysis Batch:	280-325179	Instrument ID:	WC_IonChrom11
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0034.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/14/2016 0139	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				10 uL
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Nitrate	0.10	U	0.10	NC	10	U

Method Blank - Batch: 280-325180 **Method: 9056A**
Preparation: N/A

Lab Sample ID:	MB 280-325180/6	Analysis Batch:	280-325180	Instrument ID:	WC_IonChrom11
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0006.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/13/2016 1141	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	DL	LOQ
Sulfate	0.427	J	0.23	5.0

Method Reporting Limit Check - Batch: 280-325180 **Method: 9056A**
Preparation: N/A

Lab Sample ID:	MRL 280-325180/3	Analysis Batch:	280-325180	Instrument ID:	WC_IonChrom11
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0003.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/13/2016 1041	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	2.50	2.60	104	50 - 150	J

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 280-325180 **Method: 9056A**
Preparation: N/A

LCS Lab Sample ID:	LCS 280-325180/4	Analysis Batch:	280-325180	Instrument ID:	WC_IonChrom11
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0004.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/13/2016 1101	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				10 uL
Leach Date:	N/A				
LCSD Lab Sample ID:	LCSD 280-325180/5	Analysis Batch:	280-325180	Instrument ID:	WC_IonChrom11
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0005.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/13/2016 1121	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				10 uL
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Sulfate	96	96	87 - 112	0	10		

Client: Leidos, Inc. Job Number: 280-83161-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-325180

Method: 9056A
Preparation: N/A

MS Lab Sample ID:	280-83161-6	Analysis Batch:	280-325180	Instrument ID:	WC_IonChrom11
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0045.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/14/2016 0518			Final Weight/Volume:	5 mL
Prep Date:	N/A				10 uL
Leach Date:	N/A				

MSD Lab Sample ID:	280-83161-6	Analysis Batch:	280-325180	Instrument ID:	WC_IonChrom11
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0046.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/14/2016 0538			Final Weight/Volume:	5 mL
Prep Date:	N/A				10 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Sulfate	95	95	87 - 112	0	10	D	D

Duplicate - Batch: 280-325180

Method: 9056A
Preparation: N/A

Lab Sample ID:	280-83161-6	Analysis Batch:	280-325180	Instrument ID:	WC_IonChrom11
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0044.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/14/2016 0458	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				10 uL
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Sulfate	270	262	2	10	D

Client: Leidos, Inc. Job Number: 280-83161-1

Method Blank - Batch: 280-326937 **Method: 9060A**
Preparation: N/A

Lab Sample ID:	MB 280-326937/5	Analysis Batch:	280-326937	Instrument ID:	WC_SHI3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	052416.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	05/24/2016 1633	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	DL	LOQ
Total Organic Carbon - Quad	0.50	U	0.16	1.0

Method Blank - Batch: 280-326937 **Method: 9060A**
Preparation: N/A

Lab Sample ID:	MB 280-326937/36	Analysis Batch:	280-326937	Instrument ID:	WC_SHI3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	052416.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	05/25/2016 0018	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	DL	LOQ
Total Organic Carbon - Quad	0.50	U	0.16	1.0

Lab Control Sample - Batch: 280-326937 **Method: 9060A**
Preparation: N/A

Lab Sample ID:	LCS 280-326937/4	Analysis Batch:	280-326937	Instrument ID:	WC_SHI3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	052416.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	05/24/2016 1618	Units:	mg/L	Final Weight/Volume:	200 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon - Quad	25.0	24.9	99	88 - 112	

Lab Control Sample - Batch: 280-326937 **Method: 9060A**
Preparation: N/A

Lab Sample ID:	LCS 280-326937/35	Analysis Batch:	280-326937	Instrument ID:	WC_SHI3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	052416.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	05/25/2016 0003	Units:	mg/L	Final Weight/Volume:	200 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon - Quad	25.0	25.3	101	88 - 112	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-326937 **Method: 9060A**
Preparation: N/A

MS Lab Sample ID:	280-83161-6	Analysis Batch:	280-326937	Instrument ID:	WC_SHI3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	052416.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	05/24/2016 2334			Final Weight/Volume:	50 mL
Prep Date:	N/A				
Leach Date:	N/A				

MSD Lab Sample ID:	280-83161-6	Analysis Batch:	280-326937	Instrument ID:	WC_SHI3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	052416.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	05/24/2016 2348			Final Weight/Volume:	50 mL
Prep Date:	N/A				
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Total Organic Carbon - Quad	100	101	88 - 112	1	15		

leidos

301 Laboratory Road, Oak Ridge, Tennessee 37831 (865) 482-9031

CHAIN OF CUSTODY RECORD

COC NO.: 1 of 1

PROJECT NAME: IRP Site 6, Schenectady, NYANG

PROJECT NUMBER: 314561.00.04.8002.920

PROJECT MANAGER: Mike Poligone

Sampler (Signature): ZS **(Printed Name):** Zach Steele

LABORATORY NAME: Test America

LABORATORY ADDRESS: 4955 Yarrow Street, Arvada, CO 80002

PHONE NO: 303-736-0192

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	1 VOCs	2 TOC	3 Sulfate and Nitrate	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
GMW23Ø1	5-12-16	0955	GW	X	X	X	5		
GMW24Ø1	5-12-16	0830	GW	X	X	X	5		
TBØ2	5-12-16	0800	QC	X			2		

280-83161 Chain of Custody

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS: 12	Cooler Temperature:
ZS	5-12-16 1400	DW	5/13/16 0950	Cooler ID:	FEDEX NUMBER:
COMPANY NAME: Leidos		COMPANY NAME: TAD			
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time	**Standard (5 day) turn-around**	
COMPANY NAME:		COMPANY NAME:			
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time		
COMPANY NAME:		COMPANY NAME:			

1 3 - 40 ml Glass Vials, HCL to pH < 2, 4C
2 1 - 250 ml Polyethylene, H2SO4 or HCL, Cool, 4C
3 1 - 500 ml Polyethylene, Cool, 4C

1.9-0.1 IR#5 Transfered by DW 5/13/16

leidos

301 Laboratory Road, Oak Ridge, Tennessee 37831 (865) 482-9031

CHAIN OF CUSTODY RECORD

COC NO.: 1 of 1

PROJECT NAME: IRP Site 6, Schenectady, NYANG

PROJECT NUMBER: 314561.00.04.8002.920

PROJECT MANAGER: Mike Poligone

Sampler (Signature): [signature]

(Printed Name): Zach Steele

LABORATORY NAME: Test America

LABORATORY ADDRESS: 4955 Yarrow Street, Arvada, CO 80002

PHONE NO: 303-736-0192

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	VOCs (1)	TOC (2)	Sulfate and Nitrate (3)	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
GMW23Ø1	5-12-16	0955	GW	X	X	X	5		
GMW24Ø1	5-12-16	0830	GW	X	X	X	5		
TBØ2	5-12-16	0800	QC	X			2		

280-83161 Chain of Custody

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS: 12	Cooler Temperature:
COMPANY NAME: Leidos	5-12-16 1400	COMPANY NAME: TAD	5/13/16 0950	Cooler ID:	FEDEX NUMBER:
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time	**Standard (5 day) turn-around**	
COMPANY NAME:		COMPANY NAME:			
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time		
COMPANY NAME:		COMPANY NAME:			

1 3 - 40 ml Glass Vials, HCL to pH < 2, 4C
2 1 - 250 ml Polyethylene, H2SO4 or HCL, Cool, 4C
3 1 - 500 ml Polyethylene, Cool, 4C

1-9-0.1 IR#5 Transfered by DW 5/13/16

leidos

301 Laboratory Road, Oak Ridge, Tennessee 37831 (865) 482-9031

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: IRP Site 6, Schenectady, NYANG

PROJECT NUMBER: 314561.00.04.8002.920

PROJECT MANAGER: Mike Poligone

Sampler (Signature): [signature] **(Printed Name):** Zach Steele

LABORATORY NAME: Test America

LABORATORY ADDRESS: 4955 Yarrow Street, Arvada, CO 80002

PHONE NO: 303-736-0192

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	VOCs (1)	TOC (2)	Sulfate and Nitrate (3)	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
6MW26Ø1	5-11-16	1023	GW	X	X	X	5		
6MW25Ø1	5-11-16	1140	GW	X	X	X	5		
6MW2ØØ1	5-11-16	1306	GW	X	X	X	5		
6MW22Ø1	5-11-16	1501	GW	X	X	X	5		
6MW2ØØ1D	5-11-16	1306	GW	X	X	X	5		Duplicate
6MW2ØØ1MS	5-11-16	1306	GW	X	X	X	5		Matrix Spike
6MW2ØØ1MSD	5-11-16	1306	GW	X	X	X	5		Matrix Spike Dup
TBØ1	5-11-16	0815	QC	X			2		Trip Blank
FBØ1	5-11-16	1030	QC				3		Field Blank
Temp Blank	—	—	—				1		Temp Blank

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS: 41	Cooler Temperature:
COMPANY NAME: Leidos	1900 5-11-16	COMPANY NAME: TAD	5/13/16 0950	Cooler ID:	FEDEX NUMBER:
RECEIVED BY:	Date/Time 5/12/16	RELINQUISHED BY:	Date/Time	**Standard (5 day) turn-around**	
COMPANY NAME: MI	930	COMPANY NAME:		1 3 - 40 ml Glass Vials, HCL to pH < 2, 4C 2 1 - 250 ml Polyethylene, H2SO4 or HCL, Cool, 4C 3 1 - 500 ml Polyethylene, Cool, 4C	
RELINQUISHED BY:	Date/Time 5/12/16	RECEIVED BY:	Date/Time		
COMPANY NAME: MI	1600	COMPANY NAME:			

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301 Laboratory Road, Oak Ridge, Tennessee 37831 (865) 482-9031

CHAIN OF CUSTODY RECORD

COC NO.: 1 of 1

PROJECT NAME: IRP Site 6, Schenectady, NYANG

PROJECT NUMBER: 314561.00.04.8002.920

PROJECT MANAGER: Mike Poligone

Sampler (Signature): ZS **(Printed Name):** Zach Steele

LABORATORY NAME: Test America

LABORATORY ADDRESS: 4955 Yarrow Street, Arvada, CO 80002

PHONE NO: 303-736-0192

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	VOCs (1)	TOC (2)	Sulfate and Nitrate (3)	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
GMW23Ø1	5-12-16	0955	GW	X	X	X	5		
GMW24Ø1	5-12-16	0830	GW	X	X	X	5		
TBØ2	5-12-16	0800	QC	X			2		

280-83161 Chain of Custody

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS: 12	Cooler Temperature:
ZS	5-12-16		5/13/16	Cooler ID:	FEDEX NUMBER:
COMPANY NAME: Leidos	1400	COMPANY NAME: TAD	0950		
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time	**Standard (5 day) turn-around**	
COMPANY NAME:		COMPANY NAME:			
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time		
COMPANY NAME:		COMPANY NAME:			

1 3 - 40 ml Glass Vials, HCL to pH < 2, 4C
2 1 - 250 ml Polyethylene, H2SO4 or HCL, Cool, 4C
3 1 - 500 ml Polyethylene, Cool, 4C

1.2-0.1, 1.9-0.1 IR#5 Transfered by DW 5/13/16
NCR 5/16/16

leidos

301 Laboratory Road, Oak Ridge, Tennessee 37831 (865) 482-9031

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: IRP Site 6, Schenectady, NYANG

PROJECT NUMBER: 314561.00.04.8002.920

PROJECT MANAGER: Mike Poligone

Sampler (Signature): [signature] (Printed Name): Zach Steele

LABORATORY NAME: Test America

LABORATORY ADDRESS: 4955 Yarrow Street, Arvada, CO 80002

PHONE NO: 303-736-0192

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	VOCs 1	TOC 2	Sulfate and Nitrate 3	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
6MW26Ø1	5-11-16	1023	GW	X	X	X	5		
6MW 25Ø1	5-11-16	1140	GW	X	X	X	5		
6MW 2ØØ1	5-11-16	1306	GW	X	X	X	5		
6MW 22Ø1	5-11-16	1501	GW	X	X	X	5		
6MW2ØØ1D	5-11-16	1306	GW	X	X	X	5		Duplicate
6MW2ØØ1MS	5-11-16	1306	GW	X	X	X	5		Matrix Spike
6MW2ØØ1MSD	5-11-16	1306	GW	X	X	X	5		Matrix Spike Dup
TBØ1	5-11-16	0815	QC	X			2		Trip Blank
FBØ1	5-11-16	1030	QC				3		Field Blank
Temp Blank	—	—	—				1		Temp Blank

	Date/Time		Date/Time		
RELINQUISHED BY: [signature]	1900	RECEIVED BY: [signature]	5/13/16	TOTAL NUMBER OF CONTAINERS: 41	Cooler Temperature:
COMPANY NAME: Leidos	5-11-16	COMPANY NAME: TAD	0950	Cooler ID:	FEDEX NUMBER:
RECEIVED BY: [signature]	Date/Time 5/12/16	RELINQUISHED BY:	Date/Time	**Standard (5 day) turn-around**	
COMPANY NAME: MI	930	COMPANY NAME:		1 3 - 40 ml Glass Vials, HCL to pH < 2, 4C 2 1 - 250 ml Polyethylene, H2SO4 or HCL, Cool, 4C 3 1 - 500 ml Polyethylene, Cool, 4C	
RELINQUISHED BY: [signature]	Date/Time 5/12/16	RECEIVED BY:	Date/Time		
COMPANY NAME: MI	1600	COMPANY NAME:			

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: DeHerrera, Jessica H	Carrier Tracking No(s):	COC No: 280-351524.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: jessica.deherrera@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 280-83161-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 6/2/2016			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Schenectady ANGB, NY	Project #: 28015159			
Site:	SSOW#:			

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	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=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C_DOD5/5030C VOCs - TA St. Louis (for NY samples)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
6MW2301 (280-83161-1)	5/12/16	09:55 Eastern		Water			X	3	DOD QSM Variances Rev122815, DIL3, report only lowest dilution w/in calibration
6MW2401 (280-83161-2)	5/12/16	08:30 Eastern		Water			X	3	DOD QSM Variances Rev122815, DIL3, report only lowest dilution w/in calibration
TB02 (280-83161-3)	5/12/16	08:00 Eastern		Water			X	2	DOD QSM Variances Rev122815, DIL3, report only lowest dilution w/in calibration
6MW2601 (280-83161-4)	5/11/16	10:23 Eastern		Water			X	3	DOD QSM Variances Rev122815, DIL3, report only lowest dilution w/in calibration
6MW2501 (280-83161-5)	5/11/16	11:40 Eastern		Water			X	3	DOD QSM Variances Rev122815, DIL3, report only lowest dilution w/in calibration
6MW2001 (280-83161-6) includes MS/MSD	5/11/16	13:06 Eastern		Water			X	6	DOD QSM Variances Rev122815, DIL3, report only lowest dilution w/in calibration
6MW2201 (280-83161-7)	5/11/16	15:01 Eastern		Water			X	3	DOD QSM Variances Rev122815, DIL3, report only lowest dilution w/in calibration
6MW2001D (280-83161-8)	5/11/16	13:06 Eastern		Water			X	3	DOD QSM Variances Rev122815, DIL3, report only lowest dilution w/in calibration
TB01 (280-83161-9)	5/11/16	08:15 Eastern		Water			X	2	DOD QSM Variances Rev122815, DIL3, report only lowest dilution w/in calibration
FB01 (280-83161-10)	5/11/16	10:30 Eastern		Water			X	2	DOD QSM Variances Rev122815, DIL3, report only lowest dilution w/in calibration

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	5/16/16 1445		[signature]	5.17.16 0820	TASR
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Leidos, Inc. Job Number: 280-83161-1

Login Number: 83161 **List Source: TestAmerica Denver**
List Number: 1
Creator: White, Denise E

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.	False	NO SEAL, TAPE INTACT
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	
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)	False	Shipping Delay, Refer to Case Narrative
Sample containers have legible labels.	True	
Containers are not broken or leaking.	False	Containers recd broken. Sufficient sample in remaining containers for analysis.
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Leidos, Inc.

Job Number: 280-83161-1

Login Number: 83161
List Number: 2
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 05/17/16 01:03 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
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	2.4
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?	False	
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.	True	
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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Job Number: 280-83093-1

Job Description: Schenectady ANGB, NY

For:
Leidos, Inc.
301 Laboratory Road
Leidos SSC-AP
LOC #47, MS 2113-03
Oak Ridge, TN 37830

Attention: Mr. Michael Poligone

Approved for release.
Jessica H DeHerrera
Project Manager I
5/19/2016 11:57 AM

Jessica H DeHerrera, Project Manager I
4955 Yarrow Street, Arvada, CO, 80002
jessica.deherrera@testamericainc.com
05/19/2016

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

NOTE - All references to Schenectady ANGB in this report should be Stratton ANGB

Table of Contents

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
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

CASE NARRATIVE
Client: Leidos, Inc.
Project: Schenectady ANGB, NY
Report Number: 280-83093-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 05/13/2016; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 3.2º C.

The volume for DHC was to be shipped directly to Microbial Insights for analysis. Due to a shipping error, the volume for DHC analysis was received by TestAmerica Denver, and was reshipped to Microbial Insights.

Dehalococcoides sp. (DHC)

Sample 6MW2501 (280-83093-1) was subcontracted to Microbial Insights for the requested DHC analysis. Please note that Microbial Insights does not hold DOD certification for this analysis. Please refer to the subcontract narrative for additional information.

Detection Summary

Client: Leidos, Inc.
Project/Site: Schenectady ANGB, NY

TestAmerica Job ID: 280-83093-1

Client Sample ID: 6MW2501 **Lab Sample ID: 280-83093-1**

No Detections.

This Detection Summary does not include radiochemical test results.

Certification Summary

Client: Leidos, Inc.
Project/Site: Schenectady ANGB, NY

TestAmerica Job ID: 280-83093-1

Laboratory: TestAmerica Denver

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17
Connecticut	State Program	1	PH-0686	09-30-16
Florida	NELAP	4	E87667	06-30-16
New Hampshire	NELAP	1	205310	04-28-17
New York	NELAP	2	11964	04-01-17
Pennsylvania	NELAP	3	68-00664	07-31-16

Method Summary

Client: Leidos, Inc.
Project/Site: Schenectady ANGB, NY

TestAmerica Job ID: 280-83093-1

Method	Method Description	Protocol	Laboratory
Dehalococcoides sp. (DHC) - SUB	General Sub Contract Method	NONE	Micro

Protocol References:

NONE = NONE

Laboratory References:

Micro = Micro, 10515 Research Dr, Knoxville, TN 37932

Sample Summary

Client: Leidos, Inc.
Project/Site: Schenectady ANGB, NY

TestAmerica Job ID: 280-83093-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-83093-1	6MW2501	Water	05/11/16 11:40	05/12/16 12:13

10515 Research Drive
Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133

Client: Jessica DeHerrera
Test America
4955 Yarrow Street
Arvada, CO 80002

Phone: 303-736-0165

Fax:

Identifier: 041NE **Date Rec:** 05/13/2016 **Report Date:** 05/17/2016

Client Project #: 28015159 **Client Project Name:** Schenectady ANGB, NY

Purchase Order #: TA Job #280-83093-1

Analysis Requested: CENSUS

Reviewed By:

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **Test America**
Project: Schenectady ANGB, NY

MI Project Number: **041NE**
Date Received: 05/13/2016

Sample Information

Client Sample ID:	**6MW2501 (280-83093-1)**
Sample Date:	05/11/2016
Units:	cells/mL
Analyst:	JS

Dechlorinating Bacteria

Dehalococcoides	*DHC*	**3.57E+02**

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

Quality Assurance/Quality Control Data

Samples Received **5/13/2016**

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
DHC	05/13/2016	05/17/2016	0 °C	115%	non-detect	non-detect

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: DeHerrera, Jessica H	Carrier Tracking No(s):	COC No: 280-351101.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: jessica.deherrera@testamericainc.com		Page: Page 1 of 1
Company: Microbial Insights Inc				Job #: 280-83093-1
Address: 10515 Research Dr, ,	Due Date Requested: 5/24/2016			
City: Knoxville	TAT Requested (days):			
State, Zip: TN, 37932				
Phone:	PO #:			
Email:	WO #:			
Project Name: Schenectady ANGB, NY	Project #: 28015159			
Site:	SSOW#:			

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	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=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dehalococcoides sp.)/ Dehalococcoides sp. (DHC) - SUB	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
6MW2501 (280-83093-1) 04INE1	5/11/16	11:40 Eastern		Water			X	1	Send Priority Overnight

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

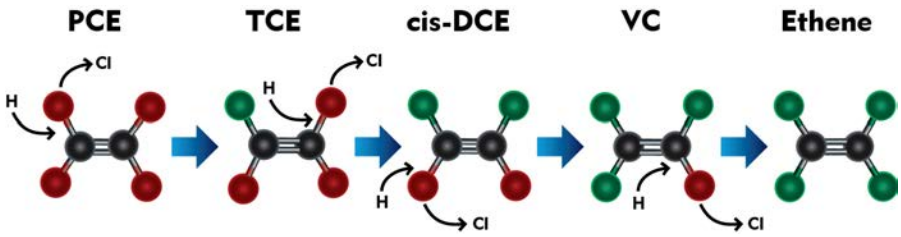
Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:				
Relinquished by:	Date/Time: 5/12/16 1517	Company	Received by:	Date/Time: 5/13/16 9:30	Company MI
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 0°C

DHC Interpretation

Dehalococcoides 16S rRNA gene (qDHC)

Under anaerobic conditions, tetrachloroethene (PCE) and trichloroethene (TCE) can undergo sequential reductive dechlorination through the daughter products *cis*-dichloroethene (*cis*-DCE) and vinyl chloride to nontoxic ethene (1,2).



While a number of bacterial cultures capable of utilizing PCE and TCE as growth supporting electron acceptors have been isolated (3-7), *Dehalococcoides* spp. may be the most important because they are the only bacterial group that has been isolated to date which is capable of complete reductive dechlorination of PCE to ethene (8). In fact, the presence of *Dehalococcoides* spp. has been associated with complete dechlorination to ethene at sites across North America and Europe (9).

Status	*Dehalococcoides spp.*	Observation
	**≥ 10^4** (cells/mL)	Lu et al. proposed that a concentration of 1 x 10^4 DHC cells/mL could be used as a screening criterion to identify sites where reductive dechlorination will yield a generally useful biodegradation rate (10). Similarly, in an internal study conducted with nearly 1000 groundwater samples obtained from sites across the US, ethene production was observed in approximately 80% of samples in which CENSUS® qDHC results were greater than or equal to 10^4 DHC cells/mL.
	**10^1 to < 10^4** (cells/mL)	When vinyl chloride reductase genes (See DHC functional genes discussion below) are also detected, complete reductive dechlorination of PCE and TCE to ethene may still occur even with moderate DHC concentrations. When the DHC population is below the 10^4 cells/mL criterion proposed by Lu et al. (10), project managers should carefully consider other site-specific data to determine whether subsurface conditions may be limiting reductive dechlorination. For example, the addition of an electron donor may be able to stimulate DHC growth and enhance anaerobic bioremediation.
	**< 10^1** (cells/mL)	DHC concentrations are low suggesting that complete reductive dechlorination of PCE and TCE to ethene is unlikely to occur under existing conditions. Enhanced anaerobic bioremediation options (biostimulation or bioaugmentation) may need to be considered.

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DHC Functional Genes (*tce*A, *bvc*A, *vcr*A)

A "stall" where daughter products *cis*-DCE and vinyl chloride accumulate can occur at PCE- and TCE-impacted sites especially under MNA conditions. The accumulation of vinyl chloride, generally considered more carcinogenic than the parent compounds, is particularly problematic. Although elevated *Dehalococcoides* concentrations correspond to ethene production in numerous studies, the range of chlorinated ethenes metabolized and cometabolized varies among species and strains within the *Dehalococcoides* genus. For example, *Dehalococcoides ethenogenes* str. 195 metabolizes PCE, TCE, and *cis*-DCE and cometabolizes vinyl chloride (8) to produce ethene. Conversely, *Dehalococcoides* sp. CBDB1 utilizes PCE and TCE but does not cometabolize additional chloroethenes (11). Other *Dehalococcoides* strains, such as BAV1, GT and VS, are known to fully dechlorinate cis-DCE and VC to ethene (14,16,19). Quantification of reductive dehalogenase genes is used to more definitively confirm the potential for reductive dechlorination of TCE, cis-DCE, and vinyl chloride (12-15).

Functional Gene	Observation
TCE Reductase	
***tce*A gene**	The *tce*A gene encodes the enzyme responsible for reductive dechlorination of TCE to *cis*-DCE in some strains of *Dehalococcoides*. Absence of *tce*A does not preclude the potential for reductive dechlorination of TCE in the field since the *tce*A gene is not universally distributed among all DHC and is not present in other microorganisms capable of reductive dechlorination of TCE (e.g. *Dehalobacter*). Detection of the *tce*A gene provides an additional line of evidence indicating the potential for dechlorination of TCE.
Vinyl Chloride Reductase	
***bvc*A gene**	The *bvc*A gene encodes the vinyl chloride reductase enzyme responsible for reductive dechlorination of vinyl chloride to ethene by *Dehalococcoides* sp. str. BAV1 (16). Presence of *bvc*A gene indicates the potential for reductive dechlorination of VC to ethene. Absence of both *bvc*A and *vcr*A genes suggests VC may accumulate. An internal study with ~1,000 samples showed ethene production was observed in 80% of the samples that the DHC population was greater than or equal to 10^4 cells/mL. The *bvc*A gene was detected in over 50% of these samples. Van Der Zaan et al (17) noted that the bvcA gene was the only VC reductase gene detected at three of their sites. Alfred Spormann's laboratory at Stanford University (18) reported that the *bvc*A gene was the most abundant and active at the outflow of a PCE fed column study. This section of the column was in the DCE to VC stages of reductive dechlorination thus confirming the importance of the *bvc*A gene for complete reductive dechlorination.
***vcr*A gene**	The *vcr*A gene encodes the vinyl chloride reductase enzyme responsible for reductive dechlorination of *cis*-DCE and vinyl chloride by *Dehalococcoides* sp. strain VS (14). Presence of *vcr*A gene indicates the potential for reductive dechlorination of DCE and/or VC to ethene. Absence of both *bvc*A and *vcr*A genes suggest VC may accumulate. As with the *bvc*A gene, detection of the *vcr*A gene is associated with ethene production in internal studies (67%) and vinyl chloride reduction in independent studies (14, 17).

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Reporting

Microbial Insights can provide a variety of data packages and reporting levels to suit the needs of any project. Data packages range from simple analytical reports with results only to more complex data packages that include a report narrative, analytical results, QC data, and supporting materials including all raw data and chain-of-custody documentation. The figure below shows our standard report and explains the way values are reported.

Microbial Insights, Inc.

2340 Stock Creek Blvd. Rockford, TN 37853-3044
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: Company Name
Project: Your Project Name

MI Project Number: Unique Laboratory Identifier
Date Received: Date Samples Arrived

Sample Information

Client Sample ID:		Sample A	Sample B	Sample C
Sample Date:		00/00/0000	00/00/0000	00/00/0000
Units:		cells/mL	cells/mL	cells/mL
Analyst:		Intials	Intials	Intials
Dechlorinating Bacteria				
Dehalococcoides spp.	DHC	**1.84E+05**	**2.76E+02**	**2.28E+01 (J)**
Functional Genes				
tceA Reductase	TCE	**6.00E+01**	**3.23E+01**	<4.00E-01
bvcA Reductase	BVC	**1.17E+04**	**1.81E+01**	<4.00E-01
vcrA Reducatase	VCR	**8.42E+04**	**1.74E+02**	<4.00E-01

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

"J" value
Result is an estimated value. This data qualifier (flag) is used when the target gene is detected but at a concentration or abundance below the practical quantification limit (PQL).

< value
The target gene was not detected at the limit of quantitation (LOQ) reported for that sample.

"I" value
QA Procedure indicated that the sample may have exhibited PCR inhibition. Although relatively rare, PCR inhibition can occur due to the presence of metals or humic acids at high concentrations in the sample.

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Quality Assurance

Microbial Insights' comprehensive Quality Assurance (QA) Program is the foundation of all laboratory analyses, ensuring that our clients receive high-quality analytical services that are timely, reliable, and meet their intended purpose in a cost effective manner. MI is committed to providing quality data that surpasses regulatory and industry standards, thus enabling the client to make well-informed decisions. MI maintains strict standard operating procedures and QA/QC measures throughout all of the analyses offered. The following Table details specific QA/QC procedures that are used for CENSUS.

QA/QC	Description
Date of Extraction	DNA and RNA extractions are performed the day the samples are received by MI to minimize the possibility of any changes to the microbial community prior to analysis.
Laboratory Method Blanks	An extraction blank (no sample added) is processed alongside each set of field samples from DNA extraction through CENSUS® analysis to ensure that cross contamination has not occurred. Although MI has never experienced this issue, the detection of the CENSUS® target (e.g. *Dehalococcoides*) in an extraction blank is direct evidence of cross contamination with a sample or contamination of a reagent and would invalidate the results. If this were to occur, MI would re-extract the sample. If not possible to re-extract, MI would contact the client immediately and notate it on the laboratory report.
Laboratory Control Samples (LCS)	A laboratory control sample (LCS) or positive control (target DNA) is included with each CENSUS® plate to confirm amplification and as a continuing calibration check.
Negative Controls	A negative control (no DNA) is included with each CENSUS plate to ensure that cross contamination has not occurred during amplification. As with the extraction blank, detection of CENSUS target (e.g. DHC) in a negative control is direct evidence of contamination and would invalidate the results. If this were to occur, MI would rerun the analysis.

References

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Subcontract Data

Shipping and Receiving Documents

leidos

301 Laboratory Road, Oak Ridge, Tennessee 37831 (865) 482-9031

CHAIN OF CUSTODY RECORD

COC NO.: 1 of 1

PROJECT NAME: IRP Site 6, Schenectady, NYANG

PROJECT NUMBER: 314561.00.04.8002.920

PROJECT MANAGER: Mike Poligone

Sampler (Signature): ZS **(Printed Name):** Zach Steele

LABORATORY NAME: Test America

LABORATORY ADDRESS: 4955 Yarrow Street, Arvada, CO 80002

PHONE NO: 303-736-0192

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	VOCs (1)	TOC (2)	Sulfate and Nitrate (3)	DHC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
GMW2501	5-11-16	1140	GW				X	1		

280-83093 Chain of Custody

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS: 1	Cooler Temperature:
ZS	5-11-16		5/12/16	Cooler ID:	FEDEX NUMBER:
COMPANY NAME: Leidos	1900	COMPANY NAME: TAD	0915		
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time	**Standard (5 day) turn-around**	
COMPANY NAME:		COMPANY NAME:		1 3 - 40 ml Glass Vials, HCL to pH < 2, 4C 2 1 - 250 ml Polyethylene, H2SO4 or HCL, Cool, 4C 3 1 - 500 ml Polyethylene, Cool, 4C	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time		
COMPANY NAME:		COMPANY NAME:			

3.3-0.1 IR#5 Transferred by DW 5/12/16

Login Sample Receipt Checklist

Client: Leidos, Inc.

Job Number: 280-83093-1

Login Number: 83093
List Number: 1
Creator: DeHerrera, Jessica H

List Source: TestAmerica Denver

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.	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.	True	
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	

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APPENDIX D – STRATTON AIR NATIONAL GUARD BASE WORK CLEARANCE REQUEST FORM

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BASE CIVIL ENGINEERING WORK CLEARANCE REQUEST

(See Instructions on Reverse)

DATE PREPARED: 28 June 16

1. Clearance is requested to proceed with work at Old Sewage Plant lawn area

on Work Order No. _____, Contract No. Leidos ticket # 06226-16-0606, involving excavation or utility disturbance per attached sketch. This area [X] has [ ] has not been staked or clearly marked.

2. TYPE OF FACILITY/WORK INVOLVED

[ ] A. PAVEMENTS	[ ] D. FIRE DETECTION & PROTECTION SYSTEMS			[ ] G. AIRCRAFT OR VEHICULAR TRAFFIC FLOW	
[ ] B. DRAINAGE SYSTEMS	[ ] E. UTILITY	[ ] OVERHEAD	[ ] UNDERGROUND	[ ] H. SECURITY	
[ ] C. RAILROAD TRACKS	[ ] F. COMM	[ ] OVERHEAD	[ ] UNDERGROUND	[X] I. OTHER Earth boring	

3. DATE CLEARANCE REQUIRED: 28 June 16

4. DATE OF CLEARANCE: 28 June 16

5. SIGNATURE OF REQUESTING OFFICIAL

6. TELEPHONE NO.: 865-405-8332

7. ORGANIZATION

8. BASE CIVIL ENGINEERING — ORGANIZATION	REMARKS *(Use Reverse for additional comments)*	REVIEWER'S NAME AND INITIALS
A. ELECTRICAL DISTRIBUTION	Marked by Prev 22 June 16	[illegible]
B. STEAM DISTRIBUTION	NA	[illegible]
C. WATER DISTRIBUTION	Marked by Wuszer 23 June 16	[illegible]
D. POL DISTRIBUTION	NA	[illegible]
E. SEWER DISTRIBUTION	Marked by Wuszer 23 June 16	[illegible]
F. ENVIRONMENTAL	Notified and are Job POC	[illegible]
G. PAVEMENTS/ GROUNDS	OK	[illegible]
H. FIRE PROTECTION	Notified in E-mail 23 June 16	[illegible]
I. ZONE _____	NA	[illegible]
J. OTHER *(Specify)*	NA	[illegible]
9. SECURITY POLICE	Notified in E-mail 23 June 16	[illegible]
10. SAFETY	Notified in E-mail 23 June 16	[illegible]
11. COMMUNICATIONS	All Base Comm in Area is dead a/f for Harrington	[illegible]
12. BASE OPERATIONS	NA	[illegible]
13. CABLE TV	No Commercial Cable - by USIC	[illegible]
14. COMMERCIAL UTILITY COMPANY [X] TELEPHONE [X] GAS [X] ELECTRIC	No Commercial telephone No Gas in Area No Commercial Electric in Area, Base Electric Marked	[illegible] [illegible] [illegible]

15. OTHER *(Specify)* _____

16. REQUESTED CLEARANCE [X] APPROVED [ ] DISAPPROVED

17. TYPED NAME AND SIGNATURE OF APPROVING OFFICER *(Chief of Operations Flight or Chief of Engineering Flight)*

[signature]

17a. DATE SIGNED: 28 June 16

AF IMT 103, 19940801, V3

PREVIOUS EDITIONS ARE OBSOLETE.

Chico, Thomas W NFG NG NYANG (US)

From: Chico, Thomas W NFG NG NYANG (US)
Sent: Thursday, June 23, 2016 1:29 PM
To: Birdsall, Kevin NFG USAF 109 AW (US); Prevendoski, Mark MSgt USAF 109 AW (US); Waszmer, Gregg S NFG USAF 109 AW (US); WEATHERWAX, BRUCE W Civ USAF ANG 109 CES/CEO; Kotch, Jennifer Rae (Jen) CIV USAF 109 AW (US); Parker, Paul R Jr NFG USAF 109 AW (US); Pike, Scott R NFG USAF 109 AW (US); Walters, Joshua J CMSgt USAF 109 AW (US); Roberts, Raymond M Jr TSgt USAF 109 AW (US); Rueda, Richard T SMSgt USAF 109 AW (US); Bathrick, Seth D MSgt USAF 109 AW (US); Harrington, Robert C TSgt USAF 109 AW (US); Scholl, Kenneth A TSgt USAF 109 AW (US); Mihalko, Greg M SMSgt USAF 109 AW (US)
Cc: Rulison, Shawn R Capt USAF 109 AW (US); Donaldson, Robert E (Rob) Lt Col USAF NG NYANG (US); Vallsdelosreyes, Frank V SMSgt USAF 109 AW (US); Behany, Katy M MSgt USAF 109 AW (US); Eldred, Michael S TSgt USAF 109 AW (US)
Subject: 2 dig safe requests

All,

We have two contractors requesting dig permits on Base. The first is Leidos Environmental. They will be performing soil borings in the lawn area around the old sewage plant area. The second will be a contractor working for Verizon but I don't know their name. They will be removing the Verizon telephone pole in the Aerial Port /TDY overflow parking area and burying the overhead phone line underground. The underground trench will run from the existing pole across the lower Base temporary entrance road out to Maple Ave. If you have any questions/concerns about the proposed work please let me know. Comm- please let me know when you have marked/cleared both areas. Thank you.

Chico, Thomas W NFG NG NYANG (US)

From: Poligone, Mike D. <MICHAEL.D.POLIGONE@leidos.com>
Sent: Wednesday, June 22, 2016 1:53 PM
To: Chico, Thomas W NFG NG NYANG (US); Kotch, Jennifer Rae (Jen) CIV USAF 109 AW (US)
Cc: Jason Natale; Joseph Sabanos (jsabanos@aztechenv.com); Steele, Charles Z.
Subject: [Non-DoD Source] FW: Stakeout Request 06226-161-060, Next Steps

All active links contained in this email were disabled. Please verify the identity of the sender, and confirm the authenticity of all links contained within the message prior to copying and pasting the address to a Web browser.

Dig Safe NY has been contacted and I listed Thomas Chico as the base point of contact. Let me know if you have any questions.

-----Original Message-----
From: DO_NOT_REPLY [Caution-mailto:APR_MailBot@DigSafelyNewYork.com]
Sent: Wednesday, June 22, 2016 1:50 PM
To: Poligone, Mike D.
Subject: Stakeout Request 06226-161-060, Next Steps

MICHAEL POLIGONE,

This is an automated message. DO NOT REPLY, it will not go anywhere.

The Dig Safely New York issued Company ID for LEIDOS is 121489. You can use this as a shortcut to identify yourself the next time you call. No worries if you forget it, however, as your phone number can work as well.

Your stakeout request 06226-161-060, 13 SOIL BORINGS AND TRENCHING at 1 AIR NATIONAL GUARD RD in the Township of Glenville, resulted the following utilites being notified.

City Of Schenectady Water (Water).
Firstlight Fiber (Fiber).
Level 3 Communications (Fiber).
Mci (Fiber).
National Grid / East / Electric (Electric).
National Grid / East / Gas (Gas).
Time Warner Cable | Schenec A (Fiber, Catv).
Town Of Glenville (Sanitary Sewer, Water).
Verizon / East (Fiber, Telephone).

Now that you have taken the important first step of calling before you dig, here is what happens next:

You've scheduled your excavation to begin on 06/28/2016 08:00:00 AM. The utilities have until that time to mark their facilities around your indicated job site. To assist in that process, it is suggested that you outline the perimeter of the digsite using white paint or white flags, to narrow down the location as closely as is possible.

After a utility has marked, or if they have no facilities in that immediate area, each utility should respond to Dig Safely New York's APR system with their results, indicating that their stakeout process is complete, or that they had no facilities in the area. Dig Safely New York's APR system will consolidate their responses and attempt to send the result to you a few business hours before 06/28/2016 08:00:00 AM, or it will send it immediately if all have checked-in sooner. Some facility owners may also contact you directly if a high risk or high value facility is nearby.

You should receive "Positive Response" from *each* utility listed above before you commence excavating. You can view the current response status at any time by visiting Caution-http://www.digsafelynewyork.com/apr or you can dial 1-888-Diggers (888-344-4377) to check via phone call. It will want to know your phone and ticket number (865-405-8332, 06226-161-060).

Note that the Dig Safely New York call center agents cannot tell you if a utility has responded or not. Call Center Agents are not allowed to see this information.

If a utility has not provided Positive Response by your stated starting time, contact them via their Stakeout Contact that is provided, below. As a last resort, you can contact the one-call center and inform us of the problem. Remember to reference ticket 06226-161-060. Also remember that Dig Safely New York is a call center; it is not one of the utilities that were involved, and it is not a locating service.

City Of Schenectady Water: Phyllis Gaumond 518-382-5023.
Firstlight Fiber: Evan Wert 518-857-7836.
Level 3 Communications: Level 3 Cable Protection Management 877-366-8344 x3.
Mci: Mci National Fiber Security 800-289-3427.
National Grid / East / Electric: Usic Voice Calls 800-262-8600 x2.
National Grid / East / Gas: Usic Voice Calls 800-262-8600 x2.
Time Warner Cable | Schenec A: Usic Voice Calls 800-262-8600 x2.
Town Of Glenville: Cathy Visco 518-688-1217.
Verizon / East: Verizon (ppm Center) Stakeout Contact 855-226-9564.

The location of any privately owned utility (such as a service drop) is typically the responsibility of the property owner, since the property owner is the person who (a) owns it, and (b) had it installed. If the property owner is unsure of the location of the service drops, private locating services are available in most areas. Dig Safely New York has compiled a list of several of these services, but be advised that the list is incomplete and no endorsements are implied.
Caution-http://www.digsafelynewyork.com/excavators/private-locators

Once all utility operators have responded to your pending excavation request, you may begin excavation on your stated commencement date 06/28/2016 08:00:00 AM. Remember that you are required to hand dig within two feet of any markings prior to using mechanized equipment (Tolerance Zone) in order to verify the location and depth of the facility. Or, you can also use vacuum excavation to accomplish this goal.
Caution-http://www.digsafelynewyork.com/excavators/tolerance-zone

Thank you for utilizing this one call service to ensure a safe excavation.

Chico, Thomas W NFG NG NYANG (US)

From: Poligone, Mike D. <MICHAEL.D.POLIGONE@leidos.com>
Sent: Wednesday, June 22, 2016 10:15 PM
To: Chico, Thomas W NFG NG NYANG (US)
Subject: [Non-DoD Source] FW: 06226-161-060

-----Original Message-----
From: vztpositivenotification@verizon.com [mailto:vztpositivenotification@verizon.com]
Sent: Wednesday, June 22, 2016 1:55 PM
To: Poligone, Mike D.
Subject: 06226-161-060

Dear Excavator,

Your request to locate Verizon facilities for the ticket identified above has been reviewed. The extent of work described in the request noted above has been compared with our facility records. Verizon has determined that the excavation location and scope of work you have identified does not conflict with our underground facilities. If you have questions or have additional information where you feel Verizon's underground facilities are in the excavation area, do not hesitate to contact our National Facility Locate Call Center at 800-492-3100.

Thank you and remember to dig safely!

Please do not reply to this email as the account is not monitored.

Chico, Thomas W NFG NG NYANG (US)

From: Poligone, Mike D. <MICHAEL.D.POLIGONE@leidos.com>
Sent: Thursday, June 23, 2016 7:22 AM
To: Chico, Thomas W NFG NG NYANG (US)
Subject: [Non-DoD Source] FW: Response to Dig Request

FYI...

-----Original Message-----
From: IRTHNet@level3.com [mailto:IRTHNet@level3.com]
Sent: Wednesday, June 22, 2016 4:26 PM
To: Poligone, Mike D.
Subject: Response to Dig Request

==========

To: LEIDOS Attn: MICHAEL POLIGONE
Voice: 8654058332 Fax:
Re: Response to Dig Request

This is an Important Message from Level 3 Communications replying to your request to locate our underground facilities in the area described on the One Call Center ticket.

==========

Ticket: 06226-161-060
County: SCHENECTADY Place: GLENVILLE
Address: 1 AIR NATIONAL GUARD RD

LEVEL 3 COMMUN:
Level 3 Communications has determined our facilities are clear of the dig site described by your One Call Center ticket. Level 3 Communications will not have to locate any underground utilities at this dig site. If you have any questions, please contact Level 3 Communications at 1-877-366-8344.

==========

If you have any questions, please contact Level 3 Communication's Cable Protection Management Team at 1-877-366-8344.

==========

This message was generated by an automated system. Please do not reply to this email.

Ticket: 06226-161-060-00 Type: Regular Previous Ticket:

State: NY County: SCHENECTADY Place: GLENVILLE /T
Addr: From: 1 To: Name: AIR NATIONAL GUARD RD
Cross: From: To: Name:
Offset:

Locate: NORTH OF MAPLE AVE AND SOUTH RUNWAY 28
: SEE COMMENTS
NearSt: MAPLE AVE
Means of Excavation: DRILL RIG AND BACKHOE Blasting: N
Site marked with white: N
Boring/Directional Drilling: N
Within 25ft of Edge of Road: N

Work Type: 13 SOIL BORINGS AND TRENCHING
Duration: 4 DAYS
Depth of excavation:
Site dimensions:
Start Date and Time: 06/28/2016 08:00
Must Start By: 07/13/2016

Contact Name: MICHAEL POLIGONE
Company: LEIDOS
Addr1: 301 LABRATORY RD Addr2:
City: OAK RIDGE State: TN Zip: 37831
Phone: 865-405-8332 Fax:
Email: POLIGONEM@LEIDOS.COM
Field Contact: THOMAS CHICO
Cell Phone: 518-344-2340
Working for: SCHENECTADY AIR NATIONAL GUARD BASE

Comments: SEE THOMAS ON SITE TO BE SHOWN EXACT LOCATION
:
: TRENCH 25 FT LONG AND 10 FT DEEP
: BORINGS 10 TO 15 FT DEEP WITH A 4 1/2 INCHES IN DIAMETER
: DIG SITE ALSO AFFECTS: EAST GLENVILLE /P
: Lookup Type: MANUAL

Members:

CITY OF SCHENECTADY WATER	518-382-5023
FIRSTLIGHT FIBER	518-857-7836
LEVEL 3 COMMUNICATIONS	877-366-8344 x3
MCI	800-289-3427
NATIONAL GRID / EAST / ELECTRIC	800-262-8600 x2
NATIONAL GRID / EAST / GAS	800-262-8600 x2
TIME WARNER CABLE | SCHENEC A	800-262-8600 x2
TOWN OF GLENVILLE	518-688-1217
VERIZON / EAST	855-226-9564

Service Area Code	Service Area Name	Contact	Day Phone	Emergency Phone	Alt Phone	Utility Type	Response
CIT SCHENECTADY WTR	CITY OF SCHENECTADY WATER	PHYLLIS GAUMOND	(518) 382 - 5023			WATER	10 CLEAR, NO FACILITIES WITHIN 15 FT OF THE EXCAVATOR DEFINED WORK AREA
FIRSTLIGHT FIBER	FIRSTLIGHT FIBER	EVAN WERT	(518) 857 - 7836			FIBER	
LEVEL 3 COMMUN	LEVEL 3 COMMUNICATIONS	LEVEL 3 CABLE PROTECTION MANAGEMENT	(877) 366 - 8344 x 3			FIBER	10 CLEAR, NO FACILITIES WITHIN 15 FT OF THE EXCAVATOR DEFINED WORK AREA
MCI	MCI	MCI NATIONAL FIBER SECURITY	(800) 289 - 3427			FIBER	10 CLEAR, NO FACILITIES WITHIN 15 FT OF THE EXCAVATOR DEFINED WORK AREA

NAT GRID / EAST / ELECTRIC	NATIONAL GRID / EAST / ELECTRIC	USIC VOICE CALLS		(800) 262 - 8600 x 2		ELECTRIC	
NAT GRID / EAST / GAS	NATIONAL GRID / EAST / GAS	USIC VOICE CALLS		(800) 262 - 8600 x 2		GAS	
TWCBL-SCHENEC A	TIME WARNER CABLE	SCHENEC A	USIC VOICE CALLS		(800) 262 - 8600 x 2		FIBER, CATV	
TWN GLENVILLE	TOWN OF GLENVILLE	CATHY VISCO	(518) 688 - 1217		(518) 857 - 9931	SANITARY SEWER, WATER	10 CLEAR, NO FACILITIES WITHIN 15 FT OF THE EXCAVATOR DEFINED WORK AREA
VERIZON / EAST	VERIZON / EAST	VERIZON (PPM CENTER) STAKEOUT CONTACT	(855) 226 - 9564		(855) 661 - 6323	FIBER, TELEPHONE	10 CLEAR, NO FACILITIES WITHIN 15 FT OF THE EXCAVATOR DEFINED WORK AREA

Ticket Status Notification

To: LEIDOS
Email: POLIGONEM@LEIDOS.COM

Below lists utilities that were statused by USIC in Central Standard Time.
Please note there may be other Utilities which include private facilities that may be present in the work area and are NOT the responsibility of USIC to locate or mark.

Ticket Number	Address
06226-161-060-00	1 AIR NATIONAL GUARD RD,GLENVILLE /T

Utility	Locate Date / Time	Status	Detail
NAT GRID ELECTRIC EAST UPSTATE - NY -	06/27/16 09:05 AM	Not Marked	Excavation Site Clear
NAT GRID GAS EAST UPSTATE - NY - P	06/27/16 09:05 AM	Not Marked	Excavation Site Clear
Time Warner Cable CATV - NY - P	06/27/16 09:05 AM	Not Marked	Excavation Site Clear

You are receiving this notification because your contact information is listed on the above ticket from the One Call System. If you have any questions regarding this notification, please contact USIC at 1-800-762-0592.

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APPENDIX E – PERMANENT INJECTION WELL SOIL BORING LOGS

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Aztech Environmental

5 McCrea Hill Road, Ballston Spa, NY 12020
518.885-5383 | aztechenv.com

Soil Boring: SB-13

Client: Leidos
Project: Stratton Air National Guard Base
Street Address: 1 Air National Guard Road
City/State: Schenectady / New York
Drilling Company: Aztech Environmental Technologies
Driller: Ray Hammond
Logged By: Stefan Truex

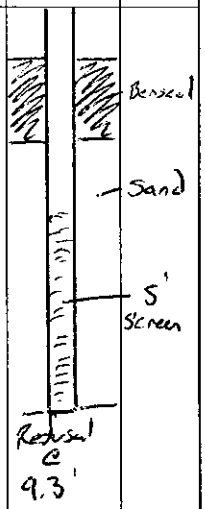
Drilling Method: Direct Push via 3" Diameter Casing
Sampling Method: N/A
Borehole Diameter: 3.25"
Borehole Depth: 9.3'
Refusal Depth: 9.3'
Hammer Weight and Travel: N/A
Auger Size: N/A

Depth to Water: N/A
Ground Elevation: N/A
Start Date: 6/28/16
Finish Date: 6/28/16

Depth (Feet)	Sample ID	Sample Interval (Feet)	Recovery (feet)	Blow Counts	Description
1–25	N/A	N/A	N/A	N/A	Soil samples not collected. A three-inch (3") hard point was used to install injection/application wells.

Depth (Feet): 1–25

Well Construction Diagram



Annotation

Notes:
N/A – Not Available
Fbg – Feet Below Grade
' – feet
" – Inches
X – Split Spoon Refusal

Aztech Environmental

5 McCrea Hill Road, Ballston Spa, NY 12020
518.885-5383 | aztechenv.com

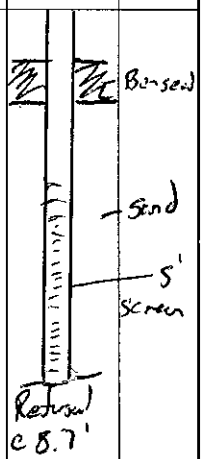
Soil Boring: SB-14

Client: Leidos
Project: Stratton Air National Guard Base
Street Address: 1 Air National Guard Road
City/State: Schenectady / New York
Drilling Company: Aztech Environmental Technologies
Driller: Ray Hammond
Logged By: Stefan Truex

Drilling Method: Direct Push via 3" Diameter Casing
Sampling Method: N/A
Borehole Diameter: 3.25"
Borehole Depth: 8.7'
Refusal Depth: 8.7'
Hammer Weight and Travel: N/A
Auger Size: N/A

Depth to Water: N/A
Ground Elevation: N/A
Start Date: 6/28/16
Finish Date: 6/28/16

Depth (Feet)	Sample ID	Sample Interval (Feet)	Recovery (feet)	Blow Counts	Description
1–25	N/A	N/A	N/A	N/A	Soil samples not collected. A three-inch (3") hard point was used to install injection/application wells.



Notes:
N/A – Not Available
Fbg – Feet Below Grade
' – feet
" – Inches
X – Split Spoon Refusal

Aztech Environmental

5 McCrea Hill Road, Ballston Spa, NY 12020
518.885-5383 | aztechenv.com

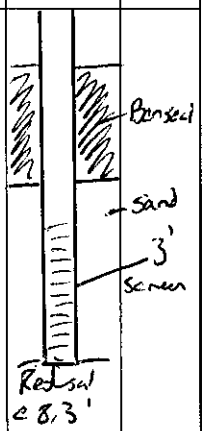
Soil Boring: SB - 16

Client: Leidos
Project: Stratton Air National Guard Base
Street Address: 1 Air National Guard Road
City/State: Schenectady / New York
Drilling Company: Aztech Environmental Technologies
Driller: Ray Hammond
Logged By: Stefan Truex

Drilling Method: Direct Push via 3" Diameter Casing
Sampling Method: N/A
Borehole Diameter: 3.25"
Borehole Depth: 8.3'
Refusal Depth: 8.3'
Hammer Weight and Travel: N/A
Auger Size: N/A

Depth to Water: N/A
Ground Elevation: N/A
Start Date: 6/28/16
Finish Date: 6/28/16

Depth (Feet)	Sample ID	Sample Interval (Feet)	Recovery (feet)	Blow Counts	Description
1–25	N/A	N/A	N/A	N/A	Soil samples not collected. A three-inch (3") hard point was used to install injection/application wells.



Notes:
N/A – Not Available
Fbg – Feet Below Grade
' – feet
" – Inches
X – Split Spoon Refusal

Aztec Environmental

5 McCrea Hill Road, Ballston Spa, NY 12020
518.885-5383 | aztechenv.com

Soil Boring: SB-15

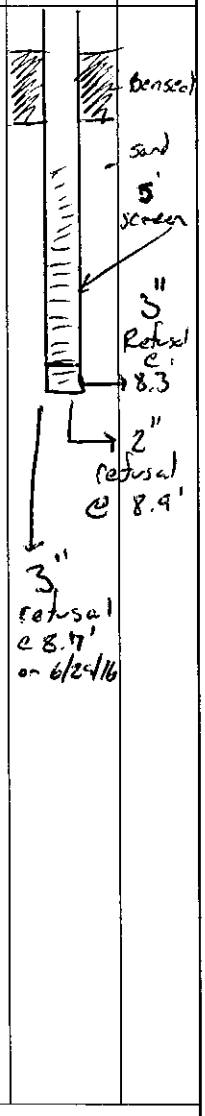
Client: Leidos
Project: Stratton Air National Guard Base
Street Address: 1 Air National Guard Road
City/State: Schenectady / New York
Drilling Company: Aztech Environmental Technologies
Driller: Ray Hammond
Logged By: Stefan Truex

Drilling Method: Direct Push via 3" Diameter Casing
Sampling Method: N/A
Borehole Diameter: 3.25"
Borehole Depth: See Below
Refusal Depth:
Hammer Weight and Travel: N/A
Auger Size: N/A

Depth to Water: N/A
Ground Elevation: N/A
Start Date: 6/28/16
Finish Date: 6/28/16

Depth (Feet)	Sample ID	Sample Interval (Feet)	Recovery (feet)	Blow Counts	Description
1–25	N/A	N/A	N/A	N/A	Soil samples not collected. A three-inch (3") hard point was used to install injection/application wells. *Probe refusal @ 8.3'. used 2" casing w/ hardpoint and drilled to refusal @ 8.9' * Drilled using 3" tooling again on 6/29/16. Refusal @ 8.7', Used 5' screen

Depth (Feet) | Well Construction Diagram | Annotation



Notes:
N/A – Not Available
Fbg – Feet Below Grade
' – feet
" – Inches
X – Split Spoon Refusal

Aztech Environmental

5 McCrea Hill Road, Ballston Spa, NY 12020
518.885-5383 | aztechenv.com

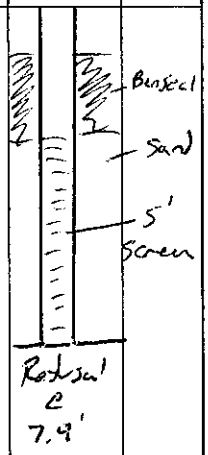
Soil Boring: SB-9

Client: Leidos
Project: Stratton Air National Guard Base
Street Address: 1 Air National Guard Road
City/State: Schenectady / New York
Drilling Company: Aztech Environmental Technologies
Driller: Ray Hammond
Logged By: Stefan Truex

Drilling Method: Direct Push via 3" Diameter Casing
Sampling Method: N/A
Borehole Diameter: 3.25"
Borehole Depth: 7.9'
Refusal Depth: 7.9'
Hammer Weight and Travel: N/A
Auger Size: N/A

Depth to Water: N/A
Ground Elevation: N/A
Start Date: 6/29/16
Finish Date: 6/29/16

Depth (Feet)	Sample ID	Sample Interval (Feet)	Recovery (feet)	Blow Counts	Description
1–25	N/A	N/A	N/A	N/A	Soil samples not collected. A three-inch (3") hard point was used to install injection/application wells.



Notes:
N/A – Not Available
Fbg – Feet Below Grade
' – feet
" – Inches
X – Split Spoon Refusal

Aztech Environmental

5 McCrea Hill Road, Ballston Spa, NY 12020
518.885-5383 | aztechenv.com

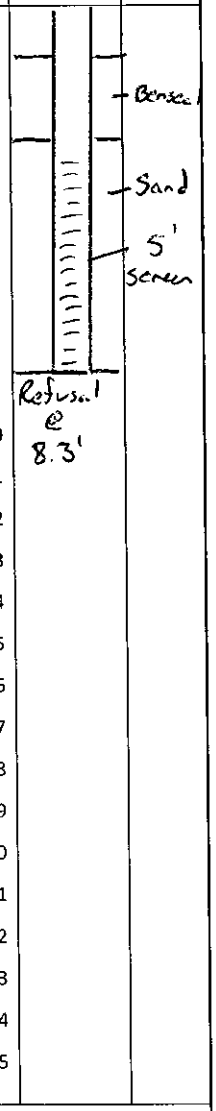
Soil Boring: SB-8

Client: Leidos
Project: Stratton Air National Guard Base
Street Address: 1 Air National Guard Road
City/State: Schenectady / New York
Drilling Company: Aztech Environmental Technologies
Driller: Ray Hammond
Logged By: Stefan Truex

Drilling Method: Direct Push via 3" Diameter Casing
Sampling Method: N/A
Borehole Diameter: 3.25"
Borehole Depth: 8.3
Refusal Depth: 8.3
Hammer Weight and Travel: N/A
Auger Size: N/A

Depth to Water: N/A
Ground Elevation: N/A
Start Date: 6/24/16
Finish Date: 6/24/16

Depth (Feet)	Sample ID	Sample Interval (Feet)	Recovery (feet)	Blow Counts	Description
1–25	N/A	N/A	N/A	N/A	Soil samples not collected. A three-inch (3") hard point was used to install injection/application wells.



Notes:
N/A – Not Available
Fbg – Feet Below Grade
' – feet
" – Inches
X – Split Spoon Refusal

Aztech Environmental

5 McCrea Hill Road, Ballston Spa, NY 12020
518.885-5383 | aztechenv.com

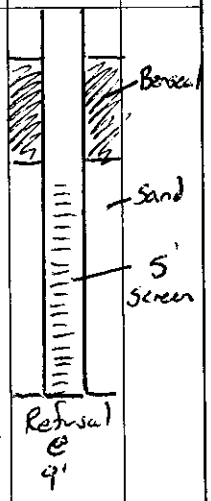
Soil Boring: SB-1

Client: Leidos
Project: Stratton Air National Guard Base
Street Address: 1 Air National Guard Road
City/State: Schenectady / New York
Drilling Company: Aztech Environmental Technologies
Driller: Ray Hammond
Logged By: Stefan Truex

Drilling Method: Direct Push via 3" Diameter Casing
Sampling Method: N/A
Borehole Diameter: 3.25"
Borehole Depth: 9'
Refusal Depth: 9'
Hammer Weight and Travel: N/A
Auger Size: N/A

Depth to Water: N/A
Ground Elevation: N/A
Start Date: 6/29/16
Finish Date: 6/29/16

Depth (Feet)	Sample ID	Sample Interval (Feet)	Recovery (feet)	Blow Counts	Description
1–25	N/A	N/A	N/A	N/A	Soil samples not collected. A three-inch (3") hard point was used to install injection/application wells.



Notes:
N/A – Not Available
Fbg – Feet Below Grade
' – feet
" – Inches
X – Split Spoon Refusal

Aztech Environmental

5 McCrea Hill Road, Ballston Spa, NY 12020
518.885-5383 | aztechenv.com

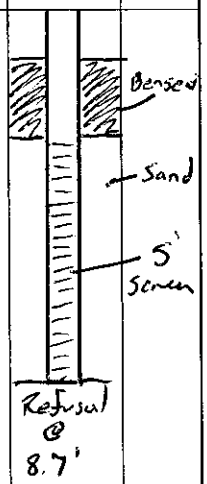
Soil Boring: SB-2

Client: Leidos
Project: Stratton Air National Guard Base
Street Address: 1 Air National Guard Road
City/State: Schenectady / New York
Drilling Company: Aztech Environmental Technologies
Driller: Ray Hammond
Logged By: Stefan Truex

Drilling Method: Direct Push via 3" Diameter Casing
Sampling Method: N/A
Borehole Diameter: 3.25"
Borehole Depth: 8.7
Refusal Depth: 8.7
Hammer Weight and Travel: N/A
Auger Size: N/A

Depth to Water: N/A
Ground Elevation: N/A
Start Date: 6/29/16
Finish Date: 6/29/16

Depth (Feet)	Sample ID	Sample Interval (Feet)	Recovery (feet)	Blow Counts	Description
1–25	N/A	N/A	N/A	N/A	Soil samples not collected. A three-inch (3") hard point was used to install injection/application wells.



Notes:
N/A – Not Available
Fbg – Feet Below Grade
' – feet
" – Inches
X – Split Spoon Refusal

Aztech Environmental

5 McCrea Hill Road, Ballston Spa, NY 12020
518.885-5383 | aztechenv.com

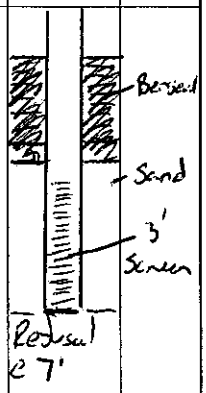
Soil Boring: SB-12

Client: Leidos
Project: Stratton Air National Guard Base
Street Address: 1 Air National Guard Road
City/State: Schenectady / New York
Drilling Company: Aztech Environmental Technologies
Driller: Ray Hammond
Logged By: Stefan Truex

Drilling Method: Direct Push via 3" Diameter Casing
Sampling Method: N/A
Borehole Diameter: 3.25"
Borehole Depth: 7'
Refusal Depth: 7'
Hammer Weight and Travel: N/A
Auger Size: N/A

Depth to Water: N/A
Ground Elevation: N/A
Start Date: 6/29/16
Finish Date: 6/29/16

Depth (Feet)	Sample ID	Sample Interval (Feet)	Recovery (feet)	Blow Counts	Description
1–25	N/A	N/A	N/A	N/A	Soil samples not collected. A three-inch (3") hard point was used to install injection/application wells.



Notes:
N/A – Not Available
Fbg – Feet Below Grade
' – feet
" – Inches
X – Split Spoon Refusal

Aztech Environmental

5 McCrea Hill Road, Ballston Spa, NY 12020
518.885-5383 | aztechenv.com

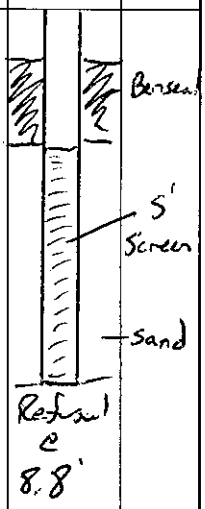
Soil Boring: SB-4

Client: Leidos
Project: Stratton Air National Guard Base
Street Address: 1 Air National Guard Road
City/State: Schenectady / New York
Drilling Company: Aztech Environmental Technologies
Driller: Ray Hammond
Logged By: Stefan Truex

Drilling Method: Direct Push via 3" Diameter Casing
Sampling Method: N/A
Borehole Diameter: 3.25"
Borehole Depth: 8.8'
Refusal Depth: 8.8'
Hammer Weight and Travel: N/A
Auger Size: N/A

Depth to Water: N/A
Ground Elevation: N/A
Start Date: 6/28/16
Finish Date: 6/28/16

Depth (Feet)	Sample ID	Sample Interval (Feet)	Recovery (feet)	Blow Counts	Description
1–25	N/A	N/A	N/A	N/A	Soil samples not collected. A three-inch (3") hard point was used to install injection/application wells.



Notes:
N/A – Not Available
Fbg – Feet Below Grade
' – feet
" – Inches
X – Split Spoon Refusal

Aztech Environmental

5 McCrea Hill Road, Ballston Spa, NY 12020
518.885-5383 | aztechenv.com

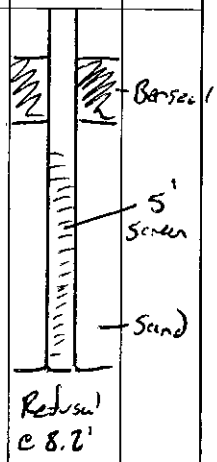
Soil Boring: SB-5

Client: Leidos
Project: Stratton Air National Guard Base
Street Address: 1 Air National Guard Road
City/State: Schenectady / New York
Drilling Company: Aztech Environmental Technologies
Driller: Ray Hammond
Logged By: Stefan Truex

Drilling Method: Direct Push via 3" Diameter Casing
Sampling Method: N/A
Borehole Diameter: 3.25"
Borehole Depth: 8.2'
Refusal Depth: 8.2'
Hammer Weight and Travel: N/A
Auger Size: N/A

Depth to Water: N/A
Ground Elevation: N/A
Start Date: 6/28/16
Finish Date: 6/28/16

Depth (Feet)	Sample ID	Sample Interval (Feet)	Recovery (feet)	Blow Counts	Description
1–25	N/A	N/A	N/A	N/A	Soil samples not collected. A three-inch (3") hard point was used to install injection/application wells.



Notes:
N/A – Not Available
Fbg – Feet Below Grade
' – feet
" – Inches
X – Split Spoon Refusal

Aztech Environmental

5 McCrea Hill Road, Ballston Spa, NY 12020
518.885-5383 | aztechenv.com

Soil Boring: SB - 11

Client: Leidos
Project: Stratton Air National Guard Base
Street Address: 1 Air National Guard Road
City/State: Schenectady / New York
Drilling Company: Aztech Environmental Technologies
Driller: Ray Hammond
Logged By: Stefan Truex

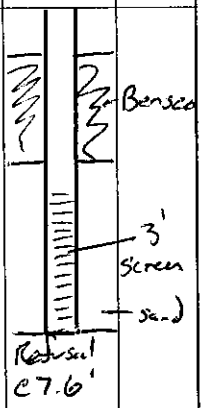
Drilling Method: Direct Push via 3" Diameter Casing
Sampling Method: N/A
Borehole Diameter: 3.25"
Borehole Depth: 7.6'
Refusal Depth: 7.6'
Hammer Weight and Travel: N/A
Auger Size: N/A

Depth to Water: N/A
Ground Elevation: N/A
Start Date: 6/28/16
Finish Date: 6/28/16

Depth (Feet)	Sample ID	Sample Interval (Feet)	Recovery (feet)	Blow Counts	Description
1–25	N/A	N/A	N/A	N/A	Soil samples not collected. A three-inch (3") hard point was used to install injection/application wells.

Depth (Feet) 1–25

Well Construction Diagram



Annotation

Notes:
N/A – Not Available
Fbg – Feet Below Grade
' – feet
" – Inches
X – Split Spoon Refusal

Aztech Environmental

5 McCrea Hill Road, Ballston Spa, NY 12020
518.885-5383 | aztechenv.com

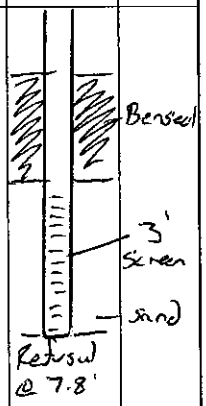
Soil Boring: SB-10

Client: Leidos
Project: Stratton Air National Guard Base
Street Address: 1 Air National Guard Road
City/State: Schenectady / New York
Drilling Company: Aztech Environmental Technologies
Driller: Ray Hammond
Logged By: Stefan Truex

Drilling Method: Direct Push via 3" Diameter Casing
Sampling Method: N/A
Borehole Diameter: 3.25"
Borehole Depth: 7.8'
Refusal Depth: 7.8'
Hammer Weight and Travel: N/A
Auger Size: N/A

Depth to Water: N/A
Ground Elevation: N/A
Start Date: 6/28/16
Finish Date: 6/28/16

Depth (Feet)	Sample ID	Sample Interval (Feet)	Recovery (feet)	Blow Counts	Description
1–25	N/A	N/A	N/A	N/A	Soil samples not collected. A three-inch (3") hard point was used to install injection/application wells.



Notes:
N/A – Not Available
Fbg – Feet Below Grade
' – feet
" – Inches
X – Split Spoon Refusal

Aztech Environmental

PH: 518-885-5383
FAX: 518-885-5385

DATE: 6/29/16
CLIENT: Leidos
JOB LOCATION: Schenectady
GEOLOGIST/ENGINEER:

EMPLOYEE NAMES	TOTAL HOURS
DRILLER: Raymond Hammond	9
HELPER: Stetten Truax	40
HELPER:	

DESCRIPTION OF DRILLING/PROBING OPERATIONS

5:30	
5:45	
6 AM	
6:15	
6:30	
6:45	
7 AM	Start of day
7:15	Final load
7:30	Mobe to Site
7:45	
8 AM	On Site
8:15	Singe in at office
8:30	
8:45	
9 AM	
9:15	Walk Site
9:30	Set up on SB-15
9:45	probed to 8.3' with 3" casing
10AM	refusal moved over 2'
10:15	used 2" tooling probed to 8.9'
10:30	refusal set 1" well at ~~8~~ 9.2'
10:45	3' Screen 8.2' Riser 4' Sand
11AM	4' Benseal
11:15	SB-16 probed to 8.3' 3" Casing
11:30	Set 1" Well at 8.3' Sand to 4'
11:45	Benseal to .6' 3' Screen 8'
12PM	Riser SB-14 probed to 8.7'
12:15	refusal Set 1" well at 8.7'
12:30	5' Screen Sand to 2' Benseal
12:45	to 1'
1 PM	13:00	SB-13 probed to 9.3'
1:15	13:15	Set 1" Well at 9.3' 5' screen
1:30	13:30	Sand to 3' Benseal to 1'
1:45	13:45	SB-4 probed to 8.8' refusal
2 PM	14:00	Set 1" Well at 8.8' 5' Screen
2:15	14:15	Sand to 3' Benseal to 1'
2:30	14:30	SB-5 probed to 8.2' refusal
2:45	14:45	Set 1" Well at 8.2' 5' Screen
3 PM	15:00	Sand to 2.5' Benseal to
3:15	15:15	1' SB-11 probed to 7.6'
3:30	15:30	refusal Set 1" Well at 7.6'
3:45	15:45	3' Screen Sand to 3.5'
4 PM	16:00	SB-10 probed to 7.8'
4:15	16:15	refusal set 1" well at 7.8'
4:30	16:30	3' screen Sand to 4'
4:45	16:45	
5 PM	17:00	off site 4:00
5:15	17:15	End of day 4:30
5:30	17:30	
5:45	17:45	
6 PM	18:00	
6:15	18:15	
6:30	18:30	
6:45	18:45	
7 PM	19:00	
7:15	19:15	
7:30	19:30	
7:45	19:45	
8 PM	20:00	

LUNCH BREAK: FROM: 12:00 TO: 12:30

1/2 hour break for more than 6 hour day, break between 11AM and 2PM

Specify start time/arrive shop, load time, leave shop/travel to site, drilling/probe time, **LUNCH BREAK**, time offsite, and end of day.

I ACKNOWLEDGE ALL STATEMENTS AND TIMES ABOVE ARE TRUE AND ACCURATE. *Sign:* *Date:*

		ENGINE HRS	MILEAGE
RIG	Geoprobe		
TRUCK	Box		
TOLLS	FROM:	TO:	

Well/Boring #				
___ PVC Riser - FT				
___ PVC Screen - FT				
___ Core – Specify Size				
___ Soil Boring				
# of Spoons				
6" Road Box				
8" Road Box				
Stand Pipe				
Grout – FT				
Sand – FT				
Benseal – FT				
Holeplug – FT				
TOTAL DEPTH				

TOTAL STANDBY TIME:
TOTAL DECON TIME:
TOTAL SAMPLE FEET:
TOTAL PROBE FEET:
TOTAL AUGER FEET:
TOTAL CASING FEET:
TOTAL BIT FEET:

CLIENT'S REMARKS/APPROVAL

SIGNATURE:

APPENDIX F – REMEDIAL ACTION PHOTOGRAPH LOG

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PHOTOGRAPH LOG
INTERCEPTOR TRENCH INSTALLATION

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Site 6 - Interceptor Trench

Site 6 - Interceptor Trench

Site 6 - Interceptor Trench

Site 6 - Interceptor Trench Monitoring Points

Site 6 - Interceptor Trench Restoration

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PHOTOGRAPH LOG
JULY 2016 INJECTION EVENT

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Site 6 - Potable Water Totes

Site 6 - Sand Bags and Water Collection Scupper.

Site 6 – Diaphragm Pump, Hose, and Collection Scupper.

Site 6 – Totes of Emulsified Vegetable Oil.

Site 6 – Placard on Tote of Emulsified Vegetable Oil.

Site 6 – Placement of 330 gallon Injection Totes.

Site 6 – Injection Setup and Injection into IP 5.

Site 6 – Injection Setup and Injection into IP 12.

Site 6 – Injection Setup and Injection into IP 4.

Site 6 – Injection Setup and Injection into IP 1 and 2.

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