DEPARTMENT OF THE AIR FORCE
27TH SPECIAL OPERATIONS MISSION SUPPORT GROUP (AFSOC)
CANNON AIR FORCE BASE NEW MEXICO

ENTERED
APR 2013
Hazardous Waste Bureau
APR 08 2013

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Mr. Daniel Comeau
Hazardous Waste Bureau
New Mexico Environment Department
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Dear Mr. Comeau

Attached is the *Well Installation Completion Report for Landfill 25, Solid Waste Management Unit (SWMU) 97.* If you have any questions regarding this submittal, please contact Mr. Ronald Lancaster, Chief, Asset Management Flight at (575) 784-1146 or Dr. Mokhtar Gaballa, Restoration Program Manager at (575) 784-0491.

Sincerely,

DAVID C. PIECH, Colonel, USAF
Commander

Attachment:
Well Installation Completion Report for Landfill 25, Solid Waste Management Unit 97.

cc:
Environmental Protection Agency, Region VI, Ms. Wendy Jacques w/o Attachment

Well Installation Completion Report for Landfill 25, Solid Waste Management Unit 97 Cannon Air Force Base, New Mexico

Final
March 2013

27 SOCES/CEAN
Cannon Air Force Base
New Mexico

Well Installation Completion Report for Landfill 25, Solid Waste Management Unit 97, Cannon Air Force Base, New Mexico

Contract No. W9128F-10-D0019, Task Order 0001
Project No. CZQZ20087600M

Final
March 2013

Prepared for:

27 SOCES/CEAN
Cannon Air Force Base, New Mexico

U.S. Army Corps of Engineers
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REPORT DOCUMENTATION PAGE	Form Approved OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington Virginia 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, D.C. 20503.

1. AGENCY USE ONLY	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	March 2013	Well Installation Completion Report for Landfill No. 25 (SWMU 97), Cannon Air Force Base, New Mexico

4. TITLE AND SUBTITLE	5. FUNDING NUMBERS
Well Installation Completion Report for Landfill No. 25 (SWMU 97), Cannon Air Force Base, New Mexico	Contract No. W9128F-10-D0019, Task Order 0001
6. AUTHOR Ms. Carol Rieger	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Tetra Tech, Inc. 143 Union Blvd. Suite 1010 Lakewood, Colorado 80228	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Corps of Engineers, Omaha District 1616 Capitol Avenue Omaha, Nebraska 68102	10. SPONSORING/ MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

This is a final document.

12a. DISTRIBUTION/AVAILABILITY STATEMENT	12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)

This report summarizes and documents the process by which the installation of monitoring well MW-Rb was conducted at LF-25 (also known as Solid Waste Management Unit [SWMU] 97) at Cannon AFB. Well installation took place in October 2012 with sampling performed under the Cannon AFB biennial groundwater monitoring program in November 2012. The well was installed to a depth of 331 feet below ground surface and replaces monitoring well MW-Ra, which can no longer be sampled due to declining water levels in the region. Analytical results for sampling conducted in November 2012 show that there are no exceedances of applicable groundwater standards at MW-Rb.

14. SUBJECT TERMS	15. NUMBER OF PAGES
• Installation of well MW-Rb • Biennial sampling of groundwater monitoring wells • Landfill No. 25 (LF-25/SWMU 97)	Approximately 120
	16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION	20. LIMITATION OF ABSTRACT
UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	

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LIST OF ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
bgs	below ground surface
cy	cubic yard/cubic yards
DRO	diesel-range organics
EPA	U.S. Environmental Protection Agency
ft	foot/feet
GRO	gasoline-range organics
IDW	investigation-derived waste
LF-25	Landfill 25
LTM	Long-Term Groundwater Monitoring
M&M	Monitoring and Maintenance
MCL	maximum contaminant level
NFA	No Further Action
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
PVC	polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SMCL	secondary maximum contaminant level
SOP	standard operating procedure
SSL	soil screening level
SVOC	semivolatile organic compound
SWMU	Solid Waste Management Unit
Tetra Tech	Tetra Tech, Inc.
TPH	total petroleum hydrocarbons
USACE	U.S. Army Corps of Engineers

LIST OF ACRONYMS AND ABBREVIATIONS (CONCLUDED)

VOC	volatile organic compound
WQCC	Water Quality Control Commission

EXECUTIVE SUMMARY

This report describes the activities conducted to install one monitoring well, MW-Rb, at Landfill 25 (LF-25), Cannon Air Force Base (AFB), New Mexico. The monitoring well installation was administered under the Cannon AFB Environmental Restoration Program and was implemented in accordance with the final work plan (Tetra Tech, 2011). The well installation work was performed under the authority of the U.S. Army Corps of Engineers (USACE), Contract No. W9128F-10-D0019, Task Order 0001.

LF-25, designated as Solid Waste Management Unit (SWMU) 97 on the Cannon AFB Resource Conservation and Recovery Act Part B Permit, is an inactive landfill and disposal site located in the east-central portion of the Base. Installation of monitoring well MW-Rb achieved the following objectives:

- Replaced downgradient well MW-Ra at LF-25 because the well can no longer be monitored as part of the Cannon AFB biennial Long-Term Groundwater Monitoring (LTM) program due to declining water levels in the regional aquifer at this location, which is currently at an elevation lower than the bottom of the well screen.
- Allows for future monitoring of LF-25 in compliance with New Mexico Environment Department (NMED) requirements for LTM at the site.

Monitoring well MW-Rb was installed and developed the week of October 1, 2012. The completed well depth was approximately 331 feet (ft) below ground surface (bgs). A 30-ft well screen was installed in the well from 301 to 331 ft bgs. The new well was monitored in compliance with NMED requirements and was included in the 2012 biennial sampling event of the site on November 2, 2012, by another contractor.

To complete the efforts required under this project, investigation-derived waste (IDW) generated during well installation, development, and sampling consisted of soil drill cuttings and purge water. It is recommended that soil and water IDW be discharged to the ground at the site because concentrations of all constituents were less than applicable soil screening levels and water quality standards.

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1. INTRODUCTION

This report describes the monitoring well installation activities conducted at a location administered under the Installation Restoration Program at Cannon Air Force Base (AFB), New Mexico. The monitoring well, MW-Rb, was installed at Landfill 25 (LF-25), which is designated as Solid Waste Management Unit (SWMU) 97 on the Cannon AFB Resource Conservation and Recovery Act (RCRA) Part B Permit. The monitoring well installation was implemented in accordance with the final work plan (Tetra Tech, 2011) and performed under the authority of the U.S. Army Corps of Engineers (USACE), Contract No. W9128F-10-D0019, Task Order 0001.

LF-25 is an inactive landfill and disposal site located in the east-central portion of Cannon AFB. Installation of monitoring well MW-Rb achieved the following objectives:

- Replaced downgradient well MW-Ra at LF-25 because the well can no longer be monitored as part of the Cannon AFB biennial Long-Term Groundwater Monitoring (LTM) program.
- Allows for future monitoring of LF-25 in compliance with New Mexico Environment Department (NMED) requirements for LTM at the site.

Groundwater monitoring well MW-Rb was installed to replace monitoring well MW-Ra. Because of declines in the regional High Plains aquifer beneath Cannon AFB (USGS, 2006), groundwater in MW-Ra is at a level lower than the bottom of the well screen, which prevented sample collection in 2010 as required under the Cannon AFB biennial LTM program.

1.1 Site Background

The former landfill covers a 32-acre area roughly trapezoidal in shape, located east of Perimeter Road and approximately 500 feet (ft) northwest of Playa Lake (Figure 1). A detailed summary of the site's background and history, results of previous investigations, corrective measures, and current status is presented in the 2006 RFI Report (HGL, 2006).

From about 1945 through the 1980s, LF-25 was used as a waste disposal site although it is unknown when disposal activities ceased. After World War II, construction demolition debris was disposed of in the landfill. The debris consists of concrete, wood, asbestos tiles, metal, transite/cement pipe, and asphalt mixed with soil. Concrete pieces are of various sizes and shapes from demolition of buildings and pavement (runways) at Cannon AFB. Debris extended approximately 3 to 4 ft above natural grade over most of the site, reaching a maximum of approximately 15 ft above natural grade at the northern end of the site.

In December 1990, the USACE performed a site environmental assessment. Trenches were excavated at nine locations and waste and native soil samples were collected for laboratory analysis. Excavation revealed the majority of the material in the debris pile was airfield paving and sub-grade material, followed by building demolition debris. In addition, glass, metal cinders, ash, and other burned material were encountered in what appeared to be burn trenches. Minor concentrations of metals (barium, mercury, and cadmium) and one semivolatile organic compound (SVOC) (benzedine) were detected in the trench samples (USACE, 1991). In 1992, 139 field samples were

analyzed during additional site characterization. One surface sample exceeded the soil action level for lead, and one sample exceeded regulatory carcinogenic action levels for SVOCs benzo(a)pyrene and benzo(b)fluoranthene (Woodward-Clyde, 1992). Concentrations of all organic compounds were below regulatory noncarcinogenic soil action levels. In 1992, metals concentrations below maximum contaminant levels (MCLs) were detected in a monitoring well sample (Woodward Clyde, 1992).

Only minor impacts to soil were identified at LF-25 during the Appendix I, Phase I RCRA Facility Investigation (RFI) (Radian, 1994), and the site was recommended for No Further Action (NFA) status and Class III permit modification. U.S. Environmental Protection Agency (EPA) Region 6 accepted the RFI but directed Cannon AFB to monitor well MW-K, which was installed downgradient of the debris pile. Monitoring began in June 1997, but the well was abandoned and replaced by MW-R in 1998 after it could no longer be sampled due to declining water levels in the regional aquifer. Well MW-R was sampled semiannually until December 2000. However, elevated metals concentrations detected in MW-R groundwater samples were attributed to corrosion of the well's stainless-steel well screen, and the well was replaced with a polyvinyl chloride (PVC)-constructed well, MW-Ra, in June 2001 (Bhate, 2002). Well MW-Ra is located approximately 30 ft north and sidegradient from the abandoned well MW-R. Groundwater monitoring was also conducted at well MW-P, which was abandoned and replaced by well MW-Pa in February 2004. No constituents have been detected at concentrations exceeding EPA or state groundwater standards in any of the downgradient compliance wells.

In 2001 exposed non-friable asbestos-containing material was observed at the site. Remediation activities associated with removal of asbestos and concrete debris were conducted in 2000 (Foster Wheeler, 2001). The site was graded and a 2-ft-high permanent earthen berm was constructed along the landfill's southern and eastern edges to prevent stormwater runoff from leaving the site. A 6-inch-thick topsoil cover was installed and the site was revegetated. A three-strand barbed-wire fence with gates and signage was installed around the perimeter of the site to control access.

Cannon AFB submitted a NFA petition for LF-25 under NMED criterion 5 and a Class III permit modification in 2006 (HGL, 2006). NMED approved the report but specified additional monitoring and inspection requirements for the site, which are being implemented under the Cannon AFB Monitoring and Maintenance (M&M) plan (Tetra Tech and Brown, Burdine, & Associates, LLC, 2009). Biennial sampling events were conducted at two downgradient wells, MW-Ra and MW-Pa, in 2008 (Tetra Tech and Brown, Burdine, & Associates, LLC, 2008) and 2010 (Tetra Tech and Trinity, 2010). However, during the 2010 monitoring event insufficient water was present in well MW-Ra to collect a groundwater sample.

1.2 Overview of Report

This report addresses all major issues relating to the monitoring well installation at LF-25. The report is divided into the following sections:

- Section 1 presents an introduction to the project, summarizes background information, and provides an overview of the report.
- Section 2 describes the monitoring well installation activities conducted at LF-25 in October 2012.

- Section 3 provides the analytical results for the first sampling round for well MW-Rb. Also included in this section is an assessment of water quality at this location relative to applicable state and/or federal standards.

- Section 4 describes the segregation, characterization, documentation, and handling of investigation-derived waste (IDW) generated as a result of monitoring well installation activities.

Four appendices accompany this report. Appendix A presents the lithologic boring log, monitoring well construction diagram, and the well development log for well MW-Rb. Appendix B contains the analytical laboratory data report for the sampling of well MW-Rb in November 2012. Appendix C presents the waste characterization analytical results. Appendix D provides the approved well permit obtained from the New Mexico Office of the State Engineer and the completed well record.

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Legend

Installation Boundary

LF-25

0 1,000 2,000 4,000

Feet

LF25_Report_Figure1_03-13-13

Digital data files provided by GeoBase/CAFB
Projection: UTM Zone 13N, NAD 83

Monitoring Well Installation
at LF-25 (SWMU 97)
Cannon Air Force Base, New Mexico

Figure 1
Site Location Map

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2. MONITORING WELL INSTALLATION PROGRAM

One monitoring well was installed at LF-25 to replace the existing well MW-Ra. Monitoring well installation was completed in accordance with the final work plan (Tetra Tech, 2011). Any deviations from the work plan are presented in the drilling procedures described below. Soil logging was completed for well installation in accordance with the final work plan Standard Operating Procedure (SOP) C1, Borehole and Sample Logging. However, no soil samples were collected for laboratory analysis, with the exception of the sample collected for waste characterization. Appendix A contains the lithologic boring log, the monitoring well construction diagram, and the well development log. The total depth of drilling for new well MW-Rb was 350 ft below ground surface (bgs). The location of the completed well is presented on Figure 2.

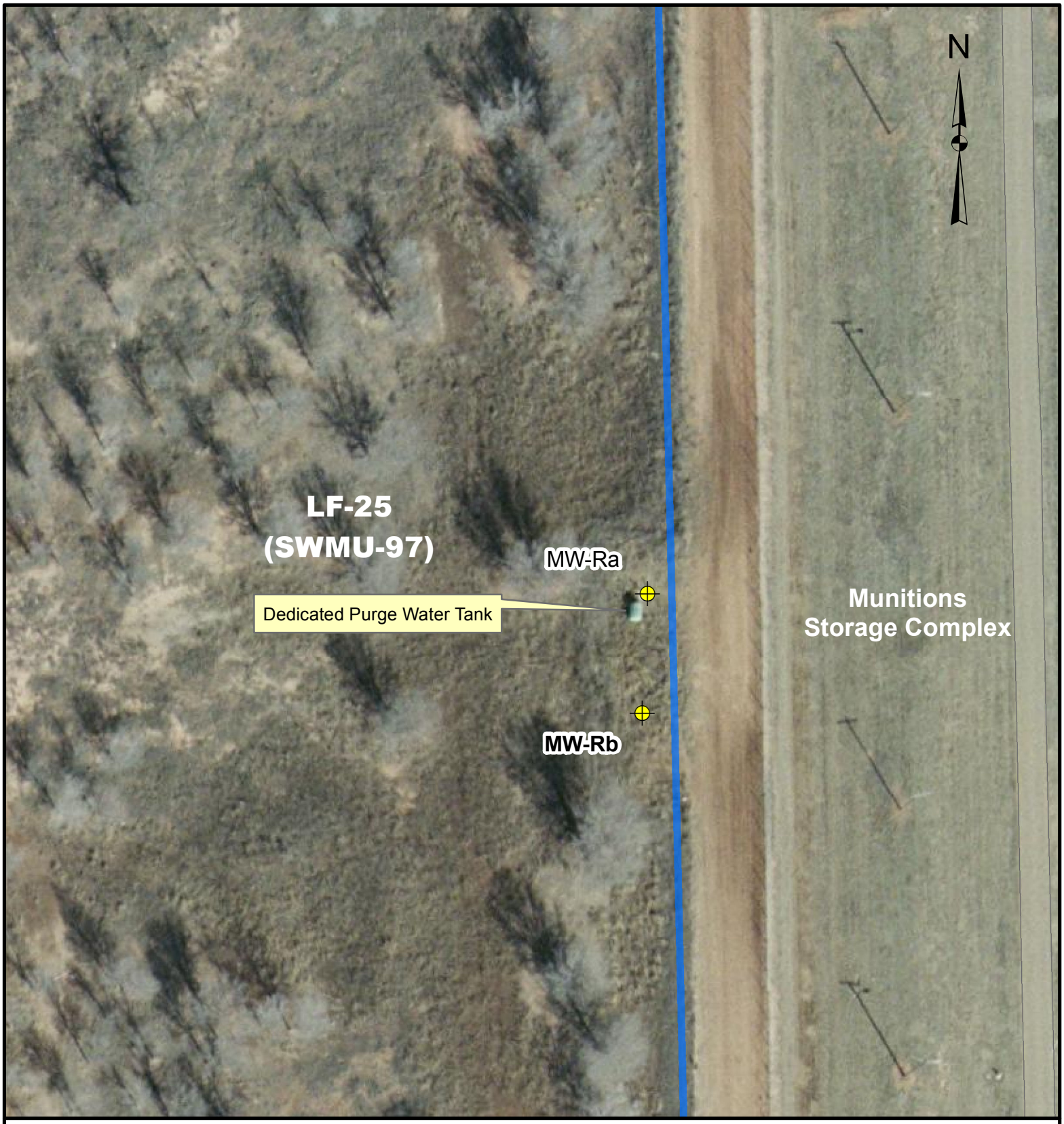
Coordinates and elevations were established for well MW-Rb as required by Cannon AFB and the New Mexico Office of the State Engineer. The monitoring well was surveyed to the closest 0.10 ft and referenced to the New Mexico State Plane Coordinate System using the North American Datum for 1983. The ground elevation at well MW-Rb was determined to the nearest 0.10 ft and an elevation for the top of the well riser determined to the closest 0.01 ft. Positions and coordinates of permanent points within the control traverse were identified on a site map and tied to the nearest site benchmark.

On October 2–3, 2012, the borehole at well MW-Rb was drilled using a GEFCO Speedstar 50K air rotary drill rig. The Stratex drilling method was used for the top 85 ft of drilling where an 11-3/4-inch drive casing was initially advanced. Below 85 ft bgs Stratex drilling was replaced with casing hammer drilling. At a depth of approximately 200 ft bgs a 9-5/8-inch drive casing was telescoped through the larger diameter casing and advanced to the total borehole depth of 350 ft bgs. Soil cuttings were collected from the cyclone and logged every 5 to 10 ft or when a change in lithology occurred (Appendix A). Water was first encountered in the borehole at a depth of approximately 306 ft bgs. Drilling was continued to a depth of 330 ft bgs when tricone drilling bits were installed to complete the last drilling to the total depth of the borehole of 350 ft bgs. Based on the depth at which water was encountered (306 ft bgs), the well screen was planned for installation from 301 to 331 ft bgs. At this point, the borehole was backfilled with Colorado silica sand (10/20) to a depth of 331 ft.

Following the procedure presented in SOP C2, well installation took place on October 4. A 4-inch-diameter, flush-threaded Schedule 80 PVC well casing and screen were installed to a total depth of 331 ft bgs. Thirty ft of Schedule 80 PVC 0.01-inch slotted well screen were installed approximately 5 ft above the water table and to a depth of 331 ft bgs, with a PVC end cap extending below the screen. Centralizers were placed at the bottom and top of the screened interval and at 40-ft intervals. A filter pack of Colorado silica sand (10/20) was placed around the well screen and was surged with a vented surge block and bailer. The top of the sand pack was then brought up to a depth of 298 ft bgs, 3 ft above the top of the screen. An 18-ft bentonite seal was installed and hydrated approximately every 2 to 3 ft. The remaining length of the annulus was filled with 20 percent high solids bentonite-cement grout. The grout was injected using a tremie pipe. Grouting to the surface was completed using the bentonite-cement mixture and the well was left to set before beginning

surface completion. Groundwater was measured at 313 ft below the top of casing upon completion of the well. A detailed diagram of the well construction is provided in Appendix A.

Well MW-Rb was developed in accordance with SOP C3 on October 5, 2012, without incident. During development, approximately 90 gallons of water was purged and pumped into the dedicated tank located adjacent to the well. The well development record is provided in Appendix A.



Legend

LF-25 Boundary

Monitoring Well

0 25 50 100
Feet

LF25_Report_Figure2_03-13-13
Digital data files provided by GeoBase/CAFB
Projection: UTM Zone 13N, NAD 83

Monitoring Well Installation
at LF-25 (SWMU 97)
Cannon Air Force Base, New Mexico

Figure 2
Well Location Map

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3. GROUNDWATER QUALITY

Monitoring well MW-Rb was initially sampled in conjunction with the biennial groundwater monitoring program on November 2, 2012, by another contractor. The analytical results for the sample collected from well MW-Rb are presented in Table 1 to provide an assessment of initial baseline groundwater quality associated with this well.

The New Mexico Water Quality Control Commission (WQCC) regulations (20.6.2.3103, New Mexico Administrative Code [NMAC]) were used as guidance to determine whether constituents detected in monitoring well MW-Rb exceeded applicable groundwater standards. If no state standard for a particular constituent was established, then EPA primary MCLs or secondary MCLs (SMCLs) were used as guidance.

The methodology for sampling well MW-Rb and a complete evaluation of the results are presented in the *Final 2012 Biennial Groundwater Monitoring and Annual Landfill Inspection Report for Landfill No. 3 (LF-03/SWMU 105), Landfill No. 4 (LF-04/SWMU 104), Landfill No. 25 (LF-25/SWMU 97), and Sewage Lagoons (SWMU 101), Cannon Air Force Base, New Mexico* (Bhate, 2013).

As required under the biennial groundwater monitoring program, the sample from well MW-Rb was analyzed for the following parameters:

- Volatile organic compounds (VOCs)—EPA Method 8260B
- Target analyte list metals—EPA Methods 6010C/7470A
- Hexavalent chromium—EPA Method 7196A
- Nitrate and nitrate nitrogen—EPA Method 300.0A
- Perchlorate—EPA Method 6860

In order to provide a comprehensive evaluation of groundwater quality at MW-Rb, the sample collected in November 2012 was also analyzed for the following parameters:

- Chloride and sulfate—EPA Method 300.0
- Total organic carbon—SM 5310B
- Ammonia—SM 4500

Based on comparison of the results for groundwater sampled at MW-Rb to regulatory standards, there were no constituents with concentrations exceeding New Mexico WQCC standards or EPA MCLs or SMCLs. The results for the sample collected from MW-Rb are presented in Table 1. Complete analytical results are provided in Appendix B.

Table 1. Summary of Groundwater Analytical Results for Monitoring Well MW-Rb, November 2012

Analytes	EPA MCL/SMCL	New Mexico WQCC	Reporting Limit	Result
Volatile Organic Compounds—EPA Method 8260B (µg/L)				
All analytes	Various	Various	Various	None detected
Mercury—EPA Method 7470A (µg/L)				
Mercury, Total	2.0	2.0	0.20	0.068U
Mercury, Dissolved	2.0	2.0	0.20	0.068U
Total Metals—EPA Method 6010C (µg/L)				
Aluminum	200	5,000	200	30.3U
Antimony	6.0	NE	60.0	3.11U
Arsenic	10	100	10.0	3.59U
Barium	2,000	1,000	10.0	35.1
Beryllium	4.0	NE	5.00	0.10U
Cadmium	5.0	10	5.00	0.53J
Calcium	NE	NE	100	42,000
Chromium	100	50	10.0	1.36J
Cobalt	NE	50	10.0	0.86J
Copper	1,000	1,000	10.0	8.08J
Iron	300	1,000	100	12.6U
Lead	15	50	15.0	1.96U
Magnesium	NE	NE	100	40,800
Manganese	50	200	15.0	1.98J
Nickel	NE	200	40.0	1.13U
Potassium	NE	NE	500	7070
Selenium	50	50	40.0	7.75J
Silver	100	50	10.0	0.70U
Sodium	NE	NE	1000	41,400
Thallium	2.0	NE	20.0	3.04U
Vanadium	NE	NE	20.0	30.2
Zinc	5,000	10,000	20.0	1,380
Total Chromium VI—EPA Method 7196A (µg/L)				
Chromium VI	NE	NE	10.0	4.0U
Dissolved Metals—EPA Method 6010C (µg/L)				
Aluminum	200	5,000	200	46.8J
Antimony	6.0	NE	60.0	3.11U
Arsenic	10	100	10.0	3.59U
Barium	2,000	1,000	10.0	34.6
Beryllium	4.0	NE	5.00	0.10U
Cadmium	5.0	10	5.00	0.38J
Calcium	NE	NE	100	42,200
Chromium	100	50	10.0	1.32J
Cobalt	NE	50	10.0	0.58U
Copper	1,000	1,000	10.0	6.83J
Iron	300	1,000	100	12.6U

Table 1. Summary of Groundwater Analytical Results for Monitoring Well MW-Rb, November 2012 (Concluded)

Analytes	EPA MCL/SMCL	New Mexico WQCC	Reporting Limit	Result
Lead	15	50	15.0	1.96U
Magnesium	NE	NE	100	41,000
Manganese	50	200	15.0	1.31U
Nickel	NE	200	40.0	1.13U
Selenium	50	50	40.0	11.2J
Silver	100	50	10.0	0.70U
Thallium	2.0	NE	20.0	3.04U
Vanadium	NE	NE	20.0	26.7
Zinc	5,000	10,000	20.0	1,160
Inorganics–EPA Method 300.0A (mg/L)				
Chloride	250	250	10.0	68.6
Sulfate	250	600	20.0	101
Nitrate	10	NE	0.500	1.02
Nitrite	10	10	0.500	0.015U
Perchlorate–EPA Method 6860 (µg/L)				
Perchlorate	NE	NE	0.30	1.98
Ammonia—SM 4500 (mg/L-Nitrogen)				
Ammonia	NE	NE	1.0	0.24U
Total Organic Carbon—SM 5310B (mg/L)				
Total organic carbon	NE	NE	1.0	

J Value is below the reporting limit and above the method detection limit.
µg/L micrograms per liter
mg/L milligrams per liter
NE Not established
U Analyte not detected and reported at method detection limit.

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4. INVESTIGATION-DERIVED WASTE MANAGEMENT

The IDW generated during the monitoring well installation program consisted of drill cuttings and water from purging and development of the well. Each material was handled in a manner consistent with the final work plan (Tetra Tech, 2011).

4.1 Soil Drill Cuttings

Approximately 8 cubic yards (cy) of drill cuttings was generated during the installation of well MW-Rb. Both the saturated and the vadose zone drill cuttings were placed within a bermed area that was lined with 8-mil plastic sheeting. The stockpiled vadose zone cuttings were also covered with 8-mil plastic sheeting. The saturated cuttings were allowed to dry and then were covered with 8-mil plastic sheeting. The stockpiled drill cuttings were located adjacent to the completed wellhead. After drilling was complete, the stockpile was wrapped and secured to prevent any contact with precipitation that could lead to runoff. The wrapped stockpiled cuttings were labeled with an indelible, nonclassified waste label indicating the date of accumulation, source of material, and the generator contact name and telephone number.

The drill cuttings were sampled for the purpose of waste characterization. This effort consisted of a composite sample for nonvolatile analysis and one grab sample for volatile analysis. One five-point composite sample was collected from the stockpiled cuttings. This composite sample was analyzed for the following parameters:

- VOCs
- SVOCs
- Target analyte list metals
- Total petroleum hydrocarbons (TPH) as gasoline-range organics (GRO) and diesel-range organics (DRO)
- RCRA waste characteristics: flashpoint, pH, cyanide and sulfide reactivity, and paint filter liquids.

Three organic compounds were detected including two VOCs (acetone and methylene chloride) and one SVOC (bis[2-ethylhexyl]phthalate). Concentrations of these organic constituents were less than NMED residential soil screening levels (SSLs) (NMED, 2012). TPH-DRO was detected at a concentration much lower than the NMED guideline for diesel of 520 milligrams per kilogram (NMED, 2012). All metals concentrations were less than Cannon AFB-specific background concentrations. Results from the soil IDW sample collected were evaluated and indicated that the soil cuttings did not present an unacceptable risk to human health and the environment. A recommendation was provided to the Cannon AFB Restoration Project Manager for the disposal of the cuttings by spreading them at the well site. In addition, a recommendation was made to dispose of the plastic sheeting as general refuse. Upon approval, the cuttings will be spread on the ground in the vicinity of the wellhead. Soil cuttings used for field screening and visual classification were placed with the drill cuttings generated during drilling activities. The drill cutting sampling results and the associated evaluation are presented in Appendix C.

4.2 Monitoring Well Development and Purge Water

Well development and purge water that was generated prior to sampling was placed into the empty dedicated tank for well MW-Ra located adjacent to well MW-Rb. The analytical results from the groundwater sampling conducted on November 2, 2012, were used to characterize the well development and purge water and are presented in Section 3, Table 1. Analytical results indicate that groundwater quality is within acceptable limits when compared to New Mexico WQCC standards and/or MCLs and SMCLs. The analytical data from the laboratory are included in Appendix B. The analytical results indicate that the development and purge water met water quality criteria. A recommendation was made to the Base to contact the NMED Groundwater Quality Bureau for approval to discharge the well development and purge water to the ground surface.

4.3 Decontamination Wastes

Large pieces of drilling equipment (drill casing, drill stem, etc.) and the portable water level indicator were decontaminated prior to beginning work, between uses, and prior to the equipment leaving the Base. For large equipment, decontamination was performed with a high-pressure steam cleaner at the Base decontamination pad located near the well location. For small equipment, decontamination followed SOP C5, Equipment Decontamination. At the end of the field program, soil remaining on the decontamination pad was moved to the soil cuttings stockpile. The nominal amount of water, which remained after decontamination was completed, was pumped into the dedicated water tank at the sampling location.

5. SUMMARY

In October 2012 monitoring well installation activities were conducted at LF-25 (SWMU 97), at Cannon AFB, New Mexico. The monitoring well installation was administered under the Cannon AFB Environmental Restoration Program and was implemented in accordance with the final work plan (Tetra Tech, 2011).

Monitoring well MW-Rb was installed at LF-25, designated as SWMU 97 on the Cannon AFB RCRA Part B Permit, an inactive landfill and disposal site located in the east-central portion of the Base. Installation of monitoring well MW-Rb achieved the following objectives:

- Replaced downgradient well MW-Ra at LF-25 because the well can no longer be monitored as part of the Cannon AFB biennial LTM program due to declining water levels in the regional aquifer at this location, which is currently at an elevation lower than the bottom of the well screen.

- Allows for future monitoring of LF-25 in compliance with NMED requirements of LTM at the site.

Monitoring well MW-Rb was installed and developed the week of October 1, 2012. The completed well depth was approximately 331 ft bgs. A 30-ft well screen was installed between 301 and 331 ft bgs. The new well was monitored in compliance with NMED requirements and was included in the 2012 biennial sampling event of the site on November 2, 2012, performed by another contractor.

To complete the efforts required under this project, IDW generated during well installation, development, and sampling consisted of soil drill cuttings and purge water. It is recommended that soil and water IDW be discharged to the ground at the site because concentrations of all constituents were less than applicable NMED SSLs and water quality standards.

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1991. LF-25 Environmental Assessment. February.

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Appendix A
Lithologic Boring Log, Monitoring Well Construction Diagram, and Well Development Log

HTRW DRILLING LOG

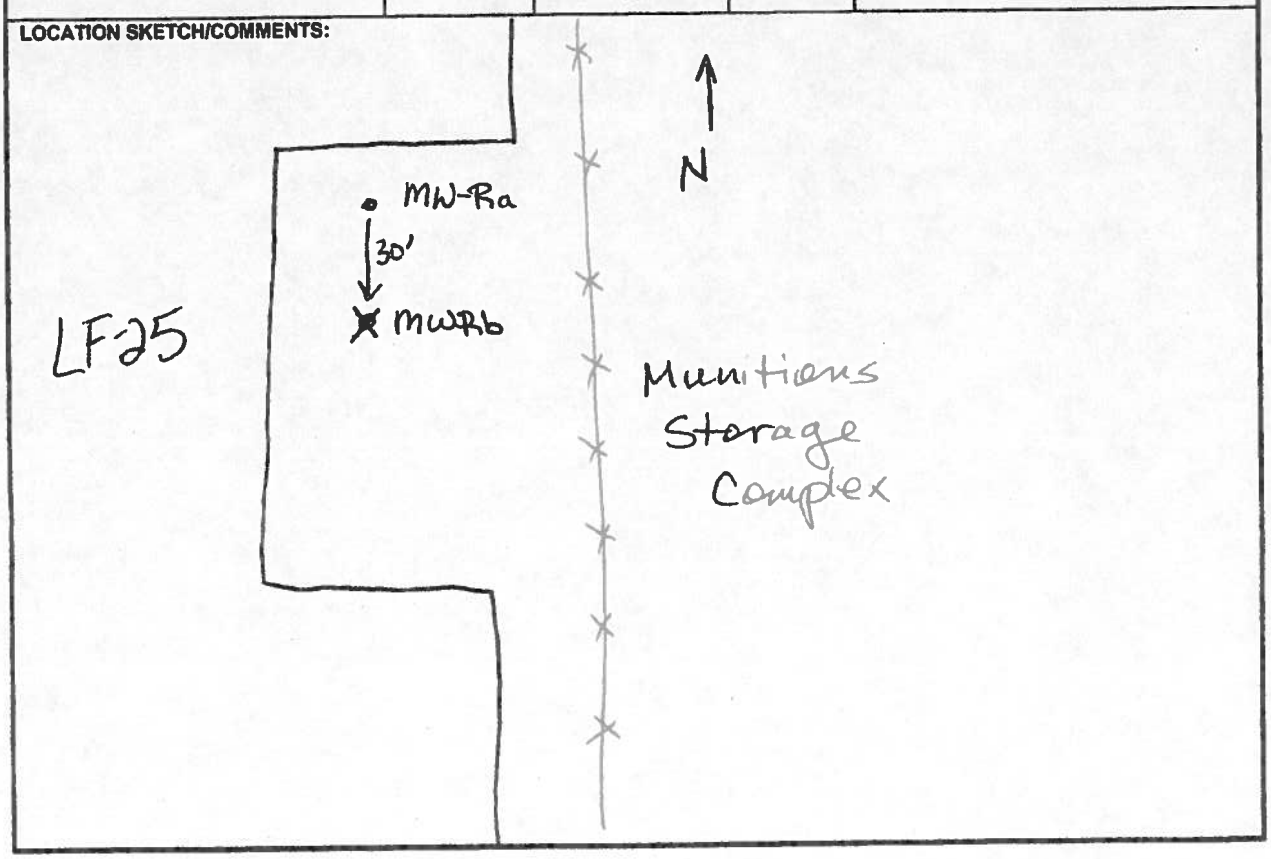
DISTRICT OMAHA		**SAMPLE LOCATION** MW-Rb
1. COMPANY NAME Tetra Tech, Inc.	**2. DRILLING SUBCONTRACTOR** National EWP, Inc.	**SHEET 1 OF 19**
3. SITE Cannon AFB, NM	**4. LOCATION** SWMU 97, Landfill 25 (LF-25)	
5. NAME OF DRILLER Adrian Lawler	**6. MANUFACTURERS DESIGNATION OF DRILL** Stratex/ Air rotary casing hammer	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT Gefco 50K 9 5/8 OD stratex top 85' ARCH 85-350	**8. HOLE LOCATION (DESCRIPTION)** MW-Rb	
	9. SURFACE ELEVATION TBD	
	10. DATE STARTED 10-2-2012	**11. DATE COMPLETED** 10-4-2012
12. OVERBURDEN THICKNESS 350 ft	**15. DEPTH GROUNDWATER ENCOUNTERED** 306 ft	
13. DEPTH DRILLED INTO ROCK —— N/A	**16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED** 312.65 ft @ 36 hr	
14. TOTAL DEPTH OF HOLE 350 ft	**17. OTHER WATER LEVEL MEASURMENTS (SPECIFY)** N/A	

18. GEOTECHNICAL SAMPLES	**DISTURBED**	**UNDISTURBED**	**19. TOTAL NUMBER OF CORE BOXES:**
None		N/A	N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	**VOC**	**METALS**	**OTHERS (SPECIFY)**	**OTHERS (SPECIFY)**	**OTHERS (SPECIFY)**	**21. TOTAL CORE REC. %**
None	None	None	None	None	None	N/A

22. DISPOSITION OF HOLE	**BACKFILLED**	**MONITORING WELL**	**OTHERS (SPECIFY)**	**23. NAME AND SIGNATURE OF INSPECTOR**
		X		Richard Buckmaster

LOCATION SKETCH/COMMENTS:



PROJECT #:	SITE:	SAMPLE LOCATION:
FA4890-04-D-0006-0001	Cannon AFB, NM	MW-Rb
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT # Tetra Tech Project 106-8094.02.NM	2. INSPECTOR Buckmaster	SHEET 2 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
				Hand-augered to 5' bgs	
	5		SM	pinkish-tan Dry sand v. fine w/silt 30% gravel coarse ↳ caliche	
	10				
	15				
				same	
	20				

PROJECT #:	SITE:	SAMPLE LOCATION:
FA4890-04-D-0006-0001	Cannon AFB, NM	MW-Rb
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT # Tetra Tech Project 106-8094.02.NM	2. INSPECTOR Buckmaster	SHEET 3 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	25				
				same	
	30				
	35				
			SM	pink-tan, fine-medium same, damp	
	40				

PROJECT #:	SITE:	SAMPLE LOCATION:
FA4890-04-D-0006-0001	Cannon AFB, NM	MW-Rb
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT # Tetra Tech Project 106-8094.02.NM	2. INSPECTOR Buckmaster	SHEET 4 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
				Same	
	45				
			SM	Same pink-tan sand 10% gravel caliche	CLE 10/17/12
	50				
	55				
	60			Same	

PROJECT #: FA4890-04-D-0006-0001	SITE: Cannon AFB, NM	SAMPLE LOCATION: MW-Rb
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT # Tetra Tech Project 106-8094.02.NM	2. INSPECTOR Buckmaster	SHEET 5 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	65				
				pink-tan medium - fine sand CLR 10/17/12	
			~~SM-SP~~ SP-SM	Same 1% gravel caliche CLR 10/17/12	
	70				
	75				
				Same	
	80				

PROJECT #:	SITE:	SAMPLE LOCATION:
FA4890-04-D-0006-0001	Cannon AFB, NM	MW-Rb
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT # Tetra Tech Project 106-8094.02.NM	2. INSPECTOR Buckmaster	SHEET 6 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	85				
				same	
	90				
	95				
				same	
	100				

PROJECT #: FA4890-04-D-0006-0001	SITE: Cannon AFB, NM	SAMPLE LOCATION: MW-Rb
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT # Tetra Tech Project 106-8094.02.NM	2. INSPECTOR Buckmaster	SHEET 7 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	105				
				same	
	110				
	115				
				same	
	120				

PROJECT #:	SITE:	SAMPLE LOCATION:
FA4890-04-D-0006-0001	Cannon AFB, NM	MW-Rb
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT # Tetra Tech Project 106-8094.02.NM	2. INSPECTOR Buckmaster	SHEET 8 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	125				
				same	
	130				
	135				
				same	
	140				

PROJECT #: FA4890-04-D-0006-0001	SITE: Cannon AFB, NM	SAMPLE LOCATION: MW-Rb
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT # Tetra Tech Project 106-8094.02.NM	2. INSPECTOR Buckmaster	SHEET 9 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	145				
	150	CLR 03-30-3	~~SP~~ SW	pink-tan, damp well sorted fine-medium sand with 1% gravel caliche	
	155			Same	
	160				

PROJECT #:	SITE:	SAMPLE LOCATION:
FA4890-04-D-0006-0001	Cannon AFB, NM	MW-Rb
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT # Tetra Tech Project 106-8094.02.NM	2. INSPECTOR Buckmaster	SHEET 10 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	165				
				same	
	170				
	175				
				same	
	180				

PROJECT #: FA4890-04-D-0006-0001	SITE: Cannon AFB, NM	SAMPLE LOCATION: MW-Rb
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT # Tetra Tech Project 106-8094.02.NM	2. INSPECTOR Buckmaster	SHEET 11 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	185				
				Same	
	190				
	195				
				pink-tan 10% gravel caliche	CLE 10/17/12
		CLE 03-30-13	SP SW	Same	
	200				

PROJECT #:	SITE:	SAMPLE LOCATION:
FA4890-04-D-0006-0001	Cannon AFB, NM	MW-Rb

HTRW DRILLING LOG

DISTRICT:	LOCATION:
Omaha	SWMU 97, LF-25

1. PROJECT #	2. INSPECTOR	SHEET
Tetra Tech Project 106-8094.02.NM	Beckmaster	12 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	~~205~~				
			~~SP~~ SW	Same 1% gravel caliche CLR 03-30-13	
	~~210~~				
	~~215~~				
	~~220~~			same	

PROJECT #:	SITE:	SAMPLE LOCATION:
FA4890-04-D-0006-0001	Cannon AFB, NM	MW-Rb
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT # Tetra Tech Project 106-8094.02.NM	2. INSPECTOR Buckmaster	SHEET 13 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	225				
				same	
	230				
	235				
				same	
	240				

PROJECT #:	SITE:	SAMPLE LOCATION:
FA4890-04-D-0006-0001	Cannon AFB, NM	MW-Rb

HTRW DRILLING LOG

DISTRICT:	LOCATION:
Omaha	SWMU 97, LF-25

1. PROJECT #	2. INSPECTOR	SHEET 14 OF 19
Tetra Tech Project 106-8094.02.NM	Buckmaster	

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	245				
				same	
	250				~~socket to trucks for ARCH~~
					CLR 10/17/12
	255				
				same w/ lens of clay moist	
	260	CLR 03-30-13	~~SP.~~ SW		

PROJECT #:	SITE:	SAMPLE LOCATION:
FA4890-04-D-0006-0001	Cannon AFB, NM	MW-Rb

HTRW DRILLING LOG

DISTRICT:	LOCATION:
Omaha	SWMU 97, LF-25

1. PROJECT #	2. INSPECTOR	SHEET
Tetra Tech Project 106-8094.02.NM	Buckmaster	15 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	265				
				Same pink-tan fine sand moist-damp	
		CLR 03-30-13	~~SP-SC~~ SW-SC	20% Clay nodules/gravel	Small, perched zone?
	270				
				Same, no clay moist	
	275	CLR 03-30-13	~~SP~~ SW-SC		
		CLR 03-30-13	~~SP~~ SW-SC	Same med grain well sort	
	280				

PROJECT #:	SITE:	SAMPLE LOCATION:
FA4890-04-D-0006-0001	Cannon AFB, NM	MW-Rb

HTRW DRILLING LOG

DISTRICT:	LOCATION:
Omaha	SWMU 97, LF-25

1. PROJECT #	2. INSPECTOR	SHEET 16 OF 19
Tetra Tech Project 106-8094.02.NM	Buckmaster	

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	285				
				Same	
	290				
	295				
				Same	
	300				

PROJECT #: FA4890-04-D-0006-0001	SITE: Cannon AFB, NM	SAMPLE LOCATION: MW-Rb
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT # Tetra Tech Project 106-8094.02.NM	2. INSPECTOR Buckmaster	SHEET 17 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	305		~~SP~~ SW	Same, coarse-med sand poor sort w/ gravel damp-wet	
		CLR 03-30-13			
	310		~~SP~~ SW	Same wet to saturated	
		03-30-13			
	315				
				Same wet	
	320				

PROJECT #: FA4890-04-D-0006-0001	SITE: Cannon AFB, NM	SAMPLE LOCATION: MW-Rb
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT # Tetra Tech Project 106-8094.02.NM	2. INSPECTOR Buckmaster	SHEET 18 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	~~325~~				
				same wet to set	
					trip out, check H_2O
	~~330~~		~~SP~~ SW	CLR 03-30-13	switch to tricone
	~~335~~				
				same saturated	
	~~340~~				

PROJECT #:	SITE:	SAMPLE LOCATION:
FA4890-04-D-0006-0001	Cannon AFB, NM	MW-Rb
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT # Tetra Tech Project 106-8094.02.NM	2. INSPECTOR Buckmaster	SHEET 19 OF 19

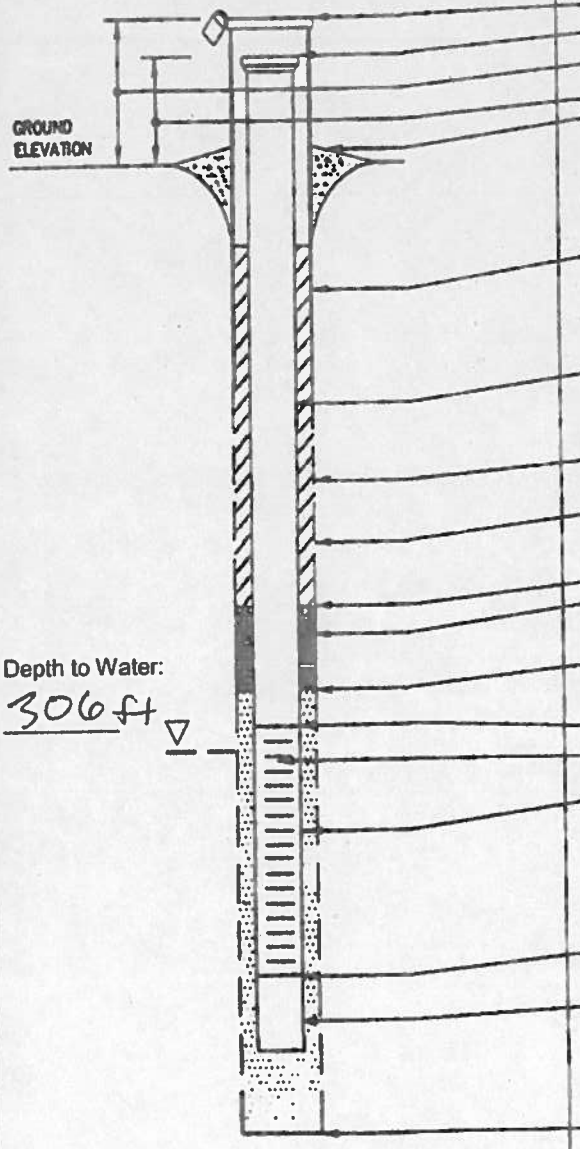
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	345			Same saturated	
	350			TD 350 ft	
	355				
	360				

OVERBURDEN
MONITORING WELL CONSTRUCTION DIAGRAM

WELL NO. MW-Rb

PROJECT Monitoring Well Installation at LF-25
PROJECT NO. FA4890-04-D-0006-0001
DATE 10-4-2012 BORING NO.: MW-Rb
ELEVATION
FIELD GEOLOGIST R. Buckmaster

DRILLER Abtional - Adrian
DRILLING METHOD Air rotary-casing hammer (ARCH)
DEVELOPMENT METHOD and Stratex surge, bail, swab & pump



ELEVATION OF TOP OF SURFACE CASING: TBD
ELEVATION OF TOP OF RISER PIPE: TBD
STICK-UP TOP OF SURFACE CASING: 3
STICK-UP RISER PIPE: 2.5
TYPE OF SURFACE SEAL: cement/bentonite grout - 3 cu
Concrete - 2 cu

I.D. OF SURFACE CASING: 8"
TYPE OF SURFACE CASING: Steel pipe

RISER PIPE I.D. 4"
TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 9 5/8"

TYPE OF BACKFILL: High solids bentonite grout
ELEVATION/DEPTH TOP OF SEAL: 280 ft
TYPE OF SEAL: bentonite chips 3/8
DEPTH TOP OF SAND PACK: 298 ft

ELEVATION/DEPTH TOP OF SCREEN: 301 ft
TYPE OF SCREEN: PVC
SLOT SIZE X LENGTH: 0.010 x 30 ft
TYPE OF SAND PACK: 10/20 Co sand silica

ELEVATION/DEPTH BOTTOM OF SCREEN: 331 ft
ELEVATION/DEPTH BOTTOM OF SAND PACK: 350 ft
TYPE OF BACKFILL BELOW OBSERVATION WELL: 10/20 filter sand
ELEVATION/DEPTH OF HOLE: 350 ft

NOT TO SCALE

DEPTHS DATUM:

Well Development Record and Water Quality Field Data Sheet

Project: Cannon AFB LF-25
Project No.: 186-8094
Date: 10/16/2012
Time Start: 0800
Time Finish: 1248

Well No: MW-R6
Samplers: R. Buckmaster
Checked by: CLRieger

Well Information

Depth to Water: 312.65 ft. Casing Diameter: 4 in. = 0.33 ft. Casing Stickup: 2.5 ft.

Bottom of Screen: 333.80 ft. Borehole Diameter: 9 5/8 in. = 0.80 ft. Screened Interval: 301-331 ft.

Sample Depth: N/A ft. Saturated Screen Well Volume: 13.75 gallons

Drawdown Limit: N/A ft.

Note: All depths measured from top of casing.

Calculations:
Casing Volume (CV) = $\pi (cr^2) h (7.48)$
Filter Pack Volume (FPV) = $\pi (br^2 - cr^2)[BS-(TS \text{ or } H)] P (7.48)$
Saturated Screen Well Volume = CV + FPV

Calculation Notes:
cr = casing radius
br = borehole radius
H = depth to water
h = bottom of screen – depth of water in ft.
P = estimated porosity of filter pack (35%)
TS = top of screen
If TS>H use TS, if TS<H use H
BS = bottom of screen

Field Equipment

pH Meter: YSI 556 Serial No.: 18462 Water Level Meter: Solinst Serial No.: 30374

Conductivity Meter: YSI 556 Serial No.: 18462 Turbidity Meter: Hach 2100Q Serial No.: 020345

Temperature Meter: YSI 556 Serial No.: 18462 Bailer: Size:

Sample Equipment (check one)

[X] Submersible Pump — Pump Type (circle one): Piston Bladder (Impeller)

[ ] Disposable Teflon Bailer — Pump Model:

Serial No.:

Field Chemistry Equipment Cal'd by Pine Env.

pH = @ °C pH = @ °C pH = @ °C Time

Conductivity Standard: µmhos/cm @ 25°C Reading µmhos/cm @ °C Time

Turbidity Standard: N.T.U. @ 25°C Reading N.T.U. @ °C Time

* Information here pertains to well development only. No sampling conducted. CLR 10/17/12

Figure B1.4-1. Well Development Record and Water Quality Field Data Sheet (Concluded)

Well Development Record and Water Quality Field Data Sheet

Project:	Cannon AFB IF-25	Well No:	MW-R5
Project No.:			
Date:	10/5/2012	Samplers:	R Buckmaster
Time Start:	0800		
Time Finish:	1248	Checked by:	C Rieger

Field Chemistry (cont'd)

Time	Volume gallons	Temp. °C	pH	Conductivity umhos/cm	Turbidity N.T.U.	Comments
1230	0	18.70	8.49	726	30.9	
1233	15	19.29	8.01	719	14.5	
1236	30	19.11	7.93	721	12.8	
1239	45	19.14	7.91	721	7.5	
1242	60	19.16	7.91	722	11.0	
1245	75	19.17	7.93	722	6.67	
1248	90	18.97	7.92	724	3.16	

Was well sampled after development? ___**YES** X **NO**

Sample Method: NA

Sample Name: NA

Analyses: NA

Appendix B
Well Sampling Analytical Laboratory Report

NELAP CERTIFICATE NUMBER 01955
DOD ELAP CERTIFICATE NUMBER ADE - 1482

ANALYTICAL RESULTS

PERFORMED BY

GULF COAST ANALYTICAL LABORATORIES, INC.

7979 GSRI Avenue

Baton Rouge, LA 70820

Report Date 11/16/2012

GCAL Report 212102705

Deliver To	Bhate Environmental Associates, Inc. 1608 14th Ave South Birmingham, AL 35205 205-918-4024
Attn	David Badio

Project Cannon

CASE NARRATIVE

Client: Bhate Environmental Associates, Inc. **Report:** 212102705

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the sample cross-reference page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

METALS

In the SW-846 6010C analysis for prep batch 493286, the MS and/or MSD recovery is outside the control limits for Zinc. The LCS recovery is within control limits. This indicates the analysis is in control and the sample is affected by matrix interference. A post-digestion spike was performed on the QC sample for this batch with a recovery of 96%. The MS/MSD recoveries are not applicable for Calcium and Magnesium because the sample concentration is greater than four times the spike concentration.

In the SW-846 6010C Dissolved analysis for prep batch 493231, the MS/MSD recoveries are not applicable for Calcium because the sample concentration is greater than four times the spike concentration.

CONVENTIONALS

In the EPA 300.0 analysis, samples 21210270501 (LF25-MW-RB-01), 21210270502 (LF25-MW-RB-01-MS) and 21210270503 (LF25-MW-RB-01-MSD) had to be diluted in order to bracket the concentration within the calibration range of the instrument.

MISCELLANEOUS

Sample 21210270501 (LF25-MW-RB-01) was received outside of the prescribed holding time for one or more parameters. The analysis was still performed at the clients request.

See Subcontract report for any case narrative.

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations Utilized in this Report

ND	Indicates the result was Not Detected at the specified RDL
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
RDL	Reporting Detection Limit
00:00	Reported as a time equivalent to 12:00 AM

Reporting Flags Utilized in this Report

J	Indicates the result is between the MDL and RDL
U	Indicates the compound was analyzed for but not detected
B	Indicates the analyte was detected in the associated Method Blank

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

_____

Robyn Migues
Technical Director
GCAL REPORT 212102705

THIS REPORT CONTAINS _____ PAGES.

Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270501	LF25-MW-RB-01	Water	10/26/2012 09:00	10/27/2012 10:00
21210270502	LF25-MW-RB-01-MS	Water	10/26/2012 09:00	10/27/2012 10:00
21210270503	LF25-MW-RB-01-MSD	Water	10/26/2012 09:00	10/27/2012 10:00
21210270504	TB-09	Water	10/26/2012 09:00	10/27/2012 10:00

Summary of Compounds Detected

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270501	**LF25-MW-RB-01**	Water	10/26/2012 09:00	10/27/2012 10:00

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	35.1	10.0	0.71	ug/L
7440-43-9	Cadmium	0.53J	5.00	0.16	ug/L
7440-70-2	Calcium	42000	100	45.7	ug/L
7440-47-3	Chromium	1.36J	10.0	0.26	ug/L
7440-48-4	Cobalt	0.86J	10.0	0.58	ug/L
7440-50-8	Copper	8.08J	10.0	1.01	ug/L
7439-95-4	Magnesium	40800	100	16.5	ug/L
7439-96-5	Manganese	1.98J	15.0	1.31	ug/L
7782-49-2	Selenium	7.75J	40.0	4.42	ug/L
7440-62-2	Vanadium	30.2	20.0	1.25	ug/L
7440-66-6	Zinc	1380	20.0	4.51	ug/L

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7440-09-7	Potassium	7070	500	34.6	ug/L
7440-23-5	Sodium	41400	1000	61.1	ug/L

SW-846 6010C Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7429-90-5	Aluminum	46.8J	200	30.3	ug/L
7440-39-3	Barium	34.6	10.0	0.71	ug/L
7440-43-9	Cadmium	0.38J	5.00	0.16	ug/L
7440-70-2	Calcium	42200	100	45.7	ug/L
7440-47-3	Chromium	1.32J	10.0	0.26	ug/L
7440-50-8	Copper	6.83J	10.0	1.01	ug/L
7439-95-4	Magnesium	41000	100	16.5	ug/L
7782-49-2	Selenium	11.2J	40.0	4.42	ug/L
7440-62-2	Vanadium	26.7	20.0	1.25	ug/L
7440-66-6	Zinc	1160	20.0	4.51	ug/L

SW-846 6010C Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-09-7	Potassium	7290	500	34.6	ug/L
7440-23-5	Sodium	41800	1000	61.1	ug/L

EPA 300.0

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	1.02	0.500	0.115	mg/L

SM 5310B TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	5.2	1.0	0.30	mg/L

Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270501	**LF25-MW-RB-01**	Water	10/26/2012 09:00	10/27/2012 10:00

EPA 300.0

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	68.6	10.0	6.30	mg/L
14808-79-8	Sulfate	101	20.0	11.5	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270502	**LF25-MW-RB-01-MS**	Water	10/26/2012 09:00	10/27/2012 10:00

SM 4500 NH3 BE Ammonia Water

CAS#	Parameter	Result	RDL	MDL	Units
7664-41-7	Ammonia	14.1	1.0	0.24	mg/L-N

SW-846 6010C Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7429-90-5	Aluminum	5090	200	30.3	ug/L
7440-36-0	Antimony	511	60.0	3.11	ug/L
7440-38-2	Arsenic	544	10.0	3.59	ug/L
7440-39-3	Barium	533	10.0	0.71	ug/L
7440-41-7	Beryllium	517	5.00	0.10	ug/L
7440-43-9	Cadmium	499	5.00	0.16	ug/L
7440-70-2	Calcium	46500	100	45.7	ug/L
7440-47-3	Chromium	486	10.0	0.26	ug/L
7440-48-4	Cobalt	486	10.0	0.58	ug/L
7440-50-8	Copper	485	10.0	1.01	ug/L
7439-89-6	Iron	5100	100	12.6	ug/L
7439-92-1	Lead	491	15.0	1.96	ug/L
7439-95-4	Magnesium	45500	100	16.5	ug/L
7439-96-5	Manganese	500	15.0	1.31	ug/L
7440-02-0	Nickel	474	40.0	1.13	ug/L
7782-49-2	Selenium	535	40.0	4.42	ug/L
7440-22-4	Silver	492	10.0	0.70	ug/L
7440-28-0	Thallium	493	20.0	3.04	ug/L
7440-62-2	Vanadium	530	20.0	1.25	ug/L
7440-66-6	Zinc	1650	20.0	4.51	ug/L

SW-846 6010C Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-09-7	Potassium	17800	500	34.6	ug/L
7440-23-5	Sodium	63800	1000	61.1	ug/L

SW-846 7470A Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	4.55	0.20	0.068	ug/L

Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270502	**LF25-MW-RB-01-MS**	Water	10/26/2012 09:00	10/27/2012 10:00

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7429-90-5	Aluminum	5140	200	30.3	ug/L
7440-36-0	Antimony	515	60.0	3.11	ug/L
7440-38-2	Arsenic	538	10.0	3.59	ug/L
7440-39-3	Barium	536	10.0	0.71	ug/L
7440-41-7	Beryllium	518	5.00	0.10	ug/L
7440-43-9	Cadmium	497	5.00	0.16	ug/L
7440-70-2	Calcium	45100	100	45.7	ug/L
7440-47-3	Chromium	498	10.0	0.26	ug/L
7440-48-4	Cobalt	488	10.0	0.58	ug/L
7440-50-8	Copper	492	10.0	1.01	ug/L
7439-89-6	Iron	5110	100	12.6	ug/L
7439-92-1	Lead	488	15.0	1.96	ug/L
7439-95-4	Magnesium	44300	100	16.5	ug/L
7439-96-5	Manganese	502	15.0	1.31	ug/L
7440-02-0	Nickel	474	40.0	1.13	ug/L
7782-49-2	Selenium	529	40.0	4.42	ug/L
7440-22-4	Silver	493	10.0	0.70	ug/L
7440-28-0	Thallium	502	20.0	3.04	ug/L
7440-62-2	Vanadium	538	20.0	1.25	ug/L
7440-66-6	Zinc	1810	20.0	4.51	ug/L

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7440-09-7	Potassium	17300	500	34.6	ug/L
7440-23-5	Sodium	60600	1000	61.1	ug/L

SW-846 7470A Water

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	4.43	0.20	0.068	ug/L

EPA 300.0 Inorganic Anions

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	3.50	0.500	0.115	mg/L
14797-65-0	Nitrite	2.90	0.500	0.015	mg/L

SW-846 7196A Chromium VI

CAS#	Parameter	Result	RDL	MDL	Units
18540-29-9	Chromium VI	514	10.0	4.00	ug/L

SW-846 8260B DOD Water

CAS#	Parameter	Result	RDL	MDL	Units
630-20-6	1,1,1,2-Tetrachloroethane	53.2	1.00	0.120	ug/L

Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270502	**LF25-MW-RB-01-MS**	Water	10/26/2012 09:00	10/27/2012 10:00

SW-846 8260B DOD Water

CAS#	Parameter	Result	RDL	MDL	Units
71-55-6	1,1,1-Trichloroethane	57.2	1.00	0.123	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	54.2	1.00	0.109	ug/L
79-00-5	1,1,2-Trichloroethane	53.0	1.00	0.159	ug/L
75-34-3	1,1-Dichloroethane	56.3	1.00	0.171	ug/L
75-35-4	1,1-Dichloroethene	58.8	1.00	0.208	ug/L
563-58-6	1,1-Dichloropropene	52.8	1.00	0.052	ug/L
87-61-6	1,2,3-Trichlorobenzene	48.1	1.00	0.079	ug/L
96-18-4	1,2,3-Trichloropropane	53.7	1.00	0.065	ug/L
120-82-1	1,2,4-Trichlorobenzene	48.1	1.00	0.105	ug/L
95-63-6	1,2,4-Trimethylbenzene	53.6	1.00	0.084	ug/L
96-12-8	1,2-Dibromo-3-chloropropane	47.4	1.00	0.194	ug/L
106-93-4	1,2-Dibromoethane	53.2	1.00	0.102	ug/L
95-50-1	1,2-Dichlorobenzene	55.4	1.00	0.135	ug/L
107-06-2	1,2-Dichloroethane	53.5	1.00	0.116	ug/L
78-87-5	1,2-Dichloropropane	58.8	1.00	0.150	ug/L
108-67-8	1,3,5-Trimethylbenzene	60.0	1.00	0.066	ug/L
541-73-1	1,3-Dichlorobenzene	55.1	1.00	0.138	ug/L
142-28-9	1,3-Dichloropropane	54.4	1.00	0.059	ug/L
106-46-7	1,4-Dichlorobenzene	54.9	1.00	0.083	ug/L
594-20-7	2,2-Dichloropropane	59.0	1.00	0.170	ug/L
78-93-3	2-Butanone	43.9	5.00	0.142	ug/L
95-49-8	2-Chlorotoluene	58.0	1.00	0.080	ug/L
591-78-6	2-Hexanone	48.8	5.00	0.122	ug/L
106-43-4	4-Chlorotoluene	59.2	1.00	0.124	ug/L
99-87-6	4-Isopropyltoluene	53.6	1.00	0.070	ug/L
108-10-1	4-Methyl-2-pentanone	52.5	5.00	0.120	ug/L
67-64-1	Acetone	26.9	5.00	0.193	ug/L
71-43-2	Benzene	57.3	1.00	0.111	ug/L
108-86-1	Bromobenzene	54.4	1.00	0.145	ug/L
74-97-5	Bromochloromethane	55.2	1.00	0.127	ug/L
75-27-4	Bromodichloromethane	55.9	1.00	0.083	ug/L
75-25-2	Bromoform	51.5	1.00	0.215	ug/L
74-83-9	Bromomethane	58.8	1.00	0.427	ug/L
75-15-0	Carbon disulfide	58.5	1.00	0.190	ug/L
56-23-5	Carbon tetrachloride	57.6	1.00	0.248	ug/L
108-90-7	Chlorobenzene	52.7	1.00	0.083	ug/L
75-00-3	Chloroethane	58.9	1.00	0.235	ug/L
67-66-3	Chloroform	54.8	1.00	0.155	ug/L
74-87-3	Chloromethane	56.0	1.00	0.144	ug/L
74-95-3	Dibromomethane	54.8	1.00	0.211	ug/L
75-71-8	Dichlorodifluoromethane	57.6	1.00	0.145	ug/L
100-41-4	Ethylbenzene	55.1	1.00	0.109	ug/L
87-68-3	Hexachlorobutadiene	50.0	1.00	0.265	ug/L
98-82-8	Isopropylbenzene (Cumene)	53.1	1.00	0.130	ug/L
75-09-2	Methylene chloride	52.3	5.00	0.149	ug/L
91-20-3	Naphthalene	45.9	1.00	0.176	ug/L
100-42-5	Styrene	53.0	1.00	0.089	ug/L
127-18-4	Tetrachloroethene	57.5	1.00	0.193	ug/L
108-88-3	Toluene	52.8	1.00	0.122	ug/L

Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270502	**LF25-MW-RB-01-MS**	Water	10/26/2012 09:00	10/27/2012 10:00

SW-846 8260B DOD Water

CAS#	Parameter	Result	RDL	MDL	Units
79-01-6	Trichloroethene	57.7	1.00	0.161	ug/L
75-69-4	Trichlorofluoromethane	56.0	1.00	0.157	ug/L
75-01-4	Vinyl chloride	57.1	1.00	0.127	ug/L
156-59-2	cis-1,2-Dichloroethene	58.8	1.00	0.103	ug/L
10061-01-5	cis-1,3-Dichloropropene	58.1	1.00	0.124	ug/L
136777-61-2	m,p-Xylene	107	2.00	0.123	ug/L
104-51-8	n-Butylbenzene	53.0	1.00	0.123	ug/L
103-65-1	n-Propylbenzene	57.7	1.00	0.727	ug/L
95-47-6	o-Xylene	52.8	1.00	0.055	ug/L
135-98-8	sec-Butylbenzene	53.4	1.00	0.107	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	56.3	5.00	0.078	ug/L
98-06-6	tert-Butylbenzene	53.4	1.00	0.087	ug/L
156-60-5	trans-1,2-Dichloroethene	58.0	1.00	0.077	ug/L
10061-02-6	trans-1,3-Dichloropropene	58.8	1.00	0.128	ug/L

SM 5310B TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	53.7	1.0	0.30	mg/L

EPA 300.0 Inorganic Anions

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	316	10.0	6.30	mg/L
14808-79-8	Sulfate	603	20.0	11.5	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270503	**LF25-MW-RB-01-MSD**	Water	10/26/2012 09:00	10/27/2012 10:00

SM 4500 NH3 BE Ammonia Water

CAS#	Parameter	Result	RDL	MDL	Units
7664-41-7	Ammonia	14.3	1.0	0.24	mg/L-N

SW-846 6010C Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7429-90-5	Aluminum	5030	200	30.3	ug/L
7440-36-0	Antimony	503	60.0	3.11	ug/L
7440-38-2	Arsenic	534	10.0	3.59	ug/L
7440-39-3	Barium	524	10.0	0.71	ug/L
7440-41-7	Beryllium	508	5.00	0.10	ug/L
7440-43-9	Cadmium	490	5.00	0.16	ug/L
7440-70-2	Calcium	45800	100	45.7	ug/L

Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270503	**LF25-MW-RB-01-MSD**	Water	10/26/2012 09:00	10/27/2012 10:00

SW-846 6010C Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-47-3	Chromium	477	10.0	0.26	ug/L
7440-48-4	Cobalt	478	10.0	0.58	ug/L
7440-50-8	Copper	479	10.0	1.01	ug/L
7439-89-6	Iron	5050	100	12.6	ug/L
7439-92-1	Lead	482	15.0	1.96	ug/L
7439-95-4	Magnesium	45100	100	16.5	ug/L
7439-96-5	Manganese	492	15.0	1.31	ug/L
7440-02-0	Nickel	467	40.0	1.13	ug/L
7782-49-2	Selenium	528	40.0	4.42	ug/L
7440-22-4	Silver	485	10.0	0.70	ug/L
7440-28-0	Thallium	487	20.0	3.04	ug/L
7440-62-2	Vanadium	522	20.0	1.25	ug/L
7440-66-6	Zinc	1620	20.0	4.51	ug/L

SW-846 6010C Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-09-7	Potassium	17700	500	34.6	ug/L
7440-23-5	Sodium	63200	1000	61.1	ug/L

SW-846 7470A Water

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	4.58	0.20	0.068	ug/L

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7429-90-5	Aluminum	4960	200	30.3	ug/L
7440-36-0	Antimony	492	60.0	3.11	ug/L
7440-38-2	Arsenic	514	10.0	3.59	ug/L
7440-39-3	Barium	515	10.0	0.71	ug/L
7440-41-7	Beryllium	496	5.00	0.10	ug/L
7440-43-9	Cadmium	476	5.00	0.16	ug/L
7440-70-2	Calcium	43500	100	45.7	ug/L
7440-47-3	Chromium	478	10.0	0.26	ug/L
7440-48-4	Cobalt	466	10.0	0.58	ug/L
7440-50-8	Copper	473	10.0	1.01	ug/L
7439-89-6	Iron	4970	100	12.6	ug/L
7439-92-1	Lead	467	15.0	1.96	ug/L
7439-95-4	Magnesium	43200	100	16.5	ug/L
7439-96-5	Manganese	483	15.0	1.31	ug/L
7440-02-0	Nickel	462	40.0	1.13	ug/L
7782-49-2	Selenium	507	40.0	4.42	ug/L
7440-22-4	Silver	472	10.0	0.70	ug/L
7440-28-0	Thallium	483	20.0	3.04	ug/L
7440-62-2	Vanadium	519	20.0	1.25	ug/L

Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270503	LF25-MW-RB-01-MSD	Water	10/26/2012 09:00	10/27/2012 10:00

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7440-66-6	Zinc	1740	20.0	4.51	ug/L

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7440-09-7	Potassium	16400	500	34.6	ug/L
7440-23-5	Sodium	57700	1000	61.1	ug/L

SW-846 7470A Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	4.50	0.20	0.068	ug/L

EPA 300.0 Inorganic Anions

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	3.52	0.500	0.115	mg/L
14797-65-0	Nitrite	2.91	0.500	0.015	mg/L

SW-846 7196A Chromium VI

CAS#	Parameter	Result	RDL	MDL	Units
18540-29-9	Chromium VI	481	10.0	4.00	ug/L

SM 5310B TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	52.3	1.0	0.30	mg/L

SW-846 8260B DOD Water

CAS#	Parameter	Result	RDL	MDL	Units
630-20-6	1,1,1,2-Tetrachloroethane	47.5	1.00	0.120	ug/L
71-55-6	1,1,1-Trichloroethane	50.0	1.00	0.123	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	51.2	1.00	0.109	ug/L
79-00-5	1,1,2-Trichloroethane	48.4	1.00	0.159	ug/L
75-34-3	1,1-Dichloroethane	50.1	1.00	0.171	ug/L
75-35-4	1,1-Dichloroethene	52.3	1.00	0.208	ug/L
563-58-6	1,1-Dichloropropene	46.3	1.00	0.052	ug/L
87-61-6	1,2,3-Trichlorobenzene	46.6	1.00	0.079	ug/L
96-18-4	1,2,3-Trichloropropane	50.3	1.00	0.065	ug/L
120-82-1	1,2,4-Trichlorobenzene	45.6	1.00	0.105	ug/L
95-63-6	1,2,4-Trimethylbenzene	48.4	1.00	0.084	ug/L
96-12-8	1,2-Dibromo-3-chloropropane	46.9	1.00	0.194	ug/L
106-93-4	1,2-Dibromoethane	49.7	1.00	0.102	ug/L
95-50-1	1,2-Dichlorobenzene	50.6	1.00	0.135	ug/L

Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270503	**LF25-MW-RB-01-MSD**	Water	10/26/2012 09:00	10/27/2012 10:00

SW-846 8260B DOD Water

CAS#	Parameter	Result	RDL	MDL	Units
107-06-2	1,2-Dichloroethane	48.8	1.00	0.116	ug/L
78-87-5	1,2-Dichloropropane	52.3	1.00	0.150	ug/L
108-67-8	1,3,5-Trimethylbenzene	53.7	1.00	0.066	ug/L
541-73-1	1,3-Dichlorobenzene	50.4	1.00	0.138	ug/L
142-28-9	1,3-Dichloropropane	49.9	1.00	0.059	ug/L
106-46-7	1,4-Dichlorobenzene	50.3	1.00	0.083	ug/L
594-20-7	2,2-Dichloropropane	51.8	1.00	0.170	ug/L
78-93-3	2-Butanone	41.8	5.00	0.142	ug/L
95-49-8	2-Chlorotoluene	52.2	1.00	0.080	ug/L
591-78-6	2-Hexanone	47.3	5.00	0.122	ug/L
106-43-4	4-Chlorotoluene	53.1	1.00	0.124	ug/L
99-87-6	4-Isopropyltoluene	48.5	1.00	0.070	ug/L
108-10-1	4-Methyl-2-pentanone	50.2	5.00	0.120	ug/L
67-64-1	Acetone	26.2	5.00	0.193	ug/L
71-43-2	Benzene	50.3	1.00	0.111	ug/L
108-86-1	Bromobenzene	49.4	1.00	0.145	ug/L
74-97-5	Bromochloromethane	49.6	1.00	0.127	ug/L
75-27-4	Bromodichloromethane	49.5	1.00	0.083	ug/L
75-25-2	Bromoform	47.5	1.00	0.215	ug/L
74-83-9	Bromomethane	52.6	1.00	0.427	ug/L
75-15-0	Carbon disulfide	51.4	1.00	0.190	ug/L
56-23-5	Carbon tetrachloride	50.3	1.00	0.248	ug/L
108-90-7	Chlorobenzene	47.0	1.00	0.083	ug/L
75-00-3	Chloroethane	51.8	1.00	0.235	ug/L
67-66-3	Chloroform	48.8	1.00	0.155	ug/L
74-87-3	Chloromethane	51.2	1.00	0.144	ug/L
74-95-3	Dibromomethane	49.8	1.00	0.211	ug/L
75-71-8	Dichlorodifluoromethane	50.2	1.00	0.145	ug/L
100-41-4	Ethylbenzene	48.6	1.00	0.109	ug/L
87-68-3	Hexachlorobutadiene	46.6	1.00	0.265	ug/L
98-82-8	Isopropylbenzene (Cumene)	46.8	1.00	0.130	ug/L
75-09-2	Methylene chloride	46.7	5.00	0.149	ug/L
91-20-3	Naphthalene	46.1	1.00	0.176	ug/L
100-42-5	Styrene	47.1	1.00	0.089	ug/L
127-18-4	Tetrachloroethene	50.7	1.00	0.193	ug/L
108-88-3	Toluene	46.8	1.00	0.122	ug/L
79-01-6	Trichloroethene	49.9	1.00	0.161	ug/L
75-69-4	Trichlorofluoromethane	49.2	1.00	0.157	ug/L
75-01-4	Vinyl chloride	50.3	1.00	0.127	ug/L
156-59-2	cis-1,2-Dichloroethene	52.3	1.00	0.103	ug/L
10061-01-5	cis-1,3-Dichloropropene	52.1	1.00	0.124	ug/L
136777-61-2	m,p-Xylene	94.8	2.00	0.123	ug/L
104-51-8	n-Butylbenzene	48.2	1.00	0.123	ug/L
103-65-1	n-Propylbenzene	51.6	1.00	0.727	ug/L
95-47-6	o-Xylene	46.9	1.00	0.055	ug/L
135-98-8	sec-Butylbenzene	47.9	1.00	0.107	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	52.5	5.00	0.078	ug/L
98-06-6	tert-Butylbenzene	48.2	1.00	0.087	ug/L
156-60-5	trans-1,2-Dichloroethene	51.0	1.00	0.077	ug/L

Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270503	**LF25-MW-RB-01-MSD**	Water	10/26/2012 09:00	10/27/2012 10:00

SW-846 8260B DOD Water

CAS#	Parameter	Result	RDL	MDL	Units
10061-02-6	**trans-1,3-Dichloropropene**	**53.0**	**1.00**	**0.128**	**ug/L**

EPA 300.0 Inorganic Anions

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	**Chloride**	**317**	**10.0**	**6.30**	**mg/L**
14808-79-8	**Sulfate**	**602**	**20.0**	**11.5**	**mg/L**

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270501	**LF25-MW-RB-01**	Water	10/26/2012 09:00	10/27/2012 10:00

Subcontract Work

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/16/2012 11:32	BJM	

CAS#	Parameter	Result	RDL	MDL	Units
SHIP-001	Ship Result	*			mg/L

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2012 12:38	EDS	493347

CAS#	Parameter	Result	RDL	MDL	Units
630-20-6	1,1,1,2-Tetrachloroethane	0.120U	1.00	0.120	ug/L
71-55-6	1,1,1-Trichloroethane	0.123U	1.00	0.123	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.109U	1.00	0.109	ug/L
79-00-5	1,1,2-Trichloroethane	0.159U	1.00	0.159	ug/L
75-34-3	1,1-Dichloroethane	0.171U	1.00	0.171	ug/L
75-35-4	1,1-Dichloroethene	0.208U	1.00	0.208	ug/L
563-58-6	1,1-Dichloropropene	0.052U	1.00	0.052	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.079U	1.00	0.079	ug/L
96-18-4	1,2,3-Trichloropropane	0.065U	1.00	0.065	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.105U	1.00	0.105	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.084U	1.00	0.084	ug/L
96-12-8	1,2-Dibromo-3-chloropropane	0.194U	1.00	0.194	ug/L
106-93-4	1,2-Dibromoethane	0.102U	1.00	0.102	ug/L
95-50-1	1,2-Dichlorobenzene	0.135U	1.00	0.135	ug/L
107-06-2	1,2-Dichloroethane	0.116U	1.00	0.116	ug/L
78-87-5	1,2-Dichloropropane	0.150U	1.00	0.150	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.066U	1.00	0.066	ug/L
541-73-1	1,3-Dichlorobenzene	0.138U	1.00	0.138	ug/L
142-28-9	1,3-Dichloropropane	0.059U	1.00	0.059	ug/L
106-46-7	1,4-Dichlorobenzene	0.083U	1.00	0.083	ug/L
594-20-7	2,2-Dichloropropane	0.170U	1.00	0.170	ug/L
78-93-3	2-Butanone	0.142U	5.00	0.142	ug/L
95-49-8	2-Chlorotoluene	0.080U	1.00	0.080	ug/L
591-78-6	2-Hexanone	0.122U	5.00	0.122	ug/L
106-43-4	4-Chlorotoluene	0.124U	1.00	0.124	ug/L
99-87-6	4-Isopropyltoluene	0.070U	1.00	0.070	ug/L
108-10-1	4-Methyl-2-pentanone	0.120U	5.00	0.120	ug/L
67-64-1	Acetone	0.193U	5.00	0.193	ug/L
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-86-1	Bromobenzene	0.145U	1.00	0.145	ug/L
74-97-5	Bromochloromethane	0.127U	1.00	0.127	ug/L
75-27-4	Bromodichloromethane	0.083U	1.00	0.083	ug/L
75-25-2	Bromoform	0.215U	1.00	0.215	ug/L
74-83-9	Bromomethane	0.427U	1.00	0.427	ug/L
75-15-0	Carbon disulfide	0.190U	1.00	0.190	ug/L
56-23-5	Carbon tetrachloride	0.248U	1.00	0.248	ug/L
108-90-7	Chlorobenzene	0.083U	1.00	0.083	ug/L
75-00-3	Chloroethane	0.235U	1.00	0.235	ug/L
67-66-3	Chloroform	0.155U	1.00	0.155	ug/L
74-87-3	Chloromethane	0.144U	1.00	0.144	ug/L
74-95-3	Dibromomethane	0.211U	1.00	0.211	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270501	**LF25-MW-RB-01**	Water	10/26/2012 09:00	10/27/2012 10:00

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2012 12:38	EDS	493347

CAS#	Parameter	Result	RDL	MDL	Units
75-71-8	Dichlorodifluoromethane	0.145U	1.00	0.145	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
87-68-3	Hexachlorobutadiene	0.265U	1.00	0.265	ug/L
98-82-8	Isopropylbenzene (Cumene)	0.130U	1.00	0.130	ug/L
75-09-2	Methylene chloride	0.149U	5.00	0.149	ug/L
91-20-3	Naphthalene	0.176U	1.00	0.176	ug/L
100-42-5	Styrene	0.089U	1.00	0.089	ug/L
127-18-4	Tetrachloroethene	0.193U	1.00	0.193	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
79-01-6	Trichloroethene	0.161U	1.00	0.161	ug/L
75-69-4	Trichlorofluoromethane	0.157U	1.00	0.157	ug/L
75-01-4	Vinyl chloride	0.127U	1.00	0.127	ug/L
156-59-2	cis-1,2-Dichloroethene	0.103U	1.00	0.103	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.124U	1.00	0.124	ug/L
136777-61-2	m,p-Xylene	0.123U	2.00	0.123	ug/L
104-51-8	n-Butylbenzene	0.123U	1.00	0.123	ug/L
103-65-1	n-Propylbenzene	0.727U	1.00	0.727	ug/L
95-47-6	o-Xylene	0.055U	1.00	0.055	ug/L
135-98-8	sec-Butylbenzene	0.107U	1.00	0.107	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	5.00	0.078	ug/L
98-06-6	tert-Butylbenzene	0.087U	1.00	0.087	ug/L
156-60-5	trans-1,2-Dichloroethene	0.077U	1.00	0.077	ug/L
10061-02-6	trans-1,3-Dichloropropene	0.128U	1.00	0.128	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	48	ug/L	96	75 - 120
1868-53-7	Dibromofluoromethane	50	49.9	ug/L	100	85 - 115
2037-26-5	Toluene d8	50	50.6	ug/L	101	85 - 120
17060-07-0	1,2-Dichloroethane-d4	50	49.6	ug/L	99	70 - 120

SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/29/2012 11:40	493285	SW-846 7470A Dissolved	1	10/31/2012 13:14	BNB	493483

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.068U	0.20	0.068	ug/L

SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/29/2012 11:40	493285	SW-846 7470A	1	10/31/2012 13:04	BNB	493483

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.068U	0.20	0.068	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270501	**LF25-MW-RB-01**	Water	10/26/2012 09:00	10/27/2012 10:00

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/29/2012 11:40	493286	SW-846 3010A	1	10/31/2012 17:55	CLB	493541

CAS#	Parameter	Result	RDL	MDL	Units
7429-90-5	Aluminum	30.3U	200	30.3	ug/L
7440-36-0	Antimony	3.11U	60.0	3.11	ug/L
7440-38-2	Arsenic	3.59U	10.0	3.59	ug/L
7440-39-3	**Barium**	**35.1**	**10.0**	**0.71**	**ug/L**
7440-41-7	Beryllium	0.10U	5.00	0.10	ug/L
7440-43-9	**Cadmium**	**0.53J**	**5.00**	**0.16**	**ug/L**
7440-70-2	**Calcium**	**42000**	**100**	**45.7**	**ug/L**
7440-47-3	**Chromium**	**1.36J**	**10.0**	**0.26**	**ug/L**
7440-48-4	**Cobalt**	**0.86J**	**10.0**	**0.58**	**ug/L**
7440-50-8	**Copper**	**8.08J**	**10.0**	**1.01**	**ug/L**
7439-89-6	Iron	12.6U	100	12.6	ug/L
7439-92-1	Lead	1.96U	15.0	1.96	ug/L
7439-95-4	**Magnesium**	**40800**	**100**	**16.5**	**ug/L**
7439-96-5	**Manganese**	**1.98J**	**15.0**	**1.31**	**ug/L**
7440-02-0	Nickel	1.13U	40.0	1.13	ug/L
7782-49-2	**Selenium**	**7.75J**	**40.0**	**4.42**	**ug/L**
7440-22-4	Silver	0.70U	10.0	0.70	ug/L
7440-28-0	Thallium	3.04U	20.0	3.04	ug/L
7440-62-2	**Vanadium**	**30.2**	**20.0**	**1.25**	**ug/L**
7440-66-6	**Zinc**	**1380**	**20.0**	**4.51**	**ug/L**

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/29/2012 11:40	493286	SW-846 3010A	1	11/03/2012 12:31	CLB	493803

CAS#	Parameter	Result	RDL	MDL	Units
7440-09-7	**Potassium**	**7070**	**500**	**34.6**	**ug/L**
7440-23-5	**Sodium**	**41400**	**1000**	**61.1**	**ug/L**

SW-846 6010C Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/29/2012 11:40	493231	SW-846 3005 Dissolved	1	10/31/2012 15:09	CLB	493541

CAS#	Parameter	Result	RDL	MDL	Units
7429-90-5	**Aluminum**	**46.8J**	**200**	**30.3**	**ug/L**
7440-36-0	Antimony	3.11U	60.0	3.11	ug/L
7440-38-2	Arsenic	3.59U	10.0	3.59	ug/L
7440-39-3	**Barium**	**34.6**	**10.0**	**0.71**	**ug/L**
7440-41-7	Beryllium	0.10U	5.00	0.10	ug/L
7440-43-9	**Cadmium**	**0.38J**	**5.00**	**0.16**	**ug/L**
7440-70-2	**Calcium**	**42200**	**100**	**45.7**	**ug/L**
7440-47-3	**Chromium**	**1.32J**	**10.0**	**0.26**	**ug/L**
7440-48-4	Cobalt	0.58U	10.0	0.58	ug/L
7440-50-8	**Copper**	**6.83J**	**10.0**	**1.01**	**ug/L**
7439-89-6	Iron	12.6U	100	12.6	ug/L
7439-92-1	Lead	1.96U	15.0	1.96	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270501	**LF25-MW-RB-01**	Water	10/26/2012 09:00	10/27/2012 10:00

SW-846 6010C Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/29/2012 11:40	493231	SW-846 3005 Dissolved	1	10/31/2012 15:09	CLB	493541

CAS#	Parameter	Result	RDL	MDL	Units
7439-95-4	**Magnesium**	**41000**	**100**	**16.5**	**ug/L**
7439-96-5	Manganese	1.31U	15.0	1.31	ug/L
7440-02-0	Nickel	1.13U	40.0	1.13	ug/L
7782-49-2	**Selenium**	**11.2J**	**40.0**	**4.42**	**ug/L**
7440-22-4	Silver	0.70U	10.0	0.70	ug/L
7440-28-0	Thallium	3.04U	20.0	3.04	ug/L
7440-62-2	**Vanadium**	**26.7**	**20.0**	**1.25**	**ug/L**
7440-66-6	**Zinc**	**1160**	**20.0**	**4.51**	**ug/L**

SW-846 6010C Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/29/2012 11:40	493231	SW-846 3005 Dissolved	1	11/01/2012 14:04	CLB	493656

CAS#	Parameter	Result	RDL	MDL	Units
7440-09-7	**Potassium**	**7290**	**500**	**34.6**	**ug/L**
7440-23-5	**Sodium**	**41800**	**1000**	**61.1**	**ug/L**

SM 4500 NH3 BE Ammonia

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/30/2012 15:00	493291	SM4500 NH3 BE TKN	1	10/31/2012 13:27	JEM	493580

CAS#	Parameter	Result	RDL	MDL	Units
7664-41-7	Ammonia	0.24U	1.0	0.24	mg/L-N

EPA 300.0

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/27/2012 15:59	DJH	493288

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	**Nitrate**	**1.02**	**0.500**	**0.115**	**mg/L**
14797-65-0	Nitrite	0.015U	0.500	0.015	mg/L

EPA 300.0

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			100	10/28/2012 08:21	DJH	493288

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	**Chloride**	**68.6**	**10.0**	**6.30**	**mg/L**
14808-79-8	**Sulfate**	**101**	**20.0**	**11.5**	**mg/L**

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270501	**LF25-MW-RB-01**	Water	10/26/2012 09:00	10/27/2012 10:00

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2012 16:02	DNM	493413

CAS#	Parameter	Result	RDL	MDL	Units
C-012	**Total Organic Carbon**	**5.2**	**1.0**	**0.30**	**mg/L**

SW-846 7196A Chromium VI

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/27/2012 10:46	DJH	493279

CAS#	Parameter	Result	RDL	MDL	Units
18540-29-9	Chromium VI	4.00U	10.0	4.00	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270502	**LF25-MW-RB-01-MS**	Water	10/26/2012 09:00	10/27/2012 10:00

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/16/2012 11:33	BJM	

CAS#	Parameter	Result	RDL	MDL	Units
SHIP-001	Ship Result	*			mg/L

SW-846 8260B DOD Water

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2012 13:00	EDS	493347

CAS#	Parameter	Result	RDL	MDL	Units
630-20-6	1,1,1,2-Tetrachloroethane	53.2	1.00	0.120	ug/L
71-55-6	1,1,1-Trichloroethane	57.2	1.00	0.123	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	54.2	1.00	0.109	ug/L
79-00-5	1,1,2-Trichloroethane	53.0	1.00	0.159	ug/L
75-34-3	1,1-Dichloroethane	56.3	1.00	0.171	ug/L
75-35-4	1,1-Dichloroethene	58.8	1.00	0.208	ug/L
563-58-6	1,1-Dichloropropene	52.8	1.00	0.052	ug/L
87-61-6	1,2,3-Trichlorobenzene	48.1	1.00	0.079	ug/L
96-18-4	1,2,3-Trichloropropane	53.7	1.00	0.065	ug/L
120-82-1	1,2,4-Trichlorobenzene	48.1	1.00	0.105	ug/L
95-63-6	1,2,4-Trimethylbenzene	53.6	1.00	0.084	ug/L
96-12-8	1,2-Dibromo-3-chloropropane	47.4	1.00	0.194	ug/L
106-93-4	1,2-Dibromoethane	53.2	1.00	0.102	ug/L
95-50-1	1,2-Dichlorobenzene	55.4	1.00	0.135	ug/L
107-06-2	1,2-Dichloroethane	53.5	1.00	0.116	ug/L
78-87-5	1,2-Dichloropropane	58.8	1.00	0.150	ug/L
108-67-8	1,3,5-Trimethylbenzene	60.0	1.00	0.066	ug/L
541-73-1	1,3-Dichlorobenzene	55.1	1.00	0.138	ug/L
142-28-9	1,3-Dichloropropane	54.4	1.00	0.059	ug/L
106-46-7	1,4-Dichlorobenzene	54.9	1.00	0.083	ug/L
594-20-7	2,2-Dichloropropane	59.0	1.00	0.170	ug/L
78-93-3	2-Butanone	43.9	5.00	0.142	ug/L
95-49-8	2-Chlorotoluene	58.0	1.00	0.080	ug/L
591-78-6	2-Hexanone	48.8	5.00	0.122	ug/L
106-43-4	4-Chlorotoluene	59.2	1.00	0.124	ug/L
99-87-6	4-Isopropyltoluene	53.6	1.00	0.070	ug/L
108-10-1	4-Methyl-2-pentanone	52.5	5.00	0.120	ug/L
67-64-1	Acetone	26.9	5.00	0.193	ug/L
71-43-2	Benzene	57.3	1.00	0.111	ug/L
108-86-1	Bromobenzene	54.4	1.00	0.145	ug/L
74-97-5	Bromochloromethane	55.2	1.00	0.127	ug/L
75-27-4	Bromodichloromethane	55.9	1.00	0.083	ug/L
75-25-2	Bromoform	51.5	1.00	0.215	ug/L
74-83-9	Bromomethane	58.8	1.00	0.427	ug/L
75-15-0	Carbon disulfide	58.5	1.00	0.190	ug/L
56-23-5	Carbon tetrachloride	57.6	1.00	0.248	ug/L
108-90-7	Chlorobenzene	52.7	1.00	0.083	ug/L
75-00-3	Chloroethane	58.9	1.00	0.235	ug/L
67-66-3	Chloroform	54.8	1.00	0.155	ug/L
74-87-3	Chloromethane	56.0	1.00	0.144	ug/L
74-95-3	Dibromomethane	54.8	1.00	0.211	ug/L
75-71-8	Dichlorodifluoromethane	57.6	1.00	0.145	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270502	**LF25-MW-RB-01-MS**	Water	10/26/2012 09:00	10/27/2012 10:00

SW-846 8260B DOD Water

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2012 13:00	EDS	493347

CAS#	Parameter	Result	RDL	MDL	Units
100-41-4	**Ethylbenzene**	**55.1**	**1.00**	**0.109**	**ug/L**
87-68-3	**Hexachlorobutadiene**	**50.0**	**1.00**	**0.265**	**ug/L**
98-82-8	**Isopropylbenzene (Cumene)**	**53.1**	**1.00**	**0.130**	**ug/L**
75-09-2	**Methylene chloride**	**52.3**	**5.00**	**0.149**	**ug/L**
91-20-3	**Naphthalene**	**45.9**	**1.00**	**0.176**	**ug/L**
100-42-5	**Styrene**	**53.0**	**1.00**	**0.089**	**ug/L**
127-18-4	**Tetrachloroethene**	**57.5**	**1.00**	**0.193**	**ug/L**
108-88-3	**Toluene**	**52.8**	**1.00**	**0.122**	**ug/L**
79-01-6	**Trichloroethene**	**57.7**	**1.00**	**0.161**	**ug/L**
75-69-4	**Trichlorofluoromethane**	**56.0**	**1.00**	**0.157**	**ug/L**
75-01-4	**Vinyl chloride**	**57.1**	**1.00**	**0.127**	**ug/L**
156-59-2	**cis-1,2-Dichloroethene**	**58.8**	**1.00**	**0.103**	**ug/L**
10061-01-5	**cis-1,3-Dichloropropene**	**58.1**	**1.00**	**0.124**	**ug/L**
136777-61-2	**m,p-Xylene**	**107**	**2.00**	**0.123**	**ug/L**
104-51-8	**n-Butylbenzene**	**53.0**	**1.00**	**0.123**	**ug/L**
103-65-1	**n-Propylbenzene**	**57.7**	**1.00**	**0.727**	**ug/L**
95-47-6	**o-Xylene**	**52.8**	**1.00**	**0.055**	**ug/L**
135-98-8	**sec-Butylbenzene**	**53.4**	**1.00**	**0.107**	**ug/L**
1634-04-4	**tert-Butyl methyl ether (MTBE)**	**56.3**	**5.00**	**0.078**	**ug/L**
98-06-6	**tert-Butylbenzene**	**53.4**	**1.00**	**0.087**	**ug/L**
156-60-5	**trans-1,2-Dichloroethene**	**58.0**	**1.00**	**0.077**	**ug/L**
10061-02-6	**trans-1,3-Dichloropropene**	**58.8**	**1.00**	**0.128**	**ug/L**

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.4	ug/L	99	75 - 120
1868-53-7	Dibromofluoromethane	50	49.9	ug/L	100	85 - 115
2037-26-5	Toluene d8	50	48.9	ug/L	98	85 - 120
17060-07-0	1,2-Dichloroethane-d4	50	50.9	ug/L	102	70 - 120

SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/29/2012 11:40	493285	SW-846 7470A Dissolved	1	10/31/2012 13:15	BNB	493483

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	**Mercury**	**4.55**	**0.20**	**0.068**	**ug/L**

SW-846 7470A Water

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/29/2012 11:40	493285	SW-846 7470A	1	10/31/2012 13:06	BNB	493483

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	**Mercury**	**4.43**	**0.20**	**0.068**	**ug/L**

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270502	**LF25-MW-RB-01-MS**	Water	10/26/2012 09:00	10/27/2012 10:00

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/29/2012 11:40	493286	SW-846 3010A	1	10/31/2012 18:03	CLB	493541

CAS#	Parameter	Result	RDL	MDL	Units
7429-90-5	Aluminum	5140	200	30.3	ug/L
7440-36-0	Antimony	515	60.0	3.11	ug/L
7440-38-2	Arsenic	538	10.0	3.59	ug/L
7440-39-3	Barium	536	10.0	0.71	ug/L
7440-41-7	Beryllium	518	5.00	0.10	ug/L
7440-43-9	Cadmium	497	5.00	0.16	ug/L
7440-70-2	Calcium	45100	100	45.7	ug/L
7440-47-3	Chromium	498	10.0	0.26	ug/L
7440-48-4	Cobalt	488	10.0	0.58	ug/L
7440-50-8	Copper	492	10.0	1.01	ug/L
7439-89-6	Iron	5110	100	12.6	ug/L
7439-92-1	Lead	488	15.0	1.96	ug/L
7439-95-4	Magnesium	44300	100	16.5	ug/L
7439-96-5	Manganese	502	15.0	1.31	ug/L
7440-02-0	Nickel	474	40.0	1.13	ug/L
7782-49-2	Selenium	529	40.0	4.42	ug/L
7440-22-4	Silver	493	10.0	0.70	ug/L
7440-28-0	Thallium	502	20.0	3.04	ug/L
7440-62-2	Vanadium	538	20.0	1.25	ug/L
7440-66-6	Zinc	1810	20.0	4.51	ug/L

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/29/2012 11:40	493286	SW-846 3010A	1	11/03/2012 12:38	CLB	493803

CAS#	Parameter	Result	RDL	MDL	Units
7440-09-7	Potassium	17300	500	34.6	ug/L
7440-23-5	Sodium	60600	1000	61.1	ug/L

SW-846 6010C Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/29/2012 11:40	493231	SW-846 3005 Dissolved	1	10/31/2012 15:17	CLB	493541

CAS#	Parameter	Result	RDL	MDL	Units
7429-90-5	Aluminum	5090	200	30.3	ug/L
7440-36-0	Antimony	511	60.0	3.11	ug/L
7440-38-2	Arsenic	544	10.0	3.59	ug/L
7440-39-3	Barium	533	10.0	0.71	ug/L
7440-41-7	Beryllium	517	5.00	0.10	ug/L
7440-43-9	Cadmium	499	5.00	0.16	ug/L
7440-70-2	Calcium	46500	100	45.7	ug/L
7440-47-3	Chromium	486	10.0	0.26	ug/L
7440-48-4	Cobalt	486	10.0	0.58	ug/L
7440-50-8	Copper	485	10.0	1.01	ug/L
7439-89-6	Iron	5100	100	12.6	ug/L
7439-92-1	Lead	491	15.0	1.96	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270502	**LF25-MW-RB-01-MS**	Water	10/26/2012 09:00	10/27/2012 10:00

SW-846 6010C Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/29/2012 11:40	493231	SW-846 3005 Dissolved	1	10/31/2012 15:17	CLB	493541

CAS#	Parameter	Result	RDL	MDL	Units
7439-95-4	**Magnesium**	**45500**	**100**	**16.5**	**ug/L**
7439-96-5	**Manganese**	**500**	**15.0**	**1.31**	**ug/L**
7440-02-0	**Nickel**	**474**	**40.0**	**1.13**	**ug/L**
7782-49-2	**Selenium**	**535**	**40.0**	**4.42**	**ug/L**
7440-22-4	**Silver**	**492**	**10.0**	**0.70**	**ug/L**
7440-28-0	**Thallium**	**493**	**20.0**	**3.04**	**ug/L**
7440-62-2	**Vanadium**	**530**	**20.0**	**1.25**	**ug/L**
7440-66-6	**Zinc**	**1650**	**20.0**	**4.51**	**ug/L**

SW-846 6010C Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/29/2012 11:40	493231	SW-846 3005 Dissolved	1	11/01/2012 14:11	CLB	493656

CAS#	Parameter	Result	RDL	MDL	Units
7440-09-7	**Potassium**	**17800**	**500**	**34.6**	**ug/L**
7440-23-5	**Sodium**	**63800**	**1000**	**61.1**	**ug/L**

SM 4500 NH3 BE Ammonia Water

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/30/2012 15:00	493291	SM4500 NH3 BE TKN	1	10/31/2012 13:27	JEM	493580

CAS#	Parameter	Result	RDL	MDL	Units
7664-41-7	**Ammonia**	**14.1**	**1.0**	**0.24**	**mg/L-N**

EPA 300.0 Inorganic Anions

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/27/2012 16:16	DJH	493288

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	**Nitrate**	**3.50**	**0.500**	**0.115**	**mg/L**
14797-65-0	**Nitrite**	**2.90**	**0.500**	**0.015**	**mg/L**

EPA 300.0 Inorganic Anions

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			100	10/28/2012 08:39	DJH	493288

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	**Chloride**	**316**	**10.0**	**6.30**	**mg/L**
14808-79-8	**Sulfate**	**603**	**20.0**	**11.5**	**mg/L**

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270502	**LF25-MW-RB-01-MS**	Water	10/26/2012 09:00	10/27/2012 10:00

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2012 16:18	DNM	493413

CAS#	Parameter	Result	RDL	MDL	Units
C-012	**Total Organic Carbon**	**53.7**	**1.0**	**0.30**	**mg/L**

SW-846 7196A Chromium VI

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/27/2012 10:47	DJH	493279

CAS#	Parameter	Result	RDL	MDL	Units
18540-29-9	**Chromium VI**	**514**	**10.0**	**4.00**	**ug/L**

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270503	**LF25-MW-RB-01-MSD**	Water	10/26/2012 09:00	10/27/2012 10:00

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/16/2012 11:33	BJM	

CAS#	Parameter	Result	RDL	MDL	Units
SHIP-001	Ship Result	*			mg/L

SW-846 8260B DOD Water

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2012 13:22	EDS	493347

CAS#	Parameter	Result	RDL	MDL	Units
630-20-6	1,1,1,2-Tetrachloroethane	47.5	1.00	0.120	ug/L
71-55-6	1,1,1-Trichloroethane	50.0	1.00	0.123	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	51.2	1.00	0.109	ug/L
79-00-5	1,1,2-Trichloroethane	48.4	1.00	0.159	ug/L
75-34-3	1,1-Dichloroethane	50.1	1.00	0.171	ug/L
75-35-4	1,1-Dichloroethene	52.3	1.00	0.208	ug/L
563-58-6	1,1-Dichloropropene	46.3	1.00	0.052	ug/L
87-61-6	1,2,3-Trichlorobenzene	46.6	1.00	0.079	ug/L
96-18-4	1,2,3-Trichloropropane	50.3	1.00	0.065	ug/L
120-82-1	1,2,4-Trichlorobenzene	45.6	1.00	0.105	ug/L
95-63-6	1,2,4-Trimethylbenzene	48.4	1.00	0.084	ug/L
96-12-8	1,2-Dibromo-3-chloropropane	46.9	1.00	0.194	ug/L
106-93-4	1,2-Dibromoethane	49.7	1.00	0.102	ug/L
95-50-1	1,2-Dichlorobenzene	50.6	1.00	0.135	ug/L
107-06-2	1,2-Dichloroethane	48.8	1.00	0.116	ug/L
78-87-5	1,2-Dichloropropane	52.3	1.00	0.150	ug/L
108-67-8	1,3,5-Trimethylbenzene	53.7	1.00	0.066	ug/L
541-73-1	1,3-Dichlorobenzene	50.4	1.00	0.138	ug/L
142-28-9	1,3-Dichloropropane	49.9	1.00	0.059	ug/L
106-46-7	1,4-Dichlorobenzene	50.3	1.00	0.083	ug/L
594-20-7	2,2-Dichloropropane	51.8	1.00	0.170	ug/L
78-93-3	2-Butanone	41.8	5.00	0.142	ug/L
95-49-8	2-Chlorotoluene	52.2	1.00	0.080	ug/L
591-78-6	2-Hexanone	47.3	5.00	0.122	ug/L
106-43-4	4-Chlorotoluene	53.1	1.00	0.124	ug/L
99-87-6	4-Isopropyltoluene	48.5	1.00	0.070	ug/L
108-10-1	4-Methyl-2-pentanone	50.2	5.00	0.120	ug/L
67-64-1	Acetone	26.2	5.00	0.193	ug/L
71-43-2	Benzene	50.3	1.00	0.111	ug/L
108-86-1	Bromobenzene	49.4	1.00	0.145	ug/L
74-97-5	Bromochloromethane	49.6	1.00	0.127	ug/L
75-27-4	Bromodichloromethane	49.5	1.00	0.083	ug/L
75-25-2	Bromoform	47.5	1.00	0.215	ug/L
74-83-9	Bromomethane	52.6	1.00	0.427	ug/L
75-15-0	Carbon disulfide	51.4	1.00	0.190	ug/L
56-23-5	Carbon tetrachloride	50.3	1.00	0.248	ug/L
108-90-7	Chlorobenzene	47.0	1.00	0.083	ug/L
75-00-3	Chloroethane	51.8	1.00	0.235	ug/L
67-66-3	Chloroform	48.8	1.00	0.155	ug/L
74-87-3	Chloromethane	51.2	1.00	0.144	ug/L
74-95-3	Dibromomethane	49.8	1.00	0.211	ug/L
75-71-8	Dichlorodifluoromethane	50.2	1.00	0.145	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270503	**LF25-MW-RB-01-MSD**	Water	10/26/2012 09:00	10/27/2012 10:00

SW-846 8260B DOD Water

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2012 13:22	EDS	493347

CAS#	Parameter	Result	RDL	MDL	Units
100-41-4	**Ethylbenzene**	**48.6**	**1.00**	**0.109**	**ug/L**
87-68-3	**Hexachlorobutadiene**	**46.6**	**1.00**	**0.265**	**ug/L**
98-82-8	**Isopropylbenzene (Cumene)**	**46.8**	**1.00**	**0.130**	**ug/L**
75-09-2	**Methylene chloride**	**46.7**	**5.00**	**0.149**	**ug/L**
91-20-3	**Naphthalene**	**46.1**	**1.00**	**0.176**	**ug/L**
100-42-5	**Styrene**	**47.1**	**1.00**	**0.089**	**ug/L**
127-18-4	**Tetrachloroethene**	**50.7**	**1.00**	**0.193**	**ug/L**
108-88-3	**Toluene**	**46.8**	**1.00**	**0.122**	**ug/L**
79-01-6	**Trichloroethene**	**49.9**	**1.00**	**0.161**	**ug/L**
75-69-4	**Trichlorofluoromethane**	**49.2**	**1.00**	**0.157**	**ug/L**
75-01-4	**Vinyl chloride**	**50.3**	**1.00**	**0.127**	**ug/L**
156-59-2	**cis-1,2-Dichloroethene**	**52.3**	**1.00**	**0.103**	**ug/L**
10061-01-5	**cis-1,3-Dichloropropene**	**52.1**	**1.00**	**0.124**	**ug/L**
136777-61-2	**m,p-Xylene**	**94.8**	**2.00**	**0.123**	**ug/L**
104-51-8	**n-Butylbenzene**	**48.2**	**1.00**	**0.123**	**ug/L**
103-65-1	**n-Propylbenzene**	**51.6**	**1.00**	**0.727**	**ug/L**
95-47-6	**o-Xylene**	**46.9**	**1.00**	**0.055**	**ug/L**
135-98-8	**sec-Butylbenzene**	**47.9**	**1.00**	**0.107**	**ug/L**
1634-04-4	**tert-Butyl methyl ether (MTBE)**	**52.5**	**5.00**	**0.078**	**ug/L**
98-06-6	**tert-Butylbenzene**	**48.2**	**1.00**	**0.087**	**ug/L**
156-60-5	**trans-1,2-Dichloroethene**	**51.0**	**1.00**	**0.077**	**ug/L**
10061-02-6	**trans-1,3-Dichloropropene**	**53.0**	**1.00**	**0.128**	**ug/L**

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.2	ug/L	98	75 - 120
1868-53-7	Dibromofluoromethane	50	49.8	ug/L	100	85 - 115
2037-26-5	Toluene d8	50	49.3	ug/L	99	85 - 120
17060-07-0	1,2-Dichloroethane-d4	50	50.3	ug/L	101	70 - 120

SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/29/2012 11:40	493285	SW-846 7470A Dissolved	1	10/31/2012 13:17	BNB	493483

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	**Mercury**	**4.50**	**0.20**	**0.068**	**ug/L**

SW-846 7470A Water

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/29/2012 11:40	493285	SW-846 7470A	1	10/31/2012 13:07	BNB	493483

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	**Mercury**	**4.58**	**0.20**	**0.068**	**ug/L**

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270503	**LF25-MW-RB-01-MSD**	Water	10/26/2012 09:00	10/27/2012 10:00

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/29/2012 11:40	493286	SW-846 3010A	1	10/31/2012 18:09	CLB	493541

CAS#	Parameter	Result	RDL	MDL	Units
7429-90-5	Aluminum	4960	200	30.3	ug/L
7440-36-0	Antimony	492	60.0	3.11	ug/L
7440-38-2	Arsenic	514	10.0	3.59	ug/L
7440-39-3	Barium	515	10.0	0.71	ug/L
7440-41-7	Beryllium	496	5.00	0.10	ug/L
7440-43-9	Cadmium	476	5.00	0.16	ug/L
7440-70-2	Calcium	43500	100	45.7	ug/L
7440-47-3	Chromium	478	10.0	0.26	ug/L
7440-48-4	Cobalt	466	10.0	0.58	ug/L
7440-50-8	Copper	473	10.0	1.01	ug/L
7439-89-6	Iron	4970	100	12.6	ug/L
7439-92-1	Lead	467	15.0	1.96	ug/L
7439-95-4	Magnesium	43200	100	16.5	ug/L
7439-96-5	Manganese	483	15.0	1.31	ug/L
7440-02-0	Nickel	462	40.0	1.13	ug/L
7782-49-2	Selenium	507	40.0	4.42	ug/L
7440-22-4	Silver	472	10.0	0.70	ug/L
7440-28-0	Thallium	483	20.0	3.04	ug/L
7440-62-2	Vanadium	519	20.0	1.25	ug/L
7440-66-6	Zinc	1740	20.0	4.51	ug/L

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/29/2012 11:40	493286	SW-846 3010A	1	11/03/2012 12:44	CLB	493803

CAS#	Parameter	Result	RDL	MDL	Units
7440-09-7	Potassium	16400	500	34.6	ug/L
7440-23-5	Sodium	57700	1000	61.1	ug/L

SW-846 6010C Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/29/2012 11:40	493231	SW-846 3005 Dissolved	1	10/31/2012 15:23	CLB	493541

CAS#	Parameter	Result	RDL	MDL	Units
7429-90-5	Aluminum	5030	200	30.3	ug/L
7440-36-0	Antimony	503	60.0	3.11	ug/L
7440-38-2	Arsenic	534	10.0	3.59	ug/L
7440-39-3	Barium	524	10.0	0.71	ug/L
7440-41-7	Beryllium	508	5.00	0.10	ug/L
7440-43-9	Cadmium	490	5.00	0.16	ug/L
7440-70-2	Calcium	45800	100	45.7	ug/L
7440-47-3	Chromium	477	10.0	0.26	ug/L
7440-48-4	Cobalt	478	10.0	0.58	ug/L
7440-50-8	Copper	479	10.0	1.01	ug/L
7439-89-6	Iron	5050	100	12.6	ug/L
7439-92-1	Lead	482	15.0	1.96	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270503	**LF25-MW-RB-01-MSD**	Water	10/26/2012 09:00	10/27/2012 10:00

SW-846 6010C Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/29/2012 11:40	493231	SW-846 3005 Dissolved	1	10/31/2012 15:23	CLB	493541

CAS#	Parameter	Result	RDL	MDL	Units
7439-95-4	**Magnesium**	**45100**	**100**	**16.5**	**ug/L**
7439-96-5	**Manganese**	**492**	**15.0**	**1.31**	**ug/L**
7440-02-0	**Nickel**	**467**	**40.0**	**1.13**	**ug/L**
7782-49-2	**Selenium**	**528**	**40.0**	**4.42**	**ug/L**
7440-22-4	**Silver**	**485**	**10.0**	**0.70**	**ug/L**
7440-28-0	**Thallium**	**487**	**20.0**	**3.04**	**ug/L**
7440-62-2	**Vanadium**	**522**	**20.0**	**1.25**	**ug/L**
7440-66-6	**Zinc**	**1620**	**20.0**	**4.51**	**ug/L**

SW-846 6010C Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/29/2012 11:40	493231	SW-846 3005 Dissolved	1	11/01/2012 14:18	CLB	493656

CAS#	Parameter	Result	RDL	MDL	Units
7440-09-7	**Potassium**	**17700**	**500**	**34.6**	**ug/L**
7440-23-5	**Sodium**	**63200**	**1000**	**61.1**	**ug/L**

SM 4500 NH3 BE Ammonia Water

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/30/2012 15:00	493291	SM4500 NH3 BE TKN	1	10/31/2012 13:27	JEM	493580

CAS#	Parameter	Result	RDL	MDL	Units
7664-41-7	**Ammonia**	**14.3**	**1.0**	**0.24**	**mg/L-N**

EPA 300.0 Inorganic Anions

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/27/2012 16:34	DJH	493288

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	**Nitrate**	**3.52**	**0.500**	**0.115**	**mg/L**
14797-65-0	**Nitrite**	**2.91**	**0.500**	**0.015**	**mg/L**

EPA 300.0 Inorganic Anions

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			100	10/28/2012 08:56	DJH	493288

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	**Chloride**	**317**	**10.0**	**6.30**	**mg/L**
14808-79-8	**Sulfate**	**602**	**20.0**	**11.5**	**mg/L**

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270503	**LF25-MW-RB-01-MSD**	Water	10/26/2012 09:00	10/27/2012 10:00

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/31/2012 09:51	DNM	493413

CAS#	Parameter	Result	RDL	MDL	Units
C-012	**Total Organic Carbon**	**52.3**	**1.0**	**0.30**	**mg/L**

SW-846 7196A Chromium VI

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/27/2012 10:47	DJH	493279

CAS#	Parameter	Result	RDL	MDL	Units
18540-29-9	**Chromium VI**	**481**	**10.0**	**4.00**	**ug/L**

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270504	**TB-09**	Water	10/26/2012 09:00	10/27/2012 10:00

SW-846 8260B DOD Water

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2012 14:06	EDS	493347

CAS#	Parameter	Result	RDL	MDL	Units
630-20-6	1,1,1,2-Tetrachloroethane	0.120U	1.00	0.120	ug/L
71-55-6	1,1,1-Trichloroethane	0.123U	1.00	0.123	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.109U	1.00	0.109	ug/L
79-00-5	1,1,2-Trichloroethane	0.159U	1.00	0.159	ug/L
75-34-3	1,1-Dichloroethane	0.171U	1.00	0.171	ug/L
75-35-4	1,1-Dichloroethene	0.208U	1.00	0.208	ug/L
563-58-6	1,1-Dichloropropene	0.052U	1.00	0.052	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.079U	1.00	0.079	ug/L
96-18-4	1,2,3-Trichloropropane	0.065U	1.00	0.065	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.105U	1.00	0.105	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.084U	1.00	0.084	ug/L
96-12-8	1,2-Dibromo-3-chloropropane	0.194U	1.00	0.194	ug/L
106-93-4	1,2-Dibromoethane	0.102U	1.00	0.102	ug/L
95-50-1	1,2-Dichlorobenzene	0.135U	1.00	0.135	ug/L
107-06-2	1,2-Dichloroethane	0.116U	1.00	0.116	ug/L
78-87-5	1,2-Dichloropropane	0.150U	1.00	0.150	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.066U	1.00	0.066	ug/L
541-73-1	1,3-Dichlorobenzene	0.138U	1.00	0.138	ug/L
142-28-9	1,3-Dichloropropane	0.059U	1.00	0.059	ug/L
106-46-7	1,4-Dichlorobenzene	0.083U	1.00	0.083	ug/L
594-20-7	2,2-Dichloropropane	0.170U	1.00	0.170	ug/L
78-93-3	2-Butanone	0.142U	5.00	0.142	ug/L
95-49-8	2-Chlorotoluene	0.080U	1.00	0.080	ug/L
591-78-6	2-Hexanone	0.122U	5.00	0.122	ug/L
106-43-4	4-Chlorotoluene	0.124U	1.00	0.124	ug/L
99-87-6	4-Isopropyltoluene	0.070U	1.00	0.070	ug/L
108-10-1	4-Methyl-2-pentanone	0.120U	5.00	0.120	ug/L
67-64-1	Acetone	0.193U	5.00	0.193	ug/L
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-86-1	Bromobenzene	0.145U	1.00	0.145	ug/L
74-97-5	Bromochloromethane	0.127U	1.00	0.127	ug/L
75-27-4	Bromodichloromethane	0.083U	1.00	0.083	ug/L
75-25-2	Bromoform	0.215U	1.00	0.215	ug/L
74-83-9	Bromomethane	0.427U	1.00	0.427	ug/L
75-15-0	Carbon disulfide	0.190U	1.00	0.190	ug/L
56-23-5	Carbon tetrachloride	0.248U	1.00	0.248	ug/L
108-90-7	Chlorobenzene	0.083U	1.00	0.083	ug/L
75-00-3	Chloroethane	0.235U	1.00	0.235	ug/L
67-66-3	Chloroform	0.155U	1.00	0.155	ug/L
74-87-3	Chloromethane	0.144U	1.00	0.144	ug/L
74-95-3	Dibromomethane	0.211U	1.00	0.211	ug/L
75-71-8	Dichlorodifluoromethane	0.145U	1.00	0.145	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
87-68-3	Hexachlorobutadiene	0.265U	1.00	0.265	ug/L
98-82-8	Isopropylbenzene (Cumene)	0.130U	1.00	0.130	ug/L
75-09-2	Methylene chloride	0.149U	5.00	0.149	ug/L
91-20-3	Naphthalene	0.176U	1.00	0.176	ug/L
100-42-5	Styrene	0.089U	1.00	0.089	ug/L
127-18-4	Tetrachloroethene	0.193U	1.00	0.193	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21210270504	**TB-09**	Water	10/26/2012 09:00	10/27/2012 10:00

SW-846 8260B DOD Water

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2012 14:06	EDS	493347

CAS#	Parameter	Result	RDL	MDL	Units
79-01-6	Trichloroethene	0.161U	1.00	0.161	ug/L
75-69-4	Trichlorofluoromethane	0.157U	1.00	0.157	ug/L
75-01-4	Vinyl chloride	0.127U	1.00	0.127	ug/L
156-59-2	cis-1,2-Dichloroethene	0.103U	1.00	0.103	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.124U	1.00	0.124	ug/L
136777-61-2	m,p-Xylene	0.123U	2.00	0.123	ug/L
104-51-8	n-Butylbenzene	0.123U	1.00	0.123	ug/L
103-65-1	n-Propylbenzene	0.727U	1.00	0.727	ug/L
95-47-6	o-Xylene	0.055U	1.00	0.055	ug/L
135-98-8	sec-Butylbenzene	0.107U	1.00	0.107	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	5.00	0.078	ug/L
98-06-6	tert-Butylbenzene	0.087U	1.00	0.087	ug/L
156-60-5	trans-1,2-Dichloroethene	0.077U	1.00	0.077	ug/L
10061-02-6	trans-1,3-Dichloropropene	0.128U	1.00	0.128	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	48.2	ug/L	96	75 - 120
1868-53-7	Dibromofluoromethane	50	49.8	ug/L	100	85 - 115
2037-26-5	Toluene d8	50	50.6	ug/L	101	85 - 120
17060-07-0	1,2-Dichloroethane-d4	50	50	ug/L	100	70 - 120

GC/MS Volatiles Quality Control Summary

Analytical Batch 493347		**Client ID**	MB493347			LCS493347			LCSD493347		
Prep Batch N/A		**GCAL ID**	1122203			1122204			1122205		
		Sample Type	Method Blank			LCS			LCSD		
		Analytical Date	10/29/2012 12:16			10/29/2012 11:08			10/29/2012 11:30		
		Matrix	Water			Water			Water		
SW-846 8260B		**Units**	**Result**	ug/L **RDL**	**Spike Added**	**Result**	**% R**	**Control Limits % R**	**Result**	**% R**	**RPD**	**RPD Limit**
67-64-1	Acetone		0.193U	0.193	50.0	50.2	100	40 - 140	54.1	108	7	30
74-97-5	Bromochloromethane		0.127U	0.127	50.0	50.8	102	65 - 130	51.4	103	1	30
75-27-4	Bromodichloromethane		0.083U	0.083	50.0	49.6	99	75 - 120	50.6	101	2	30
75-25-2	Bromoform		0.215U	0.215	50.0	45.8	92	70 - 130	47.8	96	4	30
74-83-9	Bromomethane		0.427U	0.427	50.0	49.8	100	30 - 145	53.2	106	7	30
75-15-0	Carbon disulfide		0.190U	0.190	50.0	55.5	111	35 - 160	53.3	107	4	30
56-23-5	Carbon tetrachloride		0.248U	0.248	50.0	54.1	108	65 - 140	53.4	107	1	30
75-00-3	Chloroethane		0.235U	0.235	50.0	54.5	109	60 - 135	54.4	109	0.2	30
136777-61-2	m,p-Xylene		0.123U	0.123	100	100	100	75 - 130	98.6	99	1	30
67-66-3	Chloroform		0.155U	0.155	50.0	49.5	99	65 - 135	49.8	100	0.6	30
74-87-3	Chloromethane		0.144U	0.144	50.0	50.3	101	40 - 125	51.0	102	1	30
74-95-3	Dibromomethane		0.211U	0.211	50.0	49.5	99	75 - 125	51.4	103	4	30
75-71-8	Dichlorodifluoromethane		0.145U	0.145	50.0	56.7	113	30 - 155	56.3	113	0.7	30
75-34-3	1,1-Dichloroethane		0.171U	0.171	50.0	50.7	101	70 - 135	51.8	104	2	30
107-06-2	1,2-Dichloroethane		0.116U	0.116	50.0	49.1	98	70 - 130	50.4	101	3	30
156-59-2	cis-1,2-Dichloroethene		0.103U	0.103	50.0	53.1	106	70 - 125	53.9	108	1	30
156-60-5	trans-1,2-Dichloroethene		0.077U	0.077	50.0	53.1	106	60 - 140	53.2	106	0.2	30
75-09-2	Methylene chloride		0.149U	0.149	50.0	48.0	96	55 - 140	48.7	97	1	30
78-87-5	1,2-Dichloropropane		0.150U	0.150	50.0	53.1	106	75 - 125	54.2	108	2	30
10061-01-5	cis-1,3-Dichloropropene		0.124U	0.124	50.0	53.9	108	70 - 130	55.4	111	3	30
10061-02-6	trans-1,3-Dichloropropene		0.128U	0.128	50.0	53.1	106	55 - 140	54.5	109	3	30
100-41-4	Ethylbenzene		0.109U	0.109	50.0	51.6	103	75 - 125	50.6	101	2	30
591-78-6	2-Hexanone		0.122U	0.122	50.0	54.1	108	55 - 130	60.3	121	11	30
98-82-8	Isopropylbenzene (Cumene)		0.130U	0.130	50.0	51.4	103	75 - 125	49.3	99	4	30
78-93-3	2-Butanone		0.142U	0.142	50.0	54.1	108	30 - 150	58.9	118	8	30
108-10-1	4-Methyl-2-pentanone		0.120U	0.120	50.0	48.0	96	60 - 135	52.6	105	9	30
103-65-1	n-Propylbenzene		0.727U	0.727	50.0	56.6	113	70 - 130	54.0	108	5	30
100-42-5	Styrene		0.089U	0.089	50.0	48.3	97	65 - 135	48.4	97	0.2	30
127-18-4	Tetrachloroethene		0.193U	0.193	50.0	55.8	112	45 - 150	53.7	107	4	30
630-20-6	1,1,1,2-Tetrachloroethane		0.120U	0.120	50.0	47.5	95	80 - 130	48.5	97	2	30
79-34-5	1,1,2,2-Tetrachloroethane		0.109U	0.109	50.0	47.5	95	65 - 130	50.6	101	6	30
120-82-1	1,2,4-Trichlorobenzene		0.105U	0.105	50.0	46.7	93	65 - 135	46.9	94	0.4	30
71-55-6	1,1,1-Trichloroethane		0.123U	0.123	50.0	52.7	105	65 - 130	52.9	106	0.4	30

GC/MS Volatiles Quality Control Summary

Analytical Batch 493347		**Client ID**	MB493347			LCS493347			LCSD493347		
Prep Batch N/A		**GCAL ID**	1122203			1122204			1122205		
		Sample Type	Method Blank			LCS			LCSD		
		Analytical Date	10/29/2012 12:16			10/29/2012 11:08			10/29/2012 11:30		
		Matrix	Water			Water			Water		
SW-846 8260B		**Units**	ug/L		**Spike**	**Result**		**Control**	**Result**			**RPD**
		Result	**RDL**		**Added**		**% R**	**Limits % R**		**% R**	**RPD**	**Limit**
79-00-5	1,1,2-Trichloroethane	0.159U	0.159		50.0	47.1	94	75 - 125	48.6	97	3	30
75-69-4	Trichlorofluoromethane	0.157U	0.157		50.0	54.2	108	60 - 145	53.0	106	2	30
96-18-4	1,2,3-Trichloropropane	0.065U	0.065		50.0	47.5	95	75 - 125	50.2	100	6	30
95-63-6	1,2,4-Trimethylbenzene	0.084U	0.084		50.0	51.7	103	75 - 130	50.2	100	3	30
108-67-8	1,3,5-Trimethylbenzene	0.066U	0.066		50.0	58.2	116	75 - 130	56.0	112	4	30
75-01-4	Vinyl chloride	0.127U	0.127		50.0	53.2	106	50 - 145	52.8	106	0.8	30
95-47-6	o-Xylene	0.055U	0.055		50.0	48.7	97	80 - 120	48.2	96	1	30
96-12-8	1,2-Dibromo-3-chloropropane	0.194U	0.194		50.0	42.8	86	50 - 130	47.4	95	10	30
106-93-4	1,2-Dibromoethane	0.102U	0.102		50.0	48.2	96	80 - 120	50.2	100	4	30
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	0.078		50.0	51.2	102	65 - 125	54.2	108	6	30
99-87-6	4-Isopropyltoluene	0.070U	0.070		50.0	53.8	108	75 - 130	50.5	101	6	30
594-20-7	2,2-Dichloropropane	0.170U	0.170		50.0	54.7	109	70 - 135	55.1	110	0.7	30
563-58-6	1,1-Dichloropropene	0.052U	0.052		50.0	49.5	99	75 - 130	49.0	98	1	30
142-28-9	1,3-Dichloropropane	0.059U	0.059		50.0	49.0	98	75 - 125	51.2	102	4	30
108-86-1	Bromobenzene	0.145U	0.145		50.0	49.8	100	75 - 125	50.1	100	0.6	30
95-49-8	2-Chlorotoluene	0.080U	0.080		50.0	54.9	110	75 - 125	53.6	107	2	30
106-43-4	4-Chlorotoluene	0.124U	0.124		50.0	55.6	111	75 - 130	54.7	109	2	30
98-06-6	tert-Butylbenzene	0.087U	0.087		50.0	52.7	105	70 - 130	50.3	101	5	30
135-98-8	sec-Butylbenzene	0.107U	0.107		50.0	53.9	108	70 - 125	50.7	101	6	30
541-73-1	1,3-Dichlorobenzene	0.138U	0.138		50.0	52.2	104	75 - 125	51.4	103	2	30
106-46-7	1,4-Dichlorobenzene	0.083U	0.083		50.0	52.0	104	75 - 125	51.2	102	2	30
104-51-8	n-Butylbenzene	0.123U	0.123		50.0	53.7	107	70 - 135	50.3	101	7	30
95-50-1	1,2-Dichlorobenzene	0.135U	0.135		50.0	51.1	102	70 - 120	51.1	102	0	30
87-68-3	Hexachlorobutadiene	0.265U	0.265		50.0	50.5	101	50 - 140	49.3	99	2	30
91-20-3	Naphthalene	0.176U	0.176		50.0	43.4	87	55 - 140	47.7	95	9	30
87-61-6	1,2,3-Trichlorobenzene	0.079U	0.079		50.0	47.4	95	55 - 140	48.5	97	2	30
75-35-4	1,1-Dichloroethene	0.208U	0.208		50.0	53.8	108	70 - 130	54.7	109	2	30
71-43-2	Benzene	0.111U	0.111		50.0	51.6	103	80 - 120	52.3	105	1	30
79-01-6	Trichloroethene	0.161U	0.161		50.0	52.9	106	70 - 125	53.1	106	0.4	30
108-88-3	Toluene	0.122U	0.122		50.0	47.9	96	75 - 120	48.4	97	1	30
108-90-7	Chlorobenzene	0.083U	0.083		50.0	48.0	96	80 - 120	48.3	97	0.6	30
Surrogate												
460-00-4	4-Bromofluorobenzene	47.9	96		50	49.2	98	75 - 120	49.3	99		

GC/MS Volatiles Quality Control Summary

Analytical Batch 493347		**Client ID**	MB493347			LCS493347			LCSD493347		
Prep Batch N/A		**GCAL ID**	1122203			1122204			1122205		
		Sample Type	Method Blank			LCS			LCSD		
		Analytical Date	10/29/2012 12:16			10/29/2012 11:08			10/29/2012 11:30		
		Matrix	Water			Water			Water		
SW-846 8260B		**Units**	**Result**	ug/L **RDL**	**Spike Added**	**Result**	**% R**	**Control Limits % R**	**Result**	**% R**	**RPD**	**RPD Limit**
1868-53-7	Dibromofluoromethane		50.3	101	50	49.7	99	85 - 115	49.9	100		
2037-26-5	Toluene d8		50.6	101	50	48.5	97	85 - 120	49.2	98		
17060-07-0	1,2-Dichloroethane-d4		50.1	100	50	50.7	101	70 - 120	51.5	103		

Analytical Batch 493347		**Client ID**	LF25-MW-RB-01			LF25-MW-RB-01-MS			LF25-MW-RB-01-MSD		
Prep Batch N/A		**GCAL ID**	21210270501			21210270502			21210270503		
		Sample Type	SAMPLE			MS			MSD		
		Analytical Date	10/29/2012 12:38			10/29/2012 13:00			10/29/2012 13:22		
		Matrix	Water			Water			Water		
SW-846 8260B DOD Water		**Units**	**Result**	ug/L **RDL**	**Spike Added**	**Result**	**% R**	**Control Limits % R**	**Result**	**% R**	**RPD**	**RPD Limit**
630-20-6	1,1,1,2-Tetrachloroethane		0.00	0.120	50.0	53.2	106	80 - 130	47.5	95	11	30
71-55-6	1,1,1-Trichloroethane		0.00	0.123	50.0	57.2	114	65 - 130	50.0	100	13	30
79-34-5	1,1,2,2-Tetrachloroethane		0.00	0.109	50.0	54.2	108	65 - 130	51.2	102	6	30
79-00-5	1,1,2-Trichloroethane		0.00	0.159	50.0	53.0	106	75 - 125	48.4	97	9	30
75-34-3	1,1-Dichloroethane		0.00	0.171	50.0	56.3	113	70 - 135	50.1	100	12	30
75-35-4	1,1-Dichloroethene		0.00	0.208	50.0	58.8	118	70 - 130	52.3	105	12	30
563-58-6	1,1-Dichloropropene		0.00	0.052	50.0	52.8	106	75 - 130	46.3	93	13	30
87-61-6	1,2,3-Trichlorobenzene		0.00	0.079	50.0	48.1	96	55 - 140	46.6	93	3	30
96-18-4	1,2,3-Trichloropropane		0.00	0.065	50.0	53.7	107	75 - 125	50.3	101	7	30
120-82-1	1,2,4-Trichlorobenzene		0.00	0.105	50.0	48.1	96	65 - 135	45.6	91	5	30
95-63-6	1,2,4-Trimethylbenzene		0.00	0.084	50.0	53.6	107	75 - 130	48.4	97	10	30
96-12-8	1,2-Dibromo-3-chloropropane		0.00	0.194	50.0	47.4	95	50 - 130	46.9	94	1	30
106-93-4	1,2-Dibromoethane		0.00	0.102	50.0	53.2	106	80 - 120	49.7	99	7	30
95-50-1	1,2-Dichlorobenzene		0.00	0.135	50.0	55.4	111	70 - 120	50.6	101	9	30
107-06-2	1,2-Dichloroethane		0.00	0.116	50.0	53.5	107	70 - 130	48.8	98	9	30
78-87-5	1,2-Dichloropropane		0.00	0.150	50.0	58.8	118	75 - 125	52.3	105	12	30
108-67-8	1,3,5-Trimethylbenzene		0.00	0.066	50.0	60.0	120	75 - 130	53.7	107	11	30
541-73-1	1,3-Dichlorobenzene		0.00	0.138	50.0	55.1	110	65 - 130	50.4	101	9	30
142-28-9	1,3-Dichloropropane		0.00	0.059	50.0	54.4	109	75 - 125	49.9	100	9	30
106-46-7	1,4-Dichlorobenzene		0.00	0.083	50.0	54.9	110	65 - 130	50.3	101	9	30
594-20-7	2,2-Dichloropropane		0.00	0.170	50.0	59.0	118	70 - 135	51.8	104	13	30

GC/MS Volatiles Quality Control Summary

Analytical Batch 493347		**Client ID**	LF25-MW-RB-01			LF25-MW-RB-01-MS			LF25-MW-RB-01-MSD		
Prep Batch N/A		**GCAL ID**	21210270501			21210270502			21210270503		
		Sample Type	SAMPLE			MS			MSD		
		Analytical Date	10/29/2012 12:38			10/29/2012 13:00			10/29/2012 13:22		
		Matrix	Water			Water			Water		
SW-846 8260B DOD Water		**Units**	ug/L		**Spike**	**Result**		**Control**	**Result**			**RPD**
		Result	**RDL**		**Added**		**% R**	**Limits % R**		**% R**	**RPD**	**Limit**
78-93-3	2-Butanone	0.00	0.142		50.0	43.9	88	30 - 150	41.8	84	5	30
95-49-8	2-Chlorotoluene	0.00	0.080		50.0	58.0	116	75 - 125	52.2	104	11	30
591-78-6	2-Hexanone	0.00	0.122		50.0	48.8	98	55 - 130	47.3	95	3	30
106-43-4	4-Chlorotoluene	0.00	0.124		50.0	59.2	118	75 - 130	53.1	106	11	30
99-87-6	4-Isopropyltoluene	0.00	0.070		50.0	53.6	107	75 - 130	48.5	97	10	30
108-10-1	4-Methyl-2-pentanone	0.00	0.120		50.0	52.5	105	60 - 135	50.2	100	4	30
67-64-1	Acetone	0.00	0.193		50.0	26.9	54	40 - 140	26.2	52	3	30
71-43-2	Benzene	0.00	0.111		50.0	57.3	115	80 - 120	50.3	101	13	30
108-86-1	Bromobenzene	0.00	0.145		50.0	54.4	109	75 - 125	49.4	99	10	30
74-97-5	Bromochloromethane	0.00	0.127		50.0	55.2	110	65 - 130	49.6	99	11	30
75-27-4	Bromodichloromethane	0.00	0.083		50.0	55.9	112	75 - 120	49.5	99	12	30
75-25-2	Bromoform	0.00	0.215		50.0	51.5	103	70 - 130	47.5	95	8	30
74-83-9	Bromomethane	0.00	0.427		50.0	58.8	118	30 - 145	52.6	105	11	30
75-15-0	Carbon disulfide	0.00	0.190		50.0	58.5	117	35 - 160	51.4	103	13	30
56-23-5	Carbon tetrachloride	0.00	0.248		50.0	57.6	115	65 - 140	50.3	101	14	30
108-90-7	Chlorobenzene	0.00	0.083		50.0	52.7	105	80 - 120	47.0	94	11	30
75-00-3	Chloroethane	0.00	0.235		50.0	58.9	118	60 - 135	51.8	104	13	30
67-66-3	Chloroform	0.00	0.155		50.0	54.8	110	65 - 135	48.8	98	12	30
74-87-3	Chloromethane	0.00	0.144		50.0	56.0	112	40 - 125	51.2	102	9	30
74-95-3	Dibromomethane	0.00	0.211		50.0	54.8	110	75 - 125	49.8	100	10	30
75-71-8	Dichlorodifluoromethane	0.00	0.145		50.0	57.6	115	30 - 155	50.2	100	14	30
100-41-4	Ethylbenzene	0.00	0.109		50.0	55.1	110	75 - 125	48.6	97	13	30
87-68-3	Hexachlorobutadiene	0.00	0.265		50.0	50.0	100	50 - 140	46.6	93	7	30
98-82-8	Isopropylbenzene (Cumene)	0.00	0.130		50.0	53.1	106	75 - 125	46.8	94	13	30
75-09-2	Methylene chloride	0.00	0.149		50.0	52.3	105	55 - 140	46.7	93	11	30
91-20-3	Naphthalene	0.00	0.176		50.0	45.9	92	55 - 140	46.1	92	0.4	30
100-42-5	Styrene	0.00	0.089		50.0	53.0	106	65 - 135	47.1	94	12	30
127-18-4	Tetrachloroethene	0.00	0.193		50.0	57.5	115	45 - 150	50.7	101	13	30
108-88-3	Toluene	0.00	0.122		50.0	52.8	106	75 - 120	46.8	94	12	30
79-01-6	Trichloroethene	0.00	0.161		50.0	57.7	115	70 - 125	49.9	100	14	30
75-69-4	Trichlorofluoromethane	0.00	0.157		50.0	56.0	112	60 - 145	49.2	98	13	30
75-01-4	Vinyl chloride	0.00	0.127		50.0	57.1	114	50 - 145	50.3	101	13	30
156-59-2	cis-1,2-Dichloroethene	0.00	0.103		50.0	58.8	118	70 - 125	52.3	105	12	30

GC/MS Volatiles Quality Control Summary

Analytical Batch	493347	**Client ID**	LF25-MW-RB-01			LF25-MW-RB-01-MS			LF25-MW-RB-01-MSD		
Prep Batch	N/A	**GCAL ID**	21210270501			21210270502			21210270503		
		Sample Type	SAMPLE			MS			MSD		
		Analytical Date	10/29/2012 12:38			10/29/2012 13:00			10/29/2012 13:22		
		Matrix	Water			Water			Water		
SW-846 8260B DOD Water		**Units**	**Result**	ug/L **RDL**	**Spike Added**	**Result**	**% R**	**Control Limits % R**	**Result**	**% R**	**RPD**	**RPD Limit**
10061-01-5	cis-1,3-Dichloropropene		0.00	0.124	50.0	58.1	116	70 - 130	52.1	104	11	30
136777-61-2	m,p-Xylene		0.00	0.123	100	107	107	75 - 130	94.8	95	12	30
104-51-8	n-Butylbenzene		0.00	0.123	50.0	53.0	106	70 - 135	48.2	96	9	30
103-65-1	n-Propylbenzene		0.00	0.727	50.0	57.7	115	70 - 130	51.6	103	11	30
95-47-6	o-Xylene		0.00	0.055	50.0	52.8	106	80 - 120	46.9	94	12	30
135-98-8	sec-Butylbenzene		0.00	0.107	50.0	53.4	107	70 - 125	47.9	96	11	30
1634-04-4	tert-Butyl methyl ether (MTBE)		0.00	0.078	50.0	56.3	113	65 - 125	52.5	105	7	30
98-06-6	tert-Butylbenzene		0.00	0.087	50.0	53.4	107	70 - 130	48.2	96	10	30
156-60-5	trans-1,2-Dichloroethene		0.00	0.077	50.0	58.0	116	60 - 140	51.0	102	13	30
10061-02-6	trans-1,3-Dichloropropene		0.00	0.128	50.0	58.8	118	55 - 140	53.0	106	10	30
Surrogate												
460-00-4	4-Bromofluorobenzene		48	96	50	49.4	99	75 - 120	49.2	98		
1868-53-7	Dibromofluoromethane		49.9	100	50	49.9	100	85 - 115	49.8	100		
2037-26-5	Toluene d8		50.6	101	50	48.9	98	85 - 120	49.3	99		
17060-07-0	1,2-Dichloroethane-d4		49.6	99	50	50.9	102	70 - 120	50.3	101		

Inorganics Quality Control Summary

Analytical Batch	493483	**Client ID**	LF25-MW-RB-01	LF25-MW-RB-01-MS	LF25-MW-RB-01-MSD
Prep Batch	493285	**GCAL ID**	21210270501	21210270502	21210270503
Prep Method	SW-846	**Sample Type**	SAMPLE	MS	MSD
	7470A	**Prep Date**	10/29/2012 11:40	10/29/2012 11:40	10/29/2012 11:40
	Dissolved	**Analytical Date**	10/31/2012 13:14	10/31/2012 13:15	10/31/2012 13:17
		Matrix	Water	Water	Water

SW-846 7470A Dissolved		**Units**	ug/L								
		Result	**RDL**	**Spike Added**	**Result**	**% R**	**Control Limits % R**	**Result**	**% R**	**RPD**	**RPD Limit**
7439-97-6	Mercury	0.00000	0.068	5.00	4.55	91	80 - 120	4.50	90	1	30

Inorganics Quality Control Summary

Analytical Batch	493483	**Client ID**	MB493285			LCS493285		
Prep Batch	493285	**GCAL ID**	1122012			1122013		
Prep Method	SW-846	**Sample Type**	Method Blank			LCS		
	7470A	**Prep Date**	10/29/2012 11:40			10/29/2012 11:40		
		Analytical Date	10/31/2012 13:01			10/31/2012 13:03		
		Matrix	Water			Water		
SW-846 7470A			**Units**	ug/L	**Spike**	**Result**		**Control**
			Result	**RDL**	**Added**		**% R**	**Limits % R**
7439-97-6	Mercury		0.068U	0.068	5.00	4.59	92	80 - 120

Analytical Batch	493483	**Client ID**	LF25-MW-RB-01			LF25-MW-RB-01-MS			LF25-MW-RB-01-MSD			
Prep Batch	493285	**GCAL ID**	21210270501			21210270502			21210270503			
Prep Method	SW-846	**Sample Type**	SAMPLE			MS			MSD			
	7470A	**Prep Date**	10/29/2012 11:40			10/29/2012 11:40			10/29/2012 11:40			
		Analytical Date	10/31/2012 13:04			10/31/2012 13:06			10/31/2012 13:07			
		Matrix	Water			Water			Water			
SW-846 7470A Water			**Units**	ug/L	**Spike**	**Result**		**Control**	**Result**			**RPD**
			Result	**RDL**	**Added**		**% R**	**Limits % R**		**% R**	**RPD**	**Limit**
7439-97-6	Mercury		0.00000	0.068	5.00	4.43	89	80 - 120	4.58	92	3	30

Inorganics Quality Control Summary

Analytical Batch	493541	**Client ID**	MB493286	LCS493286
Prep Batch	493286	**GCAL ID**	1122014	1122015
Prep Method	SW-846	**Sample Type**	Method Blank	LCS
	3010A	**Prep Date**	10/29/2012 11:40	10/29/2012 11:40
		Analytical Date	10/31/2012 17:41	10/31/2012 17:49
		Matrix	Water	Water

SW-846 6010C		**Units**	ug/L	**Spike**	**Result**		**Control**
		Result	**RDL**	**Added**		**% R**	**Limits % R**
7429-90-5	Aluminum	40.1J	30.3	5000	5300	106	80 - 120
7440-36-0	Antimony	3.11U	3.11	500	501	100	80 - 120
7440-38-2	Arsenic	3.59U	3.59	500	513	103	80 - 120
7440-39-3	Barium	0.71U	0.71	500	525	105	80 - 120
7440-41-7	Beryllium	0.10U	0.10	500	527	105	80 - 120
7440-43-9	Cadmium	0.16U	0.16	500	525	105	80 - 120
7440-70-2	Calcium	45.7U	45.7	5000	5310	106	80 - 120
7440-47-3	Chromium	0.26U	0.26	500	521	104	80 - 120
7440-48-4	Cobalt	0.58U	0.58	500	530	106	80 - 120
7440-50-8	Copper	1.01U	1.01	500	512	102	80 - 120
7439-89-6	Iron	12.6U	12.6	5000	5260	105	80 - 120
7439-92-1	Lead	1.96U	1.96	500	506	101	80 - 120
7439-95-4	Magnesium	16.5U	16.5	5000	5330	107	80 - 120
7439-96-5	Manganese	1.31U	1.31	500	519	104	80 - 120
7440-02-0	Nickel	1.13U	1.13	500	531	106	80 - 120
7440-09-7	Potassium	34.6U	34.6	10000	10100	101	80 - 120
7782-49-2	Selenium	4.42U	4.42	500	518	104	80 - 120
7440-22-4	Silver	0.70U	0.70	500	506	101	80 - 120
7440-23-5	Sodium	61.1U	61.1	20000	20300	101	80 - 120
7440-28-0	Thallium	3.04U	3.04	500	511	102	80 - 120
7440-62-2	Vanadium	1.25U	1.25	500	520	104	80 - 120
7440-66-6	Zinc	4.51U	4.51	500	518	104	80 - 120

Inorganics Quality Control Summary

Analytical Batch	493541	**Client ID**	LF25-MW-RB-01	LF25-MW-RB-01-MS	LF25-MW-RB-01-MSD
Prep Batch	493286	**GCAL ID**	21210270501	21210270502	21210270503
Prep Method	SW-846	**Sample Type**	SAMPLE	MS	MSD
	3010A	**Prep Date**	10/29/2012 11:40	10/29/2012 11:40	10/29/2012 11:40
		Analytical Date	10/31/2012 17:55	10/31/2012 18:03	10/31/2012 18:09
		Matrix	Water	Water	Water

SW-846 6010C		**Units**	ug/L	**Spike**	**Result**		**Control**	**Result**			**RPD**
		Result	**RDL**	**Added**		**% R**	**Limits % R**		**% R**	**RPD**	**Limit**
7429-90-5	Aluminum	0.0	30.3	5000	5140	103	80 - 120	4960	99	4	20
7440-36-0	Antimony	0.0	3.11	500	515	103	80 - 120	492	98	5	20
7440-38-2	Arsenic	0.0	3.59	500	538	108	80 - 120	514	103	5	20
7440-39-3	Barium	35.1	0.71	500	536	100	80 - 120	515	96	4	20
7440-41-7	Beryllium	0.0	0.10	500	518	104	80 - 120	496	99	4	20
7440-43-9	Cadmium	0.53	0.16	500	497	99	80 - 120	476	95	4	20
7440-70-2	Calcium	42000	45.7	5000	45100	**62***	80 - 120	43500	**30***	4	20
7440-47-3	Chromium	1.36	0.26	500	498	99	80 - 120	478	95	4	20
7440-48-4	Cobalt	0.86	0.58	500	488	97	80 - 120	466	93	5	20
7440-50-8	Copper	8.08	1.01	500	492	97	80 - 120	473	93	4	20
7439-89-6	Iron	0.0	12.6	5000	5110	102	80 - 120	4970	99	3	20
7439-92-1	Lead	0.0	1.96	500	488	98	80 - 120	467	93	4	20
7439-95-4	Magnesium	40800	16.5	5000	44300	**71***	80 - 120	43200	**48***	3	20
7439-96-5	Manganese	1.98	1.31	500	502	100	80 - 120	483	96	4	20
7440-02-0	Nickel	0.0	1.13	500	474	95	80 - 120	462	92	3	20
7782-49-2	Selenium	7.75	4.42	500	529	104	80 - 120	507	100	4	20
7440-22-4	Silver	0.0	0.70	500	493	99	80 - 120	472	94	4	20
7440-28-0	Thallium	0.0	3.04	500	502	100	80 - 120	483	97	4	20
7440-62-2	Vanadium	30.2	1.25	500	538	102	80 - 120	519	98	4	20
7440-66-6	Zinc	1380	4.51	500	1810	85	80 - 120	1740	**72***	4	20

Analytical Batch	493803	**Client ID**	LF25-MW-RB-01	LF25-MW-RB-01-MS	LF25-MW-RB-01-MSD
Prep Batch	493286	**GCAL ID**	21210270501	21210270502	21210270503
Prep Method	SW-846	**Sample Type**	SAMPLE	MS	MSD
	3010A	**Prep Date**	10/29/2012 11:40	10/29/2012 11:40	10/29/2012 11:40
		Analytical Date	11/03/2012 12:31	11/03/2012 12:38	11/03/2012 12:44
		Matrix	Water	Water	Water

SW-846 6010C		**Units**	ug/L	**Spike**	**Result**		**Control**	**Result**			**RPD**
		Result	**RDL**	**Added**		**% R**	**Limits % R**		**% R**	**RPD**	**Limit**
7440-09-7	Potassium	7070	34.6	10000	17300	102	80 - 120	16400	93	6	20
7440-23-5	Sodium	41400	61.1	20000	60600	96	80 - 120	57700	82	5	20

Inorganics Quality Control Summary

Analytical Batch	493541	**Client ID**	MB493231	LCS493231
Prep Batch	493231	**GCAL ID**	1121701	1121702
Prep Method	SW-846 3005	**Sample Type**	Method Blank	LCS
	Dissolved	**Prep Date**	10/29/2012 11:40	10/29/2012 11:40
		Analytical Date	10/31/2012 14:55	10/31/2012 15:03
		Matrix	Water	Water

SW-846 6010C Dissolved		**Units**	ug/L	**Spike**	**Result**		**Control**
		Result	**RDL**	**Added**		**% R**	**Limits % R**
7429-90-5	Aluminum	37.6J	30.3	5000	5130	103	80 - 120
7440-36-0	Antimony	3.11U	3.11	500	498	100	80 - 120
7440-38-2	Arsenic	3.59U	3.59	500	528	106	80 - 120
7440-39-3	Barium	0.71U	0.71	500	507	101	80 - 120
7440-41-7	Beryllium	0.10U	0.10	500	513	103	80 - 120
7440-43-9	Cadmium	0.16U	0.16	500	513	103	80 - 120
7440-70-2	Calcium	45.7U	45.7	5000	5130	103	80 - 120
7440-47-3	Chromium	0.26U	0.26	500	496	99	80 - 120
7440-48-4	Cobalt	0.58U	0.58	500	529	106	80 - 120
7440-50-8	Copper	1.01U	1.01	500	491	98	80 - 120
7439-89-6	Iron	12.6U	12.6	5000	5110	102	80 - 120
7439-92-1	Lead	1.96U	1.96	500	515	103	80 - 120
7439-95-4	Magnesium	16.5U	16.5	5000	5150	103	80 - 120
7439-96-5	Manganese	1.31U	1.31	500	501	100	80 - 120
7440-02-0	Nickel	1.13U	1.13	500	517	103	80 - 120
7440-09-7	Potassium	42.8J	34.6	10000	10100	101	80 - 120
7782-49-2	Selenium	4.42U	4.42	500	532	106	80 - 120
7440-22-4	Silver	0.70U	0.70	500	493	99	80 - 120
7440-23-5	Sodium	120J	61.1	20000	20400	102	80 - 120
7440-28-0	Thallium	3.04U	3.04	500	513	103	80 - 120
7440-62-2	Vanadium	1.25U	1.25	500	499	100	80 - 120
7440-66-6	Zinc	4.51U	4.51	500	510	102	80 - 120

Inorganics Quality Control Summary

Analytical Batch	493541	**Client ID**	LF25-MW-RB-01	LF25-MW-RB-01-MS	LF25-MW-RB-01-MSD
Prep Batch	493231	**GCAL ID**	21210270501	21210270502	21210270503
Prep Method	SW-846 3005	**Sample Type**	SAMPLE	MS	MSD
	Dissolved	**Prep Date**	10/29/2012 11:40	10/29/2012 11:40	10/29/2012 11:40
		Analytical Date	10/31/2012 15:09	10/31/2012 15:17	10/31/2012 15:23
		Matrix	Water	Water	Water

SW-846 6010C Dissolved		**Units**	ug/L	**Spike**	**Result**		**Control**	**Result**			**RPD**
		Result	**RDL**	**Added**		**% R**	**Limits % R**		**% R**	**RPD**	**Limit**
7429-90-5	Aluminum	46.8	30.3	5000	5090	101	80 - 120	5030	100	1	20
7440-36-0	Antimony	0.0	3.11	500	511	102	80 - 120	503	101	2	20
7440-38-2	Arsenic	0.0	3.59	500	544	109	80 - 120	534	107	2	20
7440-39-3	Barium	34.6	0.71	500	533	100	80 - 120	524	98	2	20
7440-41-7	Beryllium	0.0	0.10	500	517	103	80 - 120	508	102	2	20
7440-43-9	Cadmium	0.38	0.16	500	499	100	80 - 120	490	98	2	20
7440-70-2	Calcium	42200	45.7	5000	46500	85	80 - 120	45800	**72***	1	20
7440-47-3	Chromium	1.32	0.26	500	486	97	80 - 120	477	95	2	20
7440-48-4	Cobalt	0.0	0.58	500	486	97	80 - 120	478	96	2	20
7440-50-8	Copper	6.83	1.01	500	485	96	80 - 120	479	94	1	20
7439-89-6	Iron	0.0	12.6	5000	5100	102	80 - 120	5050	101	0.8	20
7439-92-1	Lead	0.0	1.96	500	491	98	80 - 120	482	96	2	20
7439-95-4	Magnesium	41000	16.5	5000	45500	89	80 - 120	45100	81	0.9	20
7439-96-5	Manganese	0.0	1.31	500	500	100	80 - 120	492	98	2	20
7440-02-0	Nickel	0.0	1.13	500	474	95	80 - 120	467	93	2	20
7782-49-2	Selenium	11.2	4.42	500	535	105	80 - 120	528	103	1	20
7440-22-4	Silver	0.0	0.70	500	492	98	80 - 120	485	97	1	20
7440-28-0	Thallium	0.0	3.04	500	493	99	80 - 120	487	97	1	20
7440-62-2	Vanadium	26.7	1.25	500	530	101	80 - 120	522	99	2	20
7440-66-6	Zinc	1160	4.51	500	1650	99	80 - 120	1620	94	2	20

Analytical Batch	493656	**Client ID**	LF25-MW-RB-01	LF25-MW-RB-01-MS	LF25-MW-RB-01-MSD
Prep Batch	493231	**GCAL ID**	21210270501	21210270502	21210270503
Prep Method	SW-846 3005	**Sample Type**	SAMPLE	MS	MSD
	Dissolved	**Prep Date**	10/29/2012 11:40	10/29/2012 11:40	10/29/2012 11:40
		Analytical Date	11/01/2012 14:04	11/01/2012 14:11	11/01/2012 14:18
		Matrix	Water	Water	Water

SW-846 6010C Dissolved		**Units**	ug/L	**Spike**	**Result**		**Control**	**Result**			**RPD**
		Result	**RDL**	**Added**		**% R**	**Limits % R**		**% R**	**RPD**	**Limit**
7440-09-7	Potassium	7290	34.6	10000	17800	105	80 - 120	17700	104	0.8	20
7440-23-5	Sodium	41800	61.1	20000	63800	110	80 - 120	63200	107	0.9	20

General Chemistry Quality Control Summary

Analytical Batch	493580	**Client ID**	MB493291			LCS493291		
Prep Batch	493291	**GCAL ID**	1122030			1122031		
Prep Method	SM4500 NH3 BE TKN	**Sample Type**	Method Blank			LCS		
		Prep Date	10/30/2012 15:00			10/30/2012 15:00		
		Analytical Date	10/31/2012 13:27			10/31/2012 13:27		
		Matrix	Water			Water		
SM 4500 NH3 BE Ammonia			**Units**	mg/L-N	**Spike**	**Result**		**Control**
			Result	**RDL**	**Added**		**% R**	**Limits % R**
7664-41-7	Ammonia		0.24U	0.24	15.0	14.0	93	80 - 120

Analytical Batch	493580	**Client ID**	LF25-MW-RB-01			LF25-MW-RB-01-MS			LF25-MW-RB-01-MSD			
Prep Batch	493291	**GCAL ID**	21210270501			21210270502			21210270503			
Prep Method	SM4500 NH3 BE TKN	**Sample Type**	SAMPLE			MS			MSD			
		Prep Date	10/30/2012 15:00			10/30/2012 15:00			10/30/2012 15:00			
		Analytical Date	10/31/2012 13:27			10/31/2012 13:27			10/31/2012 13:27			
		Matrix	Water			Water			Water			
SM 4500 NH3 BE Ammonia Water			**Units**	mg/L-N	**Spike**	**Result**		**Control**	**Result**			**RPD**
			Result	**RDL**	**Added**		**% R**	**Limits % R**		**% R**	**RPD**	**Limit**
7664-41-7	Ammonia		0.00	0.24	15.0	14.1	94	74.6 - 125	14.3	95	1	25

Analytical Batch	493580	**Client ID**	LF25-MW-RB-01		1121941DUP		
Prep Batch	493291	**GCAL ID**	21210270501		1122032		
Prep Method	SM4500 NH3 BE TKN	**Sample Type**	SAMPLE		DUP		
		Prep Date	10/30/2012 15:00		10/30/2012 15:00		
		Analytical Date	10/31/2012 13:27		10/31/2012 13:27		
		Matrix	Water		Water		
SM 4500 NH3 BE Ammonia			**Units**	mg/L-N	**Result**		**RPD**
			Result	**RDL**		**RPD**	**Limit**
7664-41-7	Ammonia		0.00	0.24	0.00	0	25

General Chemistry Quality Control Summary

Analytical Batch 493288	**Client ID**	MB493288			LCS493288		
Prep Batch N/A	**GCAL ID**	1122019			1122020		
	Sample Type	Method Blank			LCS		
	Analytical Date	10/27/2012 15:24			10/27/2012 15:41		
	Matrix	Water			Water		
EPA 300.0		**Units**	mg/L	**Spike**	**Result**		**Control**
		Result	**RDL**	**Added**		**% R**	**Limits % R**
16887-00-6	Chloride	0.063U	0.063	2.50	2.38	95.4	79 - 109
14797-65-0	Nitrite	0.015U	0.015	2.50	2.65	106	80 - 120
14797-55-8	Nitrate	0.115U	0.115	2.50	2.40	95.9	80 - 120
14808-79-8	Sulfate	0.115U	0.115	5.00	4.88	97.5	82 - 110

Analytical Batch 493288	**Client ID**	LF25-MW-RB-01			LF25-MW-RB-01-MS			LF25-MW-RB-01-MSD			
Prep Batch N/A	**GCAL ID**	21210270501			21210270502			21210270503			
	Sample Type	SAMPLE			MS			MSD			
	Analytical Date	10/27/2012 15:59			10/27/2012 16:16			10/27/2012 16:34			
	Matrix	Water			Water			Water			
EPA 300.0 Inorganic Anions		**Units**	mg/L	**Spike**	**Result**		**Control**	**Result**			**RPD**
		Result	**RDL**	**Added**		**% R**	**Limits % R**		**% R**	**RPD**	**Limit**
14797-55-8	Nitrate	1.02	0.115	2.50	3.50	99	75 - 125	3.52	99.7	0.57	15
14797-65-0	Nitrite	0.000	0.015	2.50	2.90	116	75 - 125	2.91	116	0.25	15

Analytical Batch 493288	**Client ID**	LF25-MW-RB-01			LF25-MW-RB-01-MS			LF25-MW-RB-01-MSD			
Prep Batch N/A	**GCAL ID**	21210270501			21210270502			21210270503			
	Sample Type	SAMPLE			MS			MSD			
	Analytical Date	10/28/2012 08:21			10/28/2012 08:39			10/28/2012 08:56			
	Matrix	Water			Water			Water			
EPA 300.0 Inorganic Anions		**Units**	mg/L	**Spike**	**Result**		**Control**	**Result**			**RPD**
		Result	**RDL**	**Added**		**% R**	**Limits % R**		**% R**	**RPD**	**Limit**
16887-00-6	Chloride	68.6	6.30	250	316	99	79 - 109	317	99.5	0.4	15
14808-79-8	Sulfate	101	11.5	500	603	100	82 - 110	602	100	0.25	15

General Chemistry Quality Control Summary

Analytical Batch 493413	**Client ID**	MB493413			LCS493413			LCSD493413			
Prep Batch N/A	**GCAL ID**	1122443			1122444			1122445			
	Sample Type	Method Blank			LCS			LCSD			
	Analytical Date	10/30/2012 12:28			10/30/2012 12:55			10/30/2012 13:15			
	Matrix	Water			Water			Water			
SM 5310B TOC		**Units**	mg/L	**Spike**	**Result**		**Control**	**Result**			**RPD**
		Result	**RDL**	**Added**		**% R**	**Limits % R**		**% R**	**RPD**	**Limit**
C-012	Total Organic Carbon	0.30U	0.30	50.0	53.4	107	80 - 120	53.2	106	0.5	25

Analytical Batch 493413	**Client ID**	LF25-MW-RB-01			LF25-MW-RB-01-MS			LF25-MW-RB-01-MSD			
Prep Batch N/A	**GCAL ID**	21210270501			21210270502			21210270503			
	Sample Type	SAMPLE			MS			MSD			
	Analytical Date	10/30/2012 16:02			10/30/2012 16:18			10/31/2012 09:51			
	Matrix	Water			Water			Water			
SM 5310B TOC		**Units**	mg/L	**Spike**	**Result**		**Control**	**Result**			**RPD**
		Result	**RDL**	**Added**		**% R**	**Limits % R**		**% R**	**RPD**	**Limit**
C-012	Total Organic Carbon	5.2	0.30	50.0	53.7	97	75 - 125	52.3	94	3	25

General Chemistry Quality Control Summary

Analytical Batch 493279	**Client ID**	MB493279			LCS493279		
Prep Batch N/A	**GCAL ID**	1121986			1121987		
	Sample Type	Method Blank			LCS		
	Analytical Date	10/27/2012 10:44			10/27/2012 10:45		
	Matrix	Water			Water		
SW-846 7196A Chromium VI		**Units**	ug/L	**Spike**	**Result**		**Control**
		Result	**RDL**	**Added**		**% R**	**Limits % R**
18540-29-9 Chromium VI		4.00U	4.00	500	518	104	80 - 120

Analytical Batch 493279	**Client ID**	LF25-MW-RB-01			LF25-MW-RB-01-MS			LF25-MW-RB-01-MSD			
Prep Batch N/A	**GCAL ID**	21210270501			21210270502			21210270503			
	Sample Type	SAMPLE			MS			MSD			
	Analytical Date	10/27/2012 10:46			10/27/2012 10:47			10/27/2012 10:47			
	Matrix	Water			Water			Water			
SW-846 7196A Chromium VI		**Units**	ug/L	**Spike**	**Result**		**Control**	**Result**			**RPD**
		Result	**RDL**	**Added**		**% R**	**Limits % R**		**% R**	**RPD**	**Limit**
18540-29-9 Chromium VI		0.000	4.00	500	514	103	80 - 120	481	96	7	20

GCAL

7979 GSRI Avenue, Baton Rouge, Louisiana 70820-7402
Phone 225.769.4900 • Fax 225.767.5717

CHAIN OF CUSTODY RECORD

Lab use only	Client Name	Client #	Workorder #	Due Date
	Bhate	4760	212102705	11/02/12

Report to:
Client: Bhate Environmental Associates
Address: 1608 13th Ave S. #300
Birmingham AL
Contact: Tracy Walker
Phone: 205 918 4000
Fax:

Bill to:
Client: Same as report to
Address:
Contact:
Phone:
Fax:

P.O. Number:
Project Name/Number: Cannon AFB D020-001

Sampled By: Ben Stewart Jordan Gibson

Analytical Requests & Method

Lab use only:
Custody Seal used ☑ yes ☐ no
intact ☑ yes ☐ no
Temperature °C 2.7

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	Preservatives	No Containers	8260C (HCL)	Total Metals (6010C/7470B) HNO3	Diss. Metals (6010C/7470B) HNO3	Cr (3+,6+) 7199	Perchlorate 6860	Nitrate + Nitrite 300.1	Ammonia SM4500 (H2SO4)	Sulfate 300.1	Chloride 300.1	TOC SM5310B (HCL)	Remarks:	Lab ID
WG	10/26/12	0900		✓	LF25-MW-Rb-01	yes	10	x	x	x	x	x	x	x	x	x	x		1
WG	10/26/12	0900		✓	LF25-MW-Rb-01-MS	yes	10	x	x	x	x	x	x	x	x	x	x		2
WG	10/26/12	0900		✓	LF25-MW-Rb-01-MSD	yes	11	x	x	x	x	x	x	x	x	x	x		3
WQ	10/26/12	0900			TB-09	yes	3	x											4

Turn Around Time: ☐ 24-48 hrs. ☐ 3 days ☐ 1 week ☑ Standard ☐ Other

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
[signature]		10/26/12	1100
Relinquished by: (Signature) Fedex	Received by: (Signature) [signature]	Date: 10/27/12	Time: 10:00
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Note: Dissolved metals were filtered in field.
#8003 4106 3314

By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.

Matrix[1]: W = water, S = soil, SD = solid, L = liquid, SL = sludge, o = oil, CT = charcoal tube, A = air bag

We cannot accept verbal changes. Please fax written changes to (225) 767-5717

WHITE: CLIENT FINAL REPORT — CANARY: LABORATORY — PINK: CLIENT

GCAL-06 11/98

GCAL
GULF COAST ANALYTICAL LABORATORIES, INC

SAMPLE RECEIVING CHECKLIST

SAMPLE DELIVERY GROUP	212102705
Client 4760 - Bhate Environmental Associates, Inc.	**Transport Method** FEDEX
Profile 235531 - Cannon	**Received By** Saucier, Charlotte
Line Item(s) 1 - Waters	**Receive Date(s)** 10/27/12

CHECKLIST

	Yes	No	NA
Were all samples received using proper thermal preservation?	☑	☐	☐
When used, were all custody seals intact?	☑	☐	☐
Were all samples received in proper containers?	☑	☐	☐
Were all samples received using proper chemical preservation?	☑	☐	☐
Was preservative added to any container at the lab?	☐	☑	☐
Were all containers received in good condition?	☑	☐	☐
Were all VOA vials received with no head space?	☑	☐	☐
Do all sample labels match the Chain of Custody?	☑	☐	☐
Did the Chain of Custody list the sampling technician?	☑	☐	☐
Was the COC maintained i.e. all signatures, dates and time of receipt included?	☑	☐	☐

COOLERS

Airbill	Temp(oC)
8003 4106 3314	2.7

DISCREPANCIES

21210270501 - LF25-MW-RB-01
- Sample received expired

LABORATORY PRESERVATIONS

None

NOTES	CR (3+, 6+) WAS EXPIRED UPON RECEIPT FOR SAMPLE LF25-MW-RB-01

November 15, 2012

Brenda Martinez
GCAL LAB
7979 GSRI AVENUE
BATON ROUGE, LA 70820
TEL: (225) 769-4900
FAX (225) 767-5717

Order No.: 1211018

RE: DoD Perchlorate

Dear Brenda Martinez:

DHL Analytical, Inc. received 1 sample(s) on 11/2/2012 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of DoD QSM Ver 4.2 and NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. This report shall not be reproduced except in full without the written approval of DHL Analytical, Inc. Thank you for using DHL Analytical.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas & DoD Laboratory Certification Number: T104704211-12-8 & DoD ELAP #ADE-1416 v2

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GCAL
GULF COAST ANALYTICAL LABORATORIES, INC
7979 GSRI AVE, BATON ROUGE LA 70820-7402
(225) 769-4900 FAX (225) 767-5717

#121018

Chain of Custody Record

Submitted by
Client: Gulf Coast Analytical Labs
Address: 7979 GSRI Avenue
Baton Rouge, LA 70820
Contact: Brenda Martinez
Phone: (225)769-4900
Fax: (225)767-5717

Bill to
Client: Gulf Coast Analytical Labs
Address: 7979 GSRI Avenue
Baton Rouge, LA 70820
Contact: Brenda Martinez
Phone: (225)769-4900
Fax: (225)767-5717

Analysis Requested

* Our P. O. Number must appear on the Invoice.
* Our Project Number must appear on the final report.

P.O. Number: 12-0930
Project Name/Number: 212102705
Sampled By:

	Matrix	Date	Time (2400)	Comp	Grab	Sample Description	Pre-servatives	No. Containers	PERCHLORATE (6860)	Remarks:	Lab ID
01	W	10/26/2012	9:00		X	LF25-MW-RB-01		1	X	21210270501	
	W	10/26/2012	9:00		X	LF25-MW-RB-01 MS		1	X	21210270502	
	W	10/26/2012	9:00			LF25-MW-RB-01 MSD		1	X	21210270503	

Turn Around Time: 24 - 48 hrs ___ 3 days ___ 1 week X standard other ___

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
[signature]	Fed Ex	11/1/12	1700
[signature]	[signature]	11/2/12	1020

Note: Receiving temp 0.80 Therm ASF Custody seal intact

Please fax results to (225)767-5717
PLEASE RETURN ICE CHESTS TO 7979 GSRI AVE.

Matrix: W = water, S=Soil, SD=Solid, L=Liquid, SL=Sludge, O=Oil, CT=Charcoal Tube, OVM=Organic Vapor Monitor, XT=XAD Tube, A=Air Bag, SUM=Summa Canister

CHARLOTTE SAUCIER (225) 769-4900
GCAL
7979 GSRI RD

BATON ROUGE, LA 70802
UNITED STATES US

SHIP DATE: 01NOV12
ACTWGT: 14.0 LB MAN
CAD: 0924693/CAFE2605

BILL SENDER

TO

DHL
2300 DOUBLE CREEK

ROUND ROCK TX 78664
(225) 769-4900 REF:
INV:
PO: DEPT:

FedEx Express

E

J121312081601 26

FRI - 02 NOV A1
PRIORITY OVERNIGHT

TRK# 0201 5443 0509 2817

A8 BSMA

78664
TX-US AUS

Part # 156148-434 RIT2 07/11

GCAL

CUSTODY SEAL

Date Sealed: 11-1-12

Sealed By: JBH

GCAL-17

This package confirms to the conditions and limitations specified in 49 CFR 173.4

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name GCAL LAB

Date Received: 11/2/2012

Work Order Number 1211018

Received by JB

Checklist completed by: _____ Signature | 11/2/2012 Date

Reviewed by _____ Initials | 11/2/2012 Date

Carrier name: FedEx 1day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	0.8 °C
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Adjusted? _____ Checked by _____

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Page 1 of 1

DHL Analytical, Inc.

Laboratory Review Checklist: Reportable Data

Project Name: DoD Perchlorate	**Date:** 11/15/12
Reviewer Name: Carlos Castro	**Laboratory Work Order:** 1211018
Prep Batch Number(s): See Prep Dates Report	**Run Batch:** See Analytical Dates Report

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-Custody (C-O-C)**					
		1) Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				R1-01
		2) Were all departures from standard conditions described in an exception report?			X		
R2	OI	**Sample and Quality Control (QC) Identification**					
		1) Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		2) Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test Reports**					
		1) Were all samples prepared and analyzed within holding times?	X				
		2) Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		3) Were calculations checked by a peer or supervisor?	X				
		4) Were all analyte identifications checked by a peer or supervisor?	X				
		5) Were sample quantitation limits reported for all analytes not detected?	X				
		6) Were all results for soil and sediment samples reported on a dry weight basis?			X		
		7) Were % moisture (or solids) reported for all soil and sediment samples?			X		
		8) If required for the project, TICs reported?			X		
R4	O	**Surrogate Recovery Data**					
		1) Were surrogates added prior to extraction?			X		
		2) Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test Reports/Summary Forms for Blank Samples**					
		1) Were appropriate type(s) of blanks analyzed?	X				
		2) Were blanks analyzed at the appropriate frequency?	X				
		3) Where method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		4) Were blank concentrations < MQL?	X				
R6	OI	**Laboratory Control Samples (LCS):**					
		1) Were all COCs included in the LCS?	X				
		2) Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		3) Were LCSs analyzed at the required frequency?	X				
		4) Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		5) Does the detectability data document the laboratory's capability to detect the COCs at te MDL used to calculate the SQLs?	X				
		6) Was the LCSD RPD within QC limits (if applicable)?	X				
R7	OI	**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Data**					
		1) Were the project/method specified analytes included in the MS and MSD?	X				
		2) Were MS/MSD analyzed at the appropriate frequency?	X				
		3) Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			R7-03
		4) Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical Duplicate Data**					
		1) Were appropriate analytical duplicates analyzed for each matrix?			X		
		2) Were analytical duplicates analyzed at the appropriate frequency?			X		
		3) Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	**Method Quantitation Limits (MQLs):**					
		1) Are the MQLs for each method analyte included in the laboratory data package?	X				
		2) Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		3) Are unadjusted MQLs included in the laboratory data package?	X				
R10	OI	**Other Problems/Anomalies**					
		1) Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		2) Were all necessary corrective actions performed for the reported data?	X				
		3) Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	X				

1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3 NA = Not applicable.
4 NR = Not Reviewed.
5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

DHL Analytical, Inc.
Laboratory Review Checklist (continued): Supporting Data

Project Name: DoD Perchlorate	**Date:** 11/15/12
Reviewer Name: Carlos Castro	**Laboratory Work Order:** 1211018

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial Calibration (ICAL)**					
		1) Were response factors and/or relative response factors for each analyte within QC limits?	X				
		2) Were percent RSDs or correlation coefficient criteria met?	X				
		3) Was the number of standards recommended in the method used for all analytes?	X				
		4) Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		5) Are ICAL data available for all instruments used?	X				
		6) Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and Continuing calibration Verification (ICCV and CCV) and Continuing Calibration blank (CCB)**					
		1) Was the CCV analyzed at the method-required frequency?	X				
		2) Were percent differences for each analyte within the method-required QC limits?	X				
		3) Was the ICAL curve verified for each analyte?	X				
		4) Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass Spectral Tuning**					
		1) Was the appropriate compound for the method used for tuning?	X				
		2) Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal Standards (IS)**					
		1) Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw Data (NELAC section 1 appendix A glossary, and section 5.12)**					
		1) Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		2) Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual Column Confirmation**					
		1) Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively Identified Compounds (TICs)**					
		1) If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) Results**					
		1) Were percent recoveries within method QC limits?			X		
S9	I	**Serial Dilutions, Post Digestion Spikes, and Method of Standard Additions**					
		1) Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	**Method Detection Limit (MDL) Studies**					
		1) Was a MDL study performed for each reported analyte?	X				
		2) Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency Test Reports**					
		1) Was the lab's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards Documentation**					
		1) Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/Analyte Identification Procedures**					
		1) Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of Analyst Competency (DOC)**					
		1) Was DOC conducted consistent with NELAC Chapter 5C?	X				
		2) Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/Validation Documentation for Methods (NELAC Chap 5)**					
		1) Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory Standard Operating Procedures (SOPs)**					
		1) Are laboratory SOPs current and on file for each method performed?	X				

1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3 NA = Not applicable.
4 NR = Not Reviewed.
5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Data Package Signature Page

This data package consists of:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;
R2 Sample identification cross-reference;
R3 Test reports (analytical data sheets) for each environmental sample that includes:
  a) Items consistent with NELAC 5.13
  b) dilution factors,
  c) preparation methods,
  d) cleanup methods, and
  e) if required for the project, tentatively identified compounds (TICs).
R4 Surrogate recovery data including:
  a) Calculated recovery (%R), and
  b) The laboratory's surrogate QC limits.
R5 Test reports/summary forms for blank samples;
R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  a) LCS spiking amounts,
  b) Calculated %R for each analyte, and
  c) The laboratory's LCS QC limits.
R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  a) Samples associated with the MS/MSD clearly identified,
  b) MS/MSD spiking amounts,
  c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  d) Calculated %Rs and relative percent differences (RPDs), and
  e) The laboratory's MS/MSD QC limits
R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  a) the amount of analyte measured in the duplicate,
  b) the calculated RPD, and
  c) the laboratory's QC limits for analytical duplicates.
R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix;
R10 Other problems or anomalies.

The Exception Report for every "No" or "Not Reviewed (NR)" item in laboratory review checklist.

Release Statement: I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

John DuPont – General Manager

Scott Schroeder – Technical Director

Signature	11/15/12 Date

DHL Analytical, Inc. **Date:** *15-Nov-12*

CLIENT: GCAL LAB
Project: DoD Perchlorate
Lab Order: 1211018

CASE NARRATIVE

This case narrative describes abnormalities and deviations that may affect the results and summarizes all known issues that need to be highlighted for the data user to assess the results. This case narrative and the report contents are compliant with DoD QSM Ver 4.2 and NELAC. The "U" flag , in the Analytical Report, indicates the results for that sample are nondetect.

Samples were analyzed using the methods outlined in the following references:

Method E332.0 or SW6860 - Perchlorate Analysis (Parameter is ELAP Accredited but not NELAC Certified)

Exception Report R1-01

The sample was received on and log-in performed on 11/2/12. A total of 1 sample was received and it was analyzed. The sample arrived in good condition and was properly packaged.

Exception Report R7-03

For Perchlorate analysis performed on 11/9/12 the matrix spike and matrix spike duplicate recoveries were out of control limits. These are flagged accordingly in the QC summary report. The sample selected for the matrix spike and matrix spike duplicate was from this work order. The LCS was within control limits. No further corrective actions were taken.

A summary of project communication follows:

Request for quote was sent to DHL Analytical from the client, via email on 5/5/11 and the quote was sent to client via email on 5/5/11. Email for work approved by both parties on 5/18/11 with P.O number 12-0930.

Client sent samples in own containers.

This sample delivery group arrived at DHL Analytical 11/2/12.

DHL Analytical, Inc.

Date: *15-Nov-12*

CLIENT: GCAL LAB
Project: DoD Perchlorate
Lab Order: 1211018

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1211018-01	LF25-MW-RB -01		10/26/12 09:00 AM	11/2/2012

DHL Analytical, Inc.

15-Nov-12

Lab Order: 1211018
Client: GCAL LAB
Project: DoD Perchlorate

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1211018-01A	LF25-MW-RB -01	10/26/12 09:00 AM	Aqueous	SW6860	Perchlorate Prep	11/09/12 10:27 AM	54622

DHL Analytical, Inc.

15-Nov-12

Lab Order: 1211018
Client: GCAL LAB
Project: DoD Perchlorate

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1211018-01A	LF25-MW-RB -01	Aqueous	SW6860	Perchlorate - Water	54622	1	11/09/12 12:40 PM	ICMS_121109A

DHL Analytical, Inc.

Date: *15-Nov-12*

CLIENT:	GCAL LAB	**Client Sample ID:**	LF25-MW-RB -01
Project:	DoD Perchlorate	**Lab ID:**	1211018-01
Project No:	212102705	**Collection Date:**	10/26/12 09:00 AM
Lab Order:	1211018	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
PERCHLORATE - WATER		**SW6860**					Analyst: **CZ**
Perchlorate	0.00198	0.000100	0.000300	N	mg/L	1	11/09/12 12:40 PM

Qualifiers:				
	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *15-Nov-12*

CLIENT: GCAL LAB
Work Order: 1211018
Project: DoD Perchlorate

ANALYTICAL QC SUMMARY REPORT

RunID: **ICMS_121109A**

The QC data in batch 54622 applies to the following samples: 1211018-01A

Sample ID: **MB-54622** Batch ID: **54622** TestNo: **SW6860** Units: **mg/L**
SampType: **MBLK** Run ID: **ICMS_121109A** Analysis Date: **11/9/2012 11:11:00 AM** Prep Date: **11/9/2012**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Perchlorate	0.000100	0.000300								NU

Sample ID: **1211018-01AMS** Batch ID: **54622** TestNo: **SW6860** Units: **mg/L**
SampType: **MS** Run ID: **ICMS_121109A** Analysis Date: **11/9/2012 12:52:00 PM** Prep Date: **11/9/2012**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Perchlorate	0.00218	0.000300	0.000300	0.00198	69.1	85	115			SN

Sample ID: **1211018-01AMSD** Batch ID: **54622** TestNo: **SW6860** Units: **mg/L**
SampType: **MSD** Run ID: **ICMS_121109A** Analysis Date: **11/9/2012 1:04:00 PM** Prep Date: **11/9/2012**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Perchlorate	0.00233	0.000300	0.000300	0.00198	118	85	115	6.53	20	SN

Sample ID: **LCS-54622** Batch ID: **54622** TestNo: **SW6860** Units: **mg/L**
SampType: **LCS** Run ID: **ICMS_121109A** Analysis Date: **11/9/2012 1:16:00 PM** Prep Date: **11/9/2012**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Perchlorate	0.000312	0.000300	0.000300	0	104	85	115			N

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: GCAL LAB
Work Order: 1211018
Project: DoD Perchlorate

ANALYTICAL QC SUMMARY REPORT

RunID: **ICMS_121109A**

Sample ID: **ICV-121108** Batch ID: **R63403** TestNo: **SW6860** Units: **mg/L**
SampType: **ICV** Run ID: **ICMS_121109A** Analysis Date: **11/9/2012 9:50:00 AM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Perchlorate	0.00184	0.000300	0.00200	0	91.8	85	115			N

Sample ID: **ICS-121108** Batch ID: **R63403** TestNo: **SW6860** Units: **mg/L**
SampType: **ICS** Run ID: **ICMS_121109A** Analysis Date: **11/9/2012 10:02:00 AM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Perchlorate	0.000290	0.000300	0.000300	0	96.8	85	115			N

Sample ID: **LCVL-121108** Batch ID: **R63403** TestNo: **SW6860** Units: **mg/L**
SampType: **LCVL** Run ID: **ICMS_121109A** Analysis Date: **11/9/2012 10:44:00 AM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Perchlorate	0.000238	0.000300	0.000200	0	119	70	130			N

Sample ID: **CCV1-121108** Batch ID: **R63403** TestNo: **SW6860** Units: **mg/L**
SampType: **CCV** Run ID: **ICMS_121109A** Analysis Date: **11/9/2012 1:28:00 PM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Perchlorate	0.00500	0.000300	0.00500	0	100	85	115			N

Sample ID: **LCVL2-121108** Batch ID: **R63403** TestNo: **SW6860** Units: **mg/L**
SampType: **LCVL** Run ID: **ICMS_121109A** Analysis Date: **11/9/2012 1:53:00 PM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Perchlorate	0.000191	0.000300	0.000200	0	95.5	70	130			N

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

DHL Analytical, Inc.

15-Nov-12

Lab Order: 1211018
Client: GCAL LAB
Project: DoD Perchlorate

Sequence Report

Run ID: ICMS_121109A

Sample ID	Client Sample ID	Test Number	Batch ID	Dilution	Analysis Date	Prep Date	Matrix
INTIAL CALIBRATION SUMMARY	-----	SW6860	R63403	1	11/9/2012		A
INTERNAL STANDARD SUMMARY	-----	SW6860	R63403	1	11/9/2012		A
ICV-121108	-----	SW6860	R63403	1	11/9/2012 9:50:00 AM		A
ICS-121108	-----	SW6860	R63403	1	11/9/2012 10:02:00 AM		A
ICB-12108	-----	SW6860	R63403	1	11/9/2012 10:14:00 AM		A
LCVL-121108	-----	SW6860	R63403	1	11/9/2012 10:44:00 AM		A
LCS-54622	-----	SW6860	54622	1	11/9/2012 10:58:00 AM	11/9/2012 10:27:48 AM	A
MB-54622	-----	SW6860	54622	1	11/9/2012 11:11:00 AM	11/9/2012 10:27:48 AM	A
1211018-01A	LF25-MW-RB -01	SW6860	54622	1	11/9/2012 12:40:00 PM	11/9/2012 10:27:48 AM	A
1211018-01AMS	LF25-MW-RB -01MS	SW6860	54622	1	11/9/2012 12:52:00 PM	11/9/2012 10:27:48 AM	A
1211018-01AMSD	LF25-MW-RB -01MSD	SW6860	54622	1	11/9/2012 1:04:00 PM	11/9/2012 10:27:48 AM	A
LCS-54622	-----	SW6860	54622	1	11/9/2012 1:16:00 PM	11/9/2012 10:27:48 AM	A
CCV1-121108	-----	SW6860	R63403	1	11/9/2012 1:28:00 PM		A
CCB1-121108	-----	SW6860	R63403	1	11/9/2012 1:41:00 PM		A
LCVL2-121108	-----	SW6860	R63403	1	11/9/2012 1:53:00 PM		A

Initial Calibration Summary

Control Program:	**ClO4PGM_120523**
Quantif. Method:	**ClO4_120523**
Recording Time:	**11/9/2012 9:50**
Injection Volume:	**200.0**
Test:	**Perchlorate**

Sample Name	Area counts*min Perchlorate_99 SIM_01B	Area counts*min Perchlorate_101 SIM_02B	Area counts*min ISTD_03 SIM_03B
ClO4_0.3_1	506.7150	217.961	1678.968
ClO4_0.5_1	938.3354	317.275	1642.060
ClO4_1.0_1	1858.8183	590.921	1651.572
ClO4_2.0_1	3430.4242	1065.045	1587.084
ClO4_5.0_1	8460.8517	2700.013	1442.137
ClO4_7.0_1	11820.8679	3799.330	1409.731
CLO4_10.0_1	16631.2688	5327.615	1396.272

Peak	Cal Type	Offset	Slope	Curve	Coeff. Det.
Perchlorate_99	XQOff	0.707	112.352	0.899	99.923
Perchlorate_101	XQOff	-1.155	37.952	0.045	99.764

Internal Standard Summary

Sequence Name:	**121108_CLO4**
Control Program:	**ClO4PGM_120523**
Quantif. Method:	**ClO4_120523**
Injection Volume:	**200.0**
Test:	**Perchlorate**

	Area Counts
ISTD 107 Cal Average	1544
Low Limit (50%)	772
High Limit (150%)	2316

Sample Name	**Area counts*min ISTD_03 SIM_03B**
LRB1-120523	1576.971
ClO4_0.3_1	1678.968
ClO4_0.5_1	1642.060
ClO4_1.0_1	1651.572
ClO4_2.0_1	1587.084
ClO4_5.0_1	1442.137
ClO4_7.0_1	1409.731
CLO4_10.0_1	1396.272
LRB2-120523	1616.530
SSCV-120523	1645.976
ICV-121108	1604.875
ICS-121108	1719.421
ICB-12108	1515.304
LCVL-121108	1463.643
LCS-54622	1404.505
MB-54622	1346.014
1211016-01A	1432.702
1211016-02A	1508.475
1211016-03A	1471.552
1211017-01A	1243.786
1211017-02A	1212.367
1211018-01A	1295.062
1211018-01AMS	1272.831
1211018-01AMSD	1199.633
LCS-54622	1341.589
CCV1-121108	938.043

CCB1-121108	1068.915
LCVL2-121108	1146.044
1211019-01A	1499.009
1211062-01A	1301.043
1211062-02A	1250.523
1211067-01A	1236.725
1211067-02A	1326.311
1211067-03A	1160.474
1211068-01A	1072.106
1211069-01A	1324.908
1211062-01A	1144.980
1211062-02A	1175.490
CCV2-121108	1034.212
CCB2-121108	1246.360
LCVL3-121108	2234.168

Appendix C
Investigation-Derived Waste Characterization Results

TETRA TECH

March 13, 2013
8094-13-X-001

Mr. Matthew Higginbotham
377 MSG/CEVR
2050 Wyoming Blvd., SE
Kirtland AFB, NM 87117-5270

Subject: Recommendation for Soil Investigation-Derived Waste for Monitoring Well Installation at Landfill 25, Solid Waste Management Unit 97, Cannon Air Force Base, New Mexico; Contract No. W9128F-10-D0019, Task Order 0001; Project No. CZQZ20087600M

Dear Mr. Higginbotham:

Investigation-derived waste (IDW) in the form of soil cuttings generated from well installation operations at Landfill 25 (LF-25), Solid Waste Management Unit 97 was sampled on October 4, 2012 The soil IDW sample was analyzed in accordance with the comment received from the New Mexico Environment Department on the *Final Work Plan for Monitoring Well Installation at Landfill No. 25 (LF-25/Solid Waste Management Unit [SWMU] 97)*:

- Volatile organic compounds (VOCs)
- Semivolatile organic compounds (SVOCs)
- Target Analyte List (TAL) metals
- Total petroleum hydrocarbons (TPH) as gasoline-range organics (GRO) and diesel-range organics (DRO)
- RCRA waste characteristics: ignitability, pH, cyanide and sulfide reactivity, and paint filter liquids

Results for detected VOCs, SVOCs, and TAL metals were evaluated using the New Mexico Environment Department's residential soil screening levels (SSLs) (June 2012 revision). Based on this evaluation, there is no unacceptable risk associated with the soil cuttings. Tetra Tech, Inc. (Tetra Tech) recommends leaving the soil cuttings at their current location by removing them from the plastic sheeting in which they are contained, and spreading them across the ground.

The plastic sheeting can be treated as general refuse and disposed on Base in a dumpster since the analytical results show no unacceptable risk and TPH-GRO and TPH-DRO and RCRA waste characteristics indicate the material is acceptable for disposal at a permitted general refuse/municipal landfill. Attachment 1 to this

Tetra Tech, Inc.
143 Union Boulevard, Lakewood, CO 80228
Tel 303.988.2202 Fax 303.980.3539 www.tetratech.com

letter presents a summary of the analytical results and the associated evaluation. The analytical laboratory results for this sample are included as Attachment 2 to this letter.

This letter and attachments will be presented as Appendix C in the *Draft Well Installation Completion Report for Landfill 25, Solid Waste Management Unit 97*. Copies of this transmittal have also been distributed as indicated below. If you have any questions, please contact me at (303) 980-3537 or carol.rieger@tetratech.com.

Sincerely,
Tetra Tech, Inc.

Carol L. Rieger, PMP
Project Manager

Attachments
cc: H. Santiago, USACE Omaha District
M. Gaballa, Cannon AFB
S. Kottkamp, Cannon AFB
Project File

Attachment 1. Summary of Results for Soil IDW Sample Collected from LF-25 Well Installation

Parameter	LF-25 IDW-S	Background Value [1]	Concentration > Background	NMED SSL[2]	Toxicity Endooint	Risk Ratio[3]	NMED DAF 20 Level
Metals (mg/kg)							
Aluminum	4,600	12,214	No	78,000	n	--	54800
Antimony	ND	--	--	--	--	--	--
Arsenic	1.4	4.3	No	3.9	c	--	0.031
Barium	63	890	No	15,600	n	--	301
Beryllium	0.17	0.73	No	156	n	--	57.7
Cadmium	0.1	1.3	No	70.3	n	--	1.37
Calcium	28,000	237,498	No	NE	n	--	--
Chromium [4]	4.2	13.3	No	2.97	c	--	0.00831
Cobalt	1.5	4.7	No	NE	n	--	--
Copper	1.8	8.3	No	3,130	n	--	51.5
Iron	5,100	13,148	No	54,800	n	--	646
Lead	2.4	8.7	No	400	IEUBK	--	NE
Magnesium	2,000	19,300	No	NE	n	--	--
Manganese	130	333	No	1,860	n	--	57.2
Mercury	ND	--	--	--	--	--	--
Nickel	3.4	14.9	No	1,560	n	--	47.7
Potassium	660	2,512	No	NE	n	--	--
Selenium	0.37	1.1	No	391	n	--	0.965
Silver	ND	--	--	--	--	--	--
Sodium	100	1,227	No	NE	n	--	--
Thallium	0.094	2.65	No	0.782	n	--	0.0260
Vanadium	8.7	32.8	No	391	n	--	183
Zinc	8.1	30.6	No	23,500	n	--	682
VOCs (mg/kg)							
Acetone	0.008	--	--	66,600	n	1.20E-07	3.86
Methylene chloride	0.002	--	--	409	n	4.89E-06	0.0412
SVOCs (mg/kg)							
bis(2-ethylhexyl) phthalate	0.057	--	--	347	c	1.64E-04	8.62
Cyanide (mg/kg)							
Cyanide	0.150	--	--	46.9	n	3.20E-03	0.22

Sum of Ratios	
Carcinogens	0.000164
Noncarcinogens	0.000005

Other Characteristics

Parameter	LF-25 IDW-S	Screening Level	Comment
Total Petroleum Hydrocarbons (mg/kg)			
Gasoline range organics	ND	440	Less than Screening Level
Diesel range organics	7.8	520	Less than Screening Level
Flashpoint (degrees C)	>95.0	95.0	Not ignitable
pH	9.73	<2 or >12	Not corrosive

NOTES

[1] Values are background concentrations for Cannon AFB (Woodward-Clyde, 1997).

[2] Table A-1, NMED Residential Soil Screening Levels, June 2012.

[3] Risk ratios were calculated as the maximum detected concentration divided by the NMED SSL for all detected organic compounds and metals detected at levels greater than background values. The sum of ratios for each enpoint are calculated and compared to 1.0. Ratios greater than 1.0 indicate probable risk exists for human health due to exposure to soil.

Sum of Risk Ratios	
Noncarcinogens	*Carcinogens*
0.000005	*0.000164*

[4] Value for trivalent chromium was used; value for total chromium not established by NMED.

c	carcinogenic effect endpoint	--	Not applicable
DAF	Dilution-attenuation factor	**ND**	Not detected
IEUBK	Integrated Exposure Uptake Biokinetic Model for Lead	**NMED**	New Mexico Environmental Department
mg/kg	Milligrams per kilogram	**SSL**	Soil screening level
n	Noncarcinogenic effect endpoint		

ATTACHMENT 2

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-34263-1
Client Project/Site: Cannon AFB

For:
Tetra Tech EC, Inc.
143 Union Boulevard
Suite 1010
Lakewood, Colorado 80228-1824

Attn: Jonathan Karnath

M. Elaine Walker

Authorized for release by:
10/23/2012 3:05:43 PM

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

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Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
B	Blank contamination: The analyte was detected above one-half the reporting limit in an associated blank.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
M	Manual integrated compound.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

GC VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
M	Manual integrated compound.

GC Semi VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
M	Manual integrated compound.

Metals

Qualifier	Qualifier Description
J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U	Undetected at the Limit of Detection.
Q	One or more quality control criteria failed.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

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
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 280-34263-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE
Client: Tetra Tech EC, Inc.
Project: Cannon AFB
Report Number: 280-34263-1

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

One sample was received on 10/08/2012; the sample arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 4.5ºC.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Sample IDW-S (280-34263-1) was analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The sample was analyzed on 10/12/2012.

Acetone 2-Hexanone, and Methylene Chloride were detected in method blank MB 280-141936/1-A at levels that were above the method detection limits but below the reporting limits. The values should be considered estimates, and have been flagged “J”. If the associated sample reported a result above the MDL and/or RL, the result has been “B” flagged.

The initial calibration verification (ICV) for analytical batch 280-141315 exceeded control criteria for Dichlorodifluoromethane at 24.18%. The associated sample results were ND for this analyte, and the ICV was biased high; therefore, the data have been reported.

The following compounds were outside control limits in the continuing calibration verification (CCV) associated with batch 280-141923: 4-Methyl-2-Pentanone at 28.5% and 2-Butanone at 23.2%. These compounds are not classified as Calibration Check Compounds (CCCs) in the reference method, and the laboratory defaults to in-house criteria for evaluation. Due to the large number of analytes contained in the CCV, the laboratory's SOP allows for 3 DOD analytes to be outside limits of 20%, but within 30%; therefore, the data have been reported.

No other difficulties were encountered during the VOC analysis.

All other quality control parameters were within the acceptance limits.

SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)

Sample IDW-S (280-34263-1) was analyzed for semivolatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8270C. The sample was prepared on 10/11/2012 and analyzed on 10/14/2012.

No difficulties were encountered during the SVOC analysis.

All quality control parameters were within the acceptance limits.

GASOLINE RANGE ORGANICS (GRO)

Sample IDW-S (280-34263-1) was analyzed for gasoline range organics (GRO) in accordance with EPA SW-846 Method 8015C - GRO. The sample was analyzed on 10/09/2012.

No difficulties were encountered during the GRO analysis.

Job ID: 280-34263-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

All quality control parameters were within the acceptance limits.

DIESEL RANGE ORGANICS

Sample IDW-S (280-34263-1) was analyzed for diesel range organics in accordance with EPA SW-846 Method 8015C - DRO. The sample was prepared on 10/10/2012 and analyzed on 10/16/2012.

No difficulties were encountered during the DRO analysis.

All quality control parameters were within the acceptance limits.

POLYCHLORINATED BIPHENYLS (PCBS)

Sample IDW-S (280-34263-1) was analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082. The samples were prepared on 10/10/2012 and analyzed on 10/15/2012.

The following samples underwent a sulfuric acid clean-up, via EPA Method 3665A, to reduce matrix interferences: IDW-S (280-34263-1), IDW-S (280-34263-1 MS), IDW-S (280-34263-1 MSD), (LCS 280-141445/2-A), and (MB 280-141445/1-A).

No other difficulties were encountered during the PCBs analysis.

All other quality control parameters were within the acceptance limits.

TOTAL METALS (ICP)

Sample IDW-S (280-34263-1) was analyzed for Total Metals (ICP) in accordance with EPA SW-846 Method 6010C. The sample was prepared on 10/10/2012 and analyzed on 10/11/2012.

Due to the high concentration, Calcium and Iron failed the recovery criteria low for the matrix spike (MS) and matrix spike duplicate (MSD) of sample IDW-S (280-34263-1) in batch 280-141746. Aluminum failed the recovery criteria high. The presence of the '4' qualifier in the report indicates where the analyte concentration in the unspiked sample exceeded four times the spiking amount. The associated laboratory control sample (LCS) recoveries met acceptance criteria, and the sample results have been flagged accordingly.

The CCVL associated with prep batch 280-141253 recovered above the established control criteria for Calcium in analytical batch 280-141746. The associated samples contained detects for this analyte greater than 10 times the RL, the Method Blank was not detect for Calcium, and the LCS recovered within the established control limits; therefore the data have been reported.

No other difficulties were encountered during the metals analysis.

All other quality control parameters were within the acceptance limits.

TOTAL METALS (ICP/MS)

Sample IDW-S (280-34263-1) was analyzed for total metals in accordance with EPA SW-846 Method 6020. The sample was prepared and analyzed on 10/10/2012.

Copper and Thallium were detected in method blank MB 280-141252/1-A at levels that were above the method detection limits but below the reporting limits. The values should be considered estimates, and have been flagged “J”. However, because the result concentrations were less than ½ the respective reporting limits, no corrective action was necessary.

The matrix spike (MS) and matrix spike duplicate (MSD) for prep batch 280-141252, performed on sample IDW-S (280-34263-1), were outside the established control limits for Barium, Manganese, and Antimony.
The presence of the '4' qualifier in the report indicates where the analyte concentration in the unspiked sample exceeded four times the spiking amount. The associated laboratory control sample (LCS) recoveries met acceptance criteria, and the sample results have been flagged accordingly.

The ICSA solution, which is used as the ICP-MS interference check standard, shows results for several metals at levels above the DoD acceptance limits (>LOD). For prep batch 280-141252, the initial ICSA solution was above the DoD acceptance limit for Cadmium. We

Job ID: 280-34263-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

believe the solution contains trace impurities of this element and that the result is not an artifact of matrix interference. This result agrees with that found by the manufacturer of the ICSA solution. The associated sample results have been flagged "Q" for Cadmium.

No other difficulties were encountered during the metals analysis.

All other quality control parameters were within the acceptance limits.

TOTAL MERCURY (CVAA)
Sample IDW-S (280-34263-1) was analyzed for total mercury (CVAA) in accordance with EPA SW-846 Method 7471B. The sample was prepared and analyzed on 10/10/2012.

No difficulties were encountered during the mercury analysis.

All quality control parameters were within the acceptance limits.

IGNITABILITY
Sample IDW-S (280-34263-1) was analyzed for Ignitability in accordance with EPA SW-846 Method 7.1.2. The sample was analyzed on 10/10/2012.

No difficulties were encountered during the ignitability analysis.

All quality control parameters were within the acceptance limits.

TOTAL CYANIDE
Sample IDW-S (280-34263-1) was analyzed for total cyanide in accordance with EPA SW-846 Method 9012B. The sample was prepared on 10/09/2012 and analyzed on 10/10/2012.

No difficulties were encountered during the cyanide analysis.

All quality control parameters were within the acceptance limits.

TOTAL SULFIDE
Sample IDW-S (280-34263-1) was analyzed for total sulfide in accordance with EPA SW-846 Method 9034. The sample was prepared and analyzed on 10/09/2012.

No difficulties were encountered during the sulfide analysis.

All quality control parameters were within the acceptance limits.

PH
Sample IDW-S (280-34263-1) was analyzed for pH in accordance with EPA SW-846 Method 9045C. The sample was leached on 10/12/2012 and analyzed on 10/12/2012.

No difficulties were encountered during the pH analysis.

All quality control parameters were within the acceptance limits.

PERCENT SOLIDS
Sample IDW-S (280-34263-1) was analyzed for percent solids in accordance with EPA SW846 3550C. The sample was analyzed on 10/10/2012.

No difficulties were encountered during the % solids analysis.

All quality control parameters were within the acceptance limits.

Detection Summary

Client: Tetra Tech EC, Inc.
Project/Site: Cannon AFB

TestAmerica Job ID: 280-34263-1

Client Sample ID: IDW-S

Lab Sample ID: 280-34263-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Acetone	7.9	J B	21	5.5	ug/Kg	1	☼	8260B/DoD	Total/NA
Methylene Chloride	2.2	J B	5.2	1.6	ug/Kg	1	☼	8260B/DoD	Total/NA
Bis(2-ethylhexyl) phthalate	57	J	340	48	ug/Kg	1	☼	8270C/DoD	Total/NA
Diesel Range Organics [C10-C28]	7.8	M	4.0	0.68	mg/Kg	1	☼	8015C	Total/NA
Aluminum	4600	J	47	1.5	mg/Kg	1	☼	6010C	Total/NA
Calcium	28000	J Q	95	13	mg/Kg	1	☼	6010C	Total/NA
Iron	5100	J	19	3.6	mg/Kg	1	☼	6010C	Total/NA
Magnesium	2000		19	3.5	mg/Kg	1	☼	6010C	Total/NA
Potassium	660		280	39	mg/Kg	1	☼	6010C	Total/NA
Sodium	100	J	470	56	mg/Kg	1	☼	6010C	Total/NA
Arsenic	1400		490	49	ug/Kg	1	☼	6020	Total/NA
Barium	63000	J	240	69	ug/Kg	1	☼	6020	Total/NA
Beryllium	170		97	22	ug/Kg	1	☼	6020	Total/NA
Cadmium	100	Q	97	9.1	ug/Kg	1	☼	6020	Total/NA
Chromium	4200		190	74	ug/Kg	1	☼	6020	Total/NA
Cobalt	1500		97	6.5	ug/Kg	1	☼	6020	Total/NA
Copper	1800	J	2400	69	ug/Kg	1	☼	6020	Total/NA
Lead	2400		97	18	ug/Kg	1	☼	6020	Total/NA
Manganese	130000	J	97	32	ug/Kg	1	☼	6020	Total/NA
Nickel	3400		340	25	ug/Kg	1	☼	6020	Total/NA
Selenium	370	J	490	130	ug/Kg	1	☼	6020	Total/NA
Thallium	94	J	97	3.4	ug/Kg	1	☼	6020	Total/NA
Vanadium	8700		490	37	ug/Kg	1	☼	6020	Total/NA
Zinc	8100		2400	310	ug/Kg	1	☼	6020	Total/NA
Cyanide, Total	0.15	J	0.53	0.11	mg/Kg	1	☼	9012B	Total/NA

Analyte	Result	Qualifier	LOQ	LOQ	Unit	Dil Fac	D	Method	Prep Type
pH adj. to 25 deg C	9.73		0.100	0.100	SU	1		9045C	Soluble

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Ignitability	no				No Unit	1		7.1.2	Total/NA

Method Summary

Client: Tetra Tech EC, Inc.
Project/Site: Cannon AFB

TestAmerica Job ID: 280-34263-1

Method	Method Description	Protocol	Laboratory
8260B/DoD	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
8270C/DoD	Semivolatile Organic Compounds (GC/MS)	SW846	TAL DEN
8015C	Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)	SW846	TAL DEN
8015C	Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)	SW846	TAL DEN
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL DEN
6010C	Metals (ICP)	SW846	TAL DEN
6020	Metals (ICP/MS)	SW846	TAL DEN
7471B	Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)	SW846	TAL DEN
7.1.2	Ignitablity,Solids	SW846	TAL DEN
9012B	Cyanide, Total andor Amenable	SW846	TAL DEN
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	TAL DEN
9045C	pH	SW846	TAL DEN
D 2216	Percent Moisture	ASTM	TAL DEN

Protocol References:

ASTM = ASTM International

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

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Tetra Tech EC, Inc.
Project/Site: Cannon AFB

TestAmerica Job ID: 280-34263-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-34263-1	IDW-S	Solid	10/05/12 08:15	10/08/12 08:40

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

Client Sample ID: IDW-S | **Lab Sample ID: 280-34263-1**
Date Collected: 10/05/12 08:15 | **Matrix: Solid**
Date Received: 10/08/12 08:40 | **Percent Solids: 95.1**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	5.2	0.58	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
1,1,1-Trichloroethane	1.0	U	5.2	0.54	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
1,2,3-Trichloropropane	1.0	U	5.2	0.84	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
1,2,3-Trichlorobenzene	1.0	U	5.2	0.77	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
1,1-Dichloroethane	0.82	U	5.2	0.22	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
1,2,4-Trichlorobenzene	1.0	U	5.2	0.75	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
1,2-Dibromo-3-Chloropropane	1.0	U	10	0.62	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
1,1-Dichloropropene	1.0	U	5.2	0.56	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
1,1-Dichloroethene	1.0	U	5.2	0.61	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
1,1,2-Trichloroethane	1.0	U	5.2	0.91	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
1,1,2,2-Tetrachloroethane	1.0	U	5.2	0.63	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
1,2,4-Trimethylbenzene	1.0	U	5.2	0.60	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
1,2-Dichlorobenzene	1.0	U	5.2	0.46	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
1,2-Dichloroethane	1.0	U	5.2	0.72	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
1,3-Dichlorobenzene	1.0	U	5.2	0.49	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
1,3-Dichloropropane	1.0	U	5.2	0.53	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
1,3,5-Trimethylbenzene	1.0	U	5.2	0.59	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
2-Butanone (MEK)	6.6	U	21	1.9	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
1,4-Dichlorobenzene	1.0	U	5.2	0.80	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
1,2-Dichloropropane	1.0	U	5.2	0.57	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
2,2-Dichloropropane	1.0	U	5.2	0.45	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
2-Hexanone	10	U	21	5.0	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
4-Methyl-2-pentanone (MIBK)	10	U	21	4.5	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
4-Isopropyltoluene	1.0	U	5.2	0.51	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Benzene	1.0	U	5.2	0.48	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Acetone	**7.9**	**J B**	21	5.5	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Bromobenzene	1.0	U	5.2	0.51	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Bromoform	0.82	U	5.2	0.24	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Bromomethane	1.0	U	10	0.52	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Carbon tetrachloride	1.0	U	5.2	0.65	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Carbon disulfide	1.0	U	5.2	0.43	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
2-Chlorotoluene	1.0	U	5.2	0.53	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
4-Chlorotoluene	1.0	U	5.2	0.80	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Chlorobenzene	1.0	U	5.2	0.56	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Chlorobromomethane	1.0	U	5.2	0.31	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Chlorodibromomethane	1.0	U	5.2	0.59	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Chloroform	1.0	U	10	0.30	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Chloroethane	1.0	U	10	0.92	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Chloromethane	1.0	U	10	0.79	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
cis-1,2-Dichloroethene	1.0	U	5.2	0.58	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
cis-1,3-Dichloropropene	2.1	U	5.2	1.3	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Dibromomethane	1.0	U	5.2	0.87	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Dichlorobromomethane	0.82	U	5.2	0.23	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Dichlorodifluoromethane	1.0	U	10	0.54	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Ethylbenzene	1.0	U	5.2	0.69	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Hexachlorobutadiene	1.0	U	5.2	0.57	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Isopropylbenzene	1.0	U	5.2	0.61	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Ethylene Dibromide	1.0	U	5.2	0.54	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Methylene Chloride	**2.2**	**J B**	5.2	1.6	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Methyl tert-butyl ether	1.0	U	21	0.35	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
m-Xylene & p-Xylene	2.1	U	3.3	1.1	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1

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

Client Sample ID: IDW-S — **Lab Sample ID: 280-34263-1**
Date Collected: 10/05/12 08:15 — **Matrix: Solid**
Date Received: 10/08/12 08:40 — **Percent Solids: 95.1**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	1.0	U	5.2	0.65	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
n-Butylbenzene	1.0	U	5.2	0.58	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
N-Propylbenzene	1.0	U	5.2	0.60	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
o-Xylene	1.0	U	5.2	0.63	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Styrene	1.0	U	5.2	0.65	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
sec-Butylbenzene	1.0	U	5.2	0.79	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
tert-Butylbenzene	1.0	U	5.2	0.52	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
trans-1,2-Dichloroethene	1.0	U	5.2	0.40	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
trans-1,3-Dichloropropene	1.0	U	5.2	0.69	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Tetrachloroethene	1.0	U	5.2	0.61	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Toluene	1.0	U	5.2	0.71	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Trichloroethene	0.82	U	5.2	0.24	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Trichlorofluoromethane	2.1	U	10	1.1	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
Vinyl chloride	2.1	U	5.2	1.4	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1
1,2-Dichloroethene, Total	1.0	U	5.2	0.40	ug/Kg	☼	10/12/12 16:00	10/12/12 20:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*85 - 115*	*10/12/12 16:00*	*10/12/12 20:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*61 - 129*	*10/12/12 16:00*	*10/12/12 20:54*	*1*
4-Bromofluorobenzene (Surr)	*103*		*85 - 120*	*10/12/12 16:00*	*10/12/12 20:54*	*1*
Dibromofluoromethane (Surr)	*103*		*71 - 126*	*10/12/12 16:00*	*10/12/12 20:54*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Client Sample ID: IDW-S — **Lab Sample ID: 280-34263-1**
Date Collected: 10/05/12 08:15 — **Matrix: Solid**
Date Received: 10/08/12 08:40 — **Percent Solids: 95.1**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	18	U	340	11	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Acenaphthylene	34	U	340	18	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Anthracene	34	U	340	18	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Benzidine	4100	U	4200	1000	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Benzo[a]anthracene	34	U	340	21	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Benzoic acid	680	U	1700	340	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Benzo[b]fluoranthene	34	U	340	27	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Benzo[k]fluoranthene	68	U	340	42	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Benzyl alcohol	34	U	340	10	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Bis(2-chloroethoxy)methane	68	U	340	24	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Bis(2-chloroethyl)ether	34	U	340	17	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
4-Bromophenyl phenyl ether	34	U	340	20	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Butyl benzyl phthalate	68	U	340	45	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
2,4-Dimethylphenol	130	U	340	68	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Dimethyl phthalate	34	U	340	24	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
4,6-Dinitro-2-methylphenol	680	U	1700	340	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
2,4-Dinitrophenol	700	U	1700	350	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
2,4-Dinitrotoluene	130	U	340	68	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
2,6-Dinitrotoluene	68	U	340	29	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Fluoranthene	68	U	340	37	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Fluorene	34	U	340	19	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
1,2-Diphenylhydrazine	34	U	340	23	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Hexachlorobenzene	68	U	340	30	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: IDW-S
Date Collected: 10/05/12 08:15
Date Received: 10/08/12 08:40

Lab Sample ID: 280-34263-1
Matrix: Solid
Percent Solids: 95.1

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobutadiene	68	U	340	10	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Hexachloroethane	34	U	340	22	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
N-Nitrosodiphenylamine	34	U	340	22	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
N-Nitrosodi-n-propylamine	68	U	340	32	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
1,4-Dichlorobenzene	34	U	340	14	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
2-Chloronaphthalene	34	U	340	10	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
2-Chlorophenol	34	U	340	22	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
4-Chlorophenyl phenyl ether	68	U	340	22	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Chrysene	34	U	340	28	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Dibenz(a,h)anthracene	34	U	340	20	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Dibenzofuran	34	U	340	21	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Benzo[g,h,i]perylene	34	U	340	17	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Benzo[a]pyrene	34	U	340	21	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Di-n-butyl phthalate	34	U	340	30	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
1,2-Dichlorobenzene	34	U	340	23	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
1,3-Dichlorobenzene	34	U	340	12	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
3,3'-Dichlorobenzidine	340	U	1700	93	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
2,4-Dichlorophenol	68	U	340	10	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Diethyl phthalate	34	U	680	27	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Indeno[1,2,3-cd]pyrene	34	U	340	23	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Isophorone	34	U	340	18	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
2-Methylnaphthalene	34	U	340	20	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
2-Methylphenol	34	U	340	13	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Naphthalene	68	U	340	32	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
2-Nitroaniline	68	U	1700	52	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
3-Nitroaniline	140	U	1700	76	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
4-Nitroaniline	130	U	1700	75	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Nitrobenzene	34	U	340	23	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
2-Nitrophenol	68	U	340	10	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
4-Nitrophenol	340	U	1700	100	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Pyrene	34	U	420	13	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Pentachlorophenol	700	U	1700	340	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Phenanthrene	34	U	340	18	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
1,2,4-Trichlorobenzene	34	U	340	29	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
2,4,5-Trichlorophenol	130	U	340	10	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
2,4,6-Trichlorophenol	68	U	340	10	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Phenol	34	U	340	19	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Carbazole	70	U	340	37	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
N-Nitrosodimethylamine	68	U	540	38	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Bis(2-ethylhexyl) phthalate	**57**	**J**	340	48	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
Di-n-octyl phthalate	68	U	340	15	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
3 & 4 Methylphenol	68	U	340	34	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
4-Chloro-3-methylphenol	130	U	340	68	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
2,2'-oxybis[1-chloropropane]	34	U	340	24	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
4-Chloroaniline	130	U	340	85	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
2,6-Dichlorophenol	130	U	340	72	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1
N-Nitrosopyrrolidine	130	U	340	66	ug/Kg	☼	10/11/12 14:17	10/14/12 13:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*80*		*45 - 105*	*10/11/12 14:17*	*10/14/12 13:44*	*1*
2-Fluorophenol (Surr)	*84*		*35 - 105*	*10/11/12 14:17*	*10/14/12 13:44*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: IDW-S — **Lab Sample ID: 280-34263-1**
Date Collected: 10/05/12 08:15 — **Matrix: Solid**
Date Received: 10/08/12 08:40 — **Percent Solids: 95.1**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	79		35 - 100	10/11/12 14:17	10/14/12 13:44	1
Terphenyl-d14 (Surr)	85		30 - 125	10/11/12 14:17	10/14/12 13:44	1
2,4,6-Tribromophenol (Surr)	84		35 - 125	10/11/12 14:17	10/14/12 13:44	1
Phenol-d5 (Surr)	85		40 - 100	10/11/12 14:17	10/14/12 13:44	1

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Client Sample ID: IDW-S — **Lab Sample ID: 280-34263-1**
Date Collected: 10/05/12 08:15 — **Matrix: Solid**
Date Received: 10/08/12 08:40 — **Percent Solids: 95.1**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	0.56	U	1.2	0.34	mg/Kg	☼	10/09/12 10:24	10/09/12 17:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	93		77 - 123	10/09/12 10:24	10/09/12 17:10	1

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Client Sample ID: IDW-S — **Lab Sample ID: 280-34263-1**
Date Collected: 10/05/12 08:15 — **Matrix: Solid**
Date Received: 10/08/12 08:40 — **Percent Solids: 95.1**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**7.8**	**M**	4.0	0.68	mg/Kg	☼	10/10/12 16:10	10/16/12 03:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl (Surr)	69	M	49 - 115	10/10/12 16:10	10/16/12 03:19	1

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

Client Sample ID: IDW-S — **Lab Sample ID: 280-34263-1**
Date Collected: 10/05/12 08:15 — **Matrix: Solid**
Date Received: 10/08/12 08:40 — **Percent Solids: 95.1**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1221	20	U	33	16	ug/Kg	☼	10/10/12 16:45	10/15/12 10:39	1
PCB-1016	10	U	33	5.1	ug/Kg	☼	10/10/12 16:45	10/15/12 10:39	1
PCB-1232	10	U	33	5.1	ug/Kg	☼	10/10/12 16:45	10/15/12 10:39	1
PCB-1242	10	U	33	9.1	ug/Kg	☼	10/10/12 16:45	10/15/12 10:39	1
PCB-1248	10	U	33	5.6	ug/Kg	☼	10/10/12 16:45	10/15/12 10:39	1
PCB-1254	10	U	33	5.5	ug/Kg	☼	10/10/12 16:45	10/15/12 10:39	1
PCB-1260	10	U	33	2.6	ug/Kg	☼	10/10/12 16:45	10/15/12 10:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	86		40 - 135	10/10/12 16:45	10/15/12 10:39	1

Method: 6010C - Metals (ICP)

Client Sample ID: IDW-S — **Lab Sample ID: 280-34263-1**
Date Collected: 10/05/12 08:15 — **Matrix: Solid**
Date Received: 10/08/12 08:40 — **Percent Solids: 95.1**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**4600**	**J**	47	1.5	mg/Kg	☼	10/10/12 14:00	10/11/12 16:06	1

Method: 6010C - Metals (ICP) (Continued)

Client Sample ID: IDW-S — **Lab Sample ID: 280-34263-1**
Date Collected: 10/05/12 08:15 — **Matrix: Solid**
Date Received: 10/08/12 08:40 — **Percent Solids: 95.1**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	28000	J Q	95	13	mg/Kg	☼	10/10/12 14:00	10/11/12 16:06	1
Iron	5100	J	19	3.6	mg/Kg	☼	10/10/12 14:00	10/11/12 16:06	1
Magnesium	2000		19	3.5	mg/Kg	☼	10/10/12 14:00	10/11/12 16:06	1
Potassium	660		280	39	mg/Kg	☼	10/10/12 14:00	10/11/12 16:06	1
Sodium	100	J	470	56	mg/Kg	☼	10/10/12 14:00	10/11/12 16:06	1

Method: 6020 - Metals (ICP/MS)

Client Sample ID: IDW-S — **Lab Sample ID: 280-34263-1**
Date Collected: 10/05/12 08:15 — **Matrix: Solid**
Date Received: 10/08/12 08:40 — **Percent Solids: 95.1**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	39	U J	190	14	ug/Kg	☼	10/10/12 14:00	10/10/12 23:02	1
Arsenic	1400		490	49	ug/Kg	☼	10/10/12 14:00	10/10/12 23:02	1
Barium	63000	J	240	69	ug/Kg	☼	10/10/12 14:00	10/10/12 23:02	1
Beryllium	170		97	22	ug/Kg	☼	10/10/12 14:00	10/10/12 23:02	1
Cadmium	100	Q	97	9.1	ug/Kg	☼	10/10/12 14:00	10/10/12 23:02	1
Chromium	4200		190	74	ug/Kg	☼	10/10/12 14:00	10/10/12 23:02	1
Cobalt	1500		97	6.5	ug/Kg	☼	10/10/12 14:00	10/10/12 23:02	1
Copper	1800	J	2400	69	ug/Kg	☼	10/10/12 14:00	10/10/12 23:02	1
Lead	2400		97	18	ug/Kg	☼	10/10/12 14:00	10/10/12 23:02	1
Manganese	130000	J	97	32	ug/Kg	☼	10/10/12 14:00	10/10/12 23:02	1
Nickel	3400		340	25	ug/Kg	☼	10/10/12 14:00	10/10/12 23:02	1
Selenium	370	J	490	130	ug/Kg	☼	10/10/12 14:00	10/10/12 23:02	1
Silver	58	U	97	20	ug/Kg	☼	10/10/12 14:00	10/10/12 23:02	1
Thallium	94	J	97	3.4	ug/Kg	☼	10/10/12 14:00	10/10/12 23:02	1
Vanadium	8700		490	37	ug/Kg	☼	10/10/12 14:00	10/10/12 23:02	1
Zinc	8100		2400	310	ug/Kg	☼	10/10/12 14:00	10/10/12 23:02	1

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Client Sample ID: IDW-S — **Lab Sample ID: 280-34263-1**
Date Collected: 10/05/12 08:15 — **Matrix: Solid**
Date Received: 10/08/12 08:40 — **Percent Solids: 95.1**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	15	U	18	6.0	ug/Kg	☼	10/10/12 11:30	10/10/12 13:05	1

General Chemistry

Client Sample ID: IDW-S — **Lab Sample ID: 280-34263-1**
Date Collected: 10/05/12 08:15 — **Matrix: Solid**
Date Received: 10/08/12 08:40 — **Percent Solids: 95.1**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.15	J	0.53	0.11	mg/Kg	☼	10/09/12 09:13	10/10/12 15:54	1
Sulfide	0.53	U	5.3	2.5	mg/Kg	☼	10/09/12 07:37	10/09/12 13:16	1

Analyte	Result	Qualifier	LOQ	LOQ	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	4.9		0.10	0.10	%			10/10/12 11:40	1

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability	no				No Unit			10/10/12 09:16	1

Client Sample Results

Client: Tetra Tech EC, Inc.
Project/Site: Cannon AFB

TestAmerica Job ID: 280-34263-1

General Chemistry - Soluble

Client Sample ID: IDW-S
Date Collected: 10/05/12 08:15
Date Received: 10/08/12 08:40

Lab Sample ID: 280-34263-1
Matrix: Solid

Analyte	Result	Qualifier	LOQ	LOQ	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	9.73		0.100	0.100	SU			10/12/12 10:32	1

Surrogate Summary

Client: Tetra Tech EC, Inc.
Project/Site: Cannon AFB

TestAmerica Job ID: 280-34263-1

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

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	12DCE	BFB	DBFM
Lab Sample ID	Client Sample ID	(85-115)	(61-129)	(85-120)	(71-126)
280-34263-1	IDW-S	94	102	103	103
LCS 280-141923/4	Lab Control Sample	95	100	103	101
MB 280-141936/1-A	Method Blank	94	94	99	99

Surrogate Legend

TOL = Toluene-d8 (Surr)
12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	TPH	TBP	PHL
Lab Sample ID	Client Sample ID	(45-105)	(35-105)	(35-100)	(30-125)	(35-125)	(40-100)
280-34263-1	IDW-S	80	84	79	85	84	85
LCS 280-141610/2-A	Lab Control Sample	80	81	77	87	93	82
MB 280-141610/1-A	Method Blank	78	79	76	89	83	80

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPH = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)
PHL = Phenol-d5 (Surr)

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		TFT1
Lab Sample ID	Client Sample ID	(77-123)
280-34263-1	IDW-S	93
LCS 280-141122/1-A	Lab Control Sample	106
LCSD 280-141122/2-A	Lab Control Sample Dup	106
MB 280-141122/3-A	Method Blank	103

Surrogate Legend

TFT = a,a,a-Trifluorotoluene

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		OTPH1
Lab Sample ID	Client Sample ID	(49-115)
280-34263-1	IDW-S	69 M
LCS 280-141410/2-A	Lab Control Sample	74 M
MB 280-141410/1-A	Method Blank	71

Surrogate Summary

Client: Tetra Tech EC, Inc.
Project/Site: Cannon AFB

TestAmerica Job ID: 280-34263-1

Surrogate Legend

OTPH = o-Terphenyl (Surr)

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

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	**Client Sample ID**	**DCB1 (40-135)**							
280-34263-1	IDW-S	86							
280-34263-1 MS	IDW-S	87							
280-34263-1 MSD	IDW-S	82							
LCS 280-141445/2-A	Lab Control Sample	95							
MB 280-141445/1-A	Method Blank	97							

Surrogate Legend

DCB = DCB Decachlorobiphenyl

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

Lab Sample ID: LCS 280-141923/4
Matrix: Solid
Analysis Batch: 141923

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	44.9		ug/Kg		90	75 - 125
1,1,1-Trichloroethane	50.0	43.4		ug/Kg		87	70 - 135
1,2,3-Trichloropropane	50.0	45.0	M	ug/Kg		90	65 - 130
1,2,3-Trichlorobenzene	50.0	49.7		ug/Kg		99	60 - 135
1,1-Dichloroethane	50.0	43.2		ug/Kg		86	75 - 125
1,2,4-Trichlorobenzene	50.0	43.4		ug/Kg		87	65 - 130
1,2-Dibromo-3-Chloropropane	50.0	43.0		ug/Kg		86	40 - 135
1,1-Dichloropropene	50.0	42.6		ug/Kg		85	70 - 135
1,1-Dichloroethene	50.0	43.4		ug/Kg		87	65 - 135
1,1,2-Trichloroethane	50.0	44.8		ug/Kg		90	60 - 125
1,1,2,2-Tetrachloroethane	50.0	42.5		ug/Kg		85	55 - 130
1,2,4-Trimethylbenzene	50.0	45.0		ug/Kg		90	65 - 135
1,2-Dichlorobenzene	50.0	43.0		ug/Kg		86	75 - 120
1,2-Dichloroethane	50.0	47.6		ug/Kg		95	70 - 135
1,3-Dichlorobenzene	50.0	43.7		ug/Kg		87	70 - 125
1,3-Dichloropropane	50.0	43.8		ug/Kg		88	75 - 125
1,3,5-Trimethylbenzene	50.0	45.9		ug/Kg		92	65 - 135
2-Butanone (MEK)	200	270		ug/Kg		135	30 - 160
1,4-Dichlorobenzene	50.0	42.5		ug/Kg		85	70 - 125
1,2-Dichloropropane	50.0	43.0		ug/Kg		86	70 - 120
2,2-Dichloropropane	50.0	45.3		ug/Kg		91	65 - 135
2-Hexanone	200	218		ug/Kg		109	45 - 145
4-Methyl-2-pentanone (MIBK)	200	229		ug/Kg		115	45 - 145
4-Isopropyltoluene	50.0	45.9		ug/Kg		92	75 - 135
Benzene	50.0	42.2		ug/Kg		84	75 - 125
Acetone	200	208		ug/Kg		104	20 - 160
Bromobenzene	50.0	44.7		ug/Kg		89	65 - 120
Bromoform	50.0	44.2		ug/Kg		88	55 - 135
Bromomethane	50.0	50.4		ug/Kg		101	30 - 160
Carbon tetrachloride	50.0	45.0		ug/Kg		90	65 - 135
Carbon disulfide	50.0	33.1		ug/Kg		66	45 - 160
2-Chlorotoluene	50.0	43.6		ug/Kg		87	70 - 130
4-Chlorotoluene	50.0	44.2		ug/Kg		88	75 - 125
Chlorobenzene	50.0	42.9		ug/Kg		86	75 - 125
Chlorobromomethane	50.0	45.5		ug/Kg		91	70 - 125
Chlorodibromomethane	50.0	46.4		ug/Kg		93	65 - 130
Chloroform	50.0	44.4		ug/Kg		89	70 - 125
Chloroethane	50.0	49.7		ug/Kg		99	40 - 155
Chloromethane	50.0	52.9		ug/Kg		106	50 - 130
cis-1,2-Dichloroethene	50.0	44.4		ug/Kg		89	65 - 125
cis-1,3-Dichloropropene	50.0	45.0		ug/Kg		90	70 - 125
Dibromomethane	50.0	45.5		ug/Kg		91	75 - 130
Dichlorobromomethane	50.0	46.5		ug/Kg		93	70 - 130
Dichlorodifluoromethane	50.0	43.9		ug/Kg		88	35 - 135
Ethylbenzene	50.0	44.0		ug/Kg		88	75 - 125
Hexachlorobutadiene	50.0	43.5		ug/Kg		87	55 - 140
Isopropylbenzene	50.0	45.4		ug/Kg		91	75 - 130
Ethylene Dibromide	50.0	44.5		ug/Kg		89	70 - 125
Methylene Chloride	50.0	42.7		ug/Kg		85	55 - 140

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

Lab Sample ID: LCS 280-141923/4
Matrix: Solid
Analysis Batch: 141923

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl tert-butyl ether	50.0	44.4		ug/Kg		89	67 - 119
m-Xylene & p-Xylene	100	85.5		ug/Kg		86	80 - 125
Naphthalene	50.0	40.5		ug/Kg		81	40 - 125
n-Butylbenzene	50.0	44.9		ug/Kg		90	65 - 140
N-Propylbenzene	50.0	44.4		ug/Kg		89	65 - 135
o-Xylene	50.0	43.8		ug/Kg		88	75 - 125
Styrene	50.0	44.8		ug/Kg		90	75 - 125
sec-Butylbenzene	50.0	45.1		ug/Kg		90	65 - 130
tert-Butylbenzene	50.0	45.0		ug/Kg		90	65 - 130
trans-1,2-Dichloroethene	50.0	43.2		ug/Kg		86	65 - 135
trans-1,3-Dichloropropene	50.0	46.4		ug/Kg		93	65 - 125
Tetrachloroethene	50.0	43.6		ug/Kg		87	65 - 140
Toluene	50.0	41.6		ug/Kg		83	70 - 125
Trichloroethene	50.0	42.6		ug/Kg		85	75 - 125
Trichlorofluoromethane	50.0	51.2		ug/Kg		102	25 - 185
Vinyl chloride	50.0	47.6		ug/Kg		95	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*95*		*85 - 115*
1,2-Dichloroethane-d4 (Surr)	*100*		*61 - 129*
4-Bromofluorobenzene (Surr)	*103*		*85 - 120*
Dibromofluoromethane (Surr)	*101*		*71 - 126*

Lab Sample ID: MB 280-141936/1-A
Matrix: Solid
Analysis Batch: 141923

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 141936

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	5.0	0.56	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
1,1,1-Trichloroethane	1.0	U	5.0	0.52	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
1,2,3-Trichloropropane	1.0	U	5.0	0.81	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
1,2,3-Trichlorobenzene	1.0	U	5.0	0.75	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
1,1-Dichloroethane	0.80	U	5.0	0.21	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.73	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
1,2-Dibromo-3-Chloropropane	1.0	U	10	0.60	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
1,1-Dichloropropene	1.0	U	5.0	0.54	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
1,1-Dichloroethene	1.0	U	5.0	0.59	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
1,1,2-Trichloroethane	1.0	U	5.0	0.88	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
1,1,2,2-Tetrachloroethane	1.0	U	5.0	0.61	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
1,2,4-Trimethylbenzene	1.0	U	5.0	0.58	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
1,2-Dichlorobenzene	1.0	U	5.0	0.45	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
1,2-Dichloroethane	1.0	U	5.0	0.70	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
1,3-Dichlorobenzene	1.0	U	5.0	0.48	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
1,3-Dichloropropane	1.0	U	5.0	0.51	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
1,3,5-Trimethylbenzene	1.0	U	5.0	0.57	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
2-Butanone (MEK)	6.4	U	20	1.8	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
1,4-Dichlorobenzene	1.0	U	5.0	0.78	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
1,2-Dichloropropane	1.0	U	5.0	0.55	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
2,2-Dichloropropane	1.0	U	5.0	0.44	ug/Kg		10/12/12 16:00	10/12/12 19:28	1

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

Lab Sample ID: MB 280-141936/1-A
Matrix: Solid
Analysis Batch: 141923

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 141936

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2-Hexanone	9.63	J	20	4.9	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
4-Methyl-2-pentanone (MIBK)	10	U	20	4.4	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
4-Isopropyltoluene	1.0	U	5.0	0.49	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Benzene	1.0	U	5.0	0.47	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Acetone	11.7	J	20	5.4	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Bromobenzene	1.0	U	5.0	0.49	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Bromoform	0.80	U	5.0	0.23	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Bromomethane	1.0	U	10	0.50	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Carbon tetrachloride	1.0	U	5.0	0.63	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Carbon disulfide	1.0	U	5.0	0.42	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
2-Chlorotoluene	1.0	U	5.0	0.51	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
4-Chlorotoluene	1.0	U	5.0	0.78	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Chlorobenzene	1.0	U	5.0	0.54	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Chlorobromomethane	1.0	U	5.0	0.30	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Chlorodibromomethane	1.0	U	5.0	0.57	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Chloroform	1.0	U	10	0.29	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Chloroethane	1.0	U	10	0.89	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Chloromethane	1.0	U	10	0.77	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
cis-1,2-Dichloroethene	1.0	U	5.0	0.56	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
cis-1,3-Dichloropropene	2.0	U	5.0	1.3	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Dibromomethane	1.0	U	5.0	0.84	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Dichlorobromomethane	0.80	U	5.0	0.22	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Dichlorodifluoromethane	1.0	U	10	0.52	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Ethylbenzene	1.0	U	5.0	0.67	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Hexachlorobutadiene	1.0	U	5.0	0.55	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Isopropylbenzene	1.0	U	5.0	0.59	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Ethylene Dibromide	1.0	U	5.0	0.52	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Methylene Chloride	2.89	J	5.0	1.6	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Methyl tert-butyl ether	1.0	U	20	0.34	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
m-Xylene & p-Xylene	2.0	U	3.2	1.0	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Naphthalene	1.0	U	5.0	0.63	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
n-Butylbenzene	1.0	U	5.0	0.56	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
N-Propylbenzene	1.0	U	5.0	0.58	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
o-Xylene	1.0	U	5.0	0.61	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Styrene	1.0	U	5.0	0.63	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
sec-Butylbenzene	1.0	U	5.0	0.77	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
tert-Butylbenzene	1.0	U	5.0	0.50	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
trans-1,2-Dichloroethene	1.0	U	5.0	0.39	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
trans-1,3-Dichloropropene	1.0	U	5.0	0.67	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Tetrachloroethene	1.0	U	5.0	0.59	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Toluene	1.0	U	5.0	0.69	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Trichloroethene	0.80	U	5.0	0.23	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Trichlorofluoromethane	2.0	U	10	1.0	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
Vinyl chloride	2.0	U	5.0	1.3	ug/Kg		10/12/12 16:00	10/12/12 19:28	1
1,2-Dichloroethene, Total	1.0	U	5.0	0.39	ug/Kg		10/12/12 16:00	10/12/12 19:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*85 - 115*	*10/12/12 16:00*	*10/12/12 19:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*61 - 129*	*10/12/12 16:00*	*10/12/12 19:28*	*1*

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

Lab Sample ID: MB 280-141936/1-A
Matrix: Solid
Analysis Batch: 141923

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 141936

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*85 - 120*	*10/12/12 16:00*	*10/12/12 19:28*	*1*
Dibromofluoromethane (Surr)	*99*		*71 - 126*	*10/12/12 16:00*	*10/12/12 19:28*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-141610/1-A
Matrix: Solid
Analysis Batch: 142046

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 141610

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	16	U	310	9.8	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Acenaphthylene	31	U	310	16	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Anthracene	31	U	310	16	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Benzidine	3800	U	3800	940	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Benzo[a]anthracene	31	U	310	19	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Benzoic acid	630	U	1500	310	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Benzo[b]fluoranthene	31	U	310	25	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Benzo[k]fluoranthene	63	U	310	38	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Benzyl alcohol	31	U	310	9.5	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Bis(2-chloroethoxy)methane	63	U	310	22	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Bis(2-chloroethyl)ether	31	U	310	16	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
4-Bromophenyl phenyl ether	31	U	310	18	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Butyl benzyl phthalate	63	U	310	41	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
2,4-Dimethylphenol	120	U	310	63	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Dimethyl phthalate	31	U	310	22	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
4,6-Dinitro-2-methylphenol	630	U	1500	310	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
2,4-Dinitrophenol	640	U	1500	320	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
2,4-Dinitrotoluene	120	U	310	63	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
2,6-Dinitrotoluene	63	U	310	27	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Fluoranthene	63	U	310	34	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Fluorene	31	U	310	17	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
1,2-Diphenylhydrazine	31	U	310	21	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Hexachlorobenzene	63	U	310	28	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Hexachlorobutadiene	63	U	310	9.5	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Hexachloroethane	31	U	310	20	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
N-Nitrosodiphenylamine	31	U	310	20	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
N-Nitrosodi-n-propylamine	63	U	310	30	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
1,4-Dichlorobenzene	31	U	310	13	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
2-Chloronaphthalene	31	U	310	9.5	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
2-Chlorophenol	31	U	310	20	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
4-Chlorophenyl phenyl ether	63	U	310	20	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Chrysene	31	U	310	26	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Dibenz(a,h)anthracene	31	U	310	18	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Dibenzofuran	31	U	310	19	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Benzo[g,h,i]perylene	31	U	310	15	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Benzo[a]pyrene	31	U	310	19	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Di-n-butyl phthalate	31	U	310	28	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
1,2-Dichlorobenzene	31	U	310	21	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
1,3-Dichlorobenzene	31	U	310	11	ug/Kg		10/11/12 14:17	10/14/12 10:45	1

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 280-141610/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 142046 — **Prep Batch: 141610**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
3,3'-Dichlorobenzidine	310	U	1500	86	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
2,4-Dichlorophenol	63	U	310	9.5	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Diethyl phthalate	31	U	630	25	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Indeno[1,2,3-cd]pyrene	31	U	310	21	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Isophorone	31	U	310	16	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
2-Methylnaphthalene	31	U	310	18	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
2-Methylphenol	31	U	310	12	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Naphthalene	63	U	310	30	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
2-Nitroaniline	63	U	1500	48	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
3-Nitroaniline	130	U	1500	70	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
4-Nitroaniline	120	U	1500	69	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Nitrobenzene	31	U	310	21	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
2-Nitrophenol	63	U	310	9.5	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
4-Nitrophenol	310	U	1500	92	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Pyrene	31	U	380	12	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Pentachlorophenol	640	U	1500	310	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Phenanthrene	31	U	310	16	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
1,2,4-Trichlorobenzene	31	U	310	27	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
2,4,5-Trichlorophenol	120	U	310	9.5	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
2,4,6-Trichlorophenol	63	U	310	9.5	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Phenol	31	U	310	17	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Carbazole	64	U	310	34	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
N-Nitrosodimethylamine	63	U	500	35	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Bis(2-ethylhexyl) phthalate	63	U	310	44	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
Di-n-octyl phthalate	63	U	310	14	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
3 & 4 Methylphenol	63	U	310	31	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
4-Chloro-3-methylphenol	120	U	310	63	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
2,2'-oxybis[1-chloropropane]	31	U	310	22	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
4-Chloroaniline	120	U	310	78	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
2,6-Dichlorophenol	120	U	310	66	ug/Kg		10/11/12 14:17	10/14/12 10:45	1
N-Nitrosopyrrolidine	120	U	310	61	ug/Kg		10/11/12 14:17	10/14/12 10:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*78*		*45 - 105*	*10/11/12 14:17*	*10/14/12 10:45*	*1*
2-Fluorophenol (Surr)	*79*		*35 - 105*	*10/11/12 14:17*	*10/14/12 10:45*	*1*
Nitrobenzene-d5 (Surr)	*76*		*35 - 100*	*10/11/12 14:17*	*10/14/12 10:45*	*1*
Terphenyl-d14 (Surr)	*89*		*30 - 125*	*10/11/12 14:17*	*10/14/12 10:45*	*1*
2,4,6-Tribromophenol (Surr)	*83*		*35 - 125*	*10/11/12 14:17*	*10/14/12 10:45*	*1*
Phenol-d5 (Surr)	*80*		*40 - 100*	*10/11/12 14:17*	*10/14/12 10:45*	*1*

Lab Sample ID: LCS 280-141610/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 142046 — **Prep Batch: 141610**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	2590	2160		ug/Kg		84	45 - 110
Acenaphthylene	2590	2260		ug/Kg		87	45 - 105
Anthracene	2590	2310		ug/Kg		89	55 - 105
Benzo[a]anthracene	2590	2280		ug/Kg		88	50 - 110

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-141610/2-A
Matrix: Solid
Analysis Batch: 142046

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 141610

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzoic acid	2590	2600		ug/Kg		100	10 - 110
Benzo[b]fluoranthene	2590	2400		ug/Kg		93	45 - 115
Benzo[k]fluoranthene	2590	2230		ug/Kg		86	45 - 125
Benzyl alcohol	2590	2170		ug/Kg		84	20 - 125
Bis(2-chloroethoxy)methane	2590	2080		ug/Kg		80	45 - 110
Bis(2-chloroethyl)ether	2590	2120		ug/Kg		82	40 - 105
4-Bromophenyl phenyl ether	2590	2330		ug/Kg		90	45 - 115
Butyl benzyl phthalate	2590	2340		ug/Kg		90	50 - 125
2,4-Dimethylphenol	2590	2050		ug/Kg		79	30 - 105
Dimethyl phthalate	2590	2330		ug/Kg		90	50 - 110
4,6-Dinitro-2-methylphenol	2590	2230		ug/Kg		86	30 - 135
2,4-Dinitrophenol	2590	2320		ug/Kg		89	15 - 130
2,4-Dinitrotoluene	2590	2460		ug/Kg		95	50 - 115
2,6-Dinitrotoluene	2590	2350		ug/Kg		91	50 - 110
Fluoranthene	2590	2350		ug/Kg		91	55 - 115
Fluorene	2590	2250		ug/Kg		87	50 - 110
1,2-Diphenylhydrazine	2620	2340		ug/Kg		90	54 - 120
Hexachlorobenzene	2590	2300		ug/Kg		89	45 - 120
Hexachlorobutadiene	2590	1920		ug/Kg		74	40 - 115
Hexachloroethane	2590	1950		ug/Kg		75	35 - 110
N-Nitrosodiphenylamine	2210	2000		ug/Kg		91	50 - 115
N-Nitrosodi-n-propylamine	2590	2070		ug/Kg		80	40 - 115
1,4-Dichlorobenzene	2590	1970		ug/Kg		76	35 - 105
2-Chloronaphthalene	2590	2140		ug/Kg		83	45 - 105
2-Chlorophenol	2590	2140		ug/Kg		83	45 - 105
4-Chlorophenyl phenyl ether	2590	2300		ug/Kg		89	45 - 110
Chrysene	2590	2310		ug/Kg		89	55 - 110
Dibenz(a,h)anthracene	2590	2350		ug/Kg		91	40 - 125
Dibenzofuran	2590	2250		ug/Kg		87	50 - 105
Benzo[g,h,i]perylene	2590	2430		ug/Kg		94	40 - 125
Benzo[a]pyrene	2590	2120		ug/Kg		82	50 - 110
Di-n-butyl phthalate	2590	2410		ug/Kg		93	55 - 110
1,2-Dichlorobenzene	2590	2020		ug/Kg		78	45 - 95
1,3-Dichlorobenzene	2590	1940		ug/Kg		75	40 - 100
3,3'-Dichlorobenzidine	2590	1320	J	ug/Kg		51	10 - 130
2,4-Dichlorophenol	2590	2180		ug/Kg		84	45 - 110
Diethyl phthalate	2590	2370		ug/Kg		91	50 - 115
Indeno[1,2,3-cd]pyrene	2590	2210		ug/Kg		85	40 - 120
Isophorone	2590	2140		ug/Kg		83	45 - 110
2-Methylnaphthalene	2590	2010		ug/Kg		78	45 - 105
2-Methylphenol	2590	2130		ug/Kg		82	40 - 105
Naphthalene	2590	2050		ug/Kg		79	40 - 105
2-Nitroaniline	2590	2410		ug/Kg		93	45 - 120
3-Nitroaniline	2590	1710		ug/Kg		66	25 - 110
4-Nitroaniline	2590	2250		ug/Kg		87	35 - 115
Nitrobenzene	2590	2040		ug/Kg		79	40 - 115
2-Nitrophenol	2590	2170		ug/Kg		84	40 - 110
4-Nitrophenol	2590	2540		ug/Kg		98	15 - 140
Pyrene	2590	2270		ug/Kg		88	45 - 125
Pentachlorophenol	2590	2180		ug/Kg		84	25 - 120

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-141610/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 142046 — **Prep Batch: 141610**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenanthrene	2590	2310		ug/Kg		89	50 - 110
1,2,4-Trichlorobenzene	2590	2000		ug/Kg		77	45 - 110
2,4,5-Trichlorophenol	2590	2450		ug/Kg		94	50 - 110
2,4,6-Trichlorophenol	2590	2390		ug/Kg		92	45 - 110
Phenol	2590	2160		ug/Kg		83	40 - 100
Carbazole	2590	2270		ug/Kg		88	45 - 115
N-Nitrosodimethylamine	2590	1900		ug/Kg		73	20 - 115
Bis(2-ethylhexyl) phthalate	2590	2460		ug/Kg		95	45 - 125
Di-n-octyl phthalate	2590	2540		ug/Kg		98	40 - 130
3 & 4 Methylphenol	5180	4260		ug/Kg		82	40 - 105
4-Chloro-3-methylphenol	2590	2290		ug/Kg		89	45 - 115
2,2'-oxybis[1-chloropropane]	2590	1910		ug/Kg		74	20 - 115
4-Chloroaniline	2590	1460		ug/Kg		56	10 - 95

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*80*		*45 - 105*
2-Fluorophenol (Surr)	*81*		*35 - 105*
Nitrobenzene-d5 (Surr)	*77*		*35 - 100*
Terphenyl-d14 (Surr)	*87*		*30 - 125*
2,4,6-Tribromophenol (Surr)	*93*		*35 - 125*
Phenol-d5 (Surr)	*82*		*40 - 100*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Lab Sample ID: MB 280-141122/3-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141159 — **Prep Batch: 141122**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	0.53	U	1.2	0.32	mg/Kg		10/09/12 08:44	10/09/12 16:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*103*		*77 - 123*	*10/09/12 08:44*	*10/09/12 16:41*	*1*

Lab Sample ID: LCS 280-141122/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141159 — **Prep Batch: 141122**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	5.38	6.45	M	mg/Kg		120	85 - 153

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*106*		*77 - 123*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics) (Continued)

Lab Sample ID: LCSD 280-141122/2-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141159 — **Prep Batch: 141122**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10			5.37	6.50	M	mg/Kg		121	85 - 153	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*106*		*77 - 123*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Lab Sample ID: MB 280-141410/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 142504 — **Prep Batch: 141410**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	1.9	U	3.9	0.66	mg/Kg		10/10/12 16:10	10/15/12 19:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*71*		*49 - 115*	*10/10/12 16:10*	*10/15/12 19:17*	*1*

Lab Sample ID: LCS 280-141410/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 142504 — **Prep Batch: 141410**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics [C10-C28]			63.3	57.2	M	mg/Kg		90	53 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl (Surr)	*74*	*M*	*49 - 115*

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

Lab Sample ID: MB 280-141445/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 142378 — **Prep Batch: 141445**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1221	18	U	30	14	ug/Kg		10/10/12 16:45	10/15/12 09:56	1
PCB-1016	9.2	U	30	4.7	ug/Kg		10/10/12 16:45	10/15/12 09:56	1
PCB-1232	9.2	U	30	4.7	ug/Kg		10/10/12 16:45	10/15/12 09:56	1
PCB-1242	9.2	U	30	8.4	ug/Kg		10/10/12 16:45	10/15/12 09:56	1
PCB-1248	9.2	U	30	5.2	ug/Kg		10/10/12 16:45	10/15/12 09:56	1
PCB-1254	9.2	U	30	5.1	ug/Kg		10/10/12 16:45	10/15/12 09:56	1
PCB-1260	9.2	U	30	2.4	ug/Kg		10/10/12 16:45	10/15/12 09:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*97*		*40 - 135*	*10/10/12 16:45*	*10/15/12 09:56*	*1*

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

Lab Sample ID: LCS 280-141445/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 142378 — **Prep Batch: 141445**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
PCB-1016			63.1	66.3		ug/Kg		105	40 - 140		
PCB-1260			63.1	68.2		ug/Kg		108	60 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*95*		*40 - 135*

Lab Sample ID: 280-34263-1 MS — **Client Sample ID: IDW-S**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 142378 — **Prep Batch: 141445**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
PCB-1016	10	U	65.3	70.7		ug/Kg	☼	108	40 - 140		
PCB-1260	10	U	65.3	67.4		ug/Kg	☼	103	60 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*87*		*40 - 135*

Lab Sample ID: 280-34263-1 MSD — **Client Sample ID: IDW-S**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 142378 — **Prep Batch: 141445**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	10	U	65.1	65.1		ug/Kg	☼	100	40 - 140	8	30
PCB-1260	10	U	65.1	64.3		ug/Kg	☼	99	60 - 130	5	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*82*		*40 - 135*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-141253/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141746 — **Prep Batch: 141253**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	3.0	U	50	1.6	mg/Kg		10/10/12 14:00	10/11/12 16:02	1
Calcium	20	U Q	100	14	mg/Kg		10/10/12 14:00	10/11/12 16:02	1
Iron	5.0	U	20	3.8	mg/Kg		10/10/12 14:00	10/11/12 16:02	1
Magnesium	5.0	U	20	3.7	mg/Kg		10/10/12 14:00	10/11/12 16:02	1
Potassium	50	U	300	41	mg/Kg		10/10/12 14:00	10/11/12 16:02	1
Sodium	100	U	500	59	mg/Kg		10/10/12 14:00	10/11/12 16:02	1

Lab Sample ID: LCS 280-141253/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141746 — **Prep Batch: 141253**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Aluminum			196	184		mg/Kg		94	80 - 120		
Calcium			4900	4650	Q	mg/Kg		95	80 - 120		

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 280-141253/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141746 — **Prep Batch: 141253**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	98.0	95.6		mg/Kg		97	80 - 120
Magnesium	4900	4550		mg/Kg		93	80 - 120
Potassium	4900	4760		mg/Kg		97	80 - 120
Sodium	4900	5040		mg/Kg		103	80 - 120

Lab Sample ID: 280-34263-1 MS — **Client Sample ID: IDW-S**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141746 — **Prep Batch: 141253**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	4600	J	193	7090	4	mg/Kg	☼	1302	80 - 120
Calcium	28000	J Q	4820	16900	4 Q	mg/Kg	☼	-220	80 - 120
Iron	5100	J	96.5	4700	4	mg/Kg	☼	-371	80 - 120
Magnesium	2000		4820	6640		mg/Kg	☼	95	80 - 120
Potassium	660		4820	5750		mg/Kg	☼	105	80 - 120
Sodium	100	J	4820	5030		mg/Kg	☼	102	80 - 120

Lab Sample ID: 280-34263-1 MSD — **Client Sample ID: IDW-S**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141746 — **Prep Batch: 141253**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	4600	J	180	6980	4	mg/Kg	☼	1337	80 - 120	2	20
Calcium	28000	J Q	4490	18800	4 Q	mg/Kg	☼	-194	80 - 120	11	20
Iron	5100	J	89.9	4690	4	mg/Kg	☼	-401	80 - 120	0	20
Magnesium	2000		4490	6150		mg/Kg	☼	92	80 - 120	8	20
Potassium	660		4490	5270		mg/Kg	☼	103	80 - 120	9	20
Sodium	100	J	4490	4570		mg/Kg	☼	99	80 - 120	10	20

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 280-141252/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141575 — **Prep Batch: 141252**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	37	U	190	13	ug/Kg		10/10/12 14:00	10/10/12 22:57	1
Arsenic	140	U	460	47	ug/Kg		10/10/12 14:00	10/10/12 22:57	1
Barium	190	U	230	65	ug/Kg		10/10/12 14:00	10/10/12 22:57	1
Beryllium	60	U	93	21	ug/Kg		10/10/12 14:00	10/10/12 22:57	1
Cadmium	23	U Q	93	8.7	ug/Kg		10/10/12 14:00	10/10/12 22:57	1
Chromium	160	U	190	70	ug/Kg		10/10/12 14:00	10/10/12 22:57	1
Cobalt	17	U	93	6.1	ug/Kg		10/10/12 14:00	10/10/12 22:57	1
Copper	102	J	2300	66	ug/Kg		10/10/12 14:00	10/10/12 22:57	1
Lead	46	U	93	17	ug/Kg		10/10/12 14:00	10/10/12 22:57	1
Manganese	83	U	93	31	ug/Kg		10/10/12 14:00	10/10/12 22:57	1
Nickel	69	U	320	23	ug/Kg		10/10/12 14:00	10/10/12 22:57	1
Selenium	230	U	460	120	ug/Kg		10/10/12 14:00	10/10/12 22:57	1
Silver	56	U	93	19	ug/Kg		10/10/12 14:00	10/10/12 22:57	1
Thallium	10.4	J	93	3.3	ug/Kg		10/10/12 14:00	10/10/12 22:57	1

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 280-141252/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141575 — **Prep Batch: 141252**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Vanadium	93	U	460	36	ug/Kg		10/10/12 14:00	10/10/12 22:57	1
Zinc	830	U	2300	290	ug/Kg		10/10/12 14:00	10/10/12 22:57	1

Lab Sample ID: LCS 280-141252/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141575 — **Prep Batch: 141252**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	18300	17400		ug/Kg		95	82 - 110
Arsenic	18300	17800		ug/Kg		97	83 - 111
Barium	18300	17800		ug/Kg		97	86 - 120
Beryllium	18300	18200		ug/Kg		99	70 - 136
Cadmium	18300	17000	Q	ug/Kg		93	85 - 109
Chromium	18300	18300		ug/Kg		100	87 - 121
Cobalt	18300	18600		ug/Kg		101	91 - 113
Copper	18300	19400		ug/Kg		106	87 - 125
Lead	18300	19000		ug/Kg		104	81 - 125
Manganese	18300	18700		ug/Kg		102	86 - 120
Nickel	18300	19000		ug/Kg		103	90 - 113
Selenium	18300	17500		ug/Kg		96	78 - 108
Silver	18300	18700		ug/Kg		102	83 - 113
Thallium	18300	19400		ug/Kg		106	84 - 124
Vanadium	18300	17600		ug/Kg		96	88 - 114
Zinc	18300	18000		ug/Kg		98	85 - 119

Lab Sample ID: 280-34263-1 MS — **Client Sample ID: IDW-S**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141575 — **Prep Batch: 141252**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	39	U J	20800	2920	J	ug/Kg	☼	14	82 - 110
Arsenic	1400		20800	22100		ug/Kg	☼	99	83 - 111
Barium	63000	J	20800	76400	J	ug/Kg	☼	62	86 - 120
Beryllium	170		20800	21000		ug/Kg	☼	100	70 - 136
Cadmium	100	Q	20800	19600	Q	ug/Kg	☼	94	85 - 109
Chromium	4200		20800	25500		ug/Kg	☼	102	87 - 121
Cobalt	1500		20800	22800		ug/Kg	☼	102	91 - 113
Copper	1800	J	20800	22300		ug/Kg	☼	99	87 - 125
Lead	2400		20800	23400		ug/Kg	☼	101	81 - 125
Manganese	130000	J	20800	147000	4	ug/Kg	☼	106	86 - 120
Nickel	3400		20800	24900		ug/Kg	☼	103	90 - 113
Selenium	370	J	20800	20300		ug/Kg	☼	96	78 - 108
Silver	58	U	20800	20000		ug/Kg	☼	96	83 - 113
Thallium	94	J	20800	22000		ug/Kg	☼	105	84 - 124
Vanadium	8700		20800	29500		ug/Kg	☼	99	88 - 114
Zinc	8100		20800	28400		ug/Kg	☼	98	85 - 119

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-34263-1 MSD — **Client Sample ID: IDW-S**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141575 — **Prep Batch: 141252**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	39	U J	19100	2340	J	ug/Kg	☼	12	82 - 110	22	20
Arsenic	1400		19100	20700		ug/Kg	☼	101	83 - 111	7	20
Barium	63000	J	19100	90400	J	ug/Kg	☼	141	86 - 120	17	20
Beryllium	170		19100	20200		ug/Kg	☼	105	70 - 136	4	20
Cadmium	100	Q	19100	18300	Q	ug/Kg	☼	95	85 - 109	7	20
Chromium	4200		19100	23700		ug/Kg	☼	102	87 - 121	7	20
Cobalt	1500		19100	21200		ug/Kg	☼	103	91 - 113	7	20
Copper	1800	J	19100	20300		ug/Kg	☼	97	87 - 125	10	20
Lead	2400		19100	22000		ug/Kg	☼	103	81 - 125	6	20
Manganese	130000	J	19100	152000	4	ug/Kg	☼	142	86 - 120	3	20
Nickel	3400		19100	22900		ug/Kg	☼	102	90 - 113	8	20
Selenium	370	J	19100	18600		ug/Kg	☼	95	78 - 108	9	20
Silver	58	U	19100	18700		ug/Kg	☼	98	83 - 113	6	20
Thallium	94	J	19100	20300		ug/Kg	☼	106	84 - 124	8	20
Vanadium	8700		19100	27900		ug/Kg	☼	100	88 - 114	5	20
Zinc	8100		19100	26800		ug/Kg	☼	98	85 - 119	6	20

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Lab Sample ID: MB 280-141332/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141641 — **Prep Batch: 141332**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	15	U	20	6.4	ug/Kg		10/10/12 11:30	10/10/12 13:01	1

Lab Sample ID: LCS 280-141332/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141641 — **Prep Batch: 141332**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			410	438		ug/Kg		107	80 - 120		

Lab Sample ID: 280-34263-1 MS — **Client Sample ID: IDW-S**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141641 — **Prep Batch: 141332**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	15	U	487	451		ug/Kg	☼	93	80 - 120		

Lab Sample ID: 280-34263-1 MSD — **Client Sample ID: IDW-S**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141641 — **Prep Batch: 141332**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	15	U	431	447		ug/Kg	☼	104	80 - 120	1	20

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 280-141135/5-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141466 — **Prep Batch: 141135**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.25	U	0.50	0.10	mg/Kg		10/09/12 09:13	10/10/12 15:35	1

Lab Sample ID: HLCS 280-141135/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141466 — **Prep Batch: 141135**

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	20.0	20.6		mg/Kg		103	90 - 110

Lab Sample ID: LCS 280-141135/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141466 — **Prep Batch: 141135**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	5.00	5.28		mg/Kg		106	90 - 110

Lab Sample ID: LCSD 280-141135/4-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141466 — **Prep Batch: 141135**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	5.00	5.29		mg/Kg		106	90 - 110	0	10

Lab Sample ID: LLCS 280-141135/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141466 — **Prep Batch: 141135**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	5.00	5.33		mg/Kg		107	90 - 110

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 280-141102/3-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141217 — **Prep Batch: 141102**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.50	U	5.0	2.4	mg/Kg		10/09/12 07:37	10/09/12 13:16	1

Lab Sample ID: LCS 280-141102/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141217 — **Prep Batch: 141102**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	98.8	64.0		mg/Kg		65	47 - 100

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric) (Continued)

Lab Sample ID: LCSD 280-141102/2-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141217 — **Prep Batch: 141102**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	98.8	61.6		mg/Kg		62	47 - 100	4	35

Method: 9045C - pH

Lab Sample ID: LCS 280-141813/4 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141813

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.000		SU		100	97 - 103

Lab Sample ID: LCSD 280-141813/5 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 141813

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
pH adj. to 25 deg C	7.00	7.000		SU		100	97 - 103	0	5

QC Association Summary

Client: Tetra Tech EC, Inc.
Project/Site: Cannon AFB

TestAmerica Job ID: 280-34263-1

GC/MS VOA

Analysis Batch: 141923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	8260B/DoD	141936
LCS 280-141923/4	Lab Control Sample	Total/NA	Solid	8260B/DoD	
MB 280-141936/1-A	Method Blank	Total/NA	Solid	8260B/DoD	141936

Prep Batch: 141936

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	5030B	
MB 280-141936/1-A	Method Blank	Total/NA	Solid	5030B	

GC/MS Semi VOA

Prep Batch: 141610

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	3550C	
LCS 280-141610/2-A	Lab Control Sample	Total/NA	Solid	3550C	
MB 280-141610/1-A	Method Blank	Total/NA	Solid	3550C	

Analysis Batch: 142046

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	8270C/DoD	141610
LCS 280-141610/2-A	Lab Control Sample	Total/NA	Solid	8270C/DoD	141610
MB 280-141610/1-A	Method Blank	Total/NA	Solid	8270C/DoD	141610

GC VOA

Prep Batch: 141122

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	5030B	
LCS 280-141122/1-A	Lab Control Sample	Total/NA	Solid	5030B	
LCSD 280-141122/2-A	Lab Control Sample Dup	Total/NA	Solid	5030B	
MB 280-141122/3-A	Method Blank	Total/NA	Solid	5030B	

Analysis Batch: 141159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	8015C	141122
LCS 280-141122/1-A	Lab Control Sample	Total/NA	Solid	8015C	141122
LCSD 280-141122/2-A	Lab Control Sample Dup	Total/NA	Solid	8015C	141122
MB 280-141122/3-A	Method Blank	Total/NA	Solid	8015C	141122

GC Semi VOA

Prep Batch: 141410

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	3546	
LCS 280-141410/2-A	Lab Control Sample	Total/NA	Solid	3546	
MB 280-141410/1-A	Method Blank	Total/NA	Solid	3546	

Prep Batch: 141445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	3546	
280-34263-1 MS	IDW-S	Total/NA	Solid	3546	

GC Semi VOA (Continued)

Prep Batch: 141445 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1 MSD	IDW-S	Total/NA	Solid	3546	
LCS 280-141445/2-A	Lab Control Sample	Total/NA	Solid	3546	
MB 280-141445/1-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 142378

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	8082A	141445
280-34263-1 MS	IDW-S	Total/NA	Solid	8082A	141445
280-34263-1 MSD	IDW-S	Total/NA	Solid	8082A	141445
LCS 280-141445/2-A	Lab Control Sample	Total/NA	Solid	8082A	141445
MB 280-141445/1-A	Method Blank	Total/NA	Solid	8082A	141445

Analysis Batch: 142504

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	8015C	141410
LCS 280-141410/2-A	Lab Control Sample	Total/NA	Solid	8015C	141410
MB 280-141410/1-A	Method Blank	Total/NA	Solid	8015C	141410

Metals

Prep Batch: 141252

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	3050B	
280-34263-1 MS	IDW-S	Total/NA	Solid	3050B	
280-34263-1 MSD	IDW-S	Total/NA	Solid	3050B	
LCS 280-141252/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 280-141252/1-A	Method Blank	Total/NA	Solid	3050B	

Prep Batch: 141253

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	3050B	
280-34263-1 MS	IDW-S	Total/NA	Solid	3050B	
280-34263-1 MSD	IDW-S	Total/NA	Solid	3050B	
LCS 280-141253/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 280-141253/1-A	Method Blank	Total/NA	Solid	3050B	

Prep Batch: 141332

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	7471B	
280-34263-1 MS	IDW-S	Total/NA	Solid	7471B	
280-34263-1 MSD	IDW-S	Total/NA	Solid	7471B	
LCS 280-141332/2-A	Lab Control Sample	Total/NA	Solid	7471B	
MB 280-141332/1-A	Method Blank	Total/NA	Solid	7471B	

Analysis Batch: 141575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	6020	141252
280-34263-1 MS	IDW-S	Total/NA	Solid	6020	141252
280-34263-1 MSD	IDW-S	Total/NA	Solid	6020	141252
LCS 280-141252/2-A	Lab Control Sample	Total/NA	Solid	6020	141252
MB 280-141252/1-A	Method Blank	Total/NA	Solid	6020	141252

Metals (Continued)

Analysis Batch: 141641

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	7471B	141332
280-34263-1 MS	IDW-S	Total/NA	Solid	7471B	141332
280-34263-1 MSD	IDW-S	Total/NA	Solid	7471B	141332
LCS 280-141332/2-A	Lab Control Sample	Total/NA	Solid	7471B	141332
MB 280-141332/1-A	Method Blank	Total/NA	Solid	7471B	141332

Analysis Batch: 141746

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	6010C	141253
280-34263-1 MS	IDW-S	Total/NA	Solid	6010C	141253
280-34263-1 MSD	IDW-S	Total/NA	Solid	6010C	141253
LCS 280-141253/2-A	Lab Control Sample	Total/NA	Solid	6010C	141253
MB 280-141253/1-A	Method Blank	Total/NA	Solid	6010C	141253

General Chemistry

Prep Batch: 141102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	9030B	
LCS 280-141102/1-A	Lab Control Sample	Total/NA	Solid	9030B	
LCSD 280-141102/2-A	Lab Control Sample Dup	Total/NA	Solid	9030B	
MB 280-141102/3-A	Method Blank	Total/NA	Solid	9030B	

Prep Batch: 141135

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	9012B	
HLCS 280-141135/1-A	Lab Control Sample	Total/NA	Solid	9012B	
LCS 280-141135/3-A	Lab Control Sample	Total/NA	Solid	9012B	
LCSD 280-141135/4-A	Lab Control Sample Dup	Total/NA	Solid	9012B	
LLCS 280-141135/2-A	Lab Control Sample	Total/NA	Solid	9012B	
MB 280-141135/5-A	Method Blank	Total/NA	Solid	9012B	

Analysis Batch: 141217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	9034	141102
LCS 280-141102/1-A	Lab Control Sample	Total/NA	Solid	9034	141102
LCSD 280-141102/2-A	Lab Control Sample Dup	Total/NA	Solid	9034	141102
MB 280-141102/3-A	Method Blank	Total/NA	Solid	9034	141102

Analysis Batch: 141343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	7.1.2	

Analysis Batch: 141387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	D 2216	

Analysis Batch: 141466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Total/NA	Solid	9012B	141135
HLCS 280-141135/1-A	Lab Control Sample	Total/NA	Solid	9012B	141135
LCS 280-141135/3-A	Lab Control Sample	Total/NA	Solid	9012B	141135

General Chemistry (Continued)

Analysis Batch: 141466 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 280-141135/4-A	Lab Control Sample Dup	Total/NA	Solid	9012B	141135
LLCS 280-141135/2-A	Lab Control Sample	Total/NA	Solid	9012B	141135
MB 280-141135/5-A	Method Blank	Total/NA	Solid	9012B	141135

Leach Batch: 141803

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Soluble	Solid	DI Leach	

Analysis Batch: 141813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-34263-1	IDW-S	Soluble	Solid	9045C	141803
LCS 280-141813/4	Lab Control Sample	Total/NA	Solid	9045C	
LCSD 280-141813/5	Lab Control Sample Dup	Total/NA	Solid	9045C	

Lab Chronicle

Client: Tetra Tech EC, Inc.
Project/Site: Cannon AFB

TestAmerica Job ID: 280-34263-1

Client Sample ID: IDW-S

Date Collected: 10/05/12 08:15
Date Received: 10/08/12 08:40

Lab Sample ID: 280-34263-1

Matrix: Solid
Percent Solids: 95.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.099 g	5 mL	141936	10/12/12 16:00	LMH	TAL DEN
Total/NA	Analysis	8260B/DoD		1			141923	10/12/12 20:54	LMH	TAL DEN
Total/NA	Prep	3550C			30.4 g	1000 uL	141610	10/11/12 14:17	BMS	TAL DEN
Total/NA	Analysis	8270C/DoD		1			142046	10/14/12 13:44	JS	TAL DEN
Total/NA	Prep	5030B			10.15 g	10 mL	141122	10/09/12 10:24	TEM	TAL DEN
Total/NA	Analysis	8015C		1			141159	10/09/12 17:10	TEM	TAL DEN
Total/NA	Prep	3546			31.6 g	10000 uL	141445	10/10/12 16:45	MRM	TAL DEN
Total/NA	Analysis	8082A		1			142378	10/15/12 10:39	TDJ	TAL DEN
Total/NA	Prep	3546			31.5 g	1000 uL	141410	10/10/12 16:10	MRM	TAL DEN
Total/NA	Analysis	8015C		1			142504	10/16/12 03:19	MRB	TAL DEN
Total/NA	Prep	3050B			1.08 g	100 mL	141252	10/10/12 14:00	JM	TAL DEN
Total/NA	Analysis	6020		1			141575	10/10/12 23:02	TEL	TAL DEN
Total/NA	Prep	7471B			0.58 g	50 mL	141332	10/10/12 11:30	BLR	TAL DEN
Total/NA	Analysis	7471B		1			141641	10/10/12 13:05	NF	TAL DEN
Total/NA	Prep	3050B			1.11 g	100 mL	141253	10/10/12 14:00	JM	TAL DEN
Total/NA	Analysis	6010C		1			141746	10/11/12 16:06	JKH	TAL DEN
Total/NA	Prep	9030B			49.98 g	250 mL	141102	10/09/12 07:37	BMG	TAL DEN
Total/NA	Analysis	9034		1			141217	10/09/12 13:16	BMG	TAL DEN
Total/NA	Analysis	7.1.2		1			141343	10/10/12 09:16	AK	TAL DEN
Total/NA	Analysis	D 2216		1			141387	10/10/12 11:40	SG	TAL DEN
Total/NA	Prep	9012B			1.00 mL	50 mL	141135	10/09/12 09:13	AJA	TAL DEN
Total/NA	Analysis	9012B		1			141466	10/10/12 15:54	AJA	TAL DEN
Soluble	Leach	DI Leach			40 g	40 mL	141803	10/12/12 10:12	DA	TAL DEN
Soluble	Analysis	9045C		1	1.0 mL	1.0 mL	141813	10/12/12 10:32	DA	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Chain of Custody Record

Sampler ID _____

Temperature on Receipt 4.5°C 10/8/12

Drinking Water? Yes ☐ No ☒

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124-280 (0508)

Client: Tetra Tech	Project Manager: Carol Rieger	Date: 10/5/2012	Chain of Custody Number: 165871
Address: 143 Union Blvd Ste 1010	Telephone Number (Area Code)/Fax Number: 303-988-2202	Lab Number	Page 1 of 1
City: Lakewood; State: CO; Zip Code: 80228	Site Contact: C. Rieger	Lab Contact: J. Dreesen	
Project Name and Location (State): Cannon AFB, New Mexico	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	VOCs	GRO	DRO	SVOCs	Metals	PCBs	Ignit	Corros	React	Special Instructions/ Conditions of Receipt
IDW-5	10-5-12	0815				X	X						X	X	X	X	X	X	X	X	X	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

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

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☒ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

1. Relinquished By	Date 10/8/12	Time 0840	1. Received By	Date 10/8/12	Time 0840
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Login Sample Receipt Checklist

Client: Tetra Tech EC, Inc.

Job Number: 280-34263-1

Login Number: 34263

List Source: TestAmerica Denver

List Number: 1

Creator: Underwood, Tim

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.	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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix D
Permit to Drill an Exploratory Well and Well Record

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER): Pod 1 MW-Rb	OSE FILE NUMBER(S): CC 02284
WELL OWNER NAME(S): Cannon AFB	PHONE (OPTIONAL): 575-784-6031
WELL OWNER MAILING ADDRESS: 506 D.L. Ingram BLVD	CITY: Cannon AFB; STATE: NM; ZIP: 88103

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	34	23	23.041	N
LONGITUDE	103	18	8.23	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND

* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD1210	ADRIAN LAWLER	National E.W.P.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
10-2-12	10-4-12	331 Ft.	350 Ft.	306 Ft.

STATIC WATER LEVEL IN COMPLETED WELL (FT): 312.65 Ft.

COMPLETED WELL IS: ( ) ARTESIAN ( ) DRY HOLE ( ) SHALLOW (UNCONFINED)

DRILLING FLUID: (X) AIR ( ) MUD ADDITIVES – SPECIFY:

DRILLING METHOD: (X) ROTARY ( ) HAMMER ( ) CABLE TOOL ( ) OTHER – SPECIFY:

DEPTH (feet bgl) FROM	TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
331	301	9 5/8	4" Sch 80 .01 Screen	Flush	4"	4.25"	0.01
301	+2.5	9 5/8	4" Sch 80 PVC	flush	4"	4.25"	

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
350	298	9 5/8	10/20 Silica Sand	58 bags	Trimmie
298	280	9 5/8	3/8 Bentonite Chip	12 Bags	trimmie
280	20	9 5/8	20% Solids Volclay Grout	410 Gallons	trimmie
30	2	9 5/8	Portland Cement	50 Gallons	trimmie
2	0	9 5/8	Concrete	4 Gallons	trimmie

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
			See Attached	◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
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				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: ◯ PUMP ◯ AIR LIFT ◯ BAILER ◯ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm):

5. TEST; RIG SUPERVISION

WELL TEST: TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

ADRIAN LAWLER — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

12-5-12 — DATE

FOR OSE INTERNAL USE

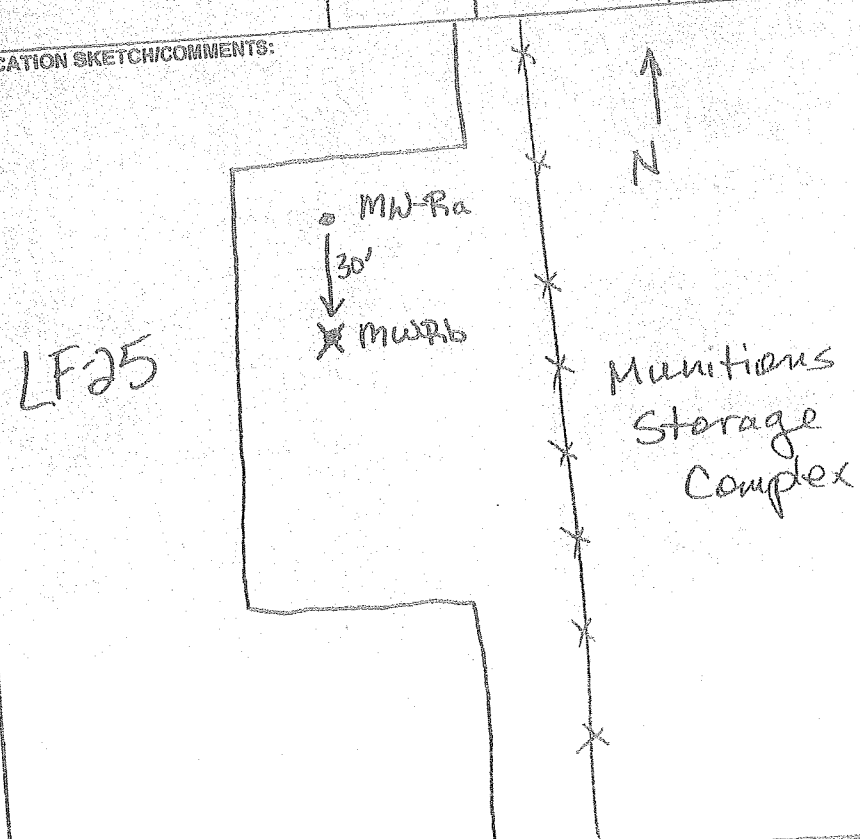
FILE NUMBER	POD NUMBER	TRN NUMBER	PAGE 2 OF 2
LOCATION			

HTRW DRILLING LOG

DISTRICT	OMAHA
SAMPLE LOCATION	MW-Rb
SHEET	1 OF 12

1. COMPANY NAME	Tetra Tech, Inc.
2. DRILLING SUBCONTRACTOR	National EWP, Inc.
3. SITE	Cannon AFB, NM
4. LOCATION	SWMU 97, Landfill 25 (LF-25)
5. NAME OF DRILLER	Adrian Lawler
6. MANUFACTURERS DESIGNATION OF DRILL	Stratex/ Air rotary casing hammer
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT	Geco 50K 9 5/8 OD Stratex top 85' ARCH 85-350
8. HOLE LOCATION (DESCRIPTION)	MW-Rb
9. SURFACE ELEVATION	TBD
10. DATE STARTED	10-2-2012
11. DATE COMPLETED	10-4-2012
12. OVERBURDEN THICKNESS	350 ft
13. DEPTH DRILLED INTO ROCK	N/A
14. TOTAL DEPTH OF HOLE	350 ft
15. DEPTH GROUNDWATER ENCOUNTERED	306 ft
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	312.65 ft @ 36 hr
17. OTHER WATER LEVEL MEASURMENTS (SPECIFY)	N/A
18. GEOTECHNICAL SAMPLES	None
DISTURBED	N/A
UNDISTURBED	N/A
19. TOTAL NUMBER OF CORE BOXES:	N/A
20. SAMPLES FOR CHEMICAL ANALYSIS	None
VOC	None
METALS	None
OTHERS (SPECIFY)	None
OTHERS (SPECIFY)	None
OTHERS (SPECIFY)	None
21. TOTAL CORE REC. %	N/A
22. DISPOSITION OF HOLE	
BACKFILLED	
MONITORING WELL	X
OTHERS (SPECIFY)	
23. NAME AND SIGNATURE OF INSPECTOR	Richard Buckmaster

LOCATION SKETCH/COMMENTS:



PROJECT #: FA4890-04-D-0006-0001	SITE: Cannon AFB, NM	SAMPLE LOCATION: MW-R6
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT #: Tetra Tech Project 100-009A.02.NM	2. INSPECTOR: Buckmaster	SHEET 2 OF 4

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
				Hand-augered to 5' bgs	
	5				
			SM	pinkish-tan Dry sand v. fine w/silt 30% gravel coarse ↳ caliche	
	10				
	15				
				same	
	20				

PROJECT #: FA4890-04-D-0005-0031	SITE: Cannon AFB, NM	SAMPLE LOCATION: MW-26i
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 07, LF-26
1. PROJECT #: Tetra Tech Project 106-8094.02.NM	2. INSPECTOR: Buckmaster	SHEET 3 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	25				
				same	
	30				
	35				
			SM	pink-tan, fine-medium same, damp	
	40				

PROJECT #: FA4890-04-D-0008-0001	SITE: Cannon AFB, NM	SAMPLE LOCATION: MW-RD
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT # Tetra Tech Project 100-0084.02.NM	2. INSPECTOR Buckmaster	SHEET 4 OF 12

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
				Same	
	45				
			SM	Same pink-tan sand 10% gravel caliche	cuttings 10/12/12
	50				
	55				
	60			Same	

PROJECT #: FA4890-04-C-0008-0001	SITE: Cannon AFB, NM	SAMPLE LOCATION: MW-RD
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-26
1. PROJECT #: Tetra Tech Project 106-9004.02.NM	2. INSPECTOR: Buckmaster	SHEET 5 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	65				
			~~SM-SP~~ SP-SM	~~pink-tan~~ medium - fine sand Same CLP 10/17/12	OLR 10/17/12 1% gravel caliche
	70				
	75				
				Same	
	80				

PROJECT #: FA4890-04-D-0008-0001	SITE: Cannon AFB, NM	SAMPLE LOCATION: MW-10
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT # Tetra Tech Project 100-8024.02.NM	2. INSPECTOR Buckmaster	SHEET 6 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	85				
				same	
	90				
	95				
				same	
	100				

PROJECT #: FA4890-04-D-0006-0001	SITE: Cannon AFB, NM	SAMPLE LOCATION: MW-R5
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT # Tetra Tech Project 106-9094.02 NM	2. INSPECTOR Buckmaster	SHEET 7 OF 14

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	105				
				same	
	110				
	115				
				same	
	120				

PROJECT #:	SITE:	SAMPLE LOCATION:
FA4850-04-D-0006-0001	Cannon AFB, NM	MW-R5
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT #: Tetra Tech Project 106-6094.02.NM	2. INSPECTOR: Buckmaster	SHEET 8 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	125			same	
	130				
	135			same	
	140				

PROJECT#: F46650-94-D-0006-0001	SITE: Cannon AFB, NM	SAMPLE LOCATION: MW-R6
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-29
1. PROJECT # Tetra Tech Project 108-6094.03.NM	2. INSPECTOR Buckmaster	SHEET 9 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	145				
	150		SP	pink-tan, damp well sorted fine-medium sand with 1% gravel caliche	
	155			Same	
	160				

PROJECT #: FA4890-04-D-0006-0001	SITE: Cannon AFB, NM	SAMPLE LOCATION: MW-10u
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT # Terra Tech Project 105-8094.02.NM	2. INSPECTOR Buckmaster	SHEET 20 OF 22

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	165				
				Same	
	170				
	175				
				Same	
	180				

PROJECT #: FA8906-04-D-0006-0001	SITE: Cannon AFB, NM	SAMPLE LOCATION: MW-K9
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT #: Tetra Tech Project 106-8894.02.NM	2. INSPECTOR Buckmaster	SHEET 11 OF 12

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	185				
				Same	
	190				
	195				
				pink-tan	CLR 10/17/12
				Same 10% gravel Caliche	
			SP		
	200				

PROJECT #: FA4880-04-D-0006-0001	SITE: Cannon AFB, NM	SAMPLE LOCATION: IMW-5b
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 87, LF-25
1. PROJECT # Tetra Tech Project 106-0004.02.NM	2. INSPECTOR Beckmasler	SHEET 1 OF 12

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	205				
			SP	Same 1% gravel caliche	
	210				
	215				
				Same	
	220				

PROJECT #: FA4890-04-D-0006-0001	SITE: Dennen AFB, NM	SAMPLE LOCATION: MW-Rb
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 07, LF-25
1. PROJECT #: Tetra Tech Project 100-80B4.02.NM	2. INSPECTOR: Buckmaster	SHEET 13 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	225				
				same	
	230				
	235				
				same	
	240				

PROJECT #: FA4890-04-D-0008-0001	SITE: Cannon AFB, NM	SAMPLE LOCATION: MW-03
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT #: Tetra Tech Project 108-8034.02.NM	2. INSPECTOR: Backmaster	SHEET 23 OF 27

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	~~245~~				
				same	
	~~250~~			CLR 10/17/12	~~Stone: to know for ARCH~~
	~~255~~				
	~~260~~		SP	same w/ lens of clay moist	

PROJECT #: FA4890-04-D-0008-0001	SITE: Cannon AFB, NM	SAMPLE LOCATION: MW-R6
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-28
1. PROJECT #: Tetra Tech, Project 100-N094.02.NM	2. INSPECTOR: Buckmaster	SHEET 15 OF 19

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	265				
			SP-SC	Same pink-tan fine sand moist-damp 20% Clay nodules/gravel	small, perched zone?
	270				
			SP	Same, no clay moist	
	275				
			SP	Same med grain well sort	
	280				

PROJECT #: FA4080-94-D-0008-0001	SITE: Cannon AFB, NM	SAMPLE LOCATION: MW-R9
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-29
1. PROJECT # Tetra Tech Project 100-0004.02.NM	2. INSPECTOR Buckmaster	SHEET 16 OF 22

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	285				
				Same	
	290				
	295				
				Same	
	300				

PROJECT #:	SITE:	SAMPLE LOCATION:
F4M000-04-C-0070-0002	Grouch AFS, NM	MW-2b
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 9/, LF-25
1. PROJECT #: Tetra Tech Project 106-80D4.02.NM	2. INSPECTOR: Buckmaster	SHEET 12 OF 12

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	305		SP	Same, coarse-med sand poor sort w/ gravel damp - wet	
	310		SP	Same wet to saturated	
	315				
				Same wet	
	320				

PROJECT #:	SITE:	SAMPLE LOCATION:
FA4000-04-D-0006-0001	Cornhusker AAP, NE	MW-4D
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 87, LF-26
1. PROJECT # Tetra Tech: Project 300-0004.02 NN	2. INSPECTOR Buckmaster	SHEET 22 OF 22

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	325				
				same wet to set	
					trip out check H_2O switch to tricone
	330		SP		
	335			same saturated	
	340				

PROJECT #:	SITE:	SAMPLE LOCATION:
FA4600-04-D-0006-0001	Cannon AFB, NM	MW-10
HTRW DRILLING LOG	DISTRICT: Omaha	LOCATION: SWMU 97, LF-25
1. PROJECT #: Tetra Tech, Project 106-0034.02.NM	2. INSPECTOR: Buckmaster	SHEET 22 OF 22

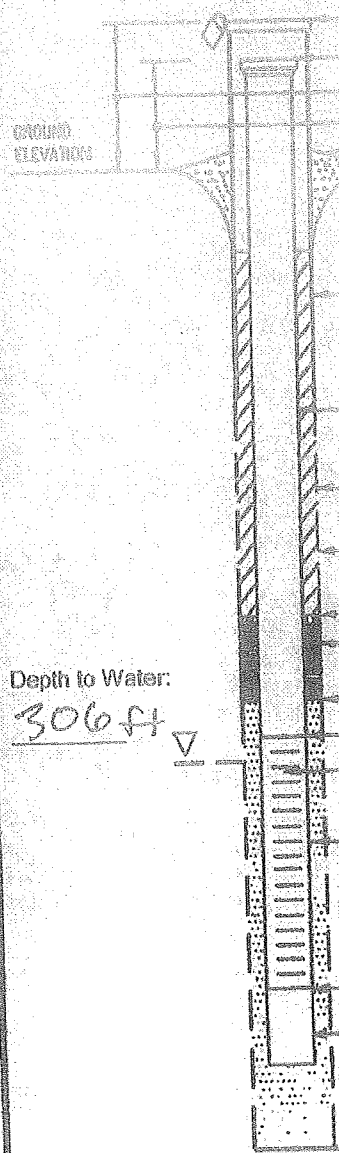
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS.	MATERIAL DESCRIPTION	COMMENTS
	345			Same saturated	
	350			TD 350 ft	
	355				
	360				

OVERBURDEN
MONITORING WELL
CONSTRUCTION DIAGRAM

WELL NO. MW-R6

PROJECT: Monitoring Well Installation at LF-25
PROJECT NO.: FA4890-04-D-0006-0001
DATE: 10-4-2022 BORING NO.: MW-R6
ELEVATION:
FIELD GEOLOGIST: R. Duckmaster

DRILLER: Antional Adrian
DRILLING METHOD: Air rotary-casing hammer (ARCH)
DEVELOPMENT METHOD: and Stratex
Surge, bail, swab, pump



ELEVATION OF TOP OF SURFACE CASING: TBD
ELEVATION OF TOP OF RISER PIPE: TBD
STICK-UP TOP OF SURFACE CASING: 3
STICK-UP RISER PIPE: 2.5
TYPE OF SURFACE SEAL: Cement/bentonite grout
Concrete

I.D. OF SURFACE CASING: 8"
TYPE OF SURFACE CASING: Steel pipe

RISER PIPE I.D. 4"
TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 9 5/8"

TYPE OF BACKFILL: High solids bentonite grout
ELEVATION/DEPTH TOP OF SEAL: 280 ft
TYPE OF SEAL: bentonite chips 3/8
DEPTH TOP OF SAND PACK: 298 ft
ELEVATION/DEPTH TOP OF SCREEN: 301 ft
TYPE OF SCREEN: PVC
SLOT SIZE X LENGTH: 0.010 x 30 ft
TYPE OF SAND PACK: 10/20 Co sand silica

ELEVATION/DEPTH BOTTOM OF SCREEN: 331 ft
ELEVATION/DEPTH BOTTOM OF SAND PACK: 350 ft
TYPE OF BACKFILL BELOW OBSERVATION WELL: 10/20 filter sand
ELEVATION/DEPTH OF HOLE: 350 ft

NOT TO SCALE

DEPTHS DATUM:

Figure B1.4-1. Well Development Record and Water Quality Field Data Sheet (Concluded)

Well Development Record and Water Quality Field Data Sheet

Project: Cannon AFB IR-25 Well No: MW-RB

Project No.: Samplers: R Buckmaster

Date: 10/8/2010 Checked by: C Rieger

Time Start: 0800

Time Finish: 1248

Field Chemistry (cont'd)

Time	Volume gallons	Temp. °C	pH	Conductivity µmhos/cm	Turbidity N.T.U.	Comments
1230	0	18.70	8.49	726	30.9	
1233	15	19.29	8.01	719	14.5	
1236	30	19.11	7.93	721	12.8	
1239	45	19.14	7.91	721	7.5	
1242	60	19.16	7.91	722	11.0	
1245	75	19.17	7.93	722	6.67	
1248	90	18.97	7.92	724	3.16	

Was well sampled after development? ___YES X NO

Sample Method: NA

Sample Name: NA

Analyses: NA

Well Development Record and Water Quality Field Data Sheet

Project: Cannon AFB LF35 Well No: MW-R6
Project No.: 186-8094
Date: 10/6/2012 Sampler: R. Buckmaster
Time Start: 0800
Time Finish: 1248 Checked by: CLeiger

Well Information

Depth to Water: 312.65 ft. Casing Diameter: 4 in. = 0.33 ft. Casing Stickup: 2.5 ft.
Bottom of Screen: 333.80 ft. Borehole Diameter: 9 5/8 in. = 0.80 ft. Screened Interval: 301-331 ft.
Sample Depth: N/A ft. Saturated Screen Well Volume: 13.75 gallons
Drawdown Limit: N/A ft. Calculations: Casing Volume (CV) = π (cr²) h (7.48)
Note: All depths measured from top of casing.
Filter Pack Volume (FPV) = π (br² – cr²)[BS-(TS or H)] P (7.48)
Saturated Screen Well Volume = CV + FPV
Calculation Notes: cr = casing radius; h = bottom of screen – depth of water in ft.; If TS>H use TS, if TS<H use H
br = borehole radius; P = estimated porosity of filter pack (35%); BS = bottom of screen
H = depth to water; TS = top of screen

Field Equipment

pH Meter: YSI 556 Serial No.: 18462 Water Level Meter: Solinst Serial No.: 30374
Conductivity Meter: YSI 556 Serial No.: 18462 Turbidity Meter: Hach 2100Q Serial No.: 020345
Temperature Meter: YSI 556 Serial No.: 18462 Baller: Size:

Sample Equipment (check one)

[X] Submersible Pump Pump Type (circle one): Piston Bladder (Impeller)
[ ] Disposable Teflon Baller Pump Model:
Serial No.:

Field Chemistry Equipment Cal'd by Pine Env.

pH = @ °C pH = @ °C pH = @ °C Time
Conductivity Standard: µmhos/cm @ 25°C Reading µmhos/cm @ °C Time
Turbidity Standard: N.T.U. @ 25°C Reading N.T.U. @ °C Time

* Information here pertains to well development only. No sampling conducted. CLR 10/17/12

File No.

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL
WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☐ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☒ Monitoring	☐ Mineral De-Watering	

A separate permit will be required to apply water to beneficial use.

☒ Temporary Request - Requested Start Date: **10/01/2012** Requested End Date: **10/31/2012**

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

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1. APPLICANT(S)

Name: **Cannon Air Force Base**	Name:
Contact or Agent: check here if Agent ☐ **Matt Higginbotham**	Contact or Agent: check here if Agent ☐
Mailing Address: **506 D.L. Ingram Blvd**	Mailing Address:
City: **Cannon Afb**	City:
State: **NM** Zip Code: **88103**	State: Zip Code:
Phone: ☐ Home ☐ Cell Phone (Work): **575-784-6031**	Phone: ☐ Home ☐ Cell Phone (Work):
E-mail (optional): **matthew.higginbotham@cannon.af.mil**	E-mail (optional):

FOR OSE INTERNAL USE

Application for Permit, Form wr-07, Rev 4/12/12

File Number:	Trn Number:
Trans Description (optional):	
Sub-Basin:	
PCW/LOG Due Date:	

2. WELL(S) Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84).
District II (Roswell) and District VII (Cimarron) customers, provide a PLSS location in addition to above.

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☒ UTM (NAD83) (Meters)
☐ Zone 12N
☒ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	Provide if known: -Public Land Survey System (PLSS) (*Quarters or Halves , Section, Township, Range)* OR - Hydrographic Survey Map & Tract; OR - Lot, Block & Subdivision; OR - Land Grant Name
MW-RB	**3806679.20**	**656068.94**	

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ **Yes** ☒ **No** **If yes, how many**_____

Other description relating well to common landmarks, streets, or other: **Replacement well of MW-Ra located approximately 30 ft to the north**

Well is on land owned by:

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. Attached? ☐ **Yes** ☒ **No**
If yes, how many_____

Approximate depth of well (feet): **350.00**	Outside diameter of well casing (inches): **4.00**
Driller Name: **Mational Ewp, Inc.**	Driller License Number:

3. ADDITIONAL STATEMENTS OR EXPLANATIONS

Monitoring well to be installed to replace dry well MW-Ra at a location approximately 30 ft south of this dry well. Well required at this regulated unit for long-term groundwater monitoring over the next several years as required by the New Mexico Environment Department Hazardous Waste bureau.

FOR OSE INTERNAL USE

File Number:	Trn Number:

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory: ☐ Include a description of any proposed pump test, if applicable.	**Pollution Control and/or Recovery:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge. ☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Construction De-Watering:** ☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	**Mine De-Watering:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐The geohydrologic characteristics of the aquifer(s). ☐The maximum amount of water to be diverted per annum. ☐The maximum amount of water to be diverted for the duration of the operation. ☐The quality of the water. ☐The method of measurement of water diverted. ☐The recharge of water to the aquifer. ☐Description of the estimated area of hydrologic effect of the project. ☐The method and place of discharge. ☐An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☒ The duration of the planned monitoring.		**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☐ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **Matthew Higginbotham**
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Applicant Signature Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

☐ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this _____ day of _____ 20 _____ , for the State Engineer,

_____, State Engineer

By: _____ _____
Signature Print

Title:

FOR OSE INTERNAL USE

File Number:	Trn Number: