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ANNUAL REPORT FOR SOLID WASTE MANAGEMENT UNIT (SWMU) 55 NAVAL ACTIVITY PUERTO RICO

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AGVIQ

SWMU 55 Annual Report

Naval Activity Puerto Rico
Ceiba, Puerto Rico

Revision No. 00

Contract No. N62470-08-D-1006
Task Order No. JM04

Submitted to:

U.S. Naval Facilities
Engineering Command
Southeast

Prepared by:

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June 2015

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Client Acceptance:

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Certification Page for the SWMU 55 Annual Report
(Revision No. 00)

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Contents

Aconyms and Abbreviations vii
1.0 Introduction 1-1
1.1 Facility Description and History 1-1
1.2 Site Location and History 1-1
1.3 Background 1-2
1.4 Purpose and Scope 1-3
2.0 Summary of Field Activities for Implementation of Corrective Measures 2-1
2.1 Pre-Corrective Action Groundwater Sampling – November 2012 2-1
2.2 Source Zone Additional Characterization and Downgradient Injection Well Installation 2-2
2.2.1 Drilling Procedures 2-3
2.2.2 Well Installation Procedures 2-3
2.2.3 Well Development 2-4
2.2.4 Surveying 2-4
2.3 Source Zone Excavation and Infiltration Gallery Construction 2-4
2.3.1 Site Preparation 2-4
2.3.2 Excavation 2-4
2.3.3 Infiltration Gallery/Bioreactor Construction and ISCO Application 2-5
2.4 Post-ISCO Performance Monitoring 2-7
2.5 Pre-ISB Monitoring 2-7
2.6 Conversion from Infiltration Gallery to Bioreactor 2-8
2.7 Mid-Plume EVO Injection 2-8
2.8 Bioreactor and Mid-Plume Performance Monitoring and TCE Plume Stability Monitoring 2-9
2.9 Waste Management 2-10
2.9.1 Temporary Storage 2-10
2.9.2 Waste Characterization 2-10
3.0 Performance Monitoring and Horizontal Delineation Results 3-1
3.1 Groundwater Flow 3-1
3.2 VOC Concentrations in Groundwater 3-1
3.2.1 Source Area 3-1
3.2.2 Downgradient Plume 3-3
3.3 Bioreactor Operation and Maintenance 3-5
4.0 Conclusions and Recommendations 4-1
4.1 Conclusions 4-1
4.2 Recommendations 4-1
5.0 References 5-1

Tables

2-1 Depth to Groundwater Measurements
2-2 Well Construction Details
3-1 Summary of Analytical Data
3-2 Total Molar Concentrations
3-3 Guidelines for Interpreting Geochemical Indicators

Figures

1-1 Site Location Map
1-2 Site Layout
2-1 In Situ Bioreactor Cross Section Schematic
2-2 Bioreactor As-Built
3-1 Shallow Aquifer Zone (Wells Screened Less than 25 Feet bgs) Potentiometric Surface Map – Pre-Corrective Action, November 26, 2012
3-2 Deep Aquifer Zone (Wells Screened Greater than 25 Feet bgs) Potentiometric Surface Map – Pre-Corrective Action, November 26, 2012
3-3 Shallow Aquifer Zone (Wells Screened Less than 25 Feet bgs) Potentiometric Surface Map – November 2014
3-4 Deep Aquifer Zone (Wells Screened Greater than 25 Feet bgs) Potentiometric Surface Map – November 2014
3-5 Shallow Aquifer Zone (Wells Screened Less than 25 Feet bgs) TCE Concentrations – Pre- Corrective Action, December 2012
3-6 Deep Aquifer Zone (Wells Screened Greater than 25 Feet bgs) TCE Concentrations – Pre-Corrective Action, December 2012
3-7 Shallow Aquifer Zone (Wells Screened Less than 25 Feet bgs) TCE Concentrations – October 2013
3-8 Deep Aquifer Zone (Wells Screened Greater than 25 Feet bgs) TCE Concentrations – October 2013
3-9 Deep Aquifer Zone (Wells Screened Greater than 25 Feet bgs TCE Concentrations – November 2013

Appendices

A Standard Groundwater Monitoring Procedures
B Soil Boring Logs
C Well Construction Diagrams
D Well Development Logs
E Survey Location Plan of SWMU 7/8 and SWMU 55
F Summary of Waste Characterization Sample Results and Waste Manifests
G Purge Data
H Laboratory Data Packages and Data Validation Reports

Acronyms and Abbreviations

AGVIQ-CH2M HILL	AGVIQ-CH2M HILL Constructors, Inc. Joint Venture III
ASTM	ASTM International (previously known as American Society for Testing and Materials)
Baker	Baker Environmental, Inc.
bgs	below ground surface
BRAC	Base Realignment and Closure
BW	bioreactor well
CAO	corrective action objective
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cis-1,2-DCE	cis-1,2-dichloroethene
Cl^-	chloride
CMI	corrective measures implementation
CMS	corrective measures study
DC	direct current
DO	dissolved oxygen
EPA	U.S. Environmental Protection Agency
ERD	enhanced reductive dechlorination
EVO	emulsified vegetable oil
Fe^{2+}	ferrous iron
gpm	gallons per minute
GPS	Global Positioning System
HASP	health and safety plan
HSA	hollow-stem auger
ID	inner diameter
ISB	in-situ bioremediation
ISCO	in-situ chemical oxidation
IW	injection well
IRP	Installation Restoration Program
LRA	Local Redevelopment Authority
mg/L	micrograms per liter
MNA	monitored natural attenuation
µg/L	micrograms per liter
MW	monitoring well
NAD	North American Datum
NAPR	Naval Activity Puerto Rico
NAVFAC SE	Naval Facilities Engineering Command Southeast
NAVY	Department of Navy
$NaMNO_4$	sodium permanganate
NSRR	Naval Station Roosevelt Roads
ORP	oxidation-reduction potential
PCB	polychlorinated biphenyl

PID	photoionization detector
PPE	personal protective equipment
ppm	parts per million
PVC	polyvinyl chloride
QC	quality control
RCRA	Resource Conservation and Recovery Act
SAP	Sampling and Analysis Plan
SCH40	Schedule 40
SESD	Science and Ecosystem Support Division
SMWU	solid waste management unit
SO^{4-}	sulfate
SOP	standard operating procedure
TCE	trichloroethene
TCLP	toxic characteristics leaching procedure
TOC	total organic carbon
UCS	Unified Soil Classification System
VOC	volatile organic compound
VC	vinyl chloride
yd^3	cubic yards

Executive Summary

AGVIQ-CH2M HILL Constructors, Inc. Joint Venture III (AGVIQ-CH2M HILL) was contracted by the Department of the Navy (Navy), Naval Facilities Engineering Command Southeast (NAVFAC SE), to conduct corrective measures at and prepare an Annual Report for Solid Waste Management Unit (SWMU) 55 located at the Naval Activity Puerto Rico (NAPR), formerly known as Naval Station Roosevelt Roads (NSRR), in Ceiba, Puerto Rico. The work was performed under Contract Number N62470-08-D-1006, Task Order Number JM04. This report documents the work performed between November 2012 and November 2014 to implement and monitor progress of the corrective measures implemented to reduce trichloroethene (TCE) concentrations in groundwater to the revised (June 2012) corrective action objective (CAO) of 193 micrograms per liter (µg/L).

In December 2009, AGVIQ-CH2M HILL performed an in-situ chemical oxidation (ISCO) pilot-scale study to evaluate the ability of sodium permanganate ($NaMnO_4$, herein referred to as permanganate) to reduce TCE concentrations in source area groundwater. The results of the pilot-scale study indicated ISCO was only partially effective because of incomplete contact with TCE residuals and because permanganate persistence was low in the subsurface. Based on this finding, AGVIQ-CH2M HILL prepared a Corrective Measures Study (CMS) Addendum in June 2012 to revise the remedial strategy for the site. The revised strategy augmented the ISCO approach to include the excavation of soil within the source area, infiltration of permanganate in the bottom of the source area excavation, and construction of a bioreactor in the source area excavation. These actions were followed by in-situ bioremediation (ISB) using emulsified vegetable oil (EVO) injections in groundwater outside the source area. The CMS Addendum also included a revised CAO for TCE in groundwater of 193 µg/L.

From November 2012 to November 2014 the following activities were performed: additional source zone characterization, source area excavation, installation of an infiltration gallery/bioreactor, injection well installation, ISCO application, injection of EVO downgradient of the source, and completion of seven groundwater sampling events.

The groundwater monitoring data indicate a reduction in TCE plume size and concentration in both the source area and downgradient plume areas of the plume following the implementation of the corrective measures. In both the source area and the downgradient plume, TCE concentrations in all shallow wells were reduced below the CAO of 193 micrograms per liter (µg/L). The corrective measures have also impacted the deep wells in the source area, bringing TCE below the CAO in this zone, but the effects of EVO injection in the mid-plume wells has yet to be seen in the deeper downgradient wells. Based on the results of the groundwater monitoring, AGVIQ-CH2M HILL recommends the continued operation of the bioreactor in the source area coupled with annual sampling of site wells for the analysis of TCE, cis-1,2-dichloroethene, vinyl chloride, and geochemical indicators. The operation and monitoring data will be evaluated to determine if additional EVO injections into the mid-plume injection wells is necessary to expedite TCE degradation in the downgradient deep wells.

1.0 Introduction

AGVIQ-CH2M HILL Constructors, Inc. Joint Venture III (AGVIQ-CH2M HILL) was contracted by the Department of the Navy (Navy), Naval Facilities Engineering Command Southeast (NAVFAC SE), to conduct corrective measures at and prepare an Annual Report for Solid Waste Management Unit (SWMU) 55 located at the Naval Activity Puerto Rico (NAPR), formerly known as Naval Station Roosevelt Roads (NSRR), in Ceiba, Puerto Rico (Figure 1-1). The work was performed under Contract Number N62470-08-D-1006 and Task Order Number JM04. This annual report documents field activities conducted between 2012 and 2014 to implement and monitor progress of the corrective measures taken to address trichloroethene (TCE) in groundwater beneath SWMU 55.

1.1 Facility Description and History

In 1943, NSRR was commissioned as a Naval Operations Base and then re-designated as a Naval Station in 1957. The naval station was utilized for flight practice, as well as other missions to control the area's air space until 2004 when it became inoperative. The NAPR was established at this time. The northern entrance to NAPR is approximately 35 miles east of San Juan, along PR Highway 53. The nearest large city is Fajardo, located approximately 10 miles north of NAPR on Route PR Highway 53. The town of Ceiba adjoins the west boundary of NAPR (Figure 1-1).

The proposed future usage of SWMU 55 is described in the *Final Supplemental Environmental Assessment for Disposal of Naval Activity Puerto Rico* (NAVFAC, 2011). The Navy has advised EPA that the Local Redevelopment Authority (LRA) application for an Economic Development Conveyance transfer has been approved for the proposed "Caribbean Riviera" development and that the "Port Parcel," including SWMU 55, was transferred to the LRA on January 25, 2012 pursuant to an approved Covenant Deferral Request allowing transfer prior to completion of the required cleanups.

1.2 Site Location and History

Prior to 1993, environmental activities at the former NSRR, exclusive of operation of underground storage tanks, were conducted in compliance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) regulations under the Navy's Installation Restoration Program (IRP). In October 1994, EPA Region 2 issued a Final Resource Conservation and Recovery Act (RCRA) Part B Permit to the NSRR, now NAPR. The permit contained requirements for RCRA facility investigation activities at 24 SWMUs and 3 areas of concern, including SWMU 55. The RCRA Part B Permit, issued for the Defense Reutilization and Marketing Office at NAPR, included conditions for corrective action under the Hazardous and Solid Waste Amendments provisions of RCRA.

SWMU 55 is the TCE plume near the Tow Way Fuel Farm and is located south of Forrestal Drive near former Building 2314 (formerly Building 46). Former Building 2314, located directly northeast of well 7MW07, was reportedly used for the storage and maintenance of small watercraft. The exact maintenance activities completed here and

specific materials stored in the building are unknown, and the source of TCE could not be determined based on available records. Former Building 2314 was destroyed by Hurricane Hugo in September 1989 (Baker Environmental, Inc. [Baker], 2005). However, the pad remains, and the former location of the building is shown on Figure 1-2.

1.3 Background

In December 2009, AGVIQ-CH2M HILL performed an in situ chemical oxidation (ISCO) pilot-scale test, as prescribed in the Corrective Measures Study Final Report for SWMUs 54 and 55 (Baker, 2005) (hereinafter referred to as the CMS), to evaluate the ability of sodium permanganate ($NaMnO_4$, referred to as permanganate in this report) to reduce TCE concentrations in source area groundwater. The results of the pilot-scale study indicated the ISCO remedy proposed in the CMS was only partially viable to address TCE contamination in groundwater because of insufficient contact with TCE residuals and because of limited permanganate persistence in the subsurface (Appendix C of the CMS Addendum, AGVIQ-CH2M HILL, 2012a). Therefore, a combination of remedial technologies, including excavation and ISCO, in addition to in-situ bioremediation (ISB) were proposed in an addendum to the CMS (AGVIQ-CH2M HILL, 2012a). The combined approach was expected to rapidly reduce TCE concentrations in the source area using excavation of TCE-impacted shallow soils and ISCO infiltration prior to implementing ISB, and reduce the time required to complete the overall remedial action.

During the pilot-scale testing during 2009 to 2010, the 2005 CAO for TCE was used to delineate the TCE plume and to design the corrective measures. In May 2012, the 2005 CAOs were revised using EPA's regional Screening Levels (November 2011) based calculation methods and toxicity factors, as recommended by EPA Region 2 during their review of the CMS Addendum. The revised CAOs are based on continued industrial land use and were developed for industrial (indoor) worker and construction worker scenarios, as presented in the *Revised Corrective Action Objectives for Solid Waste Management Units 7&8, 54, and 55* Technical Memorandum (Appendix A of the CMS Addendum, AGVIQ-CH2M HILL, 2012a).

During CAO development, the groundwater beneath SWMU 55 was demonstrated to be unusable as a potable water supply due to the brackish/saline nature of the area groundwater, with high levels of total dissolved solids and salinity, as detailed in the *Groundwater Usability Assessment, Naval Activity Puerto Rico, Ceiba, Puerto Rico* Technical Memorandum (Appendix B of the CMS Addendum, AGVIQ-CH2M HILL, 2012a). Therefore, potable use based drinking water standards (e.g., maximum contamination levels) are not applicable for SWMU 55.

Under current land use, no direct exposure to site groundwater is occurring at or downgradient of SWMU 55, as area groundwater is expected to discharge to the Ensenada Honda, thus future use of groundwater is unlikely. However, indirect exposure pathway through volatilization of TCE to ambient air and indoor air could have occurred in the SWMU 55 TCE plume area. Therefore, this indirect exposure pathway was considered complete for deriving the CAOs for the site groundwater. The revised CAO for TCE in groundwater is 193 µg/L.

1.4 Purpose and Scope

This annual report documents field activities conducted between November 2012 and November 2014 to implement and monitor the corrective measures as detailed in the Corrective Measures Implementation (CMI) Plan (AGVIQ-CH2M HILL, 2012b) at the SWMU 55 site. The field activities consisted of additional characterization in the source zone, groundwater monitoring, shallow source soils excavation, installation of the infiltration gallery/bioreactor, ISCO application, injection well installation, and emulsified vegetable oil (EVO) injection as outlined in the CMI Plan (AGVIQ-CH2M HILL, 2012b) and Sampling and Analysis Plan (SAP) (AGVIQ-CH2M HILL, 2012c).

The following tasks were performed:

- **November 2012**: Pre-corrective measures monitoring
- **April 2013**: Source zone additional characterization and downgradient plume injection well installation, shallow source zone excavation, infiltration of permanganate in the bottom of the shallow excavation, and bioreactor construction
- **July – September 2013**: Post-ISCO performance monitoring
- **October 2013**: Pre-ISB monitoring
- **November 2013**: Conversion of the ISCO infiltration gallery to the bioreactor, bioreactor start up, and operations.
- **February 2014**: Mid-plume EVO injection
- **February, April, August, and November 2014**: Bioreactor and mid-plume ISB monitoring and TCE plume stability monitoring

This report is organized as follows:

- **Section 1.0 Introduction** includes the site background information and a summary of the project objectives and scope of the work performed.
- **Section 2.0 Summary of Field Activities** summarizes the field activities conducted between November 2012 and December 2014.
- **Section 3.0 Discussion of Results** presents the data obtained between November 2012 and November 2014 related to corrective measures monitoring and TCE plume stability monitoring.
- **Section 4.0 Conclusions and Recommendations** summarizes the major conclusions drawn from completion of the corrective measures and the overall system effectiveness based on performance monitoring. This section also provides recommendations for future monitoring at the site.
- **Section 5.0 References** contains a list of the works cited in this report.
- **Appendix A** contains standard groundwater sampling procedures.
- **Appendix B** contains copies of soil boring logs.

- **Appendix C** contains copies of well construction diagrams.
- **Appendix D** contains copies of well development logs.
- **Appendix E** contains a copy of the survey for SWMU 55.
- **Appendix F** contains soil and water waste characterization sample summary results and waste manifests for SWMU 55.
- **Appendix G** contains purge data from wells sampled.
- **Appendix H** contains laboratory data packages for all groundwater samples and waste characterization samples as well as data validation reports for groundwater samples.

2.0 Summary of Field Activities for Implementation of Corrective Measures

This section provides a summary of the field activities conducted as part of the corrective measures at the SWMU 55 TCE Plume. As described in Section 1.2, the corrective measures implementation included groundwater monitoring and bioreactor construction and operations. The activities described below were conducted in accordance with the CMS Addendum (AGVIQ-CH2M HILL, 2012a), CMI Plan (AGVIQ-CH2M HILL, 2012b), and SAP (AGVIQ-CH2M HILL, 2012c). During completion of all fieldwork, protection of air, water, and land resources, including fish and wildlife, as well as spill prevention measures were implemented according to the Environmental Protection Plan (part of the Pilot Test Work Plan [AGVIQ-CH2M HILL, 2009]). In addition, quality control (QC) measures were maintained for all work. The QC measures were performed in accordance with the protocols described in the Quality Control Plan included in the Pilot Test Work Plan (AGVIQ-CH2M HILL, 2009). For clarification, the field activities are summarized in this section in chronological order, and standard procedures for activities such as groundwater monitoring are summarized in Appendix A.

The following tasks were performed between November 2012 and November 2014:

- November 2012: Performed pre-corrective measures (baseline) groundwater sampling event.
- April 2013: Installed injection wells and additional monitoring well.
- April and November 2013: Performed source zone excavation, ISCO infiltration, and constructed in situ bioreactor.
- July through September 2013: Performed post-ISCO monitoring.
- October 2013: Performed pre-ISB monitoring.
- February 2014: Performed downgradient EVO injections.
- February, April, August, and November 2014: Performed bioreactor, mid-plume ISB, and TCE plume stability monitoring.

2.1 Pre-Corrective Action Groundwater Sampling – November 2012

The pre-corrective measures (baseline) groundwater sampling event was conducted from November 27 to 30, 2012. Gauging was performed in accordance with guidelines adopted from ASTM International (ASTM) D4750 *Standard Test Method for Determining Subsurface Liquid Levels in a Borehole or Monitoring Well*. Gauging data were recorded in site-specific waterproof logbooks for each of the groundwater sampling events. The gauging data are provided in Table 2-1.

Prior to sampling, a round of water level measurements was collected from SWMU 55 groundwater monitoring and injection wells. The data from this groundwater monitoring event were used to establish the TCE plume geometry and baseline aquifer conditions prior to implementation of the corrective measures. Groundwater samples were collected from the following 36 monitoring wells:

- 7MW07
- 7MW08
- 7MW10
- 7MW21
- 7MW22
- 7MW23
- 7MW24
- 55MW01
- 55MW02
- 55MW03
- 55MW04
- 55MW05
- 55MW06
- 55MW07
- 55MW08
- 55MW09
- 55MW10
- 55MW11
- 55MW12
- 55MW13
- 55MW14
- 55MW15
- 55MW16
- 55MW17
- 55MW18
- 55MW19
- 55MW20
- 55MW21
- 55MW22
- 55MW23
- 55MW24
- 55MW25
- 55IW01
- 55IW02
- 55IW03
- 55IW04

Groundwater samples were analyzed for select VOCs [TCE, cis-1,2-dichloroethene (1,2-DCE), and vinyl chloride (VC)] using SW-846 EPA Method 8260B. Samples from select wells were also analyzed for geochemical indicators: total alkalinity (EPA Method 2320B), chloride, nitrate/nitrite, and sulfate (SW9056A), ethane, ethene, and methane (RSK-175), sulfide (A4500S2D), and total organic carbon (TOC) (A5310B). In addition, wells sampled for geochemical indicators were also sampled and analyzed in the field for ferrous iron (Fe^{2+}) (unfiltered and filtered with 0.45 micron disposable filter) using a Hach® 890 Colorimeter. Purge water was contained pending proper disposal, in accordance with Section 1.7 of the CMI Plan (AGVIQ-CH2M HILL, 2012b), and as discussed in detail in Section 2.9.

One additional monitoring well, 55MW26, was installed and sampled in April 2013; those analytical results are considered part of the pre-corrective action monitoring data. The groundwater sample collected from monitoring well 55MW26 was sampled and analyzed for TCE, cis-1,2-DCE, and VC only. Details of the 55MW26 well installation are provided in Section 2.2. Analytical results from the pre-corrective action monitoring are discussed in Section 3.2.

2.2 Source Zone Additional Characterization and Downgradient Injection Well Installation

To complete the horizontal delineation of the source area and improve the siting of the bioreactor, one shallow well (55MW26) was installed in the source zone. Eight wells were also installed downgradient of the bioreactor location (approximately mid-plume) to be used for injection of EVO. Two additional injection wells were installed beyond the six planned in the CMI Plan (AGVIQ-CH2M HILL, 2012b) in the event the EVO was depleted sooner than expected and the TCE plume was not being reduced as quickly as planned. The following subsections briefly describe well installation and development of the nine wells

that were installed from April 9 to 29, 2013. Remediation-derived waste generated during well installation was stored, transported, and disposed of in accordance with the procedures detailed in Section 1.7 of the CMI Plan (AGVIQ-CH2M HILL, 2012b) and are further discussed in Section 2.9.

2.2.1 Drilling Procedures

On April 9 and 10, 2013, monitoring well 55MW26 was installed. Additionally, on April 8 and 29, 2014, eight wells, 55IW05 through 55IW12, were installed. Well drilling and installation procedures were performed in accordance with the SOPs provided in Appendix B of the SAP (AGVIQ-CH2MHILL, 2012c) and the general requirements of EPA Region 4 Science and Ecosystem Support Division (SESD) *Field Branches Quality System and Technical Procedures (*EPA, 2009).

Monitoring well 55MW26 was drilled to a depth of 25.5 feet below ground surface (bgs), and the eight injection wells were drilled to depths ranging from 21 to 45.5 feet bgs, depending on the depth at which bedrock was encountered.

2.2.2 Well Installation Procedures

All wells were installed using hollow-stem auger (HSA) drilling techniques. As the boring was advanced, soil samples were collected at 5-foot intervals for lithologic description using standard split spoon sampling techniques. VOC concentrations were measured in soil headspace using a photoionization detector (PID); these measurements are provided on the soil boring logs (Appendix B). Soil was classified according to the Unified Soil Classification System (UCS) by AGVIQ-CH2M HILL field staff. Because split spoon samplers were not used during drilling at wells 55IW11 and 55IW12, a soil boring log was not generated for these two wells. The geology at these wells is similar to that observed during installation of well 55IW03, which is located near 55IW11 and 55IW12. The soil boring logs for the remaining injection wells and monitoring well are provided in Appendix B. Well construction details are summarized in Table 2-2, well construction diagrams are presented in Appendix C, and the well locations are shown on Figure 1-2.

All wells were constructed using 10.1 to 28.4 feet of 2-inch inner diameter (ID) Schedule 40 (SCH40) polyvinyl chloride (PVC) casing. Monitoring well 55MW26 was constructed with 14.8 feet of SCH40 PVC 0.020-inch slot screen. The injection wells were constructed using a 0.020-inch continuously wrapped Vee-wire® screen. The screen intervals for injection wells varied, as summarized in Table 2-2. In all wells, the sand filter pack extended a minimum of 1.5 feet above the screen and a 2-foot-thick (minimum) bentonite seal was placed above the filter pack. The cement grout seal consisted of Portland Type I cement conforming to ASTM C-150 standards. The cement grout seal was extended from the top of the bentonite seal to ground surface where the well pad was placed. All wells were finished as aboveground completions with a locking well vault set in 3-foot square concrete pads. Additionally, four bollards were installed at each corner of the injection well pads to protect each well from vehicular damage. Well construction details are summarized on Table 2-2 and on well construction diagrams presented in Appendix C.

Following well installations, a well tag was affixed to the outside of the well vault. The tag included well identification number, date installed, and total well depth for each of the monitoring well and injection wells.

2.2.3 Well Development

Each well was developed following the well development procedures outlined in CMI Plan (AGVIQ-CH2M HILL, 2012b). Development commenced after the grout had been cured for 24 hours. The wells were developed using a surge block. After surging, a submersible pump equipped with disposable polyethylene tubing was used to remove suspended sediment. Well development at 55MW26 was continued until the water produced was clear and relatively free of sediment. Well development at the eight injection wells was continued until three successive measurements of water quality parameters remained stable (within 10 percent). Well development logs for monitoring well and injections wells are provided in Appendix D. Post-development samples were collected from monitoring well 55MW26 for analysis of select VOCs and geochemical indicators.

2.2.4 Surveying

PJDC Inc., San Juan - Professional Land Surveyors registered in Puerto Rico surveyed the locations and elevations of the monitoring and injection wells. The horizontal location of the wells were surveyed relative to the North American Datum (NAD) 83 (latest adjustment), and the top of casing and ground surface elevations were surveyed relative to a local tide study made by the U.S. Navy survey section in 1941, using a mean low water of 100 feet as base datum. The survey coordinates use the mean low water datum as 0.00 feet, without the 100 feet offset. The survey is provided in Appendix E. The survey data received from the surveyor for each of the monitoring well and injection wells are summarized in Table 2-2.

2.3 Source Zone Excavation and Infiltration Gallery Construction

2.3.1 Site Preparation

Preparations for the source zone excavation commenced on April 8, 2013 with staking of the infiltration gallery/bioreactor location using global positioning system (GPS) coordinates. After the excavation location was staked, it was determined to be too close to 7MW07, which is the well that will be used as an extraction well once the infiltration gallery is converted into a bioreactor. Therefore, to ensure the integrity of 7MW07, the proposed infiltration gallery/bioreactor location was revised. The revised location was selected using the analytical results from post-development sampling at monitoring well 55MW26 and field observations. The infiltration gallery/bioreactor excavation footprint was shifted north by approximately 3 feet. The final location is shown on Figure 1-2. A lined soil stockpile area was established and stormwater management controls including berms were constructed.

On April 10, 2013, the utility locate was completed by GeoEnvirotech, a third party utility locate contractor through Right Way Environmental. The work area and lined soil stockpile area were also established, including stormwater management controls consisting of berms were constructed.

2.3.2 Excavation

On April 17 and 18, 2013, AGVIQ-CH2M HILL completed the planned excavation in the source zone for the infiltration gallery/bioreactor. The final limits of excavation measured 20 feet square with a final depth of 12 feet bgs, as specified in the CMI Plan (AGVIQ-

CH2M HILL. 2012b). An estimated 178 cubic yards (yd^3) of soil was excavated and placed in the soil stockpile area using a CAT 330D excavator.

During excavation, breathing zone air monitoring was conducted to protect onsite workers from potential vaporization exposure during excavation and stockpiling operations. The air monitoring was conducted in accordance with the approved site-specific health and safety plan (HASP) (AGVIQ-CH2M HILL, 2012d). The breathing zone air monitoring for VOCs was conducted using a photoionization detector (PID) during soil excavation and stockpiling operations. Air monitoring readings were recorded in the field logbook.

The soil excavated from the source area was segregated during excavation and stockpiled on secondary containment pads lined with two layers of 6-mil plastic sheeting. Based on previous soil characterization conducted during the pilot-scale testing in 2009, soil from 0 to 2 feet bgs was expected to be non-hazardous and was stockpiled separately from soil excavated from 2 to 12 feet bgs. VOCs in soil headspace was measured in samples from each soil stockpile by collecting a composite soil sample in a plastic bag. The headspace inside the bag was allowed to equilibrate for 1 minute prior to inserting the PID sensor into the bag. One headspace VOC measurement was taken for soil excavated from 0 to 2 feet bgs, and a separate measurement was taken for every 10 yd^3 excavated from 2 to 12 feet bgs. The headspace VOC concentration from the 0 to 2 feet bgs soil stockpile was measured at 0.1 part per million (ppm). The headspace VOC concentrations measured during excavation from 2 to 10 feet bgs stockpile ranged from 0.0 ppm to 3.0 ppm. The highest PID reading of 3.0 ppm was measured in the headspace of soil excavated from the northeast corner of the excavation from the 11 to 12 feet bgs. Overall, no significant breathing zone or headspace VOC concentrations were measured during excavation and stockpiling operations.

Remediation-derived waste generated during excavation and well installation was stored, transported, and disposed of in accordance with the procedures in Section 1.7 of the CMI Plan (AGVIQ-CH2M HILL, 2012b), and are further detailed in Section 2.9. One composite soil sample was collected from each of the soil stockpiles for waste characterization. Appendix F provides soil analytical results for both composite samples collected.

2.3.3 Infiltration Gallery/Bioreactor Construction and ISCO Application

Construction of the infiltration gallery/bioreactor was conducted in three separate phases: installation of a monitoring point and backfilling with gravel, ISCO application using permanganate solution, and conversion of the excavation into a bioreactor.

On April 18, 2013, immediately following excavation, Phase I of the infiltration gallery/ bioreactor was constructed. Initial construction of the infiltration gallery/bioreactor consisted of installing one monitoring point (55BW01) near the center of the excavation and backfilling the bottom 4 feet (from 8 to 12 feet bgs, the infiltration gallery) with 60 yd^3 of ¾-inch gravel. The monitoring point was constructed of 2-inch SCH40 PVC, screened within the gravel from 8 to 12 feet bgs, and was installed to monitor the presence of permanganate after ISCO application as well as TCE treatment achieved in the bioreactor during bioreactor operations. A schematic of the bioreactor cross-section is provided on Figure 2-1. The well location shown on Figure 1-2 is approximate because the well location was not surveyed.

Following monitoring point installation and gravel placement, the ISCO application was completed with introduction of approximately 2,000 gallons of a 60.1 gallons per liter

sodium permanganate ($NaMnO_4$) solution into the infiltration gallery (bottom 4 feet of excavation backfilled with gravel in Phase I). The $NaMNO_4$ solution was added to the infiltration gallery until the gravel was completely saturated. All chemical handling activities were conducted in accordance with the HASP (AGVIQ-CH2M HILL, 2012d) and in accordance with the procedures in Section 1.7 of the CMI Plan (AGVIQ-CH2M HILL, 2012b), and are further detailed in Section 2.9.

After the ISCO application, the bioreactor was constructed in the excavation above the infiltration gallery by backfilling with a mixture of 70 percent mulch and 30 percent gravel (by volume). Prior to backfilling, two wells (55BW02 and 55BW03) were placed off-center in the gravel/mulch zone as possible monitoring or injection points. The two wells were set east and west of monitoring point 55BW01, as shown on Figure 1-2. The well locations are approximate because they were not surveyed. The two injection points were constructed with a 2-inch inner diameter SCH40 PVC 10 feet riser connected to 6-feet of a 2-inch SCH40 PVC 0.02-inch Vee-wire ® continuous slot screen. The injection points will be used in the future for injections of EVO in the bioreactor to replenish TOC, if necessary.

The excavation was backfilled from 1 to 8 feet bgs with a mixture of 80 yd^3 of mulch, 40 yd^3 of gravel (by volume), and approximately 63 gallons of soybean vegetable oil to complete construction of the bioreactor. Prior to placement, the mulch, gravel, and oil were mixed thoroughly using the excavator bucket and the front end loader. The gravel used was washed river rock or river gravel 0.5 to 1.25 inches in size. The mulch consisted of locally-sourced composted organic mulch containing leaves and small wood chips with a 3-inch maximum dimension.

A drip irrigation piping system was installed within the excavation above the mulch/gravel layer to distribute groundwater. The drip irrigation piping was assembled as a large square and placed flat on top of the bioreactor mulch/gravel backfill (Figure 2-2). The drip irrigation piping consisted of two separate (primary and secondary) distribution racks constructed of 1/2-inch diameter SCH40 PVC pipe with 3/16-inch-diameter holes located approximately every 3 feet along the 10 foot sections of pipe. The primary distribution rack was placed at 1 foot bgs whereas the secondary distribution rack was placed at 1.5 feet bgs. Currently, the primary distribution rack is plumbed to extraction well 7MW07. The secondary distribution rack will be reserved for possible future use, if the primary rack gets clogged, or if additional distribution capacity is required.

Geotextile fabric (Geofabric plastic Terra Tex NO_4) was placed above the drip irrigation piping. Based on the toxicity characteristic leaching procedure (TCLP) soil analytical results, it was determined that the soil from 0 to 2 feet bgs that was stockpiled during excavation could be returned as backfill at the top of the bioreactor. The excavation was backfilled to grade and mounded an additional 24 inches to account for settling/compression of the mulch and to promote drainage. The work zone and soil and materials stockpiles were fenced for security.

Site Restoration

The remaining open excavation was backfilled with soil excavated from the 0 to 2 feet bgs stockpile. The soil placed in the excavation was compacted using the flat-end of the excavator bucket to lightly compact the soil. The bioreactor mound was rough-graded to divert surface water away from the center of the bioreactor. The site was graded to prevent

erosion and erosion controls (hay bales) were left in place until local vegetation was reestablished in the disturbed areas.

The remaining excavated soil (i.e., 2 to 12 feet bgs) from the source was transported and disposed offsite from June 10 through 21, 2013. A total of 388 tons of soil was disposed of as non-hazardous waste at Ponce Sanitary Landfill. All waste manifests and waste characterization samples are located in Appendix F. Additional details regarding waste management can be found in Section 2.9.

2.4 Post-ISCO Performance Monitoring

Two post-ISCO groundwater sampling events were conducted to monitor the distribution of $NaMNO_4$ below the excavation and in select adjacent monitoring wells. The wells were purged and a sample was collected for visual field analysis for presence of permanganate. The post-ISCO monitoring events were completed in July 2013 and September 2013. The following 12 wells were included in each post-ISCO monitoring event:

- 7MW07
- 7MW10
- 7MW23
- 7MW24
- 55MW01
- 55MW02
- 55MW12
- 55MW14
- 55MW25
- 55MW26
- 55IW02
- 55IW04

In July of 2013, permanganate was observed in 4 of the 12 wells: 7MW07, 7MW24, 55IW02, and 55IW04. In September 2013, permanganate was not observed in any of the wells monitored, indicating the oxidation phase of the source area treatment was complete. Purge data for these monitoring events are included in Appendix G. All sampling and analysis was conducted in accordance with the SAP (AGVIQ-CH2M HILL, 2012c). Details regarding storage, handling, and disposal of remediation derived waste are included in Section 2.9.

2.5 Pre-ISB Monitoring

A pre-ISB monitoring event was completed prior to initiating the ISB remediation phase to determine the success of TCE reduction and aquifer conditions following ISCO application. The pre-ISB groundwater monitoring event was conducted between October 22 and 28, 2013. Prior to sampling, a comprehensive round of water levels were collected from SWMU 55 groundwater monitoring and injection wells. The following 23 wells were sampled during the pre-ISB monitoring event:

- 7MW07
- 7MW10
- 7MW22
- 7MW23
- 7MW24
- 55IW02
- 55IW04
- 55BW01
- 55MW01
- 55MW02
- 55MW05
- 55MW06
- 55MW09
- 55MW10
- 55MW11
- 55MW12
- 55MW14
- 55MW15
- 55MW16
- 55MW17
- 55MW18
- 55MW25
- 55MW26

The groundwater samples collected were analyzed for select VOCs using SW-846 EPA Method 8260B. The wells were also sampled for geochemical indicators including alkalinity

using method SM 2320; methane, ethane, and ethene using RSK-175; total dissolved iron (filtered-using 0.45 micron disposal filter) using SW-846 6010; nitrate/nitrite using EPA Method 300.0; sulfate (SO^{4-}) and chloride (Cl^{-}) using EPA Method 300.0; sulfide using Method SM 4500-S2-F; and TOC using SM 5310-B. In addition, the wells sampled for geochemical indicators were also sampled for ferrous iron filtered (filtered with 0.45 micron disposable filter) and unfiltered) using the Hach® 890 colorimeter. Purge data for these monitoring events are included in Appendix G. All sampling and analysis was conducted in accordance with the SAP (AGVIQ-CH2M HILL, 2011c). Details regarding storage, handling, and disposal of remediation derived waste are included in Section 2.9.

2.6 Conversion from Infiltration Gallery to Bioreactor

From November 4 to 7, 2013, the remaining components for the bioreactor, consisting of the solar powered extraction well and conveyance piping, flow totalizer and pressure gauge for monitoring flow to the bioreactor (Figure 2-2), were installed.

On November 5 and 6, 2013, a trench was excavated between the bioreactor and extraction well 7MW07, and the conveyance piping, totalizing flow meter, and pressure gauge were installed. The trench for conveyance piping trench was approximately 1 foot wide, 1 foot deep, and 30 feet long. The conveyance piping consisted of ¾-inch SCH40 PVC. The conveyance piping trench was backfilled with 12 inches of sand following placement of the piping. A plastic valve box was installed at the end of the groundwater conveyance trench and on top of the bioreactor in a 24 inches long, 18 inches wide and 18 inches deep vault. The vault included the totalizing flow meter and pressure gauge to track infiltration system pressure and a sampling port to collect samples of groundwater being pumped to the bioreactor from well 7MW07. Groundwater exiting the valve box passes through a flow control valve before connecting to the infiltration piping that is used to distribute water across the top of the bioreactor. Clean soil excavated during trenching was spread over the bioreactor and compacted.

On November 6, 2013, a Grundfos™ SQFlex (11SQF-2), 4-inch centrifugal, solar-powered pumping system was installed in well 7MW07. The pump extracts contaminated groundwater and circulates it through conveyance piping to the bioreactor for treatment. The design flow rate is 1 gallon per minute (gpm) under mid-day solar conditions. Two 50-watt, 17.4-volt solar panels mounted on top of an abandoned refrigeration box located adjacent to the bioreactor (see Figure 2-3) provide power to the CU200 Control Unit that controls the pump. The solar panels are mounted at an angle of 10 degrees facing south-southeast. The CU200 Control Unit regulates power from the solar panels to the pump and includes a volt-meter, amp-meter, diagnostic tools, and an on/off switch.

The electrical supply to the extraction pump at 7MW07 was installed in 1-inch PVC electrical conduit placed along the perimeter of the bioreactor. The low-voltage DC power conduit was buried approximately 12 inches below the surface.

2.7 Mid-Plume EVO Injection

Injection of EVO at the eight mid-plume injection wells (55IW05 through 55IW12) was conducted on February 6 and 7, 2014, to enhance downgradient attenuation of the TCE

plume. A total of 16,399 gallons of 1.6 percent EVO by volume (mixture of 60 percent EDS-ER EVO solution and water) was injected.

The EVO was staged onsite as a 60 percent solution in 250-gallon totes, and was mixed onsite prior to injection in 508-gallon batches. The 60 percent EVO solution was diluted using a ratio of 62.5 gallons of water per gallon of 60 percent EVO solution to achieve a 1.6 percent (by volume) injection concentration.

According to the CMI Plan (AGVIQ-CH2M HILL, 2012b), injections of an equal amount (4,600 gallons) of EVO were planned for each new injection well. However, because of difficulty injecting EVO at 55IW05, injections were terminated and the remaining oil allotted for well 55IW05 was split between wells 55IW08 and 55IW09, but at a higher concentration. Although not originally planned, injection also was completed at wells 55IW11 and 55IW12. Daylighting occurred during injections at 55IW12; therefore, injection at that well was terminated after a total of 447 gallons were injected and the remaining oil allotted for 55IW12 was added to 55IW11, although at a higher concentration. The total injection volume for each well is as follows:

- 55IW05: 10 gallons of 1.5 percent EVO by volume
- 55IW06: 3,066 gallons of 1.5 percent EVO by volume
- 55IW07: 1,534 gallons of 1.5 percent EVO by volume
- 55IW08: 3,066 gallons of 1.5 percent EVO by volume and 424 gallons of 5.6 percent EVO by volume
- 55IW09: 3,068 gallons of 1.5 percent EVO by volume and 424 gallons of 5.6 percent EVO by volume
- 55IW10: 3,080 gallons of 1.5 percent EVO by volume
- 55IW11: 1,533 gallons of 1.5 percent EVO by volume and 116 gallons of 13.8 percent EVO by volume
- 55IW12: 447 gallons of 1.5 percent EVO by volume

2.8 Bioreactor and Mid-Plume Performance Monitoring and TCE Plume Stability Monitoring

In February, April, August, and November 2014, water quality sampling was performed to evaluate performance of the bioreactor and mid-plume ISB injection, and monitor the configuration of the TCE plume. The following wells sampled during each event:

- **February 2014:** 7MW07 (bioreactor influent), 55BW01 (bioreactor effluent), 55IW02, 55IW03, and 55IW04
- **April and November 2014:** 7MW07 (bioreactor influent), 7MW10, 7MW22, 7MW23, 7MW24, 55IW02, 55IW04, 55BW01 (bioreactor effluent), 55MW01, 55MW02, 55MW10, 55MW05, 55MW06, 55MW09, 55MW10, 55MW11, 55MW12, 55MW14, 55MW15, 55MW16, 55MW17, 55MW18, 55MW25, and 55W26

- **August 2014**: 7MW07 (bioreactor influent), 55BW01 (bioreactor effluent), 55IW02, and 55IW04

Bioreactor influent, bioreactor effluent, and samples from monitoring wells were analyzed for select VOCs (TCE, DCE, and VC) and geochemical indicators (alkalinity, chloride, ferrous iron, nitrate, nitrite, sulfate, sulfide, TOC, and MEE). Field parameters, including DO, turbidity, conductivity, pH, temperature and ORP, were recorded during well purging. All sampling and analysis were conducted in accordance with the SAP (AGVIQ-CH2MHILL, 2012c). Purge water was contained pending proper disposal as detailed in Section 2.9.

2.9 Waste Management

Remediation-derived waste was generated during the well installation, well development, bioreactor construction, groundwater sampling, and decontamination operations. The waste streams associated with this project included:

- Personal protective equipment (PPE) and used sampling supplies
- Soil cuttings and excess excavated material
- Equipment decontamination fluid
- Purge water

Soil, groundwater, and decontamination waste was stored, transported, and disposed of in accordance with the procedures in Section 1.7 of the CMI Plan (AGVIQ-CH2M HILL, 2012b) and are further detailed in the following subsections.

2.9.1 Temporary Storage

PPE and used sampling supplies associated with the generation of non-hazardous wastes and general debris were collected in black, non-translucent trash bags and disposed of in onsite refuse dumpsters. Soil cuttings generated from well installation were containerized in 55-gallon drums at a Base-approved temporary storage location pending waste characterization and offsite disposal. Purge water, development water and decontamination fluids were collected in bulk containers (i.e., 600-gallon blue poly tanks with secondary containment), and staged onsite for subsequent offsite disposal.

2.9.2 Waste Characterization

Soil

Soil cuttings, produced during the installation of monitoring well 55MW26 and injection wells 55IW05 through 55IW12 were temporarily stored in 55-gallon drums onsite. One composite soil sample (TD495) was collected from these drums for waste characterization on May 2, 2013. Material excavated during bioreactor construction was segregated into two piles according to depth interval and contained on bermed plastic sheeting. A composite soil sample was collected from each stockpile on April 18, 2013.

Waste characterization soil samples were analyzed for the following parameters:

- TCLP VOCs (Methods SW1311/8260C)
- TCLP semivolatile organic compounds (SVOCs) (Methods SW1311/8270D)
- TCLP metals (Methods SW1311/6010C/7470A)

- TCLP pesticides (Methods SW1311/8081B)
- TCLP herbicides (Methods SW1311/8151A)
- Polychlorinated biphenyls (PCBs) (Method SW8082)
- Corrosivity (Method SW9045)
- Ignitability (Method SW1010)

All soil was characterized as non-hazardous. Laboratory data packages and waste manifests are included in Appendix F.

Water

One liquid sample (TD491) from contained purge water was collected on December 6, 2012, and analyzed for the following parameters:

- RCRA VOCs (Method SW8260C)
- RCRA SVOCs (Method SW8270D)
- RCRA metals (Methods SW6010C/7470A)
- RCRA pesticides (Method SW8081B)
- PCBs (Method SW8082A)
- Herbicides (Method SW8151A)
- Corrosivity (Method SW9045)
- Ignitability (Method SW 1010)

The water was characterized as non-hazardous. Laboratory data packages and waste manifests are included in Appendix F.

3.0 Performance Monitoring and Horizontal Delineation Results

3.1 Groundwater Flow

A groundwater potentiometric surface map presenting baseline water levels measured in November 2012 prior to implementation of corrective measures is shown on Figures 3-1 (shallow aquifer zone – wells screened to 25 feet bgs or less) and 3-2 (deep aquifer zone – wells screened greater than 25 feet bgs). Figures 3-3 and 3-4 show the most recent site-wide gauging event (November 2014) for the shallow and deep aquifer zones, respectively. The measured water levels for all the site-wide gauging events conducted since November 2012 are summarized in Table 2-1. Note that the water levels provided in Table 2-1 are not adjusted for potential tidal influences.

Based on interpretation of the gauging data, groundwater flows from north/northeast to south/southwest across the site with a hydraulic gradient of 0.006 foot per foot for the shallow aquifer and 0.005 foot per foot for the deep aquifer zone. Groundwater elevations across the site vary between 1.34 feet (at UGW-11) and 8.39 feet (at 7MW20).

3.2 VOC Concentrations in Groundwater

Since November 2012, corrective measures, including application of potassium permanganate, soil excavation, and construction of a bioreactor in the TCE source area, and mid-plume EVO injection have impacted TCE concentrations in the shallow and deep aquifer zones. Groundwater samples were collected after implementation of each phase of the corrective measures in order to gauge effectiveness and progress of remediation. Analytical results are summarized in Table 3-1 and Appendix H contains the laboratory analytical data packages and data validation reports.

3.2.1 Source Area

VOC Concentrations Trends at Shallow Wells (Screened above 25 feet bgs)

Baseline TCE concentrations in groundwater samples collected from shallow wells 7MW07, 7MW24, 55IW03, 55MW25, and 5MW26 in November 2012 contained TCE concentrations ranging from 16.4 to 10,300 µg/L. Figure 3-5 shows the baseline TCE plume configuration for the shallow (less than 25 feet bgs) zone. Figure 3-6 depicts the baseline plume configuration for the deep (greater than 25 feet bgs) aquifer. The TCE concentrations measured in the shallow and deep aquifer in October 2013, representative of the post-ISCO groundwater concentrations, are presented on Figures 3-7 and 3-8. These figures indicate a significant reduction in the TCE concentrations in both intervals of the aquifer.

Because there were no TCE exceedances of the CAO in shallow wells in November 2014, a figure showing the current TCE plume configuration is not included in this document. A significant reduction of VOCs has occurred in the shallow source area wells, with the

greatest decrease in TCE, cis-1,2-DCE, and VC observed at well 7MW07. This result is to be expected since it is the closest shallow well to the bioreactor. VOC concentrations also declined at wells 7MW24 and 55IW03 (see Table 3-1).

During the reporting period, cis-1,2-DCE and VC increased slightly at well 7MW24 following implementation of the corrective measures, which is an indication of biodegradation of TCE. At 7MW24, the cis-1,2-DCE concentration increased from non-detect in November 2012 to 5.88 µg/L in November 2014 and VC concentrations increased from non-detect in November 2012 to 22.4 µg/L in November. The cis-1,2-DCE concentration is below the CAO for cis-1,2-DCE and there is no CAO for VC (AGVIQ-CH2M HILL. 2012a). Concentrations of 1,2-DCE and VC are expected to fluctuate over time as these compounds are biodegradation products of TCE.

The total molar concentrations of TCE, 1,2-cis-DCE, and VC were used to evaluate whether the shallow SWMU 55 TCE plume is being completely oxidized or biodegraded without significant production of 1,2-cis DCE or VC byproducts. The total molar concentrations of TCE, 1,2-cis-DCE, and VC were calculated for each shallow source area well by dividing the measured concentration by its respective molecular weight and summing the results for TCE, 1,2-cis-DCE, and VC for each data point. The percent change in total molar concentration between the November 2012 and November 2014 data was then calculated to evaluate the change in total molar concentration over the reporting period.

As summarized in Table 3-2, since implementation of the corrective measures within the source area, the total molar concentration has decreased at shallow source area monitoring locations between 93 and 100 percent. The bioreactor is achieving a 99 percent molar reduction based on the influent groundwater extracted from well 7MW07 and the bioreactor effluent measured in 55BW01.

Geochemical Trends at Shallow Source Area Wells

Samples were collected for analysis of geochemical indicators from shallow wells in the source area prior to corrective measures implementation, following ISCO application, and several times during 2014 to monitor the impacts of the bioreactor and EVO injections on aquifer conditions. Table 3-3 summarizes guideline concentrations for geochemical conditions that indicate a potential for biological reductive dechlorination. In general, the geochemical data support the conclusion that conditions for TCE reduction exist in the shallow source area groundwater.

For example, at wells 7MW07 and 7MW24, background methane concentrations were non-detect in November 2012 and prior to bioreactor operations. Methane was measured at 7MW07 at concentrations of 8,180 µg/L in October 2013 and 1,950 µg/L in November 2014, and was measured at 7MW23 at a concentration of 4,740 µg/L in November 2014, indicating strong reducing conditions. TOC was not detected in 7MW07 or 7MW24 prior to operation of the bioreactor, and was measured at 47.7 milligrams per liter (mg/L) and 10.8 mg/L, respectively, in November 2014. Elevated iron levels (3.41 mg/L) at 7MW07 is a positive indicator of reducing conditions. Chloride levels at 7MW07 have also increased to 301 mg/L, six times higher than pre-treatment levels, which indicates the complete breakdown of TCE is producing a chloride byproduct. ORP levels at 7MW07 and 55BW01 are negative and indicate the general reducing conditions in source area groundwater. DO measured in the field prior to sample collection was depressed in shallow wells in the

source area until November 2014, when DO concentrations were measured at approximately 3 mg/L. Because oxygen can be introduced into the sample during measurement in the field, leading to erroneously high DO concentrations, DO is a secondary indicator parameter.

VOC Concentration Trends at Source Area Deep Wells (Screened below 25 feet bgs)

Baseline TCE concentrations in samples collected from deep wells in the source area contained TCE concentrations ranging from 42.5 to 777 µg/L. Figure 3-7 shows the baseline TCE plume configuration. Figure 3-8 depicts the October 2013 plume configuration after ISCO application in the source area. The current deep well plume configuration is shown on Figure 3-9. During the reporting period, an overall trend in TCE reduction is seen in 55IW02; however, fluctuations in TCE concentrations have occurred at 55IW04. Well 55IW04 is farther away from the bioreactor, and slower concentration reduction is expected at that location. Cis-1,2-DCE and VC concentrations increased at both of these deep source area wells following implementation of the bioreactor remedy, indicating biodegradation of TCE is occurring in the deep zone. Concentrations of the biodegradation products cis-1,2-DCE and VC are expected to initially increase and then decrease over time.

As summarized in Table 3-2, since implementation of the corrective measures within the source area, the total molar concentration has decreased at 55IW02 by 96 percent, while total molar concentration has increased at 55IW04 by 40 percent. The increase is due to increasing concentrations of cis-1,2-DCE and VC at this location with no corresponding decrease in TCE, and could also be an effect of mobilization of TCE following startup of the bioreactor. Wells 55IW04 and 55MW01 will continue to be monitored to evaluate long-term impacts of bioremediation on the deep source area and downgradient aquifer.

Geochemical Indicators at Deep Source Area Wells

Samples for baseline geochemical indicators were not collected at deep wells in the source area. Samples collected in May and November 2014 from deep source area wells 55IW02 and 55IW04 contained elevated levels of total organic carbon (>10 mg/L), indicating that the bioreactor is releasing TOC to the deeper aquifer. TOC levels at downgradient well 55MW01 have not increased above 10 mg/L, indicating that TOC influence in the deeper aquifer is confined to within 40 to 90 feet of the bioreactor. Wells 55IW04 and 55IW02 contain elevated methane levels (296 to 6,268 ug/L), which is indicative of reducing conditions that promote reductive dechlorination. ORP values in wells 55IW02 and 55IW04 were slightly negative (-13.2. and -36.3) in the February 2014 monitoring event but were positive in the August and November 2014 monitoring events. This indicates that additional TOC may be needed to sustain reductive dechlorination in the deep source area groundwater. No relevant trends were observed in other geochemical indicators.

3.2.2 Downgradient Plume

TCE concentrations have decreased or remained stable at all shallow and deep wells in the downgradient plume area since implementation of the corrective measures, as evidenced when comparing baseline VOC concentrations from November 2012 to data collected in November 2014. In addition, concentrations of TCE in samples collected in November 2014 from all shallow wells within the downgradient plume area were well below the CAO of 193 µg/L. Samples from three of the five deep wells within the downgradient plume

contained TCE above the CAO, but all the deep wells demonstrate decreasing TCE concentrations.

VOC Concentrations Trends at Shallow Wells (Screened less than 25 feet bgs)

Baseline TCE concentrations in samples collected from shallow wells 7MW23, 55MW02, 55MW10, 55MW17, and 7MW10 in the downgradient plume area contained TCE concentrations ranging from 0.2 U µg/L (non-detect) to 496 µg/L. An overall trend in reduction of VOCs is seen in the shallow downgradient plume area wells, with the greatest decrease in TCE observed at well 55MW10. Cis-1,2-DCE concentrations at downgradient plume shallow wells also followed decreasing or stable trends. There was an increase in VC at several wells following downgradient EVO injections. Increases of cis-1,2-DCE and VC are indications of biodegradation of TCE. The CAO for cis-1,2-DCE presented in the CMS Addendum (AGVIQ-CH2M HILL, 2012a) is 20,901 µg/L and no CAO exists for VC. Concentrations of 1,2-DCE and VC are expected to initially increase then decrease at the site. These concentration reduction trends indicate that the goal of the corrective measures as described in the CMI Plan (AGVIQ-CH2M HILL, 2012b) of treating the downgradient TCE plume area over an extended timeframe through limited injections of EVO and monitored natural attenuation (MNA) are progressing as expected. The MNA potential and stability of the distal portion of the plume is continuing to be evaluated.

As summarized in Table 3-2, since implementation of the corrective measures, the total molar concentration has decreased at shallow monitoring well locations in the downgradient plume area between 6 and 60 percent.

Geochemical Indicators at Shallow Downgradient Plume Area Wells

Samples were collected for analysis of geochemical indicators from shallow wells in the downgradient plume area prior to corrective measures implementation, following EVO injection, and several times during 2014 to monitor progress of the corrective measures. In general, geochemical indicators support the conclusions that degradation of TCE is occurring.

Shallow wells 7MW23, 7MW24, 55MW02, and 55MW10 are in the areas targeted by EVO injections. There is no indication of significant TOC influence in these wells; however, elevated methane concentrations in 7MW23, 7MW24, and 55MW10 indicate groundwater at these locations is being impacted by the EVO injections. ORP values in these wells have also been trending downward, indicating that more reducing conditions are occurring upgradient in EVO injection areas. No relevant trends were observed in other geochemical indicators.

VOC Concentration Trends at Deep Wells (Screened below 25 feet bgs)

TCE concentrations in samples collected from deep wells in the downgradient plume area decreased or remained stable when compared to November 2012 (baseline) concentrations. Samples from 55MW01, 55MW14, and 55MW09 collected in November 2014 contained TCE at concentrations above the CAO level of 193 µg/L. Concentrations of cis-1,2-DCE and VC remained stable or decreased at the deep downgradient plume area wells following implementation of the corrective measures. Concentrations of cis-1,2-DCE and VC are expected to fluctuate over time as biodegradation products of TCE.

As summarized in Table 3-3, since implementation of the corrective measures, the total molar concentration has decreased at deep downgradient plume area monitoring locations between 15 and 63 percent.

Geochemical Indicators at Deep Downgradient Plume Area Wells

Samples were collected for analysis of geochemical indicators from deep wells in the downgradient plume area prior to corrective measures implementation, following EVO injection, and several times during 2014 to monitor progress of the corrective measures. Wells 55MW01, 55MW09, and 55MW14 are in areas downgradient of EVO injections and should be the first to experience TOC increases. There is no indication of significant TOC influence in these wells; however, elevated methane concentrations in 55MW01 (196 ug/L) indicates that this groundwater is being impacted by the EVO injections. Ethane and ethene were detected at elevated concentrations at well 55MW01, indicating upgradient biodegradation of VOCs near EVO injection wells. ORP values in 55MW01 and 55MW14 have also been trending downward, indicating that more reducing conditions are occurring upgradient in EVO injection areas. No relevant trends were observed in other geochemical indicators.

3.3 Bioreactor Operation and Maintenance

Recirculation of groundwater from monitoring/extraction well 7MW07 was initiated on November 7, 2013. From November 7, 2013 to December 26, 2014, the solar pump extracted 64,600 gallons of groundwater that was processed through the bioreactor. The average pump flow rate is approximately 265 gallons per day, but can vary based on weather conditions. Trained local technicians inspect the bioreactor system, including flow rates, water levels within the bioreactor, and system pressure on a quarterly basis. Because the bioreactor is a simple system, utilizing only solar-powered pumps for mechanical equipment, little maintenance is required.

In May 2014, a loose pump connection between the pump and the top of extraction well 7MW07 and the bioreactor was discovered. No groundwater was spilled outside the extraction well. This connection was repaired in July 2014; however, flow to the bioreactor was not restarted until September 2014. Therefore, samples in the vicinity of the bioreactor were collected in August 2014 for evaluation of VOC rebound. The analytical results for this sampling are included in Table 3-1. No VOC rebound was observed in source zone well 7MW07, indicating that source zone treatment was successful.

4.0 Conclusions and Recommendations

4.1 Conclusions

The groundwater monitoring data collected since November 2012 demonstrates a reduction in TCE plume size and concentration in both the source area and downgradient plume following the implementation of the corrective measures. In both the source area and the downgradient plume, TCE concentrations in all shallow wells were reduced below the CAO of 193 µg/L. The corrective measures have also impacted the deep wells in the source area, bringing TCE below the CAO in this zone, but thus far there have been limited impacts from the mid-plume EVO injection on the deeper downgradient wells. These overall concentration reduction trends indicate that the goal of the corrective measures, as described in the CMI of aggressively reducing the mass of TCE in the source area through excavation, ISCO, and long-term bioreactor operations is being achieved.

4.2 Recommendations

- Continue monitoring deep wells on an annual basis for select VOCs (TCE, cis-1,2-DCE, and VC) and geochemical indicators until CAOs are met. Recommend late summer monitoring events to coincide with SWMU 54 groundwater monitoring.
- TCE concentrations in shallow wells in the source area and downgradient plume area are all below the CAO of 193 µg/L, most for three consecutive monitoring events. It is recommended to eliminate monitoring shallow from the groundwater monitoring program.
- Continue operation of the bioreactor to impact deeper source area wells. This could include relocating the solar powered pump to new deep extraction well located near 55IW04.
- Continue to evaluate VOC and geochemical data to determine if a second round of EVO injection into the mid-plume injection wells is necessary to increase TOC levels and increase TCE degradation rate in the downgradient deep wells.

5.0 References

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Tables

TABLE 2-1
Depth to Groundwater Measurements
SWMU 55, Naval Activity Puerto Rico

		November 2012		July 2013		October 2013		May 2014		November 2014	
Well ID	**Top of Casing Elevation (ft PRVD02)**	**DTW (ft btoc)**	**Groundwater Elevation (ft PRVD02)**	**DTW (ft btoc)**	**Groundwater Elevation (ft PRVD02)**	**DTW (ft btoc)**	**Groundwater Elevation (ft PRVD02)**	**DTW (ft btoc)**	**Groundwater Elevation (ft PRVD02)**	**DTW (ft btoc)**	**Groundwater Elevation (ft PRVD02)**
Wells Screened 25 ft bgs and Less											
55IW01	16.19	13.47	2.72	Abandoned	Abandoned	Abandoned	Abandoned	Abandoned	Abandoned	Abandoned	Abandoned
55IW03	15.60	13.05	2.55	NM	NM	NM	NM	12.69	2.91	11.9	3.70
55MW02	14.82	11.96	2.86	11.32	3.50	11.80	3.02	10.60	4.22	10.84	3.98
55MW04	16.40	13.65	2.75	NM	NM	NM	NM	NM	NM	12.7	3.70
55MW06	13.87	10.80	3.07	NM	NM	10.58	3.29	9.54	4.33	9.98	3.89
55MW08	14.55	12.26	2.29	NM	NM	NM	NM	11.14	3.41	11.77	2.78
55MW10	10.16	8.56	1.60	NM	NM	8.42	1.74	8.62	1.54	8.13	2.03
55MW12	16.01	13.76	2.25	13.65	2.36	13.29	2.72	10.78	5.23	12.5	3.51
55MW13	12.57	11.00	1.57	NM	NM	NM	NM	10.41	2.16	10.35	2.22
55MW16	14.36	11.39	2.97	NM	NM	11.12	3.24	9.91	4.45	10.4	3.96
55MW17	9.62	8.09	1.53	NM	NM	7.47	2.15	7.42	2.20	7.44	2.18
55MW20	8.18	6.67	1.51	NM	NM	NM	NM	6.45	1.73	6.2	1.98
UGW-16	13.80	11.28	2.52	NM	NM	NM	NM	9.66	4.14	10.22	3.58
7MW07	15.47	13.81	1.66	12.43	3.04	12.47	3.00	NM	NM	11.53	3.94
7MW10	7.03	5.88	1.15	5.82	1.21	5.66	1.37	5.40	1.63	5.4	1.63
7MW21	6.65	5.47	1.18	NM	NM	NM	NM	4.94	1.71	4.98	1.67
7MW22	9.79	7.74	2.05	NM	NM	7.43	2.36	6.90	2.89	7.11	2.68
7MW23	9.06	7.21	1.85	7.20	1.86	6.86	2.20	6.65	2.41	6.75	2.31
7MW24	10.49	8.26	2.23	8.04	2.45	7.95	2.54	7.32	3.17	7.52	2.97
55MW26	13.86	NI	NI	10.66	3.20	10.7	3.16	9.51	4.35	NM	NM
Wells Screened Greater Than 25 ft bgs											
55IW02	16.12	13.42	2.70	13.12	3.00	13.14	2.98	12.00	4.12	12.3	3.82
55IW04	16.03	13.41	2.62	13.10	2.93	13.12	2.91	12.00	4.03	12.25	3.78
55IW05	16.58	NI	NI	NM	NM	NM	NM	12.82	3.76	NM	NM
55IW06	13.20	NI	NI	NM	NM	NM	NM	11.05	2.15	NM	NM
55IW07	11.75	NI	NI	NM	NM	NM	NM	9.51	2.24	NM	NM
55IW08	10.44	NI	NI	NM	NM	NM	NM	8.51	1.93	NM	NM
55IW09	9.77	NI	NI	NM	NM	NM	NM	8.41	1.36	NM	NM
55IW10	9.59	NI	NI	NM	NM	NM	NM	8.62	0.97	NM	NM
55IW11	14.81	NI	NI	NM	NM	NM	NM	11.25	3.56	NM	NM
55IW12	13.42	NI	NI	NM	NM	NM	NM	10.56	2.86	NM	NM
55MW01	14.89	12.28	2.61	11.95	2.94	11.87	3.02	10.91	3.98	11.32	3.57
55MW03	16.66	14.03	2.63	NM	NM	NM	NM	12.69	3.97	13.1	3.56
55MW05	13.81	10.70	3.11	NM	NM	10.50	3.31	9.41	4.40	9.85	3.96
55MW07	14.59	12.29	2.30	NM	NM	NM	NM	10.99	3.60	11.38	3.21
55MW09	10.16	8.45	1.71	NM	NM	8.42	1.74	8.25	1.91	8.17	1.99
55MW11	10.49	8.88	1.61	NM	NM	8.82	1.67	NM	NM	8.55	1.94
55MW14	12.69	10.85	1.84	10.96	1.73	10.68	2.01	10.41	2.28	10.42	2.27
55MW15	14.29	11.31	2.98	NM	NM	11.05	3.24	9.85	4.44	10.3	3.99
55MW18	8.87	7.58	1.29	NM	NM	7.54	1.33	7.38	1.49	7.12	1.75
55MW19	8.08	5.93	2.15	NM	NM	NM	NM	5.90	2.18	5.65	2.43
55MW21	10.03	8.91	1.12	NM	NM	NM	NM	8.79	1.24	8.61	1.42

TABLE 2-1

Depth to Groundwater Measurements

SWMU 55, Naval Activity Puerto Rico

		November 2012		July 2013		October 2013		May 2014		November 2014	
Well ID	**Top of Casing Elevation (ft PRVD02)**	**DTW (ft btoc)**	**Groundwater Elevation (ft PRVD02)**	**DTW (ft btoc)**	**Groundwater Elevation (ft PRVD02)**	**DTW (ft btoc)**	**Groundwater Elevation (ft PRVD02)**	**DTW (ft btoc)**	**Groundwater Elevation (ft PRVD02)**	**DTW (ft btoc)**	**Groundwater Elevation (ft PRVD02)**
55MW22	10.03	8.80	1.23	NM	NM	NM	NM	8.71	1.32	8.55	1.48
55MW23	9.84	8.03	1.81	NM	NM	NM	NM	8.61	1.23	NM	NM
55MW24	13.50	11.10	2.40	Abandoned	Abandoned	Abandoned	Abandoned	Abandoned	Abandoned	Abandoned	Abandoned
55MW25	13.50	11.07	2.43	10.70	2.80	10.81	2.69	9.55	3.95	NM	NM
7MW20	13.54	10.92	2.62	NM	NM	NM	NM	4.55	8.99	5.15	8.39
UGW-18	14.64	11.72	2.92	NM	NM	NM	NM	9.85	4.79	10.15	4.49
UGW-11	9.79	8.65	1.14	NM	NM	NM	NM	8.35	1.44	8.45	1.34

Notes:

NI = not yet installed

NM = not measured

DTW = Depth to Water

ft = feet

btoc = below top of casing

ID = identification

Horizontal Datum is North American Datum 83 (latest adjustment).

Vertical Datum used is a local tide study made by the U.S. Navy Survey Section in 1941, using a mean low water of 100 feet as base datum. These survey coordinates use the mean low water datum as 0.00 feet, without the 100 foot offset.

TABLE 2-2
Well Construction Details
SWMU 55, Naval Activity Puerto Rico

Well ID	Northing (NAD 1983)	Easting (NAD 1983)	Ground Elevation (ft PRVD02)	Top of Casing Elevation (ft PRVD02)	Flush/Stick-up	Height from TOC to Ground Surface (ft)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Total Depth (ft bgs)	Riser Material	Riser Inner Diameter (inches)	Screen Length (ft)	Date Installed
Monitoring Well													
55MW26	145539.650	782607.437	13.75	13.86	stick-up	0.11	9.99	24.7	25.5	Sch 40 PVC	2	14.7	4/10/2013
Injection Wells													
55IW05	145468.042	782661.764	13.57	16.58	stick-up	3.01	21.51	41.51	36.4	Sch 40 PVC	2	20	4/25/2013
55IW06	145431.245	782621.076	10.44	13.2	stick-up	2.76	26.06	46.06	41.5	Sch 40 PVC	2	20	4/25/2013
55IW07	145398.142	782586.815	8.7	11.75	stick-up	3.05	18.65	28.55	23.5	Sch 40 PVC	2	9.9	4/24/2013
55IW08	145368.154	782559.414	7.43	10.44	stick-up	3.01	20.51	40.51	35.5	Sch 40 PVC	2	20	4/23/2013
55IW09	145335.173	782518.419	6.64	9.77	stick-up	3.13	29.73	49.73	44.5	Sch 40 PVC	2	20	4/22/2013
55IW10	145304.534	782484.210	6.19	9.59	stick-up	3.4	31.31	51.31	45.5	Sch 40 PVC	2	20	4/18/2013
55IW11	145472.340	782603.881	11.82	14.81	stick-up	2.99	21.0	31.0	26.0	Sch 40 PVC	2	10	4/26/2013
55IW12	145477.283	782569.437	10.38	13.42	stick-up	3.04	16.54	26.54	21	Sch 40 PVC	2	10	4/29/2013

Notes:
ft = feet
PVC = polyvinyl chloride
ID = identification
SCH 40 = schedule 40
NAD = North American Datum.
PRVD = Puerto Rico Vertical Datum
TOC = top of casing
bgs = below ground surface
Horizontal Datum is North American Datum 83 (latest adjustment).
Vertical Datum used is a local tide study made by the U.S. Navy Survey Section in 1941, using a mean low water of 100 feet as base datum. These survey coordinates use the mean low water datum as 0.00 feet, without the 100 foot offset.

TABLE 3-1
Summary of Analytical Data
SWMU 55, Naval Activity Puerto Rico

Well ID	Screen Interval	Sample Date	Sample ID	Trichloroethylene		cis-1,2-Dichloroethylene		Vinyl Chloride		Alkalinity[1]		Chloride		Ethane[2]		Ethene[2]		Dissolved Iron		Ferrous Iron (lab analyzed)		Ferrous Iron (unfiltered - field analyzed)		Ferrous Iron (filtered - field analyzed)		Methane		Nitrate		Nitrite		Sulfate		Sulfide		Temperature	pH	ORP	Dissolved Oxygen	TOC	
				µg/L		µg/L		µg/L		mg/L		mg/L		µg/L		µg/L		mg/L		mg/L		mg/L		mg/L		µg/L		mg/L		mg/L		mg/L		mg/L		(°C)		mV	mg/L	mg/L	
7MW07	Shallow	11/30/2012	JM04-7MW07-113012	10,300		217		20	U	384	U	53.9	U	0.22	U	0.29	U	--		--		--		--		1.09	U	0.5	U	0.1	U	15.5	U	0.01	U	29.73	7.39	97.8	2.96	9.1	U
		10/24/2013	JM04-7MW07-102413	0.509	J	79.50		1.64		1,110		403	JB	0.368	J	0.29	U	3.41		1.9		--		--		8,180		0.5	U	0.5	U	2.77	JB	0.01	UJ	31.88	7.13	-116.5	0.15	181	
		2/18/2014	JM04-7MW07-021814	8.75		4.13		18.5		--		--		--		--		--		--		--		--		--		--		--		--		--		NM	NM	NM	NM	8.1	
		5/2/2014	JM04-7MW07-050214	7.94		3.42		18.4		902		735	JB	0.22	U	0.29	U	2.22		0.82		--		--		3,420		1	U	1	U	28.8	JB	0.01	U	33.36	6.91	130.8	NM	48.4	JB
		8/26/2014	JM04-7MW07-082614	5.19		1.67		15.4		--		--		--		--		--		--		--		--		--		--		--		--		--		32.33	6.63	-19.8	0.31	37.5	
		11/17/2014	JM04-7MW07-111714	3.09		1.1		0.20	U	803		301		0.22	U	0.29	U	--		0.41	J	1.98		1.33		1,950		0.5	U	0.5	UJ	5.96		0.02	U	32.8	6.77	-87.4	2.94	47.7	
7MW10	Shallow	11/28/2012	JM04-7MW10-112812	0.2	U	17.7		0.2	U	423		1,940		0.22	U	0.29	U	--		--		0		0		290		1	U	1	U	269		0.01	U	29.7	7.56	-289.9	1.37	13.7	
		10/22/2013	JM04-7MW10-102213	0.2	U	9.85		0.2	U	314		519	JB	0.22	U	0.29	U	0.1	U	0.1	U	0.06		0.01		37		0.563	J	0.5	U	86.1		0.01	U	28.06	7.69	-223.5	0.35	2.1	
		4/30/2014	JM04-7MW10-043014	0.2	U	10.9		0.2	U	298	JB	402	JB	0.22	U	0.29	U	0.1	U	0.1	U	--		--		722		0.5	U	0.5	U	65	JB	0.028		26.55	7.54	-274.9	0.32	6.9	
		11/14/2014	JM04-7MW10-111414	0.2	U	10.5		2.59		350		840		0.220	U	0.290	U	--		0.17	J	0.03		0.02		2,550		0.5	U	0.5	U	67.8		0.055	JB	28.61	7.34	-250.2	3.42	2.9	
7MW21	Shallow	11/28/2012	JM04-7MW21-112812	0.2	U	1.25		0.2	U	--		--		--		--		--		--		--		--		--		--		--		--		--		28.22	7.14	-339.3	0.42	--	
7MW22	Shallow	11/29/2012	JM04-7MW22-112912	4.29		0.2	U	0.2	U	421	U	1,210	U	0.22	U	0.29	U	--		--		--		--		1.09	U	2.5	U	0.5	U	236	U	0.01	U	30.11	7.62	100.2	1.56	12.6	U
		10/23/2013	JM04-7MW22-102313	4.21		0.2	U	0.2	U	439		1,080		0.22	U	0.29	U	0.1	U	0.1	U	0.04		0.01		1.09	U	0.501	J	0.5	U	239		0.01	U	28.09	7.04	99.8	0.31	5.2	
		5/1/2014	JM04-7MW22-050114	1.87		0.732	J	0.2	U	436	JB	1,130	JB	0.22	U	0.29	U	0.061	J	0.061	J	0		0		1.09	U	2	U	1	U	275	JB	0.01	U	29.09	7.07	95.3	0.24	5	U
		11/20/2014	JM04-7MW22-112014	2.52		0.2	U	0.2	U	467		1,270		0.22	U	0.29	U	--		0.25	U	0.07		0.14		1.09	U	0.816	J	1	U	240		0.01	U	29.05	6.96	310.1	0.18	1	U
7MW23	Shallow	11/28/2012	JM04-7MW23-112812	397		106		1	U	386		1,060		0.22	U	0.29	U	--		--		0		0		281		0.5	U	0.5	U	130		0.01	U	28.9	6.85	-59.3	0.96	16.2	
		10/22/2013	JM04-7MW23-102213	3.97		13.5		0.2	U	640		389	JB	0.22	U	0.29	U	0.31		0.1	U	0.34		0.3		270		0.5	U	0.5	U	69.8		0.01	U	27.94	7.09	-128.2	0.26	4.5	
		4/29/2014	JM04-7MW23-042914	76		12.1		117		456	JB	855	JB	0.22	U	0.712	J	1.41		0.24		--		--		2,460		0.5	U	0.5	U	89.9	JB	0.01	U	26.75	7.11	-172.3	0.31	9.6	JB
		11/20/2014	JM04-7MW23-112014	109		14.2		70.9		612	JB	1,140	JB	0.22	U	1.01		--		0.25	U	0.67		0.57		1,830		1	U	1	U	124	JB	0.02	U	28.55	7.21	-149.2	3.07	2	U
7MW24	Shallow	11/29/2012	JM04-7MW24-112912	969		1	U	1	U	353	U	1,170	U	0.22	U	0.29	U	--		--		0		0		1.09	U	2.5	U	0.5	U	85.9	U	0.01	U	29.74	6.96	213.1	0.84	13	U
		10/23/2013	JM04-7MW24-102313	77.3		0.973	J	0.2	U	617	JB	481	JB	0.22	U	0.29	U	0.1	U	0.1	U	0.04		0		1.09	U	0.5	U	0.5	U	76.6	JB	0.01	U	30.1	7.52	229.8	0.17	14.7	
		5/1/2014	JM04-7MW24-050114	0.20	U	0.463	J	0.2	U	479	JB	712	JB	0.179	J	0.29	U	0.067	J	0.067	J	0		0		1,720		0.5	U	0.5	U	38.8	JB	0.01	U	29.23	7.28	453.2	0.19	15.6	JB
		11/14/2014	JM04-7MW24-111414	13.4		5.88		22.4		675		1,190		0.220	U	0.290	U	--		0.25	U	0.03		0		4,740		0.5	U	0.5	U	45.2		0.054	JB	29.88	7.02	47.6	3.09	10.8	
55BW01	Shallow	10/24/2013	JM04-55BW01-102413	0.744	J	1.56		0.2	U	1,480		281	JB	0.220	U	0.290	U	2.06		1.22		0.92		0.84		5,720		0.5	U	0.5	U	0.5	U	0.01	U	34.31	6.55	-124.1	0.12	174	
		2/18/2014	JM04-BRW01-021814	0.2	U	0.419	J	0.2	U	--		281.0	JB	--		--		--		--		--		--		--		--		--		--		--		33.94	6.46	26.2	0.03	62.3	
		5/1/2014	JM04-55BRW01-050114	4.2		0.2	U	0.2	U	947		721	JB	0.22	U	0.29	U	1.27		1.25		--		--		5,790		0.5	U	0.5	U	5.84	JB	0.01	U	35.7	6.61	-151.6	1.79	67.5	
		8/27/2014	JM04-BRW01-082714	0.2	U	0.2	U	0.2	U	--		--		--		--		--		--		--		--		--		--		--		--		--		37.38	6.69	-121.2	0.19	48.1	
		11/14/2014	JM04-55BRW01-111414	0.2	U	0.2	U	0.2	U	700		207		0.220	U	0.290	U	--		0.30		0.93		0.73		4,510		2	U	2	U	2	U	0.069	JB	33.76	6.54	-38.3	0.16	81.4	J
55IW01	Shallow	11/30/2012	JM04-55IW01-113012	5,320		10		10	U	--		--		--		--		--		--		--		--		--		--		--		--		--		30	7.36	203.3	0.3	--	
55IW02	Deep	11/30/2012	JM04-55IW02-113012	777		2	U	2	U	--		--		--		--		--		--		--		--		--		--		--		--		--		31.69	NM	225.4	4.15	--	
		10/24/2013	JM04-55IW02-102413	5.72		20.7		0.2	U	552	JB	679	JB	0.450	J	0.290	U	0.82	J	0.82	J	--		--		6,260		0.5	U	0.5	U	55.8	JB	0.010	U	32.26	7.21	-42.5	0.51	66.9	
		2/17/2014	JM04-55IW02-021714	10.7		6.88		9.34		--		--		--		--		--		--		--		--		--		--		--		--		--		31.55	6.72	-13.2	0.03	73.2	
		5/1/2014	JM04-55IW02-050114	86.5		24.8		1.8		953		844	JB	0.22	U	0.29	U	0.62		0.51		0.14		0.11		3,260		0.5	U	0.5	U	37.5	JB	0.01	U	31.09	6.51	172	NM	48.9	JB
		8/27/2014	JM04-55IW02-082714	17		3.93		11.5		--		--		--		--		--		--		--		--		--		--		--		--		--		33.28	6.6	81.9	0.29	29.4	
		11/14/2014	JM04-55IW02-111414	14.6		2.73		6.51		848		578		0.220	U	0.290	U	--		0.15	J	0.24		0.12		680		0.5	U	0.5	U	17.6		0.028	JB	31.78	6.66	26.6	0.24	32.5	
55IW03	Shallow	11/29/2012	JM04-55IW03-112912	1,070		2	U	2	U	--		--		--		--		--		--		--		--		--		--		--		--		--		29.48	6.92	284.4	0.89	--	
		2/17/2014	JM04-IW03-021714	78		7.71		2.86		--		--		--		--		--		--		--		--		--		--		--		--		--		30.03	7.33	-287.6	0.02	34.4	
55IW04	Deep	11/30/2012	JM04-55IW04-113012	42.5		0..2	U	0.2	U	--		--		--		--		--		--		--		--		--		--		--		--		--		30.18	6.77	418.6	0.48	--	
		10/24/2013	JM04-55IW04-102413	37.1		4.91		0.2	U	493	JB	1,020	JB	0.152	J	0.29	U	0.1	U	0.1	U	0.03		0		2,380		0.5	U	0.5	U	83.4	JB	0.01	U	30.24	6.99	374.8	0.58	23	
		2/17/2014	JM04-IW04-021714	193		6.31		3.23		--		--		--		--		--		--		--		--		--		--		--		--		--		31.86	6.78	-36.3	0.04	30.6	
		5/1/2014	JM04-55IW04-050114	100		5.46		0.2	U	782		1,210	JB	0.22	U	0.29	U	0.15	J	0.11	J	0.25		0.04		720		0.5	U	0.5	U	71.1	JB	0.01	U	29.21	6.52	83.5	NM	26.1	JB
		8/27/2014	JM04-55IW04-082714	22.3		3.05		4.30		--		--		--		--		--		--		--		--		--		--		--		--		--		31.5	6.58	123.2	0.27	9.8	
		11/14/2014	JM04-55IW04-111414	46.6		2.50		4.44		715		1,220		0.220	U	0.290	U	--		0.085	J	0		0.01		296		0.5	U	0.5	U	50.5		0.057	JB	30.62	6.6	97.5	0.23	13.3	
55MW01	Deep	11/29/2012	JM04-55MW01-112912	948		2	U	2	U	439	U	1,080	U	0.22	U	0.29	U	--		--		0.5		0.5		1.09	U	2.5	U	0.5	U	89.2	U	0.02	UJ	29.72	6.95	-174.1	0.35	12.8	U
		10/23/2013	JM04-55MW01-102313	492		1	U	1	U	518	JB	884	JB	0.22	U	0.29	U	0.1	U	0.1	U	--		--		1.09	U	1	U	0.5	U	48.4	JB	0.01	U	30.06	7.63	164.7	0.73	5.3	JB
		4/30/2014	JM04-55MW01-043014	1,220		2	U	2	U	526	JB	373	JB	0.22	U	0.29	U	0.1	U	0.1	U	0		0		1.09	U	1	U	0.5	U	53.2	JB	0.01	U	31.41	7.13	304	NM	6.4	JB
		11/20/2014	JM04-55MW01-112014	349		1	U	1	U	452	JB	388	JB	38.9		37.7		--		0.1	U	--		--		196		0.4	U	0.4	U	35.2	JB	0.01	UJ	29.83	7.15	-115.6	2.84	1.8	
55MW02	Shallow	11/29/2012	JM04-55MW02-112912	0.2	U	0.2	U	0.2	U	323	U	17.9	U	0.22	U	0.29	U	--		--		0		0		1.09	U	0.5	U	0.1	U	8.4	U	0.01	U	29.75	6.96	119.1	0.3	6.1	U
		10/23/2013	JM04-55MW02-102313	0.2	U	0.2	U	0.2	U	341	JB	22.5	JB	0.22	U	0.29	U	0.1	U	0.1	U	--		--		1.09	U	0.1	U	0.1	U	11.6	JB	0.01	U	29.52	7.17	191.3	0.38	1	U
		4/29/2014	JM04-55MW02-042914	0.831	J	0.2	U	0.2	U	325	JB	19.5	JB	0.22	U	0.29	U	0.1	U	0.1	U	0		0		1.09	U	0.2	U	0.2	U	8.32	JB	0.01	U	26.87	6.86	255	NM	2.5	JB
		11/20/2014	JM04-55MW02-112014	1.21	JB	0.2	U	0.2	U	319	JB	27.1	JB	0.22	U	0.29	U	--		0.05	U	0.22		0.21		1.09	U	0.1	U	0.1	UJ	9.77	JB	0.01	U	29.02	7.41	25.2	3.25	1	U
55MW03	Deep	11/29/2012	JM04-55MW03-112912	29.70		0.2	U	0.2	U	--		--		--		--		--		--		--		--		--		--		--		--		--		30.7	6.77	195.4	0.29	--	
55MW04	Shallow	11/29/2012	JM04-55MW04-112912	2.26		0.2	U	0.2	U	--		--		--		--		--		--		--		--		--		--		--		--		--		31.8	7.82	158.5	5.35	--	
55MW05	Deep	11/28/2012	JM04-55MW05-112812	0.2	U	0.2	U	0.2	U	523		230		0.22	U	0.29	U	--		--		0		0		3,330		0.2	U	0.2	U	6.44		0.01	U	29.77	6.76	-28.1	0.35	16.9	
		10/23/2013	JM04-55MW05-102313	0.2	U	0.2	U	0.2	U	470	JB	2,330	JB	0.22	U	0.29	U	0.19	J	0.1	U	0.24		0.22		9.97		0.5	U	0.5	U	129	JB	0.01	U	30.2	6.65	94.1	0.59	6.6	JB
		4/30/2014	JM04-55MW05-042914	0.2	U	0.2	U	0.2	U	507	JB	895	JB	0.22	U	0.29	U	0.28		0.23		--		--		1,230		0.5	U	0.5	U	61.1	JB	0.01	U	30.73	6.76	-97.6	2.1	10.5	JB
		11/12/2014	JM04-55MW05-111214	0.2	U	0.2	U	0.2	U	507		2,010		0.220	U	0.290	U	--		0.25	U	0.29		0.02		173		2	U	2	U	124		0.01	U	30.77	6.62	87.1	0.21	1.3	J
55MW06	Shallow	11/28/2012	JM04-55MW06-112812	0.87	J	0.2	U	0.2	U	486		362		0.22	U	0.29	U	--		--		0.5		0.5		186		0.2	U	0.2	U	27.1		0.01	U	29.1	6.84	72.2	0.36	5.4	
		10/23/2013	JM04-55MW06-102313	0.2	U	0.2	U	0.2	U	460	JB	473	JB	0.22	U	0.29	U	0.079	J	0.1	U	0.09		0.09		14.1		0.5	U	0.5	U	52.1	JB	0.01	U	30.67	7.01	66.1	2.41	2	U
		4/30/2014	JM04-55MW06-043014	0.2	U	0.2	U	0.2	U	432	JB	740	JB	0.22	U	0.22	U	0.1	J	0.1	J	--		--		35.6		0.5	U	0.5	U	44.9	JB	0.01	U	30.54	6.86	-5.7	2.09	7.2	JB
		11/12/2014	JM04-55MW06-111214	0.2	U	0.2	U	0.2	U	492		1,100		0.220	U	0.290	U	--		0.25	U	0.11		0.08		39.5		1	U	1	U	62.6		0.02		30.81	6.73	69.8	0.23	5	U
55MW07	Deep	11/28/2012	JM04-55MW07-112812	2.75		0.2	U	0.2	U	512		1,140		0.22	U	0.29	U	--		--		0		0		1.09	U	0.5	U	0.5	U	246		0.01	U	30.2	6.8	337.4	0.35	8.6	

TABLE 3-1
Summary of Analytical Data
SWMU 55, Naval Activity Puerto Rico

Well ID	Screen Interval	Sample Date	Sample ID	Trichloroethylene	cis-1,2-Dichloroethylene	Vinyl Chloride	Alkalinity[1]	Chloride	Ethane[2]	Ethene[2]	Dissolved Iron	Ferrous Iron (lab analyzed)	Ferrous Iron (unfiltered - field analyzed)	Ferrous Iron (filtered - field analyzed)	Methane	Nitrate	Nitrite	Sulfate	Sulfide	Temperature	pH	ORP	Dissolved Oxygen	TOC
				µg/L	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	(°C)		mV	mg/L	mg/L
55MW08	Shallow	11/28/2012	JM04-55MW08-112812	2.34	0.2 U	0.2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	30.87	6.87	286.8	0.39	--
55MW09	Deep	11/28/2012	JM04-55MW09-112812	1,020	2 U	2 U	364	7,480	0.22 U	0.286 J	--	--	0	0	1.03 J	2 U	2 U	1,260	0.01 U	29.94	6.86	122.2	0.35	10.3
		10/28/2013	JM04-55MW09-102813	1,010	2 U	2 U	447	5,340	0.22 U	0.153 J	0.1 U	0.1 U	0.01	0	1.06 J	2 U	2 U	853	0.01 U	30.59	6.93	42.9	0.18	4
		5/1/2014	JM04-55MW09-050114	1,010	2 U	2 U	373 JB	6,590 JB	0.22 U	0.29 U	0.1 U	0.1 U	--	--	1.43 J	2 U	2 U	1,110 JB	0.01 U	28.06	6.8	141.6	0.31	5 U
		11/17/2014	JM04-55MW09-111714	865	2.97 J	1 U	417	5,300	0.22 U	0.29 U	--	1 U	0.17	0.07	2.02	5 U	5 U	840	0.01 U	30.07	6.83	315.2	0.26	2 U
55MW10	Shallow	11/28/2012	JM04-55MW10-112812	496	34.0	18.2	892	4,850	0.22 U	0.29 U	--	--	0	0	1,110	2 U	2 U	759	0.01 U	29.69	7.3	-304.2	0.08	22.1
		10/28/2013	JM04-55MW10-102813	344	33.7	86.2	719	3,020	0.22 U	0.366 J	0.24	0.1 U	0.33	0.31	835	1 U	1 U	444	0.024	29.34	7.33	-185.3	0.26	5 U
		5/2/2014	JM04-55MW10-050214	314	19.5	0.4 U	835	3,330 JB	0.22 U	0.29 U	0.086 J	0.1 U	--	--	492	2 U	2 U	581 JB	0.053	27.18	7.4	-299	0.69	8.2 JB
		11/17/2014	JM04-55MW10-111714	2.30	3.19	107	654	2,000	0.134 J	0.409 J	--	0.5 U	0	0.17	844	2 U	2 U	256	0.02 U	29.44	7.22	-157.6	0.12	1 U
55MW11	Deep	11/28/2012	JM04-55MW11-112812	456	10.6	1 U	459	4,200	0.22 U	0.29 U	--	--	--	--	2.84 J	2 U	2 U	655	0.01 U	30.39	7.65	-55.9	1.12	10.1
		10/22/2013	JM04-55MW11-102213	476	5.66	1 U	436	4,020	0.22 U	0.29 U	0.1 U	0.1 U	0.1	0.05	1.5 J	2 U	2 U	410	0.01 U	28.14	7.29	39.4	0.29	1 U
		5/1/2014	JM04-55MW11-050114	359	8.02	0.4 U	620 JB	4,400 JB	0.127 J	0.29 U	0.069 J	0.1 U	--	--	1.77 J	2 U	2 U	846 JB	0.01 U	27.25	7.2	132.3	0.47	5 U
		11/14/2014	JM04-55MW11-111414	113	5.7	0.2 U	497	6,910	0.150 J	0.290 U	--	0.50 U	0.06	0.03	436	2 U	2 U	726	0.042 JB	28.79	7.2	30.3	6	1.4 J
55MW12	Shallow	11/29/2012	JM04-55MW12-112912	3.5	0.2 U	0.2 U	250 U	12.7 U	0.22 U	0.29 U	--	--	--	--	1.09 U	0.5 U	0.1 U	6.21 U	0.01 U	29.39	7.36	103.7	4	4.9 U
		10/23/2013	JM04-55MW12-102313	3.15	0.2 U	0.2 U	258	49.1	0.22 U	0.29 U	0.1 U	0.1 U	0.03	0.03	262	0.1 U	0.1 U	5.13	0.01 U	29.7	7.08	20.8	0.68	9.5
		5/1/2014	JM04-55MW12-050114	2.64	0.905 J	0.2 U	657 JB	270 JB	0.22 U	0.29 U	0.18 J	0.18 J	--	--	4,670	0.5 U	0.5 U	3.56 JB	0.01 U	30.72	6.78	-18.1	2.15	30.8 JB
		11/20/2014	JM04-55MW12-112014	1.360	0.74 J	0.2 U	697	237 JB	0.22 U	0.29 U	--	0.071 J	0.12	0.13	206	0.2 U	0.2 U	2.65	0.01 U	31.25	6.73	49	0.31	5.7 J
55MW13	Shallow	11/29/2012	JM04-55MW13-112912	0.20 U	0.20 U	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	27.11	6.85	-295.1	0.26	--
55MW14	Deep	11/28/2012	JM04-55MW14-112812	641	4.56 J	1 U	345	1,720	0.22 U	0.29 U	--	--	0	0	3.33 J	0.803 J	0.5 U	180	0.01 U	29.36	7.11	101.7	0.23	3.4 J
		10/28/2013	JM04-55MW14-102813	626	9.36	1 U	337 JB	1,210 JB	0.22 U	0.29 U	0.1 U	0.1 U	0.01	0.01	0.47 J	1 U	1 U	113 JB	0.01 U	29.33	6.78	300.1	0.37	4.2 J
		4/30/2014	JM04-55MW14-043014	608	3.84 J	1 U	402 JB	1,380 JB	0.22 U	0.29 U	0.1 U	0.1 U	--	--	4.71	2 U	1 U	153 JB	0.01 U	26.99	6.84	179.6	0.5	6.1 JB
		11/20/2014	JM04-55MW14-112014	522	1 U	1 U	346 JB	1,570 JB	0.22 U	0.29 U	--	0.25 U	0.25	0.22	1.09 U	1 U	1 U	123 JB	0.02 U	28.92	6.98	35	3.05	1.4
55MW15	Deep	11/27/2012	JM04-55MW15-0112712	18.5	0.2 U	0.2 U	501	3,680	0.22 U	0.29 U	--	--	0	0	1.13 J	1 U	2 U	273	0.01 U	30.83	6.57	285.2	0.23	13.1
		10/22/2013	JM04-55MW15-102213	13.5	0.2 U	0.2 U	468 JB	2,800 JB	0.22 U	0.29 U	0.1 U	0.1 U	--	--	5 U	1 U	1 U	194 JB	0.01 U	31.04	6.64	208.7	0.34	7 JB
		4/28/2014	JM04-55MW15-042814	10.8	0.2 U	0.2 U	458 JB	3,680 JB	0.22 U	0.29 U	0.1 U	0.1 U	--	--	2.71 JB	2 U	2 U	400 U	0.007 J	30.95	6.41	60	2	7.7 JB
		11/12/2014	JM04-55MW15-111214	14.7	0.38 J	0.2 U	440	3,600	0.220 U	0.290 U	--	0.5 U	0.37	0.22	1.09 U	3 U	3 U	211	0.01 U	30.85	6.45	115.1	3.02	2 U
55MW16	Shallow	11/27/2012	JM04-55MW16-112712	4.46	0.2 U	0.2 U	585	1,170	0.22 U	0.29 U	--	--	0	0	1.07 J	0.5 U	0.5 U	112	0.01 U	31.19	7.03	228.2	0.65	12.2
		10/23/2013	JM04-55MW16-102313	1.11	0.2 U	0.2 U	500 JB	536 JB	0.22 U	0.29 U	0.1 U	0.1 U	0.04	0	1.09 U	0.5 U	0.5 U	67.7 JB	0.01 U	31.32	7.02	165.3	0.5	9.4
		4/28/2014	JM04-55MW16-042814	2.72	0.2 U	0.2 U	541 JB	722 JB	0.22 U	0.29 U	0.1 U	0.1 U	--	--	1.09 U	0.5 U	0.5 U	100 U	0.01 U	31.6	7.08	138.7	2	8.3 JB
		11/12/2014	JM04-55MW16-111214	1.40	0.2 U	0.2 U	317	326	0.220 U	0.290 U	--	0.1 U	0.29	0.18	1.09 U	0.387 J	0.5 U	35	0.01 U	30.8	7.25	81	0.19	1 U
55MW17	Shallow	11/28/2012	JM04-55MW17-112812	59.1	0.2 U	0.2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	31.16	6.86	87.4	0.26	--
		10/28/2013	JM04-55MW17-102813	32.5	0.61 J	0.2 U	401	1,560 JB	0.22 U	0.29 U	0.1 U	0.1 U	0.3	0.3	2.99 J	0.5 U	0.5 U	143 JB	0.01 U	30.44	6.76	308.1	0.5	7.1 JB
		4/29/2014	JM04-55MW17-042914	63	0.37 J	0.2 U	416 JB	2,810 JB	0.22 U	0.29 U	0.1 U	0.1 U	--	--	1.09 U	1 U	1 U	294 JB	0.01 U	29.62	6.8	74.3	2	5.1 JB
		11/12/2014	JM04-55MW17-111214	54.8	0.51 J	0.2 U	411	4,740 J	3.30	3.14	--	0.5 U	0.07	0	16.4	3 U	3 U	332	0.01 U	30.12	268.1	268.1	0.19	1 U
55MW18	Deep	11/28/2012	JM04-55MW18-112812	0.934 J	0.2 U	0.2 U	219	20,100	0.329 J	0.657 J	--	--	1	1	3.82 J	5 U	5 U	2,460	0.01 U	30.16	6.66	32.5	0.22	8
		10/22/2013	JM04-55MW18-102213	0.2 U	0.2 U	0.2 U	231 JB	18,400 JB	0.22 U	0.29 U	0.49	0.2 U	1.48	0.64	1.52 J	5 U	5 U	2,100 JB	0.01 U	30.68	6.61	7.1	0.19	3.9
		4/29/2014	JM04-55MW18-042914	2.78	0.2 U	0.2 U	230 JB	16,600 JB	0.22 U	0.29 U	0.3 J	0.5 U	--	--	2 U	5 U	5 U	1,280 JB	0.01 U	29.09	6.61	-75.3	1.77	2 JB
		11/12/2014	JM04-55MW18-111214	0.2 U	0.2 U	0.2 U	238	20,200	0.220 U	0.290 U	--	0.25 U	0.79	0.65	1.09 U	10 U	10 U	2,210	0.01 U	29.41	6.56	-30.1	2.8	0.37 J
55MW19	Deep	11/28/2012	JM04-55MW19-112812	2 U	0.2 U	0.2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	29.58	6.58	22.1	0.21	--
55MW20	Shallow	11/27/2012	JM04-55MW20-112712	3.37	28.4	0.2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	30.85	6.91	-292.1	0.11	--
55MW21	Deep	11/27/2012	JM04-55MW21-112712	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	31.32	6.84	49.1	1.84	--
55MW22	Deep	11/27/2012	JM04-55MW22-112712	0.413 J	0.2 U	0.2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	31.52	6.42	30.2	0.5	--
55MW23	Deep	11/29/2012	JM04-55MW23-112912	48.9	1.36	0.2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	29.1	6.8	-10.9	1.6	--
55MW24	Shallow	11/29/2012	JM04-55IMW24-112912	4,380	10 U	10 U	--	--	--	--	--	--	--	--	--	--	--	--	--	31.54	7.9	99.8	7.53	--
55MW25	Shallow	11/29/2012	JM04-55MW25-112912	26.9	0.2 U	0.2 U	306 U	526 U	0.22 U	0.29 U	--	--	0	0	1.09 U	1 U	0.2 U	48.9 U	0.01 U	31.86	7.26	177.9	2.44	11.3 U
		10/24/2013	JM04-55MW25-102413	0.664 J	5.85	0.2 U	1,200	290 JB	0.314 J	0.29 U	3.12	0.53	1.3	2.55	8,090	0.5 U	0.5 U	1 U	0.01 U	32.14	6.75	-106.1	0.22	220
		4/30/2014	JM04-55MW25-043014	0.2 U	0.757 J	0.2 U	991	536 JB	0.22 U	0.29 U	7.07	6.1	1.81	0.97	4,470	0.5 U	0.5 U	0.5 U	0.01 U	32.94	6.05	-60.2	0.69	91.3
		11/20/2014	JM04-55MW25-112014	0.2 U	0.2 U	0.2 U	733	215	0.22 U	0.29 U	--	0.75	1.57	0.74	3,640	0.2 U	0.2 U	0.2 U	0.01 U	33.14	6.62	-50.1	0.22	58.3
55MW26	Shallow	4/12/2013	JM04-55MW26-041212	16.4	0.2 U	0.2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	31.36	6.67	-85.2	0.8	--
		10/24/2013	JM04-55MW26-102413	24.8	0.2 U	0.2 U	438 JB	755 JB	0.22 U	0.29 U	0.1 U	0.1 U	0.02	0	0.767 J	0.5 U	0.5 U	76.9 JB	0.01 U	31.6	6.87	215.6	0.83	4.7 JB
		4/30/2014	JM04-55MW26-043014	33.2	2.3	0.2 U	147 JB	233 JB	0.22 U	0.29 U	0.1 U	0.1 U	0.35	0.7	211	2 U	2 U	47.5 JB	0.009 J	31.22	6.86	309.2	NM	6 JB
		11/20/2014	JM04-55MW26-112014	16	3.45	0.83 J	607	343	0.22 U	0.29 U	--	0.1 U	0.1	0	250	0.4 U	0.4 U	15.4	0.01 U	31.99	7.04	329.8	0.24	7.4

Notes:
[1] Dissolved
µg/L = micrograms per liter
mg/L - milligrams per liter
B = The analyte was detected in the associated method blank.
J = Estimated. The analyte was present but the reported value may not be accurate or precise.
U = Undetected. The analyte was analyzed for but not detected above the method detection limit.
TOC = Total Organic Carbon
MW = Monitoring Well

IW = Injection Well
-- = Not analyzed
NM = not measured
ORP = oxidation reduction potential
°C = degrees Celsius
Shaded cells indicate corrective action objective exceedence.

TABLE 3-2
Total Molar Concentrations
SWMU 55, Naval Activity Puerto Rico

		November 2012 (Pre-Corrective Action Sampling)								October 2013(Pre-ISB Sampling)								April/May 2014 ISB Performance and TCE Plume Stability Monitoring								November 2014 ISB Performance and TCE Plume Stability Monitoring								Change in Total Molar Concentration Compared to Baseline*
Well ID	Screen Interval	TCE		cis-1,2-DCE		VC		Total CVOC (µg/L)	Total Molar Concentration (µM/L)	TCE		cis-1,2-DCE		VC		Total CVOC (µg/L)	Total Molar Concentration (µM/L)	TCE		cis-1,2-DCE		VC		Total CVOC (µg/L)	Total Molar Concentration (µM/L)	TCE		cis-1,2-DCE		VC		Total CVOC (µg/L)	Total Molar Concentration (µM/L)	
7MW07	Shallow	10,300		217		20	U	10,517	80.63	0.509	J	79.50		1.64		81.649	0.85	7.94		3.42		18.4		29.76	0.39	3.09		1.1		0.20	U	4.19	0.03	100%
7MW10	Shallow	0.2	U	17.7		0.2	U	17.7	0.18	0.2	U	9.85		0.2	U	9.85	0.10	0.2	U	10.9		0.2	U	10.9	0.11	0.2	U	10.5		2.59		13.09	0.15	18%
7MW21	Shallow	0.2	U	1.25		0.2	U	1.25	0.01	--		--		--		--	--	--		--		--		--	--	--		--		--		--	--	--
7MW22	Shallow	4.29		0.2	U	0.2	U	4.29	0.03	4.21		0.2	U	0.2	U	4.21	0.03	1.87		0.732	J	0.2	U	2.602	0.02	2.52		0.2	U	0.2	U	2.52	0.02	41%
7MW23	Shallow	397		106		1	U	503	4.11	3.97		13.5		0.2	U	17.47	0.17	76		12.1		117		205.1	2.57	109		14.2		70.9		194.1	2.11	49%
7MW24	Shallow	969		1	U	1	U	969	7.37	77.3		0.973	J	0.2	U	78.273	0.60	0.20	U	0.463	J	0.2	U	0.463	0.00	13.4		5.88		22.4		41.68	0.52	93%
55BRW01		NI		NI		NI		--	--	0.744	J	1.56		0.2	U	2.304	0.02	4.2		0.2	U	0.2	U	4.2	0.03	0.2	U	0.2	U	0.2	U	0	0.00	100%
55IW01	Shallow	5,320		10	U	10	U	5,320	40.49	--		--		--		--	--	--		--		--		--	--	--		--		--		--	--	--
55IW02	Deep	777		2	U	2	U	777	5.91	5.72		20.7		0.2	U	26.42	0.20	86.5		24.8		1.8		113.1	0.94	14.6		2.73		6.51		23.84	0.24	96%
55IW03	Shallow	1,070		2	U	2	U	1,070	8.14	--		--		--		--	--	--		--		--		--	--	--		--		--		--	--	--
55IW04	Deep	42.5		0.2	U	0.2	U	42.5	0.32	37.1		4.91		0.2	U	42.01	0.33	100		5.46		0.2	U	105.46	0.82	46.6		2.50		4.44		53.54	0.45	-40%
55MW01	Deep	948		2	U	2	U	948	7.22	492		1	U	1	U	492	3.74	1,220		2	U	2	U	1,220	9.29	349		1	U	1	U	349	2.66	63%
55MW02	Shallow	0.2	U	0.2	U	0.2	U	0	0.00	0.2	U	0.2	U	0.2	U	0	0.00	0.831	J	0.2	U	0.2	U	0.831	0.01	1.21	JB	0.2	U	0.2	U	1.21	0.01	--
55MW03	Deep	29.7		0.2	U	0.2	U	29.7	0.23	--		--		--		--	--	--		--		--		--	--	--		--		--		--	--	--
55MW04	Shallow	2.26		0.2	U	0.2	U	2.26	0.02	--		--		--		--	--	--		--		--		--	--	--		--		--		--	--	--
55MW05	Deep	0.2	U	0.2	U	0.2	U	0	0.00	0.2	U	0.2	U	0.2	U	0	0.00	0.2	U	0.2	U	0.2	U	0	0.00	0.2	U	0.2	U	0.2	U	0	0.00	--
55MW06	Shallow	0.87	J	0.2	U	0.2	U	0.87	0.01	0.2	U	0.2	U	0.2	U	0	0.00	0.2	U	0.2	U	0.2	U	0	0.00	0.2	U	0.2	U	0.2	U	0	0.00	100%
55MW07	Deep	2.75		0.2	U	0.2	U	2.75	0.02	--		--		--		--	--	--		--		--		--	--	--		--		--		--	--	--
55MW08	Shallow	2.34		0.2	U	0.2	U	2.34	0.02	--		--		--		--	--	--		--		--		--	--	--		--		--		--	--	--
55MW09	Deep	1,020		2	U	2	U	1,020	7.76	1,010		2	U	2	U	1,010	7.69	1,010		2	U	2	U	1,010	7.69	865		2.97	J	1	U	867.97	6.61	15%
55MW10	Shallow	496		34		18.2		548.2	4.42	344		33.7		86.2		463.9	4.34	314		19.5		0.4	U	333.5	2.59	2.30		3.19		107		112.49	1.76	60%
55MW11	Deep	456		10.6		1	U	466.6	3.58	476		5.66		1	U	481.66	3.68	359		8.02		0.4	U	367.02	2.82	113		5.7		0.2	U	118.7	0.92	74%
55MW12	Shallow	3.5		0.2	U	0.2	U	3.5	0.03	3.15		0.2	U	0.2	U	3.15	0.02	2.64		0.905	J	0.2	U	3.545	0.03	1.360		0.74	J	0.2	U	2.096	0.02	33%
55MW13	Shallow	0.2	U	0.2	U	0.2	U	0	0.00	--		--		--		--	--	--		--		--		--	--	--		--		--		--	--	--
55MW14	Deep	641		4.56	J	1	U	645.56	4.93	626		9.36		1	U	635.36	4.86	608		3.84	J	1	U	611.84	4.67	522		1	U	1	U	522	3.97	19%
55MW15	Deep	18.5		0.2	U	0.2	U	18.5	0.14	13.5		0.2	U	0.2	U	13.5	0.10	10.8		0.2	U	0.2	U	10.8	0.08	14.7		0.38	J	0.2	U	15.08	0.12	18%
55MW16	Shallow	4.46		0.2	U	0.2	U	4.46	0.03	1.11		0.2	U	0.2	U	1.11	0.01	2.72		0.2	U	0.2	U	2.72	0.02	1.40		0.2	U	0.2	U	1.40	0.01	69%
55MW17	Shallow	59.1		0.2	U	0.2	U	59.1	0.45	32.5		0.61	J	0.2	U	33.11	0.25	63		0.37	J	0.2	U	63.37	0.48	54.8		0.51	J	0.2	U	55.31	0.42	6%
55MW18	Deep	0.934	J	0.2	U	0.2	U	0.934	0.01	0.2	U	0.2	U	0.2	U	0	0.00	2.78		0.2	U	0.2	U	2.78	0.02	0.2	U	0.2	U	0.2	U	0	0.00	100%
55MW19	Deep	2		0.2	U	0.2	U	2	0.02	--		--		--		--	--	--		--		--		--	--	--		--		--		--	--	--
55MW20	Shallow	3.37		28.4		0.2	U	31.77	0.32	--		--		--		--	--	--		--		--		--	--	--		--		--		--	--	--
55MW21	Deep	0.2	U	0.2	U	0.2	U	0	0.00	--		--		--		--	--	--		--		--		--	--	--		--		--		--	--	--
55MW22	Deep	0.413	J	0.2	U	0.2	U	0.413	0.00	--		--		--		--	--	--		--		--		--	--	--		--		--		--	--	--
55MW23	Deep	48.9		1.36		0.2	U	50.26	0.39	--		--		--		--	--	--		--		--		--	--	--		--		--		--	--	--
55MW24	Shallow	4,380		10	U	10	U	4,380	33.34	--		--		--		--	--	--		--		--		--	--	--		--		--		--	--	--
55MW25	Shallow	26.9		0.2	U	0.2	U	26.9	0.20	0.664	J	5.85		0.2	U	6.514	0.07	0.2	U	0.757	J	0.2	U	0.757	0.01	0.2	U	0.2	U	0.2	U	0	0.00	100%
55MW26	Shallow	NI		NI		NI		NI	NI	24.8		0.2	U	0.2	U	24.8	0.19	33.2		2.3		0.2	U	35.5	0.28	16		3.45		0.83	J	20.278	0.17	10%

Notes:
Shading indicates analyte exceeded the corrective action objective concentration.
Cis-1,2-Dichloroethylene project action limit/screening criteria is 20,901 µg/L.
µg/L = micrograms per liter
-- = not sampled
NI = not yet installed
J = Estimated. The analyte was present but the reported value may not be accurate or precise.
U = Undetected. The analyte was analyzed for but not detected above the method detection limit.
ISB = in situ bioremediation
AB = Well was abandoned
MW = Monitoring Well
IW = Injection Well
* Baseline is defined as the November/December 2012 sampling event.

TCE molecular weight	131.39
Cis molecular weight	96.95
VC molecular weight	62.51

TABLE 3-3
Guidelines for Interpreting Geochemical Indicators
SWMU 55, Naval Activity Puerto Rico

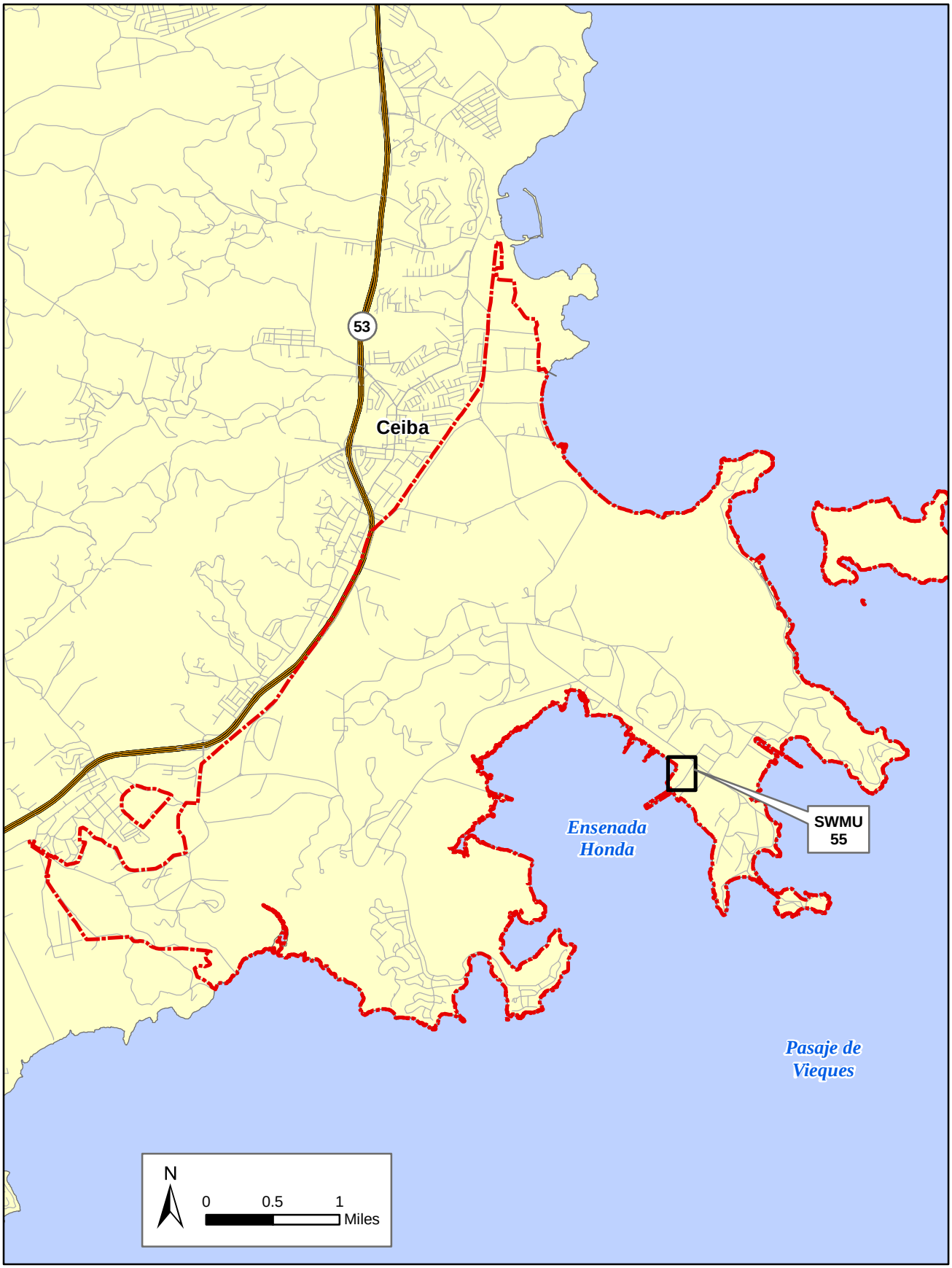
Parameter	Purpose for Sample Collection	Concentration in Most Contaminated Zone Conducive to ERD	Interpretation
Nitrate	Indicator of successful ERD.	<1 mg/L[1, 2]	Depressed nitrate indicates onset of reducing conditions. At higher concentrations may compete with reductive pathway.
Dissolved Iron(II)[3]	Indicator of successful ERD. Necessary for abiotic transformations.	>1 mg/L[1]	The presence of reduced iron indicates moderately reducing conditions. Reductive pathway possible; vinyl chloride may be oxidized under reducing conditions that generate iron (II). Creates iron sulfide minerals under sulfate reducing conditions that support abiotic reduction.
Sulfate	Indicator of successful ERD. Necessary for abiotic transformations.	<20 mg/L[1, 2] >20 mg/L[1]	Reduction in sulfate concentration indicates moderate to strong reducing conditions. At higher concentrations may compete with biological reduction; however, sulfate is the source of sulfide, which is required to form iron sulfide minerals, which promote abiotic reduction.
Sulfide	Indicator of successful ERD.	>1 mg/L[1]	The presence of sulfide in groundwater indicated moderate to strongly reducing conditions. Sulfide is not always detected when present. Sulfide combines with iron (II) to form sulfide minerals which promote abiotic reduction.
Methane	Indicator of successful ERD.	<500 g/L[1]	Vinyl chloride oxidizes.
		>500 g/L[1] >1,000 g/L[2]	Methane and carbon dioxide are the ultimate product of anaerobic degradation of organic material; indicative of highly reducing conditions.
Tetrachloroethene	Monitor decrease in chlorinated ethene concentrations.	Not applicable	Parent compound released during solvent spill.
Trichloroethene	Monitor decrease in chlorinated ethene concentrations.	Not applicable	Parent compound released during solvent spill and/or daughter product of tetrachloroethene.
cis- and trans-1,2-Dichloroethene	Monitor decrease in chlorinated ethene concentrations.	Not applicable	Infrequent parent compounds released during solvent spill. Primary biological reduction daughter products of trichloroethene. May be absent if abiotic degradation is occurring.
Vinyl chloride	Monitor decrease in chlorinated ethene concentrations.	Not applicable	Biological reduction daughter product of 1,2-dichloroethene. May be absent or at low concentrations if abiotic degradation is occurring.
Ethene	Indicator of bioactivity.	>10 g/L[1]	Short-lived daughter product of vinyl chloride or acetylene.
Ethane	Indicator of bioactivity.	>100 g/L[1]	Short-lived daughter product of ethene.
Secondary Lines of Evidence			
TOC	TOC is monitored to evaluate the distribution and consumption of biologically available organic carbon.	>10-20 mg/L[1, 2]	Carbon and energy source; drives dechlorination; can be natural or anthropogenic.
Alkalinity	Indicator of successful ERD and helps buffer groundwater against byproducts of anaerobic biodegradation.	Alkalinity>100 mg/L as $CaCO_3$ is favorable for buffering[1] Alkalinity>300 mg/L[2]	Results from interaction between carbon dioxide and aquifer materials; increased alkalinity correlates to increased carbon dioxide in zones of microbial activity or abiotic degradation. This may be masked by high natural alkalinity.

TABLE 3-3
Guidelines for Interpreting Geochemical Indicators
SWMU 55, Naval Activity Puerto Rico

Parameter	Purpose for Sample Collection	Concentration in Most Contaminated Zone Conducive to ERD	Interpretation
Chloride	Indicator of successful ERD.	Increases when initial TCE levels are = or > than background chloride[1]	Biological and abiotic daughter product of organic chlorine. At many site, concentrations of chloride higher than COC concentrations limits chloride's usefulness for interpreting ERD.
ORP	In general, low and negative ORP values are indicative of highly reducing conditions.	<50 mV[1, 5] <0 mV[2, 5]	Reductive pathway possible. Field measurements are not always reliable and field ORP should be used as a general indicator of relative increase or decrease of reducing conditions.
		<-150 mV[1, 5]	Reductive pathway likely. Field measurements are not always reliable and corrected to proper reference probe and should be confirmed relative to other lines of evidence. Field ORP should be used as a general indicator of relative increase or decrease of reducing conditions.
Oxygen	DO concentrations will be depressed under anaerobic conditions.	<0.5 mg/L[1] <1.0 mg/L[2, 4]	Tolerated by dehalorespiring bacteria; suppresses reductive pathway at higher concentrations. Field measurements are not always reliable and should be confirmed relative to other lines of evidence.
		>5 mg/L[1, 4]	Not tolerated by dehalorespiring bacteria; however, vinyl chloride may be oxidized aerobically. Field measurements are not always reliable and should be confirmed relative to other lines of evidence.
pH	During ERD, groundwater pH will decrease during biodegradation of TOC as fatty acids and carbon dioxide are produced as byproducts.	5<pH<9[1, 2]	Optimal range for reductive pathway.
		pH<5 or pH>9[1]	Outside optimal range for reductive pathway.
Temperature	Indicator of successful ERD.	>20 degrees Celsius[1]	Biochemical process is accelerated.

Notes:
[1]From the *Principles and Practices of Enhanced Anaerobic Bioremediation of Chlorinated Solvents* (Parsons, 2004) and *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater* (EPA, 1998).
[2]From the *Technical Protocol for Enhanced Anaerobic Bioremediation Using Permeable Mulch Biowalls and Bioreactors* (AFCEE, 2008).
[3]Analyzed as dissolved iron.
[4]Oxygen is not considered to be available if iron(II) is >0.5 mg/L or if methane is present at >0.005 mg/L. Therefore, field DO readings should not be relied on if DO is detected by the field probe under these conditions (personal communication with Todd Wiedemeier [Wiedemeier et al., 2014]).
Current research has identified low nitrate, high dissolved iron, and high methane as some of the important conditions to support a multiple lines of evidence approach for justifying biological and abiotic degradation of chlorinated ethenes (personal communication with Todd Wiedemeier [see Wiedemeier, 2014]).
[5] Measured or corrected versus a silver/silver chloride electrode (see EPA 1998)
ERD = enhanced reductive dechlorination
mg/L = milligram(s) per liter
mV = millivolt(s)
ORP = oxidation reduction potential
TOC = total organic carbon

Figures



Road

Expressway

Naval Activity Puerto Rico

FIGURE 1-1
SWMU 55 Location
Naval Activity Puerto Rico

AGVIQ CH2M HILL

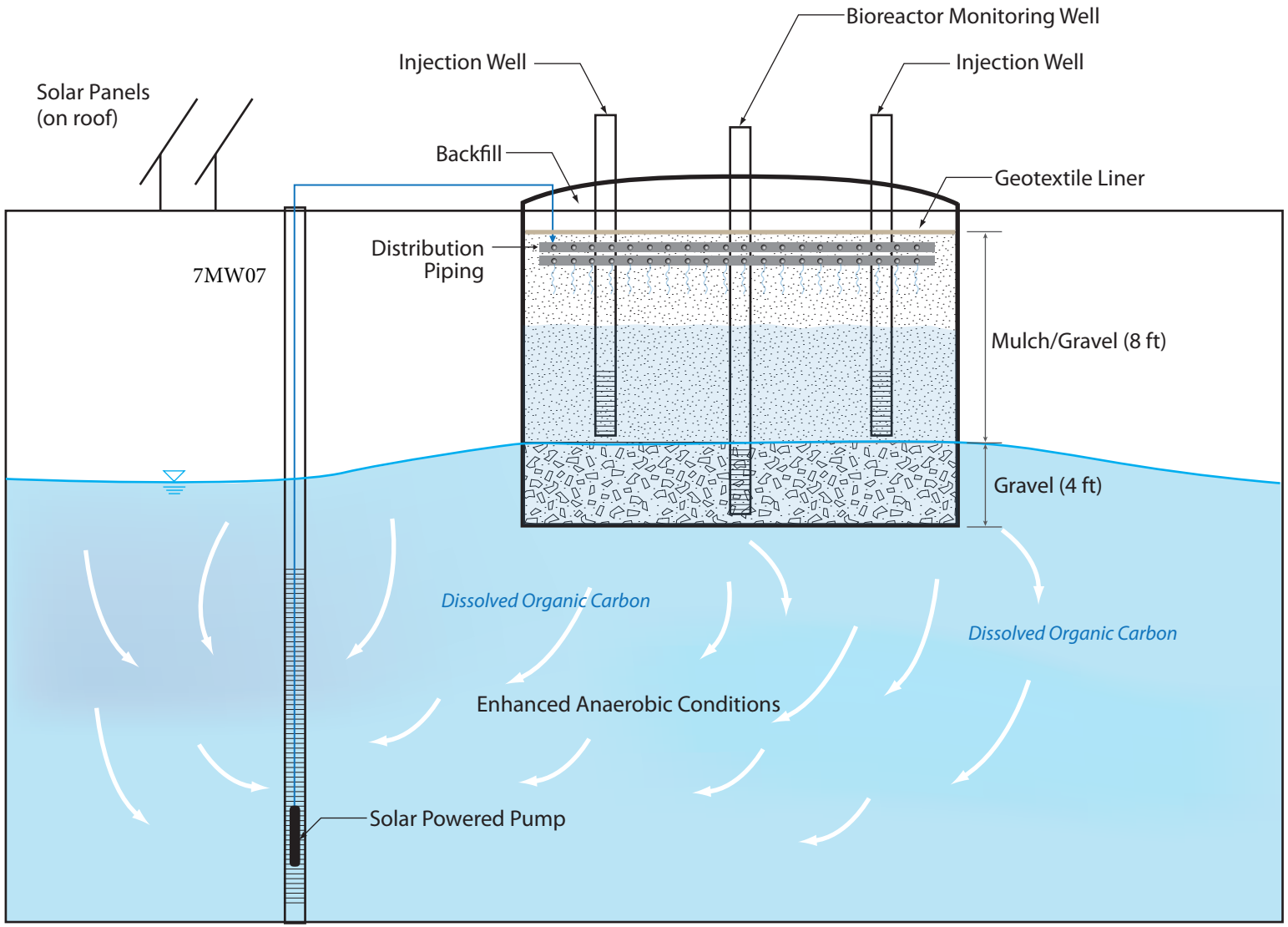
Notes:
1. * - Monitoring well (55MW26) and injection wells (55IW05 through 55IW12) were installed in April 2013.
2. Monitoring well 55MW24 and injection well 55IW01 were abandoned on April 10, 2013

Monitoring Well Screened Primarily Less than 25 ft bgs
Injection Well Screened Primarily Less than 25 ft bgs
Monitoring Well Screened Primarily Greater than 25 ft bgs
Injection Well Screened Primarily Greater than 25 ft bgs
Bioreactor Injection Well
Bioreactor Monitoring Well
Abandoned Well
Fence
Bioreactor

FIGURE 1-2
Site Layout
SWMU 55
Naval Activity Puerto Rico

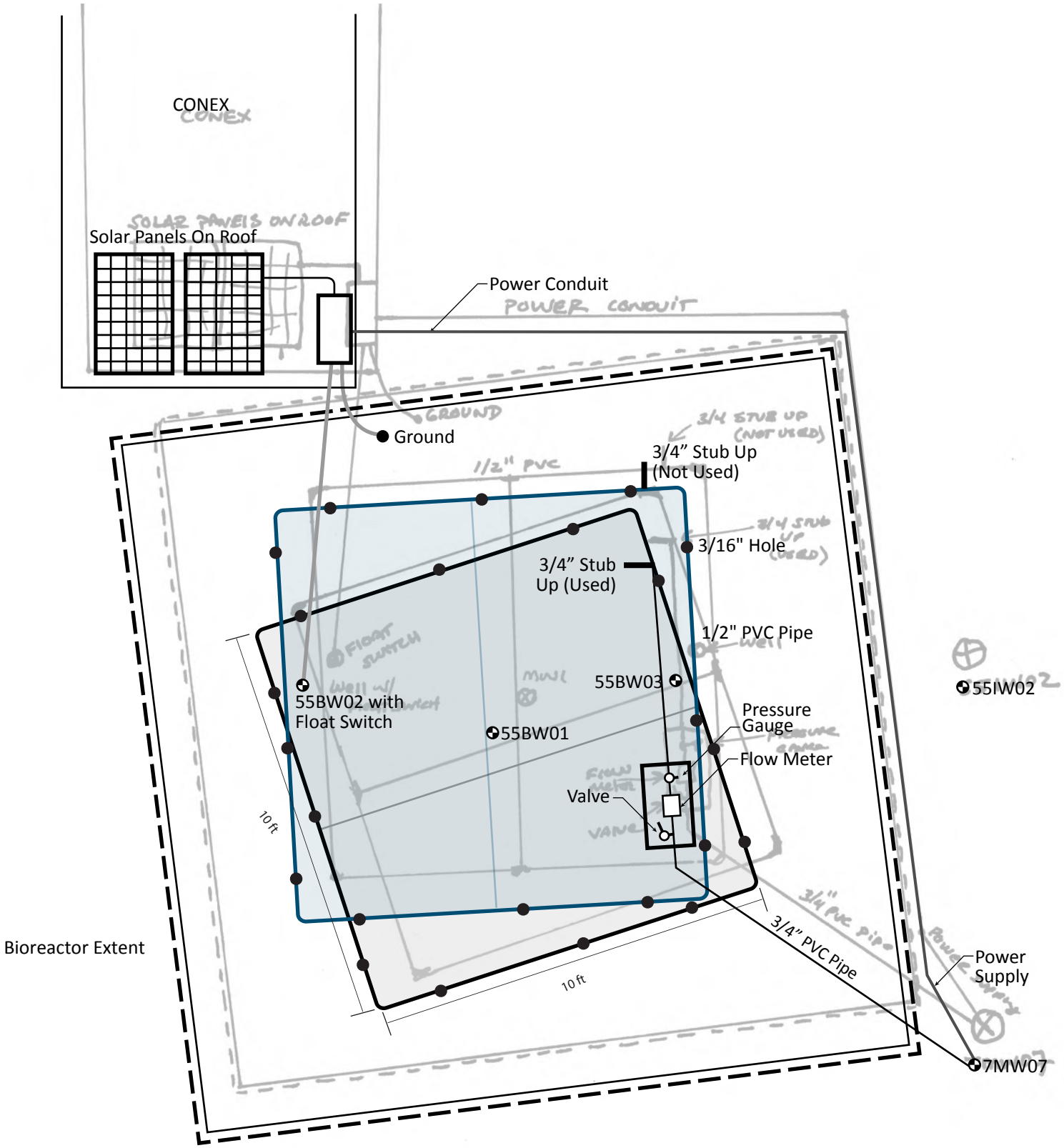
AGVIQ CH2M HILL

R:\USNavyPuertoRico20000317\MapFiles\SWMU_55\2015\Fig_1-2_SWMU55_SiteLayout.mxd 5/29/2015 JCarr_ch2mhillenvgis



NOT TO SCALE

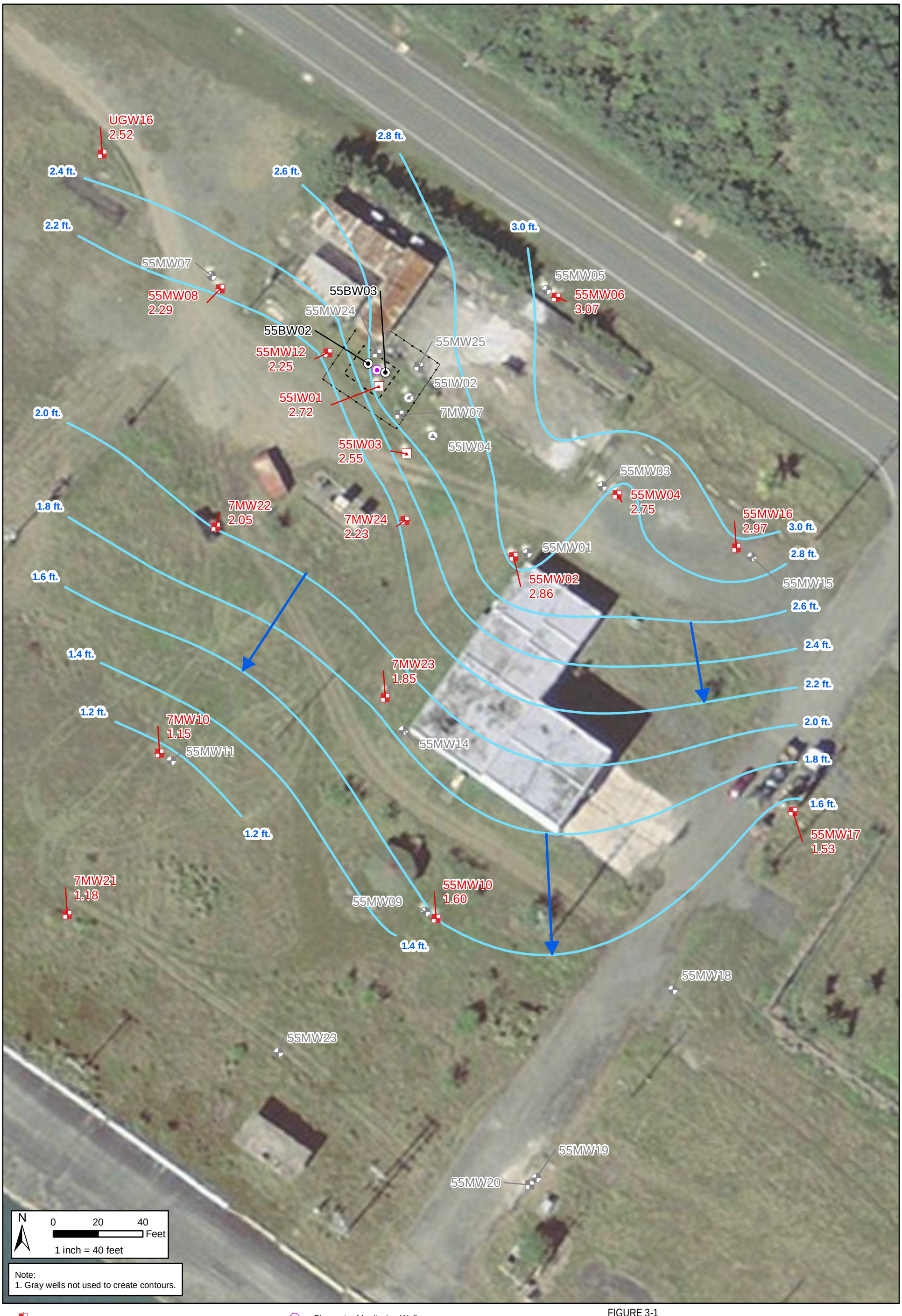
FIGURE 2-1
In Situ Bioreactor Cross Section Schematic
SWMU 55
Naval Activity, Puerto Rico



NOT TO SCALE

North

FIGURE 2-2
Bioreactor As-Built
SWMU 55
Naval Activity Puerto Rico

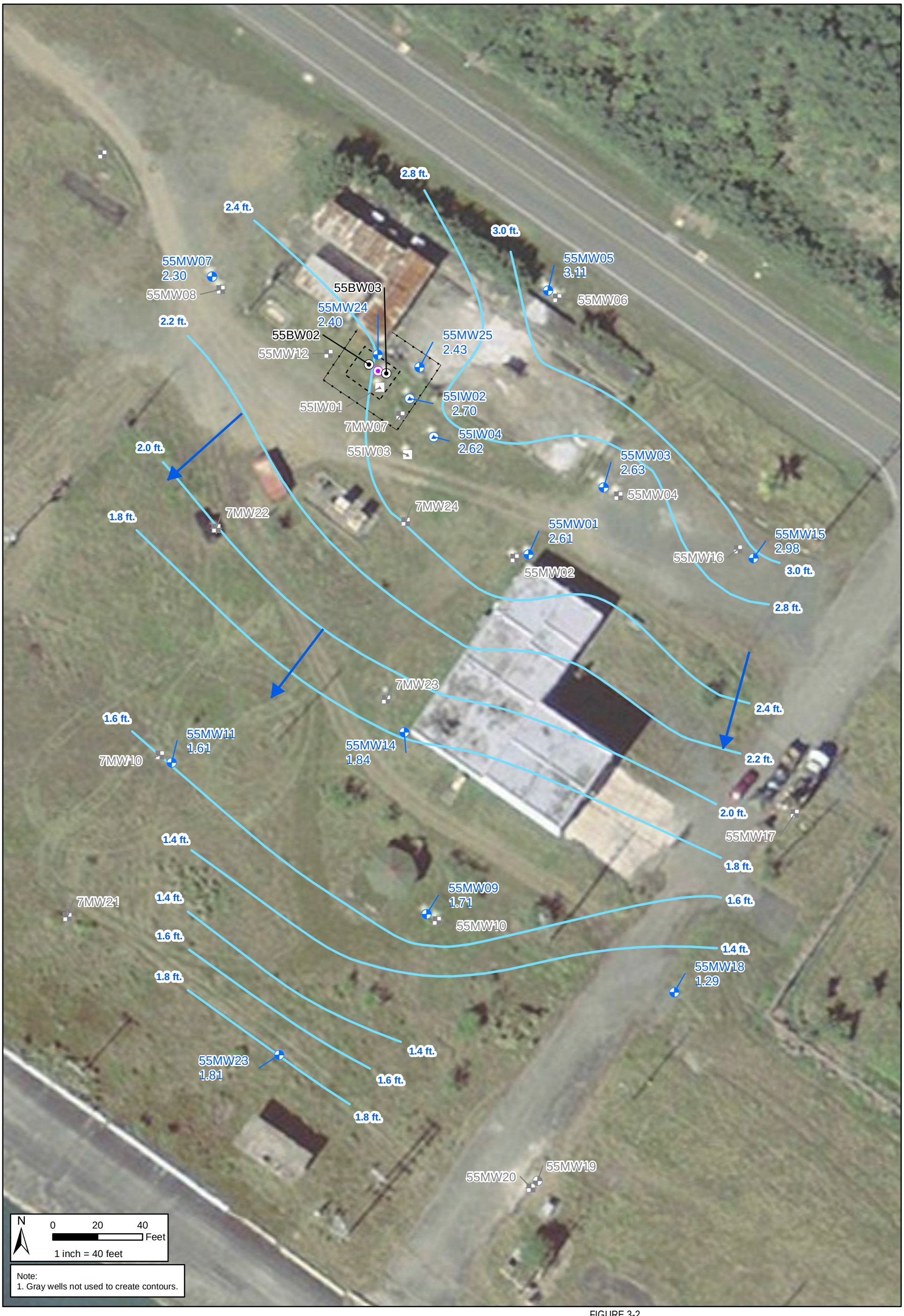


Monitoring Well Screened Primarily Less Than 25 feet bgs
Injection Well Screened Primarily Less Than 25 feet bgs
Bioreactor Injection Well
Existing monitoring wells not used to develop contours
Bioreactor Monitoring Well
Fence
Groundwater Contour - November 26, 2012
Groundwater Flow Direction
Bioreactor

FIGURE 3-1
Shallow Aquifer Zone (Wells Screened Less than 25 Feet bgs)
Potentiometric Surface Map - Pre-Corrective Action
November 26, 2012
SWMU 55
Naval Activity Puerto Rico

AGVIQ CH2M HILL

R:\USNavyPuertoRico20000317\MapFiles\SWMU_55\2015\Fig_3-1_SWMU55_Potentiometric_Shallow_201211.mxd 5/29/2015 JCarr_ch2mhillenvgis



Monitoring Well Screened Primarily Greater Than 25 feet bgs
Injection Well Screened Primarily Greater Than 25 feet bgs
Bioreactor Injection Well
Existing monitoring wells not used to develop contours
Bioreactor Monitoring Well
Fence
Groundwater Contour - November 26, 2012
Groundwater Flow Direction
Bioreactor

FIGURE 3-2
Deep Aquifer Zone (Wells Screened Greater than 25 Feet bgs)
Potentiometric Surface Map - Pre-Corrective Action
November 26, 2012
SWMU 55
Naval Activity Puerto Rico

AGVIQ CH2M HILL

R:\USNavyPuertoRico20000317\MapFiles\SWMU_55\2015\Fig_3-2_SWMU55_Potentiometric_Deep_201211.mxd 5/29/2015 JCarr_ch2mhillenvgis

Notes:
1. * - Monitoring well (55MW26) and injection wells (55IW05 through 55IW12) were installed in April 2013.
2. Monitoring well 55MW24 and injection well 55IW01 were abandoned on April 10, 2013

Monitoring Well Screened Primarily Less Than 25 feet bgs
Injection Well Screened Primarily Less Than 25 feet bgs
Bioreactor Injection Well
Bioreactor Monitoring Well
Abandoned Well
Existing monitoring wells not used to develop contours
Fence
Groundwater Contour - November 19, 2014
Groundwater Flow Direction
Bioreactor

FIGURE 3-3
Shallow Aquifer Zone (Wells Screened Less than 25 Feet bgs)
Potentiometric Surface Map - November 19, 2014
SWMU 55
Naval Activity Puerto Rico

AGVIQ CH2M HILL

R:\USNavyPuertoRico20000317\MapFiles\SWMU_55\2015\Fig_3-3_SWMU55_Potentiometric_Shallow_201411.mxd 5/29/2015 JCarr_ch2mhillenvgis

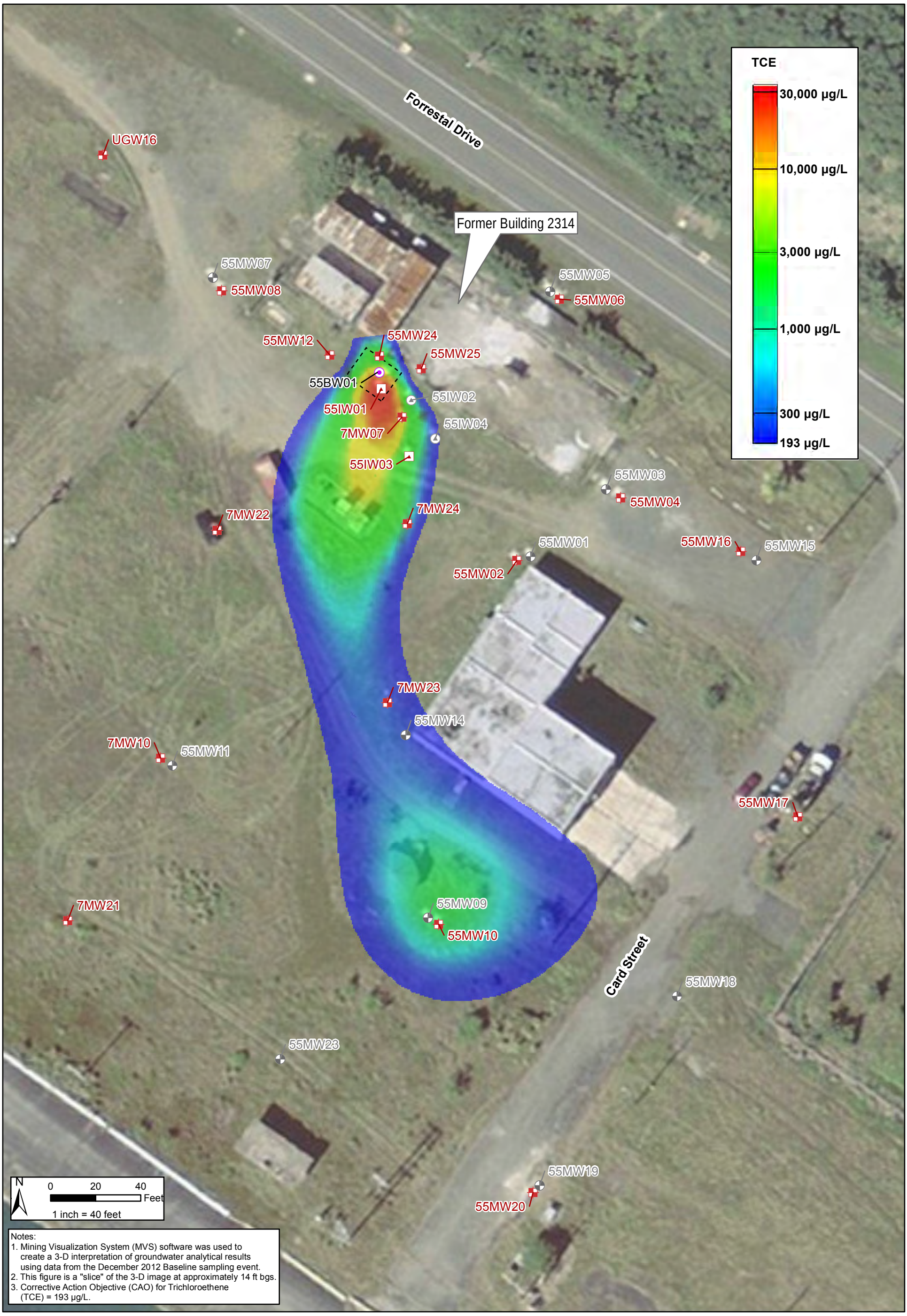
Notes:
1. * - Monitoring well (55MW26) and injection wells (55IW05 through 55IW12) were installed in April 2013.
2. Monitoring well 55MW24 and injection well 55IW01 were abandoned on April 10, 2013

Monitoring Well Screened Primarily Greater Than 25 feet bgs
Injection Well Screened Primarily Greater Than 25 feet bgs
Bioreactor Injection Well
Bioreactor Monitoring Well
Abandoned Well
Existing monitoring wells not used to develop contours
Fence
Groundwater Contour - November 19, 2014
Groundwater Flow Direction
Bioreactor

FIGURE3-4
Deep Aquifer Zone (Wells Screened Greater than 25 Feet bgs)
Potentiometric Surface Map - November 19, 2014
SWMU 55
Naval Activity Puerto Rico

AGVIQ CH2M HILL

R:\USNavyPuertoRico20000317\MapFiles\SWMU_55\2015\Fig_3-4_SWMU55_Potentiometric_Deep_201411.mxd 5/29/2015 JCarr_ch2mhillenvgis



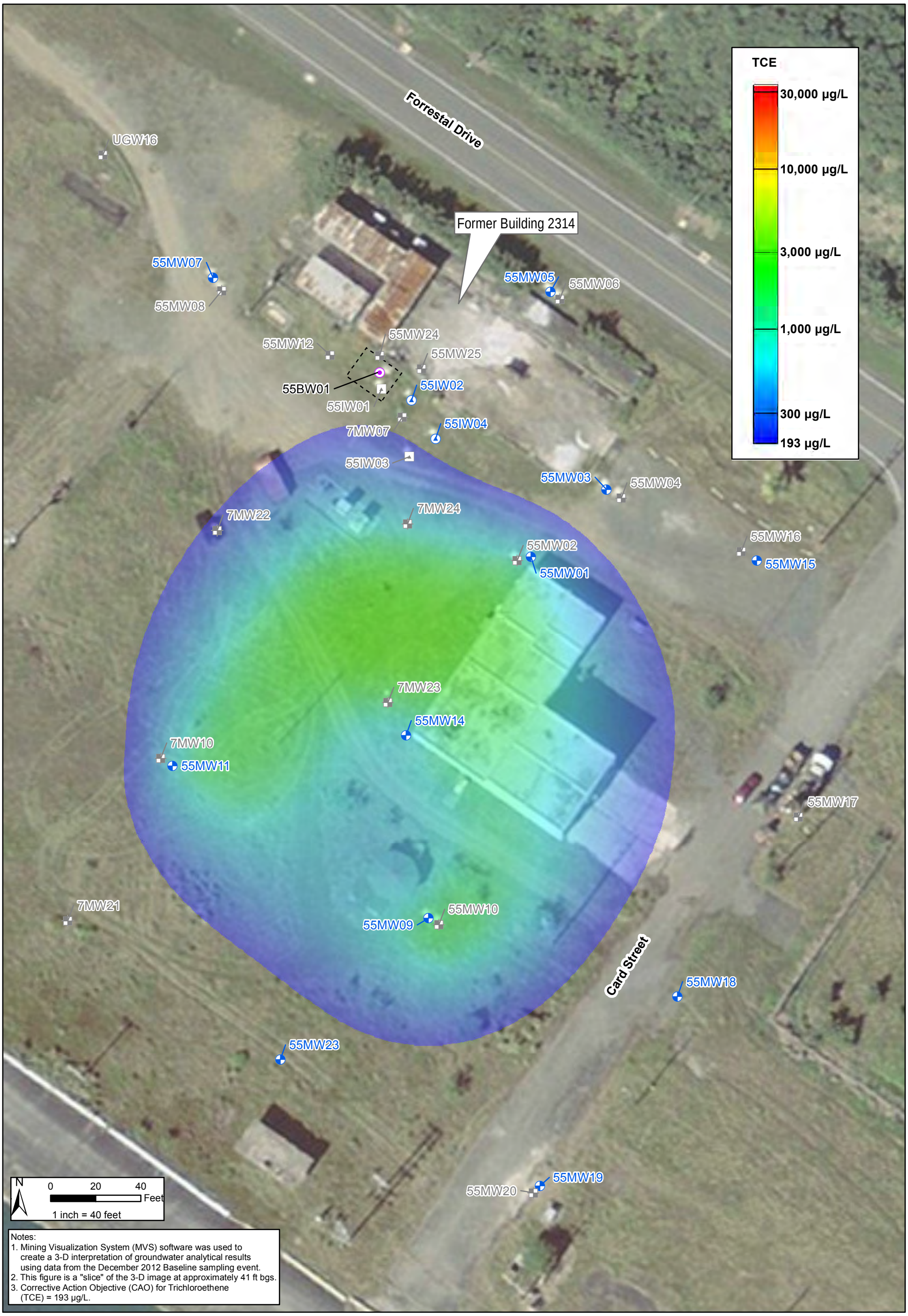
Notes:
1. Mining Visualization System (MVS) software was used to create a 3-D interpretation of groundwater analytical results using data from the December 2012 Baseline sampling event.
2. This figure is a "slice" of the 3-D image at approximately 14 ft bgs.
3. Corrective Action Objective (CAO) for Trichloroethene (TCE) = 193 µg/L.

Proposed Bioreactor Monitoring Well
Monitoring Well Screened Primarily Less than 25 ft bgs
Injection Well Screened Primarily Less than 25 ft bgs
Existing monitoring wells not used to develop 3-D interpretation.
Bioreactor

FIGURE 3-5
Shallow Aquifer (Wells Screened Less than 25 Feet bgs) Zone
TCE Concentrations - Pre-Corrective Action
December 2012
SWMU 55
Naval Activity Puerto Rico

AGVIQ CH2M HILL

R:\USNavyPuertoRico20000317\MapFiles\SWMU_55\2015\Fig_3-5_SWMU55_TCE_Shallow_201212.mxd 6/4/2015 JCarr_ch2mhillenvgis



Proposed Bioreactor Monitoring Well

Monitoring Well Screened Primarily Greater than 25 ft bgs

Injection Well Screened Primarily Greater than 25 ft bgs

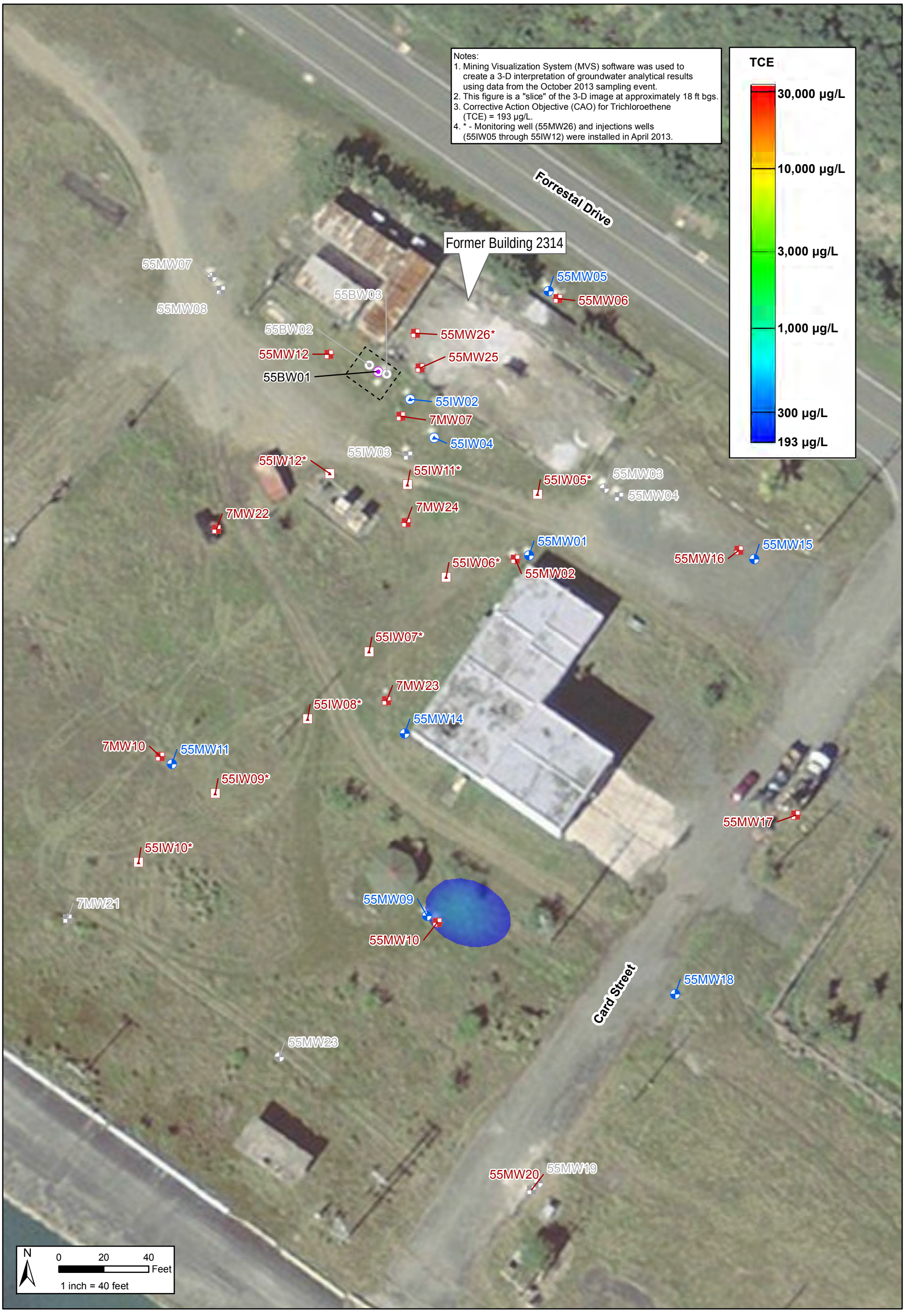
Existing monitoring wells not used to develop 3-D interpretation.

Bioreactor

FIGURE 3-6
Deep Aquifer (Wells Screened Greater than 25 Feet bgs) Zone
TCE Concentrations - Pre-Corrective Action
December 2012
SWMU 55
Naval Activity Puerto Rico

R:\USNavyPuertoRico20000317\MapFiles\SWMU_55\2015\Fig_3-6_SWMU55_TCE_Deep_201212.mxd 5/29/2015 JCarr_ch2mhillenvgis

AGVIQ CH2M HILL

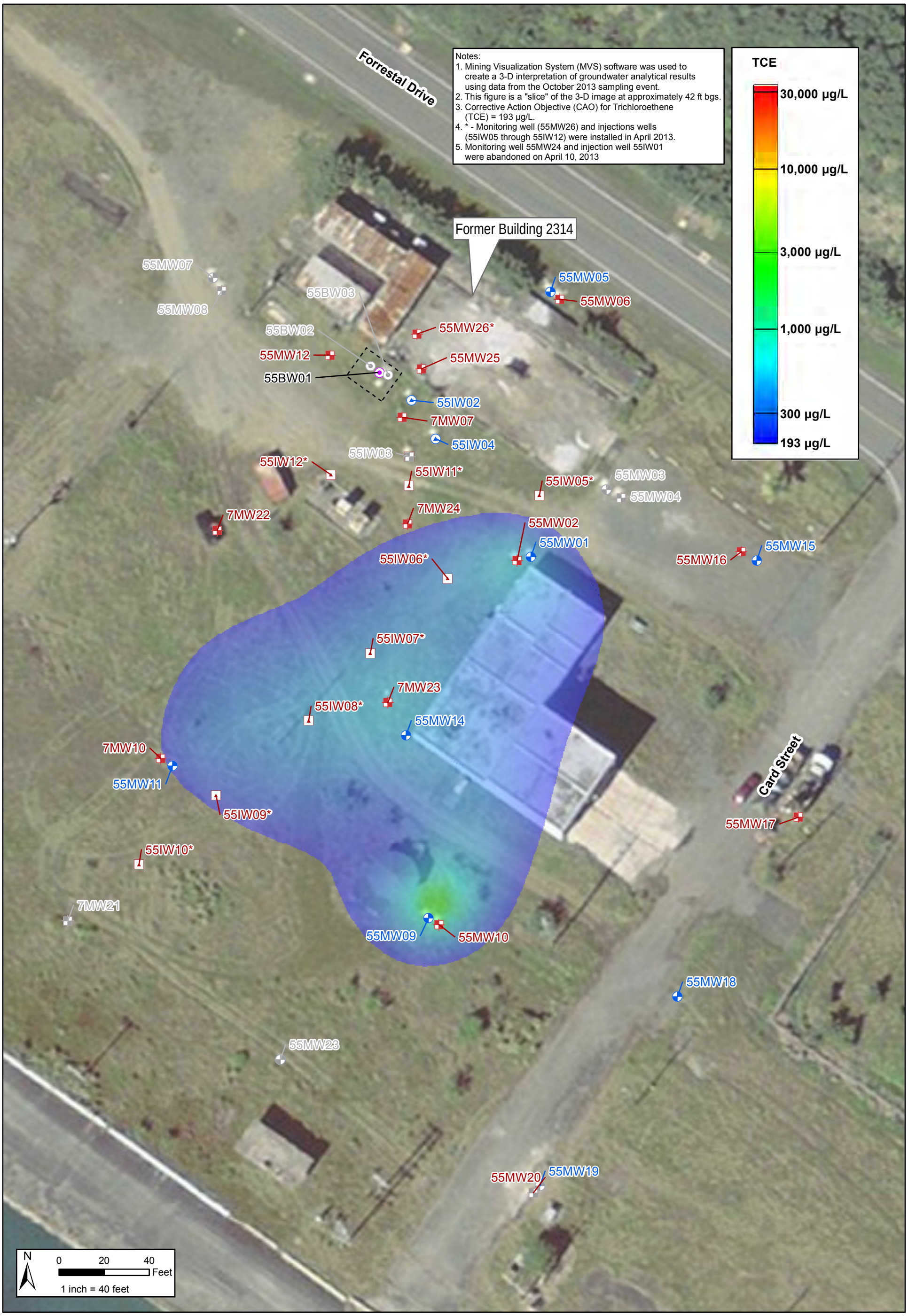


Monitoring Well Screened Primarily Less than 25 ft bgs
Injection Well Screened Primarily Less than 25 ft bgs
Monitoring Well Screened Primarily Greater than 25 ft bgs
Injection Well Screened Primarily Greater than 25 ft bgs
Bioreactor Monitoring Well
Wells not used to develop 3-D interpretation.
Bioreactor

FIGURE 3-7
Shallow Aquifer (Wells Screened Less than 25 Feet bgs) Zone
TCE Concentrations - October 2013
SWMU 55
Naval Activity Puerto Rico

AGVIQ CH2M HILL

R:\USNavyPuertoRico20000317\MapFiles\SWMU_55\2015\Fig_3-7_SWMU55_TCE_Shallow_201310.mxd 5/29/2015 JCarr_ch2mhillenvgis



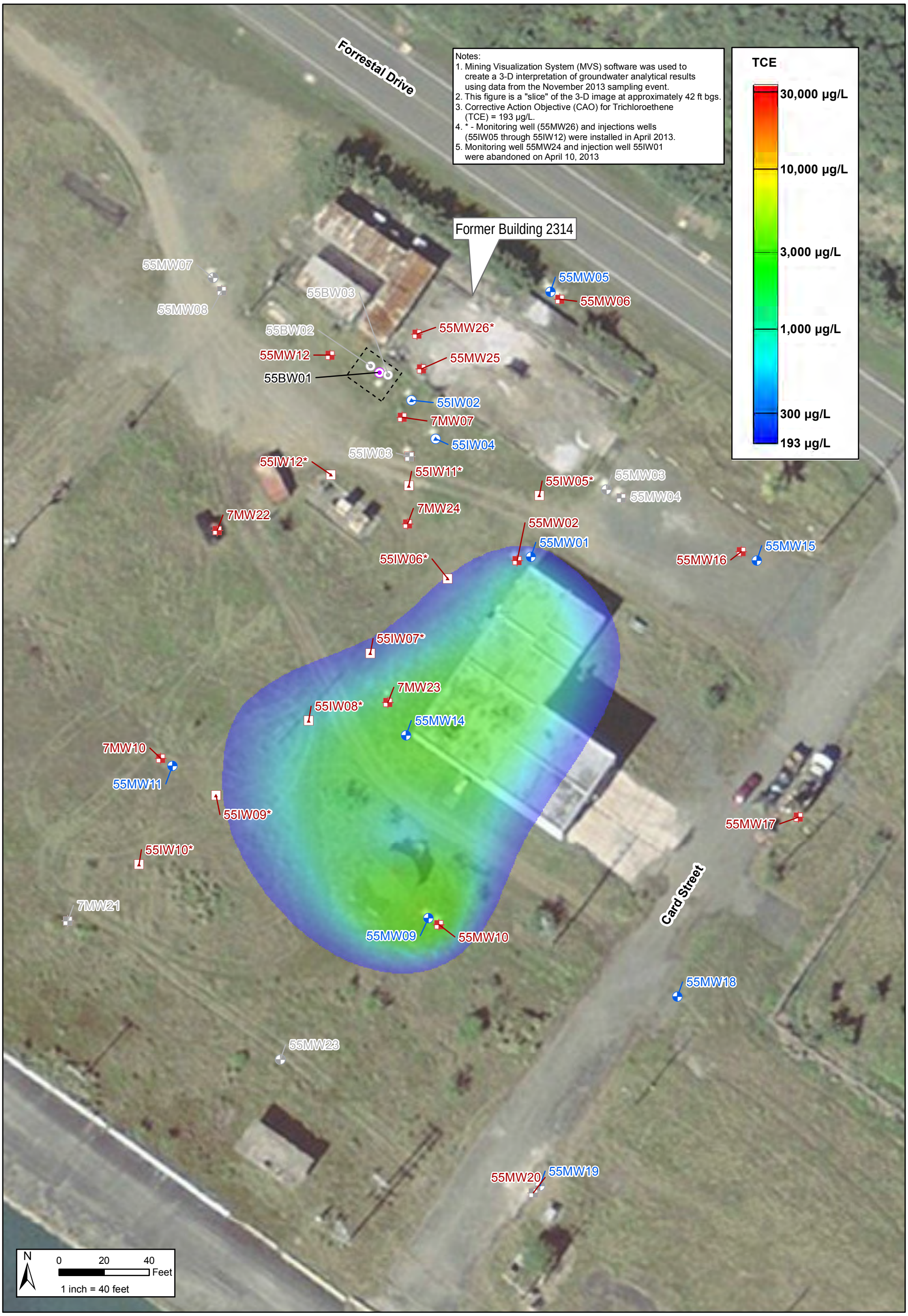
Monitoring Well Screened Primarily Less than 25 ft bgs
Injection Well Screened Primarily Less than 25 ft bgs
Monitoring Well Screened Primarily Greater than 25 ft bgs
Injection Well Screened Primarily Greater than 25 ft bgs
Bioreactor Monitoring Well

Wells not used to develop 3-D interpretation.
Bioreactor

FIGURE 3-8
Deep Aquifer (Wells Screened Greater than 25 Feet bgs) Zone
TCE Concentrations - October 2013
SWMU 55
Naval Activity Puerto Rico

R:\USNavyPuertoRico20000317\MapFiles\SWMU_55\2015\Fig_3-8_SWMU55_TCE_Deep_201310.mxd 5/29/2015 JCarr_ch2mhillenvgis

AGVIQ CH2M HILL



Monitoring Well Screened Primarily Less than 25 ft bgs
Injection Well Screened Primarily Less than 25 ft bgs
Monitoring Well Screened Primarily Greater than 25 ft bgs
Injection Well Screened Primarily Greater than 25 ft bgs
Bioreactor Monitoring Well

/ / Wells not used to develop 3-D interpretation.
Bioreactor

FIGURE 3-9
Deep Aquifer (Wells Screened Deeper than 25 Feet bgs) Zone
TCE Concentrations - November 2014
SWMU 55
Naval Activity Puerto Rico

AGVIQ CH2M HILL

R:\USNavyPuertoRico20000317\MapFiles\SWMU_55\2015\Fig_3-9_SWMU55_TCE_Deep_201411.mxd 5/29/2015 JCarr_ch2mhillenvgis

Appendix A
Standard Groundwater Monitoring Procedures

Appendix A
Standard Groundwater Monitoring Procedures

Groundwater Monitoring Procedures

This section describes the field procedures followed during the collection and analysis of groundwater samples.

Groundwater Sample Collection

Monitoring wells were purged and sampled in accordance with the low-flow/ low-volume (micro-purge) method described in the standard operating procedures (SOPs) provided in Appendix B of the *SAP* (AGVIQ-CH2M HILL, 2012c), and in general accordance with the requirements described in EPA Region 4 SESD *Field Branches Quality System and Technical Procedures* (EPA, 2009).

A minimum of one well volume was purged from each well, and samples were collected after water quality parameters stabilized over three consecutive readings, or if a maximum of five well volumes had been purged. Parameters were considered stable when:

- Temperature remained constant
- pH did not fluctuate more than 0.1 standard units
- Conductivity did not vary more than 3 percent
- Oxidation-reduction potential (ORP) did not fluctuate more than 10 millivolts
- Dissolved oxygen did not vary more than 10 percent
- Turbidity did not vary more than 10 percent

If the recharge rate of the well was so low that the well purged dry, the pump was turned off, and the field team allowed the well to recharge to a sufficient level to obtain the necessary sample volume. Samples were collected within 24 hours.

Quality Assurance/Quality Control Samples

The following quality assurance (QA)/QC samples were collected to conduct the data validation required to ensure all data were useable as reported:

- One field duplicate sample per every 10 samples
- One trip blank per sample cooler containing VOC samples
- One equipment blank for each equipment used per day of sampling
- One matrix spike/matrix spike duplicate sample per 20 samples

Laboratory data reports submitted for each event were reviewed and quality flags were applied as described in data validation reports.

Appendix B
Soil Boring Logs

PROJECT NUMBER:	BORING NUMBER:
378718	55IW05 SHEET 1 OF 2

Soil Boring Log

PROJECT : Naval Activity Puerto Rico JM04 | LOCATION : Ceiba, Puerto Rico

ELEVATION : 13.57 ft (NGVD 29) | DRILLING CONTRACTOR : Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago

COORDINATES : 145468.0 N 782661.0 E | DRILLING METHOD AND EQUIPMENT : Mobil B61, Hollow-stem auger, 8.25-in OD augers

STATIC WATER LEVEL: ft BTOC () | START: 04/25/2013 | END: 04/25/2013 | LOGGER : James Fank/RAL

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	PID (ppm) breathing zone	PID (ppm) headspace	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	GRAPHIC LOG	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR,MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, & INSTRUMENTATION	ELEVATION NGVD 29
	0.0 – 4.0	4.0	NM	NM	NM		FILL		10
5	4.0 – 6.0	0.7	NM	0.0	39-50/4 (50/4")		CLAYEY GRAVEL (GC) tan-light brown-orange, damp, hard, 1/8-1/2 inch gravel, trace very fine-fine sand		
	6.0 – 9.0						No Recovery		5
10	9.0 – 11.0	1.3	NM NM	0.0 0.1	35-37-50/3 (87/9")		SILTY GRAVEL (GC) tan-light gray, dry, hard, 1/8-1/2 inch gravel, trace very fine sand No Recovery		
15	14.0 – 16.0	0.3	NM	0.0	50/4 (50/4")		SILTY GRAVEL (GC) tan-light gray, dry, hard, 1/8-1/2 inch gravel, trace very fine sand No Recovery.	Refusal at 15.5 ft bgs. End of boring. Offset 5 ft northeast and start drilling again.	0
20	19.0 – 21.0	0.2	NM	0.0	50/2 (50/2")		SILTY GRAVEL (GC) tan-light gray, dry, hard, 1/8-1/2 inch gravel, trace very fine sand No Recovery		-5
25	24.0 – 26.0	0.3	NM	0.0	50/6 (50/6")		SILTY GRAVEL (GC) tan-light gray, dry, hard, 1/8-1/2 inch gravel, fine sand No Recovery		-10
30	29.0 –		NM	0.0	50/4		Soil Description on next page		-15

WELL DIAGRAM

Casing Top Elev: 16.58 (ft)
Casing Type: Sch 40 PVC
3.01ft Stick Up

CEMENT GROUT

BENTONITE

FILTER PACK

SCREEN

PROJECT NUMBER:	BORING NUMBER:
378718	55IW05 SHEET 2 OF 2

Soil Boring Log

PROJECT : Naval Activity Puerto Rico JM04

LOCATION : Ceiba, Puerto Rico

ELEVATION : 13.57 ft (NGVD 29)

DRILLING CONTRACTOR : Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago

COORDINATES : 145468.0 N 782661.0 E

DRILLING METHOD AND EQUIPMENT : Mobil B61, Hollow-stem auger, 8.25-in OD augers

STATIC WATER LEVEL: ft BTOC ()

START: 04/25/2013

END: 04/25/2013

LOGGER : James Fank/RAL

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	PID (ppm) breathing zone	PID (ppm) headspace	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	GRAPHIC LOG	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR,MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, & INSTRUMENTATION	WELL DIAGRAM: Casing Top Elev: 16.58 (ft) Casing Type: Sch 40 PVC	ELEVATION NGVD 29
	31.0	0.3			(50/4")		SILTY GRAVEL (GC) tan-light gray, dry, hard, 1/8-1/2 inch gravel, fine sand			
							No Recovery(Soil Description Repeated)			
	34.0									-20
35		0.2	NM	0.0	50/2 (50/2")		SILTY GRAVEL (GC) tan-light gray, dry, hard, 1/8-1/2 inch gravel, fine sand			
	36.0						No Recovery		0.5ft Sump	
								Boring terminated at 36.5 ft bgs		
										-25
40										
										-30
45										
										-35
50										
										-40
55										
										-45
60										

PROJECT NUMBER:	BORING NUMBER:
378718	55IW06 SHEET 1 OF 2

Soil Boring Log

PROJECT : Naval Activity Puerto Rico JM04 | LOCATION : Ceiba, Puerto Rico

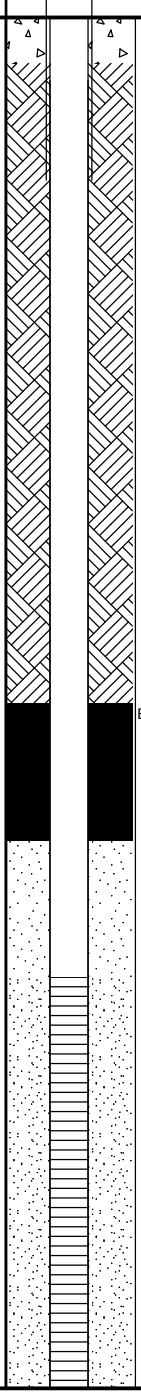
ELEVATION : 10.44 ft (NGVD 29) | DRILLING CONTRACTOR : Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago

COORDINATES : 145431.2 N 782621.1 E | DRILLING METHOD AND EQUIPMENT : Mobil B61, Hollow-stem auger, 8.25-in OD augers

STATIC WATER LEVEL: ft BTOC () | START: 04/24/2013 | END: 04/24/2013 | LOGGER : James Fank/RAL

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	PID (ppm) breathing zone	PID (ppm) headspace	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	GRAPHIC LOG	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR,MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, & INSTRUMENTATION	ELEVATION NGVD 29
	0.0 – 4.0	4.0	NM	NM	NM		FILL		10
5	4.0 – 6.0	1.5	NM NM	0.0 0.0	30-26-27-33 (53)		CLAYEY GRAVEL (GC) tan-light brown-orange, damp, hard, 1/4 inch gravel, trace fine-medium sand No Recovery		5
10	6.0 – 9.0								
	9.0 – 11.0	1.8	NM NM	0.0 0.0	18-26-33-40 (59)		SILTY SAND (SM) tan-light brown, damp, hard, trace 1/4 inch gravel, very fine-medium grained sand No Recovery		0
15	11.0 – 14.0								
	14.0 – 16.0	0.7	NM NM	0.0 0.0	33-50/6 (50/6")		SILTY GRAVEL (GC) tan-light brown, hard, 1/4 inch gravel No Recovery.		-5
20	16.0 – 19.0								
	19.0 – 21.0	0.8	NM NM	0.0 0.0	33-50/5 (50/5")		SILTY GRAVEL (GC) tan-light brown, hard, 1/4 inch gravel No Recovery		-10
25	21.0 – 24.0								
	24.0 – 26.0	1.8	NM NM	0.0 0.0	26-28-50/6 (78/12")		SILTY GRAVEL (GC) tan-light brown, wet, hard, 1/4 inch gravel No Recovery		-15
30	26.0 – 29.0								
	29.0 –		NM	0.0	50/4		Soil Description on next page		

WELL DIAGRAM



PROJECT NUMBER:	BORING NUMBER:
378718	55IW06 SHEET 2 OF 2

Soil Boring Log

PROJECT : Naval Activity Puerto Rico JM04 | LOCATION : Ceiba, Puerto Rico

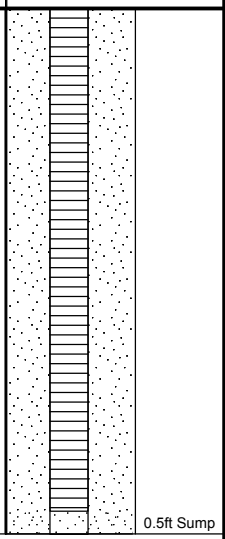
ELEVATION : 10.44 ft (NGVD 29) | DRILLING CONTRACTOR : Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago

COORDINATES : 145431.2 N 782621.1 E | DRILLING METHOD AND EQUIPMENT : Mobil B61, Hollow-stem auger, 8.25-in OD augers

STATIC WATER LEVEL: ft BTOC () | START: 04/24/2013 | END: 04/24/2013 | LOGGER : James Fank/RAL

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	PID (ppm) breathing zone	PID (ppm) headspace	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	GRAPHIC LOG	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR,MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, & INSTRUMENTATION	ELEVATION NGVD 29
	31.0	0.3	NM	0.0	(50/4")		SILTY GRAVEL (GC) tan-light brown, wet, hard, 1/4 inch gravel		-20
							No Recovery(Soil Description Repeated)		
	34.0								
35	36.0	1.1	NM NM	0.0 0.0	20-50/4 (50/4")		SILTY GRAVEL (GC) tan-light brown, wet, hard, 1/4 inch gravel No Recovery		-25
	39.0								
40	41.0	0.2	NM	0.0	50/2 (50/2")		SILTY GRAVEL (GC) tan-light brown, wet, hard, 1/4 inch gravel No Recovery		-30
45								Boring terminated at 41.5 ft bgs	-35
50									-40
55									-45
60									

WELL DIAGRAM: Casing Top Elev: 13.20 (ft)
Casing Type: Sch 40 PVC



PROJECT NUMBER:	BORING NUMBER:
378718	55IW07 SHEET 1 OF 1

Soil Boring Log

PROJECT : Naval Activity Puerto Rico JM04

LOCATION : Ceiba, Puerto Rico

ELEVATION : 8.70 ft (NGVD 29)

DRILLING CONTRACTOR : Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago

COORDINATES : 145398.1 N 782586.8 E

DRILLING METHOD AND EQUIPMENT : Mobil B61, Hollow-stem auger, 8.25-in OD augers

STATIC WATER LEVEL: ft BTOC ()

START: 04/24/2013

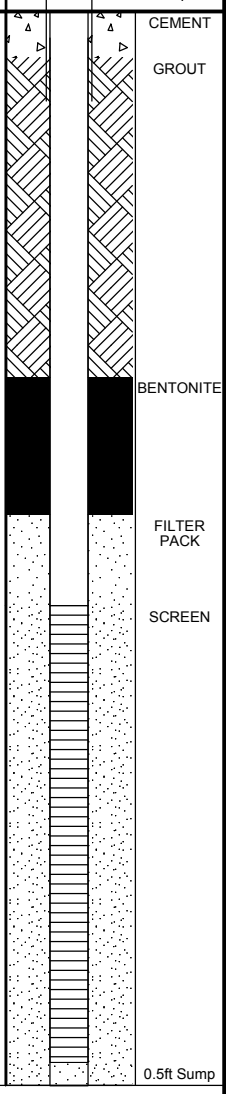
END: 04/24/2013

LOGGER : James Fank/RAL

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	PID (ppm) breathing zone	PID (ppm) headspace	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	GRAPHIC LOG	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR,MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, & INSTRUMENTATION
	0.0 – 4.0	4.0	NM	NM	NM		FILL	
5	4.0 – 6.0	0.8	NM NM	0.0 0.0	2-1-2-3 (3)		SAND (SP) tan-orange-brown, moist, medium-dense, very fine-med grained No Recovery	
10	9.0 – 11.0	1.7	NM NM	0.0 0.0	8-8-10-50 (18)		SILTY GRAVEL (GC) dark gray, wet, loose, 1/4 inch gravel SILTY GRAVEL (GC) tan-orange-brown, wet, loose, 1/4 inch gravel No Recovery	
15	14.0 – 16.0	0.4	NM NM	0.0 0.0	50/6 (50/6")		SILTY GRAVEL (GC) tan-orange-brown, wet, loose, 1/4 inch gravel No Recovery.	
20	19.0 – 21.0	0.2	NM	0.0	50/2 (50/2")		SILTY GRAVEL (GC) tan-orange-brown, wet, loose, 1/4 inch gravel No Recovery	
25								Auger refusal at 23.5 ft bgs Boring terminated at 23.5 ft bgs
30								

WELL DIAGRAM

Casing Top Elev: 11.75 (ft)
Casing Type: Sch 40 PVC
3.05ft Stick Up



ELEVATION NGVD 29: 5, 0, -5, -10, -15, -20

PROJECT NUMBER:	BORING NUMBER:
378718	55IW08 SHEET 1 OF 2

Soil Boring Log

PROJECT : Naval Activity Puerto Rico JM04 | LOCATION : Ceiba, Puerto Rico

ELEVATION : 7.43 ft (NGVD 29) | DRILLING CONTRACTOR : Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago

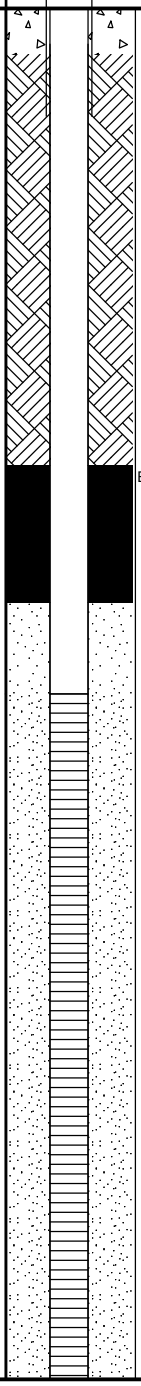
COORDINATES : 145368.2 N 782559.4 E | DRILLING METHOD AND EQUIPMENT : Mobil B61, Hollow-stem auger, 8.25-in OD augers

STATIC WATER LEVEL: ft BTOC () | START: 04/22/2013 | END: 04/23/2013 | LOGGER : James Fank/RAL

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	PID (ppm) breathing zone	PID (ppm) headspace	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	GRAPHIC LOG	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR,MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, & INSTRUMENTATION	ELEVATION NGVD 29
	0.0 – 4.0	4.0	NM	NM	NM		FILL		5
5	4.0 – 6.0	1.3			3-4-3-2 (7)		CLAYEY GRAVEL (GC) orange-tan-brown, moist, medium-dense; No Recovery		
	6.0 – 9.0								0
10	9.0 – 11.0	0.7	NM 0.0; NM 0.0		3-2-2-2 (4)		SILT (ML) dark gray, moist, soft, strong odor; No Recovery		-5
15	14.0 – 16.0	1.5	NM 0.0; NM 0.0		14-21-50/6 (71/12")		SILTY GRAVEL (GC) dark gray, wet, hard, 1/2 inch gravel; No Recovery.		-10
20	19.0 – 21.0	1.5	NM 0.0; NM 0.0		8-12-15-20 (27)		SILTY GRAVEL (GC) orange-brown, wet, hard, 1/2 in. gravel; No Recovery		-15
25	24.0 – 26.0	NM	NM 0.0; NM 0.0		NM		SAND (SW) white-tan, wet, loose		-20
30	29.0 –				2-4-6-5		SAND (SW) white-tan, wet, loose		

WELL DIAGRAM

Casing Top Elev: 10.44 (ft)
Casing Type: Sch 40 PVC
3.01ft Stick Up



PROJECT NUMBER:	BORING NUMBER:
378718	55IW08 SHEET 2 OF 2

Soil Boring Log

PROJECT : Naval Activity Puerto Rico JM04

LOCATION : Ceiba, Puerto Rico

ELEVATION : 7.43 ft (NGVD 29)

DRILLING CONTRACTOR : Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago

COORDINATES : 145368.2 N 782559.4 E

DRILLING METHOD AND EQUIPMENT : Mobil B61, Hollow-stem auger, 8.25-in OD augers

STATIC WATER LEVEL: ft BTOC ()

START: 04/22/2013

END: 04/23/2013

LOGGER : James Fank/RAL

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	PID (ppm) breathing zone	PID (ppm) headspace	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	GRAPHIC LOG	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR,MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, & INSTRUMENTATION	WELL DIAGRAM: Casing Top Elev: 10.44 (ft) Casing Type: Sch 40 PVC	ELEVATION NGVD 29
	31.0	NM			(10)					
	34.0									-25
35	36.0	NM			8-1-5-50/3 (6)		SAND (SW) white-tan, wet, loose	Auger refusal at 35.5 ft bgs Boring terminated at 35.5 ft bgs	0.5ft Sump	
										-30
40										
										-35
45										
										-40
50										
										-45
55										
										-50
60										

PROJECT NUMBER:	BORING NUMBER:
378718	55IW09 SHEET 1 OF 2

Soil Boring Log

PROJECT : Naval Activity Puerto Rico JM04 | LOCATION : Ceiba, Puerto Rico

ELEVATION : 6.64 ft (NGVD 29) | DRILLING CONTRACTOR : Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago

COORDINATES : 145335.2 N 782518.4 E | DRILLING METHOD AND EQUIPMENT : Mobil B61, Hollow-stem auger, 8.25-in OD augers

STATIC WATER LEVEL: ft BTOC () | START: 04/18/2013 | END: 04/22/2013 | LOGGER : James Fank/RAL

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	PID (ppm) breathing zone	PID (ppm) headspace	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	GRAPHIC LOG	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR,MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, & INSTRUMENTATION	WELL DIAGRAM	ELEVATION NGVD 29
	0.0 – 4.0	4.0			NM		FILL	No PID readings collected.	CEMENT; GROUT	5
5	4.0 – 6.0	1.5			8-2-10-12 (12)		LIMESTONE white-tan, wet, fine-medium, grained sand with shells; No Recovery			0
	6.0 – 9.0									
10	9.0 – 11.0	1.3			1-2-0-5 (2)		LIMESTONE white-tan, wet, fine-medium, grained sand with shells; No Recovery			-5
	11.0 – 14.0									
15	14.0 – 16.0	1.8			0-1-2-4 (3)		LIMESTONE white-tan, wet, fine-medium, grained sand with shells; No Recovery.			-10
	16.0 – 19.0									
20	19.0 – 21.0	0.7			12-3-1-2 (4)		SAND (SW) white-tan, wet, loose; No Recovery		BENTONITE	-15
	21.0 – 24.0								FILTER PACK	
25	24.0 – 26.0	2.0			1-2-2-5 (4)		SAND (SW) white-tan, wet, loose		SCREEN	-20
	26.0 – 29.0									
30	29.0 –				NM-NM-NM-		SAND (SW) white-tan, wet, loose			

Casing Top Elev: 9.77 (ft)
Casing Type: Sch 40 PVC
3.13ft Stick Up

PROJECT NUMBER:	BORING NUMBER:
378718	55IW09 SHEET 2 OF 2

Soil Boring Log

PROJECT : Naval Activity Puerto Rico JM04

LOCATION : Ceiba, Puerto Rico

ELEVATION : 6.64 ft (NGVD 29)

DRILLING CONTRACTOR : Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago

COORDINATES : 145335.2 N 782518.4 E

DRILLING METHOD AND EQUIPMENT : Mobil B61, Hollow-stem auger, 8.25-in OD augers

STATIC WATER LEVEL: ft BTOC ()

START: 04/18/2013

END: 04/22/2013

LOGGER : James Fank/RAL

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	PID (ppm) breathing zone	PID (ppm) headspace	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	GRAPHIC LOG	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR,MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, & INSTRUMENTATION	WELL DIAGRAM (Casing Top Elev: 9.77 (ft) Casing Type: Sch 40 PVC)	ELEVATION NGVD 29
	31.0	NM			NM					
	34.0									-25
35	36.0	NM			NM-NM-NM-NM		SAND (SW) white-tan, wet, loose			
	39.0									-30
40	41.0	NM			NM-NM-NM-NM		SAND (SW) white-tan, wet, loose			
										-35
45								Boring terminated at 44.5 ft bgs Auger refusal at 44.5 ft bgs	0.5ft Sump	
										-40
50										
										-45
55										
										-50
60										

PROJECT NUMBER:	BORING NUMBER:
378718	55IW10 SHEET 1 OF 2

Soil Boring Log

PROJECT : Naval Activity Puerto Rico JM04

LOCATION : Ceiba, Puerto Rico

ELEVATION : 6.19 ft (NGVD 29)

DRILLING CONTRACTOR : Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago

COORDINATES : 145304.5 N 782484.2 E

DRILLING METHOD AND EQUIPMENT : Mobil B61, Hollow-stem auger, 8.25-in OD augers

STATIC WATER LEVEL: ft BTOC ()

START: 04/18/2013

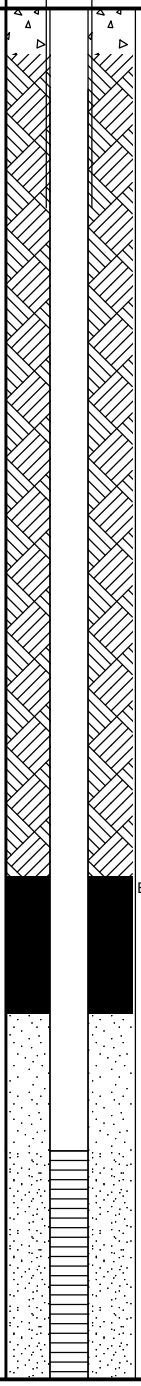
END: 04/18/2013

LOGGER : James Fank/RAL

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	PID (ppm) breathing zone	PID (ppm) headspace	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	GRAPHIC LOG	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR,MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, & INSTRUMENTATION
	0.0 – 4.0	4.0	NM	NM	NM		FILL	
5	4.0 – 6.0	1.8	NM NM	0.0 0.0	8-6-5-4 (11)		LIMESTONE white-light tan, wet, loosely cemented fine-medium grained sand with shells	
	6.0 – 9.0						No Recovery	
10	9.0 – 11.0	1.5	NM NM	0.0 0.0	4-1-0-0 (1)		LIMESTONE white-light tan, wet, loosely cemented fine-medium grained sand with shells	
	11.0 – 14.0						No Recovery	
15	14.0 – 16.0	1.8	NM NM	0.0 0.0	0-1-0-1 (1)		LIMESTONE white-light tan, wet, loosely cemented fine-medium grained sand with shells	
	16.0 – 19.0						No Recovery.	
20	19.0 – 21.0	1.5	NM NM	0.0 0.0	11-1-3-1 (4)		Shell hash > 50 SAND (SW) white-tan, wet, loose	
25	21.0 – 24.0							
	24.0 – 26.0	1.8	NM NM	0.0 1.0	NA		SAND (SW) white-tan, wet, loose	
	26.0 – 29.0						No Recovery	
30	29.0 –						SAND (SW) white-tan, wet, loose	Very hard augering at 29 ft bgs

WELL DIAGRAM

Casing Top Elev: 9.60 (ft)
Casing Type: Sch 40 PVC
3.41ft Stick Up



ELEVATION NGVD 29: 5, 0, -5, -10, -15, -20

PROJECT NUMBER:	BORING NUMBER:
378718	55IW10 SHEET 2 OF 2

Soil Boring Log

PROJECT : Naval Activity Puerto Rico JM04 | LOCATION : Ceiba, Puerto Rico

ELEVATION : 6.19 ft (NGVD 29) | DRILLING CONTRACTOR : Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago

COORDINATES : 145304.5 N 782484.2 E | DRILLING METHOD AND EQUIPMENT : Mobil B61, Hollow-stem auger, 8.25-in OD augers

STATIC WATER LEVEL: ft BTOC () | START: 04/18/2013 | END: 04/18/2013 | LOGGER : James Fank/RAL

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	PID (ppm) breathing zone	PID (ppm) headspace	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	GRAPHIC LOG	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR,MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, & INSTRUMENTATION	WELL DIAGRAM: Casing Top Elev: 9.60 (ft) Casing Type: Sch 40 PVC	ELEVATION NGVD 29
	31.0	2.0			NA			No PID readings collected as the pump stopped working on the multirae		-25
	34.0									
35		1.7			NA		SAND (SW) white-tan, wet, loose			
	36.0						No Recovery			-30
	39.0									
40		1.5			NA		SAND (SW) white-tan, wet, loose			
	41.0						No Recovery			-35
45									0.5ft Sump	
								Boring terminated at 45.5 ft bgs		-40
50										-45
55										-50
60										

PROJECT NUMBER:	BORING NUMBER:
378718	55IW11 SHEET 1 OF 1

Soil Boring Log

PROJECT : Naval Activity Puerto Rico JM04

LOCATION : Ceiba, Puerto Rico

ELEVATION : 11.82 ft (NGVD 29)

DRILLING CONTRACTOR : Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago

COORDINATES : 145472.3 N 782603.9 E

DRILLING METHOD AND EQUIPMENT : Mobil B61, Hollow-stem auger, 8.25-in OD augers

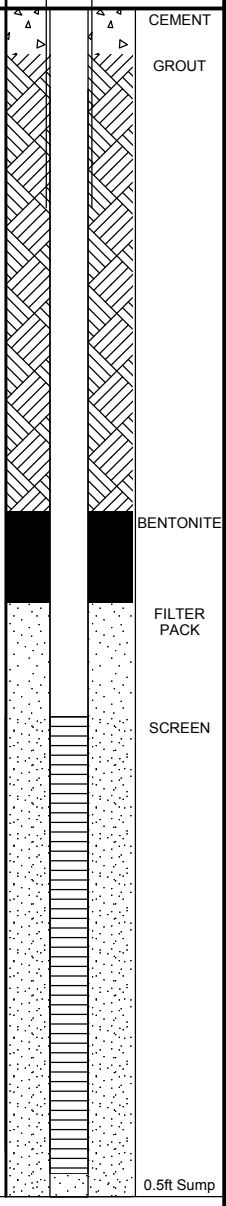
STATIC WATER LEVEL: ft BTOC ()

START: 04/26/2013

END: 04/26/2013

LOGGER : James Fank/RAL

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	PID (ppm) breathing zone	PID (ppm) headspace	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	GRAPHIC LOG	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR,MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, & INSTRUMENTATION	WELL DIAGRAM	ELEVATION NGVD 29
5										10
10										5
15										0
20										-5
25										-10
30										-15



PROJECT NUMBER:	BORING NUMBER:
378718	55IW12 SHEET 1 OF 1

Soil Boring Log

PROJECT : Naval Activity Puerto Rico JM04

LOCATION : Ceiba, Puerto Rico

ELEVATION : 10.38 ft (NGVD 29)

DRILLING CONTRACTOR : Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago

COORDINATES : 145477.3 N 782569.4 E

DRILLING METHOD AND EQUIPMENT : Mobil B61, Hollow-stem auger, 8.25-in OD augers

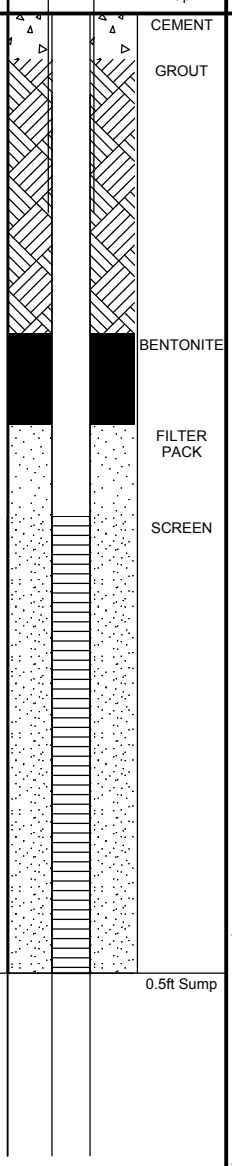
STATIC WATER LEVEL: ft BTOC ()

START: 04/29/2013

END: 04/29/2013

LOGGER : James Fank/RAL

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	PID (ppm) breathing zone	PID (ppm) headspace	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	GRAPHIC LOG	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR,MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, & INSTRUMENTATION	WELL DIAGRAM	ELEVATION NGVD 29
5										5
10										0
15										-5
20										-10
25										-15
30										



PROJECT NUMBER:	BORING NUMBER:
378718	55MW26 SHEET 1 OF 1

Soil Boring Log

PROJECT : Naval Activity Puerto Rico JM04 | LOCATION : Ceiba, Puerto Rico

ELEVATION : 13.75 ft (NGVD 29) | DRILLING CONTRACTOR : Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago

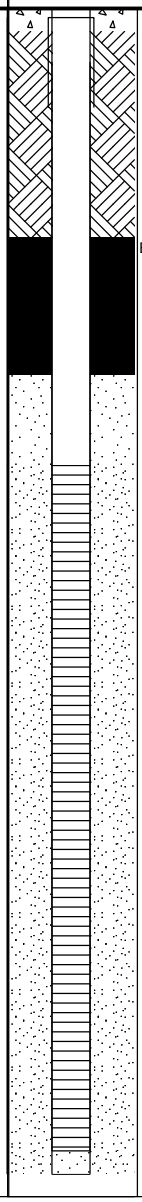
COORDINATES : 145539.7 N 782607.4 E | DRILLING METHOD AND EQUIPMENT : Mobil B61, Hollow-stem auger, 4.25-in ID augers

STATIC WATER LEVEL: ft BTOC () | START: 04/08/2013 | END: 04/08/2013 | LOGGER : James Frank/RAL

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	PID (ppm) breathing zone	PID (ppm) headspace	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	GRAPHIC LOG	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR,MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, & INSTRUMENTATION	ELEVATION NGVD 29
	0.0 – 4.0	4.0	NM	NM	NM		FILL		
5	4.0 – 6.0	1.7	NM NM	0.0 0.0	23-43-38-23 (81)		GRAVEL (GC) brown-gray, dry, hard, with silt and clay, subangular gravel < 1 inch		
	6.0						No Recovery		
	8.0 – 10.0	1.1	NM NM	0.0 0.0	16-12-14-22 (26)		SILT (ML) yellowish-brown, dry, stiff, trace gravel		
10	10.0						No Recovery		
	12.0 – 14.0	0.7	NM NM	0.3 0.7	7-50 (50)		SILT (ML) yellowish-brown, dry, stiff, trace gravel		
	14.0						No Recovery		
15	16.0 – 18.0	0.8	NM	0.0	50/5 (50/5")		CLAYEY GRAVEL (GC) yellow-brown, wet, dense, 1/4 inch gravel		
	18.0						No Recovery		
20	20.0 – 22.0	0.5	NM	0.0	37-50/4 (50/4")		CLAYEY GRAVEL (GC) yellow-brown, wet, dense, 1/4 inch gravel		
	22.0						No Recovery		
25	24.0 – 26.0	0.5	NM	0.0	28-50 (50)		GRAVEL (GC) gabbaro, purple-black, dry, hard		
	26.0						No Recovery		
30								Boring terminated at 26 ft bgs End of boring at 26 ft bgs	

WELL DIAGRAM

Casing Top Elev: 13.86 (ft)
Casing Type: Sch 40 PVC



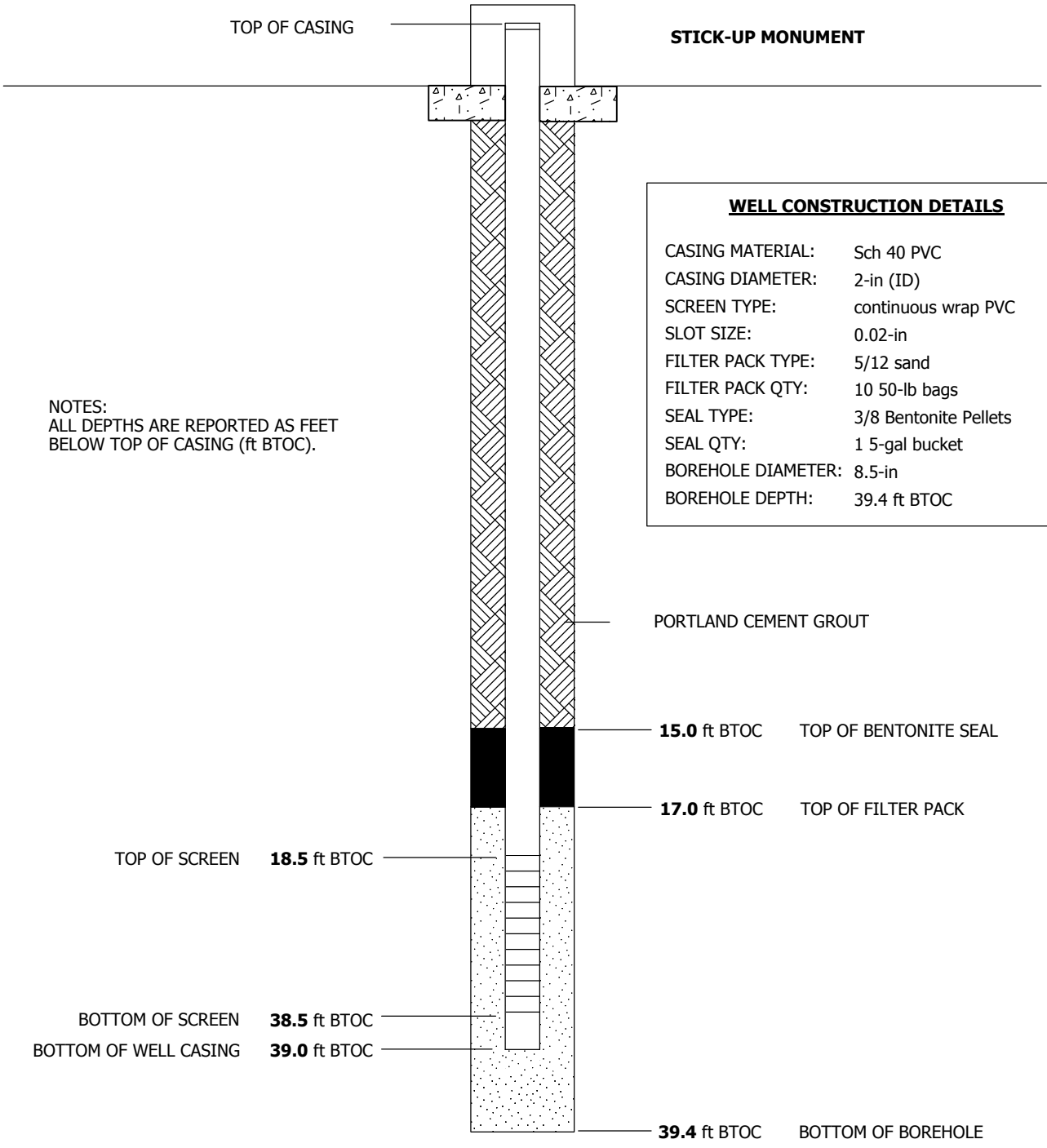
ELEVATION NGVD 29: 10, 5, 0, -5, -10, -15

Appendix C
Well Construction Diagrams

AGVIQ ENVIRONMENTAL SERVICES CH2M HILL JOINT VENTURE	**PROJECT NUMBER:** 378718	**BORING NUMBER:** 55IW05

WELL COMPLETION DIAGRAM

PROJECT: Naval Activity Puerto Rico JM04		**LOCATION:** SWMU 55	
DRILLING METHOD: Hollow-stem auger, 8.25-in OD augers, Mobil B61		**DRILLING CONTRACTOR:** Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago	
TOP OF CASING ELEVATION (NGVD29): 16.58 ft	**NORTHING (NAD83 Z 20):** 145468.04	**EASTING (NAD83 Z 20):** 782661.76	**STATIC WATER LEVEL:** ft BTOC ()
GROUND ELEVATION (NGVD29): 13.57 ft	**START:** 04/25/2013	**FINISH:** 04/25/2013	**LOGGED BY:** James Fank/RAL



WELL CONSTRUCTION DETAILS

CASING MATERIAL:	Sch 40 PVC
CASING DIAMETER:	2-in (ID)
SCREEN TYPE:	continuous wrap PVC
SLOT SIZE:	0.02-in
FILTER PACK TYPE:	5/12 sand
FILTER PACK QTY:	10 50-lb bags
SEAL TYPE:	3/8 Bentonite Pellets
SEAL QTY:	1 5-gal bucket
BOREHOLE DIAMETER:	8.5-in
BOREHOLE DEPTH:	39.4 ft BTOC

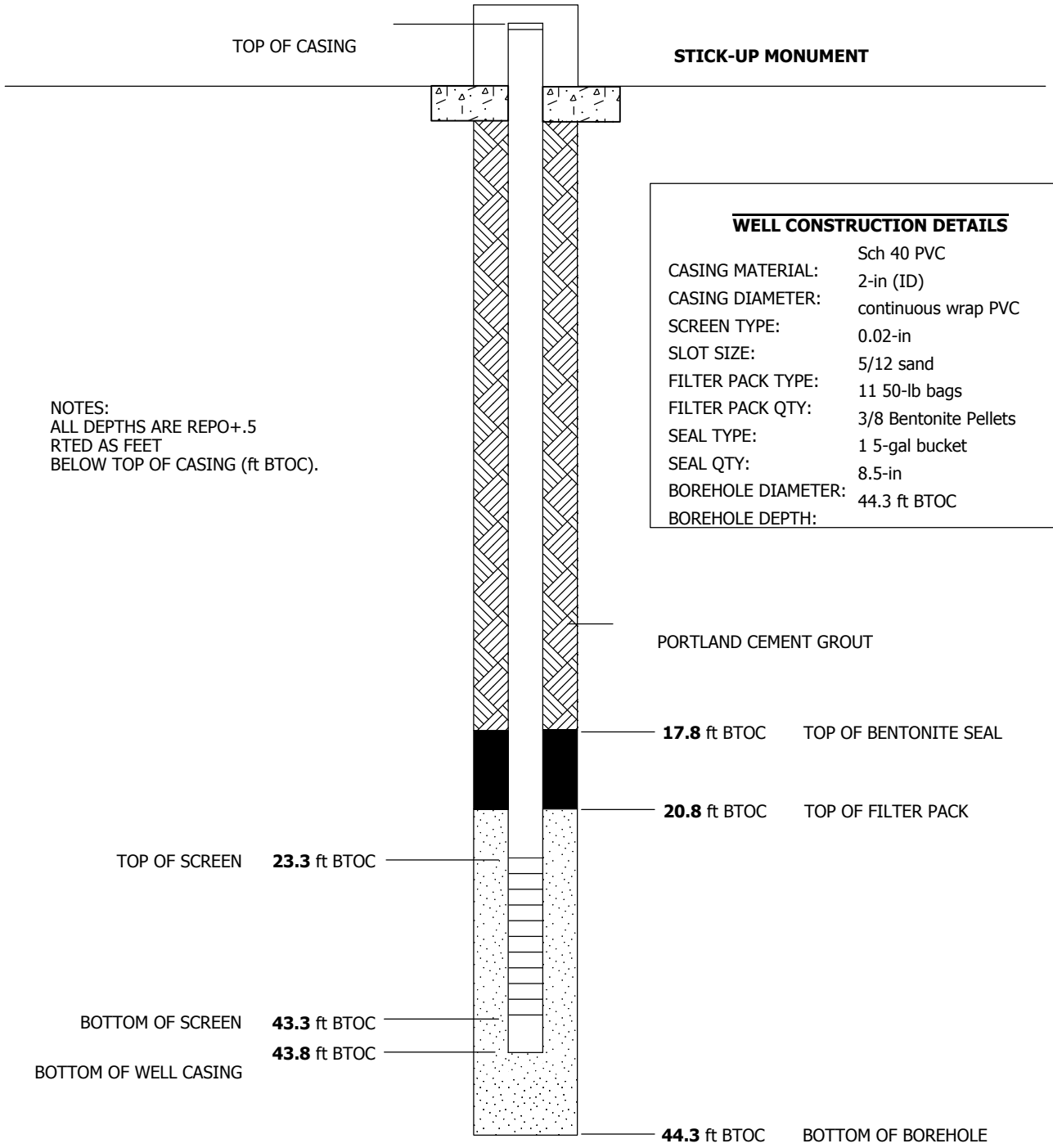
NOTES:
ALL DEPTHS ARE REPORTED AS FEET BELOW TOP OF CASING (ft BTOC).

WELL DIAGRAM IS NOT TO SCALE

AGVIQ ENVIRONMENTAL SERVICES / CH2M HILL JOINT VENTURE	**PROJECT NUMBER:** 378718	**BORING NUMBER:** 55IW06

WELL COMPLETION DIAGRAM

PROJECT: Activity Puerto Rico JM04		**LOCATION:**	
DRILLING METHOD: 8.25-in OD augers, Mobil B61		**DRILLING CONTRACTOR:** Services, Driller: Eduardo Santiago	
TOP OF CASING ELEVATION (NGVD29):	**NORTHING (NAD83 Z 20):**	**EASTING (NAD83 Z 20):**	**STATIC WATER LEVEL:** ft BTOC ()
GROUND ELEVATION (NGVD29):	**START:** 04/24/2013	**FINISH:** 04/24/2013	**LOGGED BY:**



WELL CONSTRUCTION DETAILS

CASING MATERIAL:	Sch 40 PVC
CASING DIAMETER:	2-in (ID)
SCREEN TYPE:	continuous wrap PVC
SLOT SIZE:	0.02-in
FILTER PACK TYPE:	5/12 sand
FILTER PACK QTY:	11 50-lb bags
SEAL TYPE:	3/8 Bentonite Pellets
SEAL QTY:	1 5-gal bucket
BOREHOLE DIAMETER:	8.5-in
BOREHOLE DEPTH:	44.3 ft BTOC

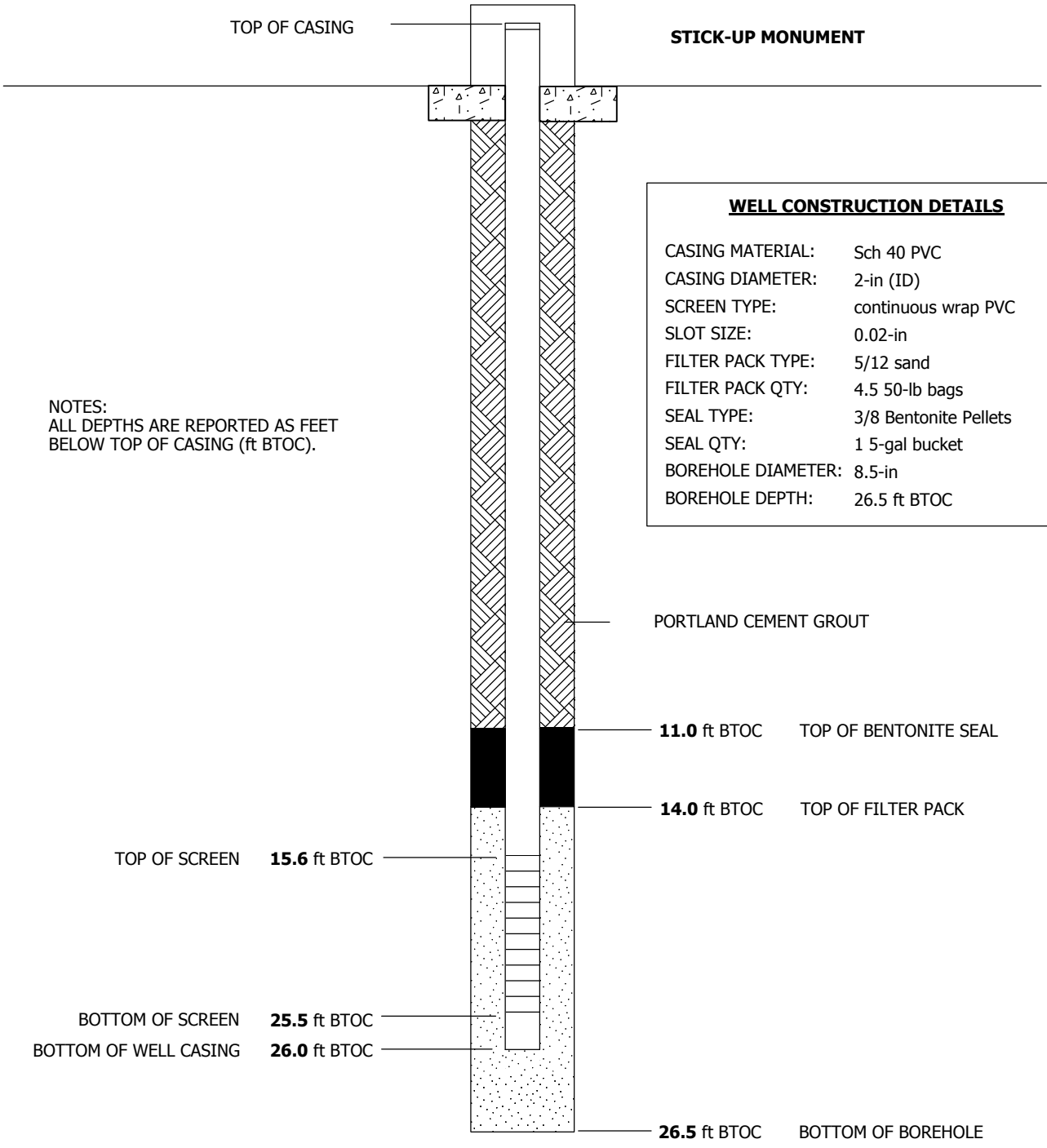
NOTES:
ALL DEPTHS ARE REPO+.5
RTED AS FEET
BELOW TOP OF CASING (ft BTOC).

WELL DIAGRAM IS NOT TO SCALE

AGVIQ ENVIRONMENTAL SERVICES CH2M HILL JOINT VENTURE	**PROJECT NUMBER:** 378718	**BORING NUMBER:** 55IW07

WELL COMPLETION DIAGRAM

PROJECT: Naval Activity Puerto Rico JM04		**LOCATION:** SWMU 55	
DRILLING METHOD: Hollow-stem auger, 8.25-in OD augers, Mobil B61		**DRILLING CONTRACTOR:** Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago	
TOP OF CASING ELEVATION (NGVD29): 11.75 ft	**NORTHING (NAD83 Z 20):** 145398.14	**EASTING (NAD83 Z 20):** 782586.82	**STATIC WATER LEVEL:** ft BTOC ()
GROUND ELEVATION (NGVD29): 8.70 ft	**START:** 04/24/2013	**FINISH:** 04/24/2013	**LOGGED BY:** James Fank/RAL



WELL CONSTRUCTION DETAILS

CASING MATERIAL:	Sch 40 PVC
CASING DIAMETER:	2-in (ID)
SCREEN TYPE:	continuous wrap PVC
SLOT SIZE:	0.02-in
FILTER PACK TYPE:	5/12 sand
FILTER PACK QTY:	4.5 50-lb bags
SEAL TYPE:	3/8 Bentonite Pellets
SEAL QTY:	1 5-gal bucket
BOREHOLE DIAMETER:	8.5-in
BOREHOLE DEPTH:	26.5 ft BTOC

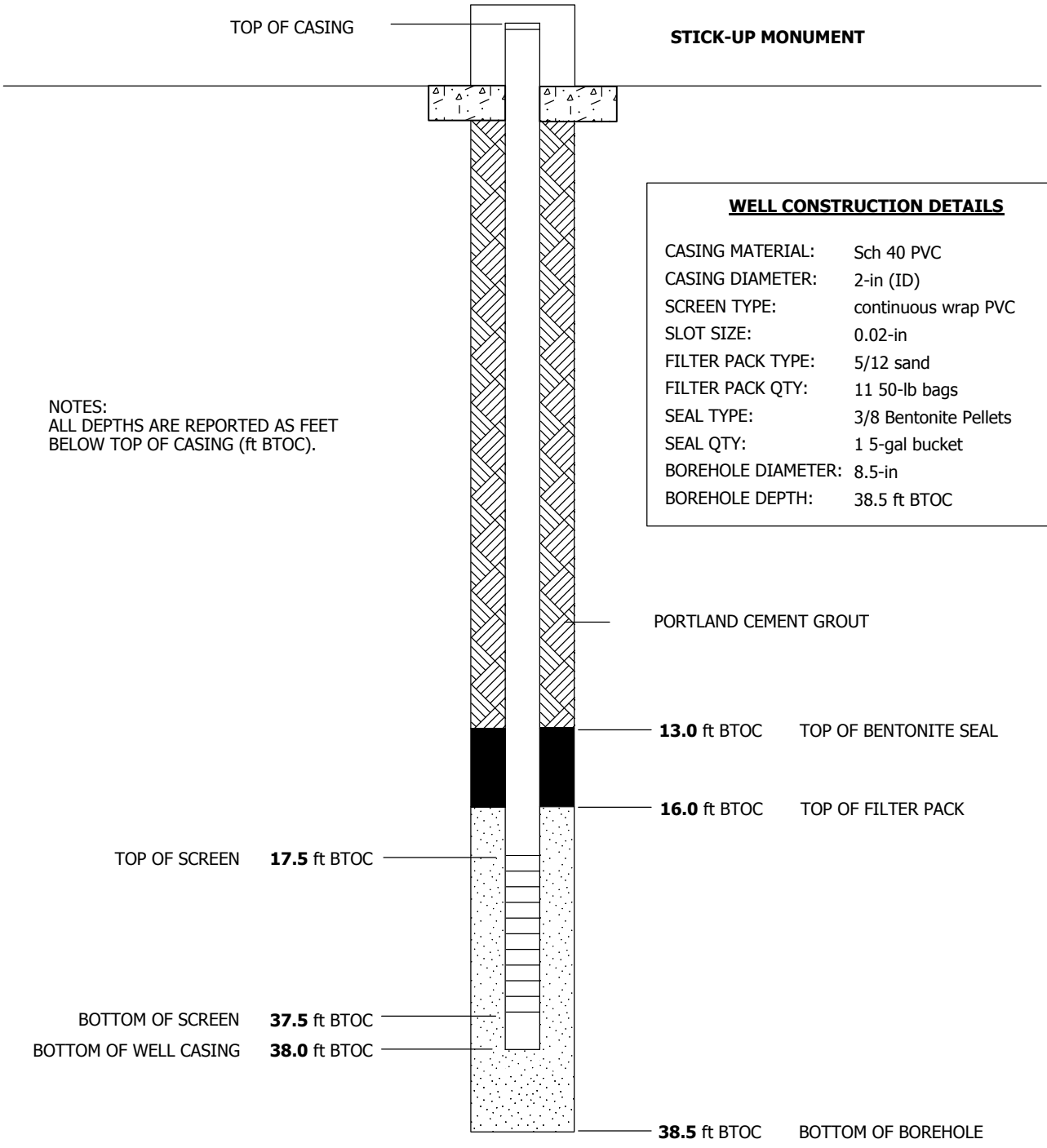
NOTES:
ALL DEPTHS ARE REPORTED AS FEET BELOW TOP OF CASING (ft BTOC).

WELL DIAGRAM IS NOT TO SCALE

AGVIQ ENVIRONMENTAL SERVICES CH2M HILL JOINT VENTURE	**PROJECT NUMBER:** 378718	**BORING NUMBER:** 55IW08

WELL COMPLETION DIAGRAM

PROJECT: Naval Activity Puerto Rico JM04		**LOCATION:** SWMU 55	
DRILLING METHOD: Hollow-stem auger, 8.25-in OD augers, Mobil B61		**DRILLING CONTRACTOR:** Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago	
TOP OF CASING ELEVATION (NGVD29): 10.44 ft	**NORTHING (NAD83 Z 20):** 145368.15	**EASTING (NAD83 Z 20):** 782559.41	**STATIC WATER LEVEL:** ft BTOC ()
GROUND ELEVATION (NGVD29): 7.43 ft	**START:** 04/22/2013	**FINISH:** 04/23/2013	**LOGGED BY:** James Fank/RAL



WELL CONSTRUCTION DETAILS

CASING MATERIAL:	Sch 40 PVC
CASING DIAMETER:	2-in (ID)
SCREEN TYPE:	continuous wrap PVC
SLOT SIZE:	0.02-in
FILTER PACK TYPE:	5/12 sand
FILTER PACK QTY:	11 50-lb bags
SEAL TYPE:	3/8 Bentonite Pellets
SEAL QTY:	1 5-gal bucket
BOREHOLE DIAMETER:	8.5-in
BOREHOLE DEPTH:	38.5 ft BTOC

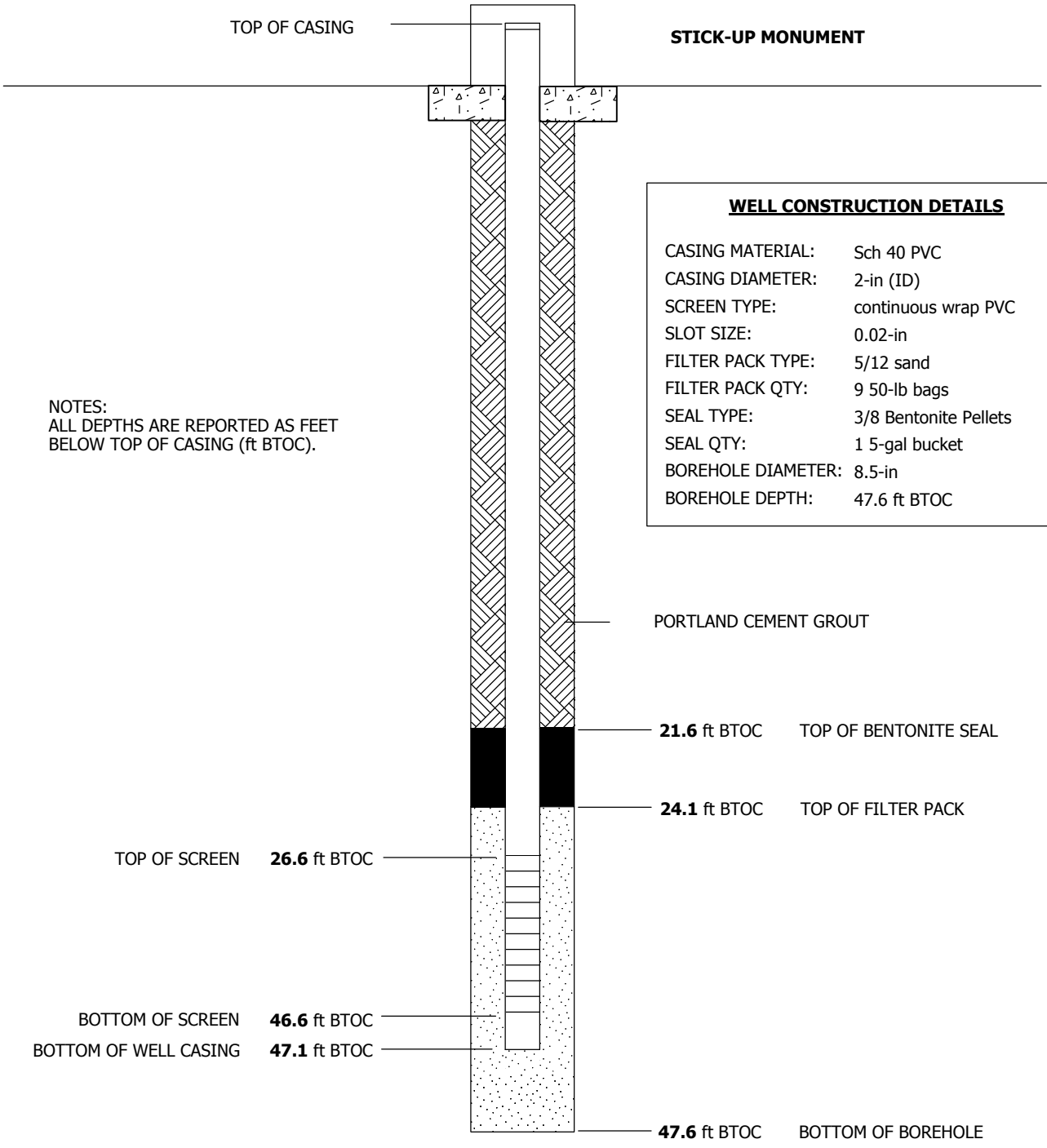
NOTES:
ALL DEPTHS ARE REPORTED AS FEET BELOW TOP OF CASING (ft BTOC).

WELL DIAGRAM IS NOT TO SCALE

AGVIQ ENVIRONMENTAL SERVICES CH2M HILL JOINT VENTURE	**PROJECT NUMBER:** 378718	**BORING NUMBER:** 55IW09

WELL COMPLETION DIAGRAM

PROJECT: Naval Activity Puerto Rico JM04		**LOCATION:** SWMU 55	
DRILLING METHOD: Hollow-stem auger, 8.25-in OD augers, Mobil B61		**DRILLING CONTRACTOR:** Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago	
TOP OF CASING ELEVATION (NGVD29): 9.77 ft	**NORTHING (NAD83 Z 20):** 145335.17	**EASTING (NAD83 Z 20):** 782518.42	**STATIC WATER LEVEL:** ft BTOC ()
GROUND ELEVATION (NGVD29): 6.64 ft	**START:** 04/18/2013	**FINISH:** 04/22/2013	**LOGGED BY:** James Fank/RAL



WELL CONSTRUCTION DETAILS

CASING MATERIAL:	Sch 40 PVC
CASING DIAMETER:	2-in (ID)
SCREEN TYPE:	continuous wrap PVC
SLOT SIZE:	0.02-in
FILTER PACK TYPE:	5/12 sand
FILTER PACK QTY:	9 50-lb bags
SEAL TYPE:	3/8 Bentonite Pellets
SEAL QTY:	1 5-gal bucket
BOREHOLE DIAMETER:	8.5-in
BOREHOLE DEPTH:	47.6 ft BTOC

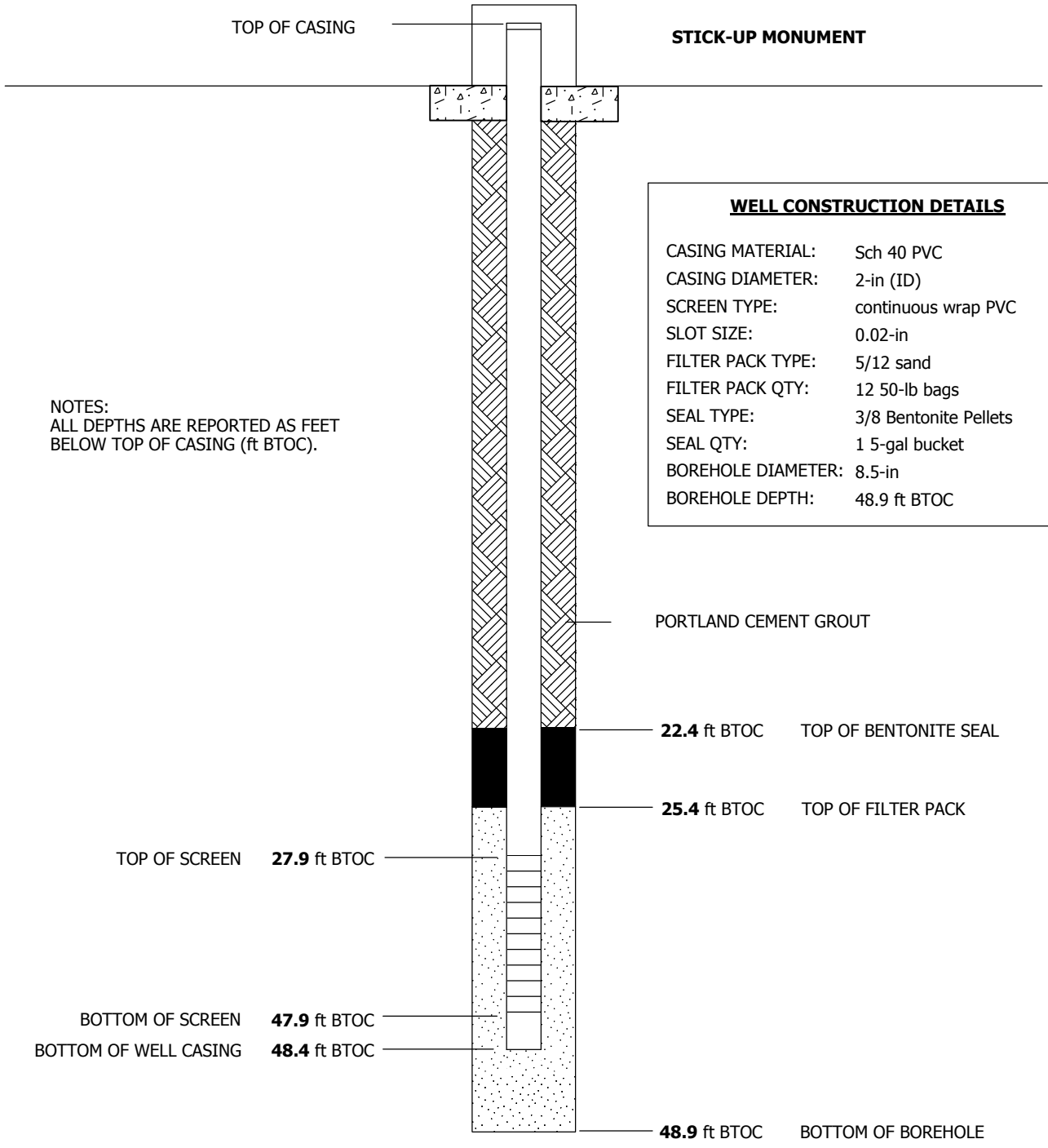
NOTES:
ALL DEPTHS ARE REPORTED AS FEET BELOW TOP OF CASING (ft BTOC).

WELL DIAGRAM IS NOT TO SCALE

AGVIQ ENVIRONMENTAL SERVICES CH2M HILL JOINT VENTURE	**PROJECT NUMBER:** 378718	**BORING NUMBER:** 55IW10

WELL COMPLETION DIAGRAM

PROJECT: Naval Activity Puerto Rico JM04		**LOCATION:** SWMU 55	
DRILLING METHOD: Hollow-stem auger, 8.25-in OD augers, Mobil B61		**DRILLING CONTRACTOR:** Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago	
TOP OF CASING ELEVATION (NGVD29): 9.60 ft	**NORTHING (NAD83 Z 20):** 145304.53	**EASTING (NAD83 Z 20):** 782484.21	**STATIC WATER LEVEL:** ft BTOC ()
GROUND ELEVATION (NGVD29): 6.19 ft	**START:** 04/18/2013	**FINISH:** 04/18/2013	**LOGGED BY:** James Fank/RAL



WELL CONSTRUCTION DETAILS

CASING MATERIAL:	Sch 40 PVC
CASING DIAMETER:	2-in (ID)
SCREEN TYPE:	continuous wrap PVC
SLOT SIZE:	0.02-in
FILTER PACK TYPE:	5/12 sand
FILTER PACK QTY:	12 50-lb bags
SEAL TYPE:	3/8 Bentonite Pellets
SEAL QTY:	1 5-gal bucket
BOREHOLE DIAMETER:	8.5-in
BOREHOLE DEPTH:	48.9 ft BTOC

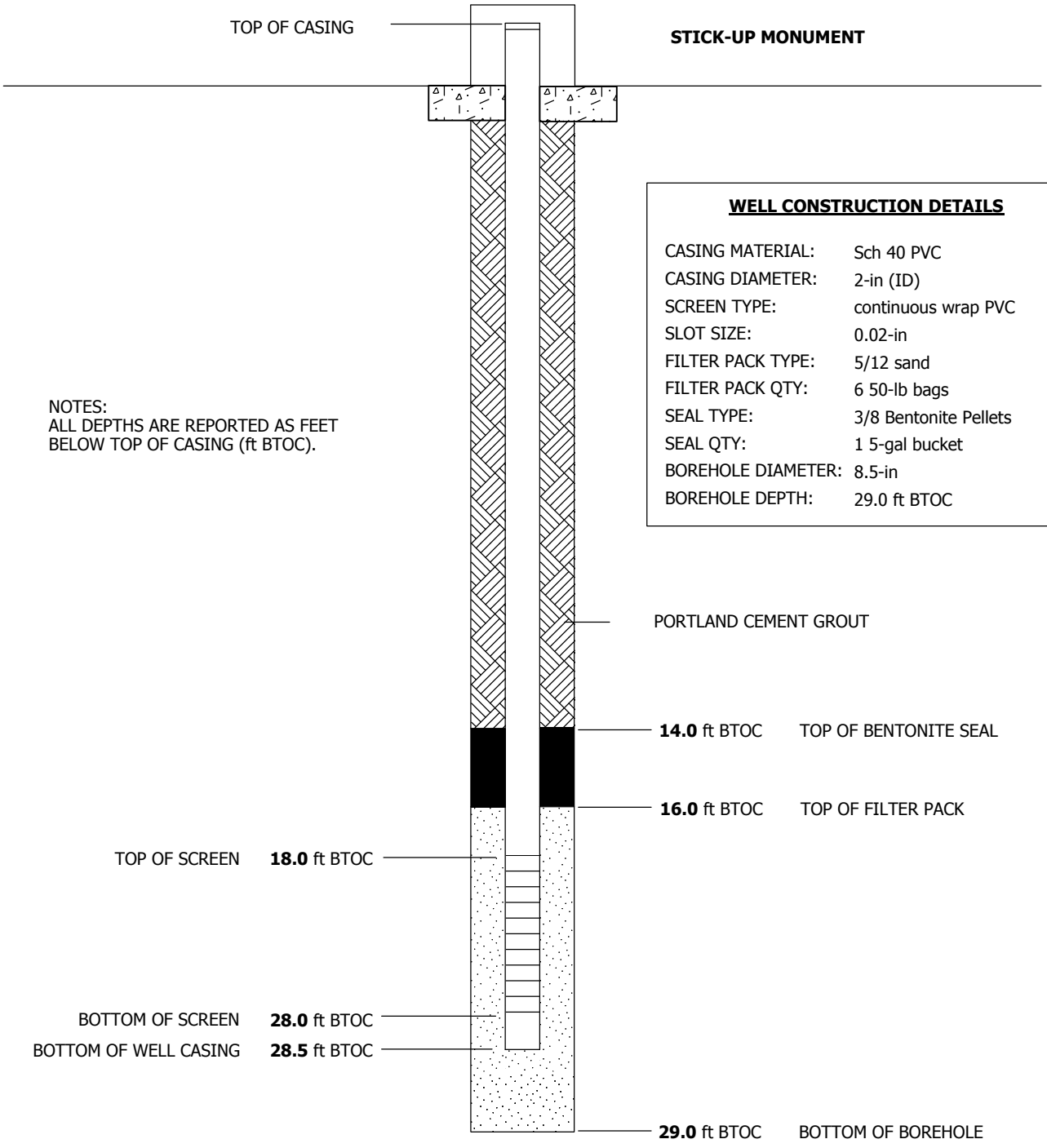
NOTES:
ALL DEPTHS ARE REPORTED AS FEET BELOW TOP OF CASING (ft BTOC).

WELL DIAGRAM IS NOT TO SCALE

AGVIQ ENVIRONMENTAL SERVICES CH2M HILL JOINT VENTURE	**PROJECT NUMBER:** 378718	**BORING NUMBER:** 55IW11

WELL COMPLETION DIAGRAM

PROJECT: Naval Activity Puerto Rico JM04		**LOCATION:** SWMU 55	
DRILLING METHOD: Hollow-stem auger, 8.25-in OD augers, Mobil B61		**DRILLING CONTRACTOR:** Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago	
TOP OF CASING ELEVATION (NGVD29): 14.81 ft	**NORTHING (NAD83 Z 20):** 145472.34	**EASTING (NAD83 Z 20):** 782603.88	**STATIC WATER LEVEL:** ft BTOC ()
GROUND ELEVATION (NGVD29): 11.82 ft	**START:** 04/26/2013	**FINISH:** 04/26/2013	**LOGGED BY:** James Fank/RAL



WELL CONSTRUCTION DETAILS

CASING MATERIAL:	Sch 40 PVC
CASING DIAMETER:	2-in (ID)
SCREEN TYPE:	continuous wrap PVC
SLOT SIZE:	0.02-in
FILTER PACK TYPE:	5/12 sand
FILTER PACK QTY:	6 50-lb bags
SEAL TYPE:	3/8 Bentonite Pellets
SEAL QTY:	1 5-gal bucket
BOREHOLE DIAMETER:	8.5-in
BOREHOLE DEPTH:	29.0 ft BTOC

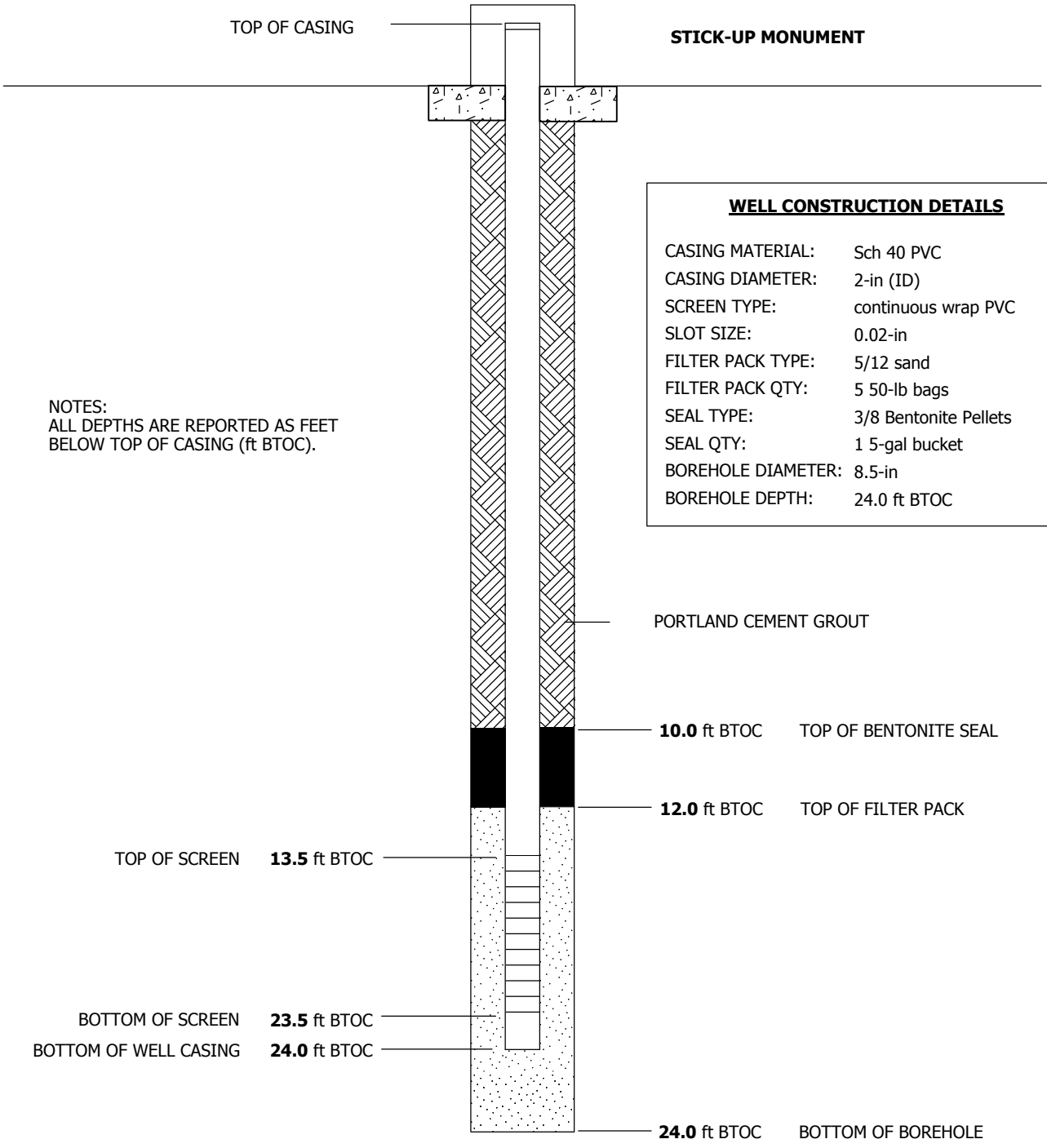
NOTES:
ALL DEPTHS ARE REPORTED AS FEET BELOW TOP OF CASING (ft BTOC).

WELL DIAGRAM IS NOT TO SCALE

AGVIQ ENVIRONMENTAL SERVICES CH2M HILL JOINT VENTURE	**PROJECT NUMBER:** 378718	**BORING NUMBER:** 55IW12

WELL COMPLETION DIAGRAM

PROJECT: Naval Activity Puerto Rico JM04		**LOCATION:** SWMU 55	
DRILLING METHOD: Hollow-stem auger, 8.25-in OD augers, Mobil B61		**DRILLING CONTRACTOR:** Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago	
TOP OF CASING ELEVATION (NGVD29): 13.42 ft	**NORTHING (NAD83 Z 20):** 145477.28	**EASTING (NAD83 Z 20):** 782569.38	**STATIC WATER LEVEL:** ft BTOC ()
GROUND ELEVATION (NGVD29): 10.38 ft	**START:** 04/29/2013	**FINISH:** 04/29/2013	**LOGGED BY:** James Fank/RAL



WELL CONSTRUCTION DETAILS

CASING MATERIAL:	Sch 40 PVC
CASING DIAMETER:	2-in (ID)
SCREEN TYPE:	continuous wrap PVC
SLOT SIZE:	0.02-in
FILTER PACK TYPE:	5/12 sand
FILTER PACK QTY:	5 50-lb bags
SEAL TYPE:	3/8 Bentonite Pellets
SEAL QTY:	1 5-gal bucket
BOREHOLE DIAMETER:	8.5-in
BOREHOLE DEPTH:	24.0 ft BTOC

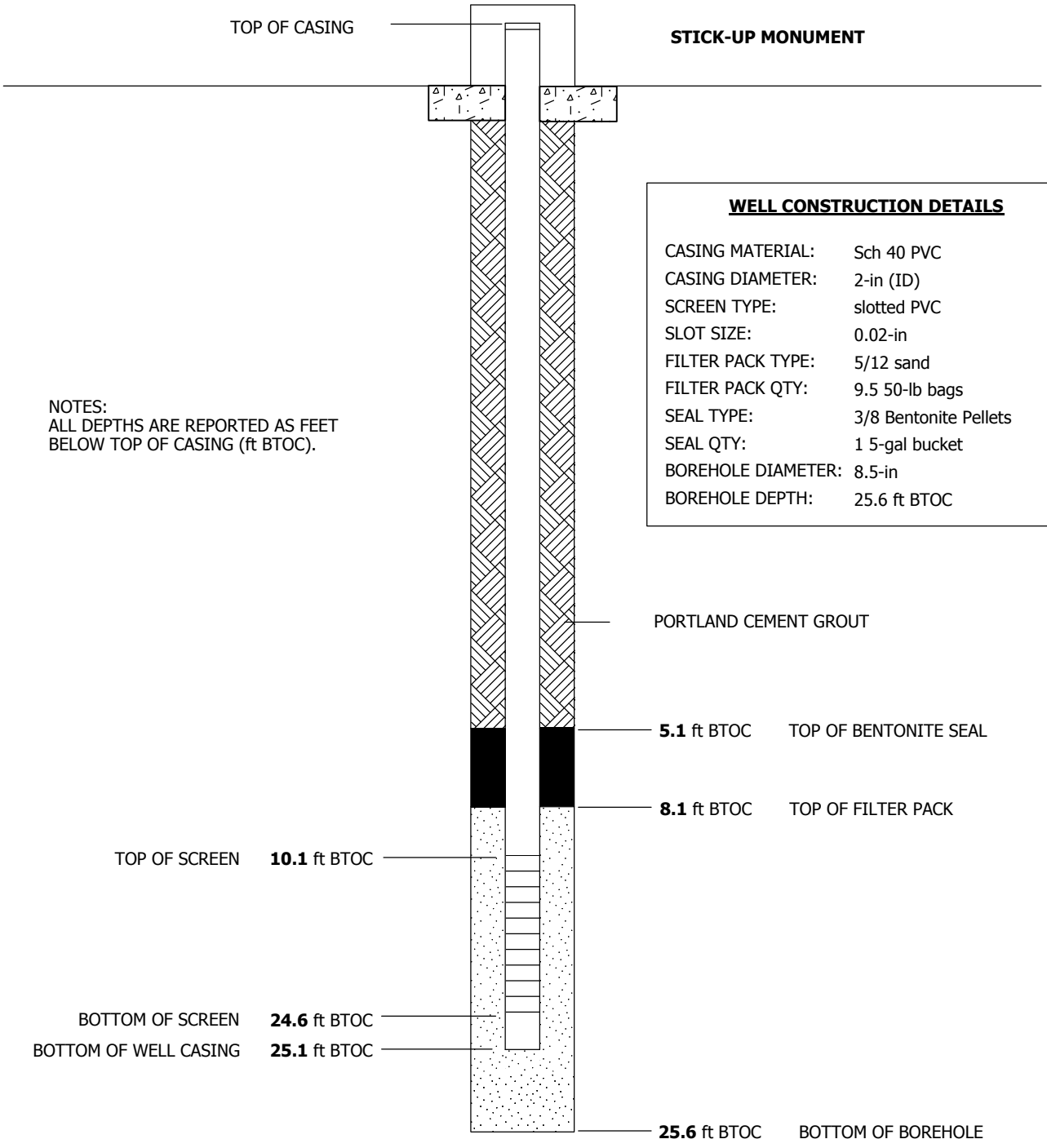
NOTES:
ALL DEPTHS ARE REPORTED AS FEET BELOW TOP OF CASING (ft BTOC).

WELL DIAGRAM IS NOT TO SCALE

AGVIQ ENVIRONMENTAL SERVICES CH2M HILL JOINT VENTURE	**PROJECT NUMBER:** 378718	**BORING NUMBER:** 55MW26

WELL COMPLETION DIAGRAM

PROJECT: Naval Activity Puerto Rico JM04		**LOCATION:** SWMU 55	
DRILLING METHOD: Hollow-stem auger, 4.25-in ID augers, Mobil B61		**DRILLING CONTRACTOR:** Jaca and Sierra Geotechnical Services, Driller: Eduardo Santiago	
TOP OF CASING ELEVATION (NGVD29): 13.86 ft	**NORTHING (NAD83 Z 20):** 145539.65	**EASTING (NAD83 Z 20):** 782607.44	**STATIC WATER LEVEL:** ft BTOC ()
GROUND ELEVATION (NGVD29): 13.75 ft	**START:** 04/08/2013	**FINISH:** 04/08/2013	**LOGGED BY:** James Frank/RAL



WELL CONSTRUCTION DETAILS

CASING MATERIAL:	Sch 40 PVC
CASING DIAMETER:	2-in (ID)
SCREEN TYPE:	slotted PVC
SLOT SIZE:	0.02-in
FILTER PACK TYPE:	5/12 sand
FILTER PACK QTY:	9.5 50-lb bags
SEAL TYPE:	3/8 Bentonite Pellets
SEAL QTY:	1 5-gal bucket
BOREHOLE DIAMETER:	8.5-in
BOREHOLE DEPTH:	25.6 ft BTOC

NOTES:
ALL DEPTHS ARE REPORTED AS FEET BELOW TOP OF CASING (ft BTOC).

WELL DIAGRAM IS NOT TO SCALE

Appendix D
Well Development Logs

WELL DEVELOPMENT LOG

WELL ID: 55MW26

Project Name:	NAPR SWMU 55		Development Information	Development Method:	Surge/Pump
Project Number:	378718	Start Date:	4/11/2013		
Installation Date:		Start Time:	1105		
Development Team:		End Date:	4/11/2013		
		End Time:	1537		
Log Book ID/Page:					
Well Depth:	25 ft btoc		Contractor Information	Purging Equipment:	YSI 6920V2 w/
Well Diameter:	2 in	Development:	Jaca & Sierra Geotechnical		GRUNDFOS Submersible
Screened Interval:	ft btoc		Services		
Static Water Level:	1 ft btoc	Equipment:			
Well Materials:					

WELL STABILIZATION DATA

Time	Volume Removed	DO (mg/L)	Turbidity (NTU)	ORP (mV)	Temp. (°C)	pH	Sp. Cond. (mS/cm)	Remarks
1425	130	2.50	103.6	45.10	32.82	7.07	4.765	
1439	133	2.06	43.5	20.40	33.80	7.07	4.934	
1455	137	3.78	33.5	17.20	33.34	7.14	4.950	
1513	144	3.49	19.2	13.40	33.12	7.14	4.962	
1523	152	2.28	15.0	27.50	32.89	7.07	4.885	
1537	158	2.72	13.0	22.70	32.27	7.18	4.955	

STABILIZATION SUMMARY

Range or Average Pump Rate:		gpm	Purge Water Description:	
Maxium Drawdown during pumping:		ft		
Total quantity of material bailed:		gal	Comments:	Started purging clear at 1425. Take paramaters w/ YSI
Total quantity of water discharged by pumping:	158.9	gal		

WELL DEVELOPMENT LOG

WELL ID: 55IW05

Project Name:	NAPR SWMU 55		Development Information	Development Method:	Air lift
Project Number:	378718	Start Date:	5/1/2013		
Installation Date:		Start Time:	1044		
Development Team:		End Date:	5/1/2013		
		End Time:	1122		
Log Book ID/Page:					
Well Depth:	30.45 ft btoc		Contractor Information	Purging Equipment:	
Well Diameter:	2 in	Development:	Jaca & Sierra Geotechnical		
Screened Interval:	ft btoc		Services		
Static Water Level:	15.24 ft btoc	Equipment:			
Well Materials:					

WELL STABILIZATION DATA

Time	Volume Removed	DO (mg/L)	Turbidity (NTU)	ORP (mV)	Temp. (°C)	pH	Sp. Cond. (mS/cm)	Remarks
1050	15	7.37	>1500	197.7	31.17	8.12	2.097	
1055	-	7.52	>1500	197.6	31.36	7.95	2.098	
1100	-	7.49	1312.2	191.0	31.60	8.04	4.559	
1105	20	6.70	1430.9	192.2	31.66	8.03	4.877	
1110	-	7.22	1601.6	194.3	31.85	8.03	4.991	
1115	-	7.43	1603.6	184.9	31.95	8.09	4.941	
1120	80	7.47	1603.2	179.8	31.94	8.12	5.330	

STABILIZATION SUMMARY

Range or Average Pump Rate:		gpm	Purge Water Description:	
Maxium Drawdown during pumping:		ft		
Total quantity of material bailed:		gal	Comments:	
Total quantity of water discharged by pumping:	80	gal		

WELL DEVELOPMENT LOG

WELL ID: 55IW06

Project Name:	NAPR SWMU 55		Development Information	Development Method:	Air lift
Project Number:	378718	Start Date:	5/1/2013		
Installation Date:		Start Time:	940		
Development Team:		End Date:	5/1/2013		
		End Time:	1010		
Log Book ID/Page:					
Well Depth:	ft btoc		Contractor Information	Purging Equipment:	
Well Diameter:	2 in	Development:	Jaca & Sierra Geotechnical		
Screened Interval:	ft btoc		Services		
Static Water Level:	ft btoc	Equipment:			
Well Materials:					

WELL STABILIZATION DATA

Time	Volume Removed	DO (mg/L)	Turbidity (NTU)	ORP (mV)	Temp. (°C)	pH	Sp. Cond. (mS/cm)	Remarks
940	20	7.61	1577.3	197.3	29.65	8.12	5.638	
950	40	7.70	1573.6	196.1	29.39	8.02	5.759	
955	50	7.74	1574.6	196.7	29.44	8.03	5.830	
1000	60	7.67	1572.6	200.6	29.28	8.04	5.884	
1005	75	7.70	1573.9	197.8	29.26	8.04	5.910	
1010	80	7.71	1572.4	206.7	29.29	8.03	5.913	

STABILIZATION SUMMARY

Range or Average Pump Rate:		gpm	Purge Water Description:	
Maxium Drawdown during pumping:		ft		
Total quantity of material bailed:		gal	Comments:	Did not get a static level or total depth (T.D.)
Total quantity of water discharged by pumping:	80	gal		

WELL DEVELOPMENT LOG

WELL ID: 55IW07

Project Name:	NAPR SWMU 55		Development Information	Development Method:	
Project Number:	378718	Start Date:	4/30/2013		
Installation Date:		Start Time:	1644		
Development Team:		End Date:	5/1/2013		
		End Time:	925		
Log Book ID/Page:					
Well Depth:	21.39 ft btoc		Contractor Information	Purging Equipment:	
Well Diameter:	2 in	Development:	Jaca & Sierra Geotechnical		
Screened Interval:	ft btoc		Services		
Static Water Level:	11.25 ft btoc	Equipment:			
Well Materials:					

WELL STABILIZATION DATA

Time	Volume Removed	DO (mg/L)	Turbidity (NTU)	ORP (mV)	Temp. (°C)	pH	Sp. Cond. (mS/cm)	Remarks
1644	20	7.46	1493.6	94.5	30.48	8.41	3.935	
1649	-	7.54	1492.2	132.3	30.39	8.33	4.004	
1656	40	7.49	1492.0	148.8	30.39	8.36	4.081	
1701	-	7.55	1491.5	157.7	30.29	8.39	4.129	
1706	50	7.59	1495.3	156.6	30.64	8.41	2.177	
1710	-	-	-	-	-	-	-	Stop until next day
0830	70	7.93	1568.9	156.6	28.92	7.54	4.232	
0835	-	7.73	1574.6	154.8	29.38	8.30	4.309	
0840	-	7.41	1574.1	165.6	29.60	8.36	3.300	
0845	90	7.70	1528.6	167.6	29.87	8.37	4.338	
0850	-	7.78	1459.6	166.1	30.27	8.43	4.313	
0855	110	7.85	1200.8	171.3	30.31	8.39	4.298	
0900	-	7.60	1028.6	177.5	33.42	8.38	2.294	
0905	-	7.73	1443.2	176.5	30.33	8.36	4.395	
0910	-	7.75	1267.4	176.1	30.42	8.36	4.376	
0915	-	7.73	1158.6	177.4	30.52	8.37	4.391	
0920	150	7.59	1510.8	176.3	30.50	8.37	4.396	
0925	160	7.70	1014.5	177.4	31.20	8.54	2.392	

STABILIZATION SUMMARY

Range or Average Pump Rate:	gpm	Purge Water Description:	
Maxium Drawdown during pumping:	ft		
Total quantity of material bailed:	gal	Comments:	stopped on 4/30 to let well recharge
Total quantity of water discharged by pumping:	160 gal		start again on 5/1

WELL DEVELOPMENT LOG

WELL ID: 55IW08

Project Name:	NAPR SWMU 55		Development Information	Development Method:	Air lift
Project Number:	378718	Start Date:	4/30/2013		
Installation Date:		Start Time:	1431		
Development Team:	John Santoputio/HOU	End Date:	4/30/2013		
		End Time:	1601		
Log Book ID/Page:					
Well Depth:	28.06 ft btoc		Contractor Information	Purging Equipment:	
Well Diameter:	2 in	Development:	Jaca & Sierra Geotechnical		
Screened Interval:	ft btoc		Services		
Static Water Level:	10.18 ft btoc	Equipment:			
Well Materials:					

WELL STABILIZATION DATA

Time	Volume Removed	DO (mg/L)	Turbidity (NTU)	ORP (mV)	Temp. (°C)	pH	Sp. Cond. (mS/cm)	Remarks
1436	-	7.64	715.5	128.5	28.70	7.98	5.819	
1441	100	7.71	1395.4	140.4	28.49	7.87	3.105	
1446	-	7.72	1472.3	150.9	28.51	7.85	5.624	
1451	-	7.68	1473.0	154.8	28.61	7.89	6.236	
1456	200	7.71	1472.2	154.3	28.58	7.87	5.812	
1501	-	-	-	-	-	-	-	Tank full - run to dump purged water
1506	-	-	-	-	-	-	-	Tank full - run to dump purged water
1511	-	-	-	-	-	-	-	Tank full - run to dump purged water
1516	-	-	-	-	-	-	-	Tank full - run to dump purged water
1521	-	-	-	-	-	-	-	Tank full - run to dump purged water
1526	-	-	-	-	-	-	-	Back from dumping the purge water
1531	220	7.52	1482.5	166.9	29.46	7.87	6.286	
1536	280	7.66	1477.2	163.4	29.05	7.85	6.359	
1541	-	7.57	1477.6	173.1	29.04	7.84	6.426	
1546	360	7.66	1473.6	177.4	28.69	7.82	6.455	
1551	-	7.68	1473.3	178.2	28.59	7.83	6.379	
1556	-	7.68	1472.5	179.4	28.62	7.83	6.045	
1601	400	7.70	1474.3	178.0	28.74	7.84	2.920	

STABILIZATION SUMMARY

Range or Average Pump Rate:		gpm	Purge Water Description:	
Maxium Drawdown during pumping:		ft		
Total quantity of material bailed:		gal	Comments:	still very silt (like chocolate milk)
Total quantity of water discharged by pumping:	400	gal		

WELL DEVELOPMENT LOG

WELL ID: 55IW09

Project Name:	NAPR SWMU 55		Development Information	Development Method:	Air lift
Project Number:	378718	Start Date:	4/30/2013		
Installation Date:		Start Time:	--		
Development Team:	John Santoputio/HOU	End Date:	4/30/2013		
		End Time:	1418		
Log Book ID/Page:					
Well Depth:	ft btoc		Contractor Information	Purging Equipment:	
Well Diameter:	2 in	Development:	Jaca & Sierra Geotechnical		
Screened Interval:	ft btoc		Services		
Static Water Level:	ft btoc	Equipment:			
Well Materials:					

WELL STABILIZATION DATA

Time	Volume Removed	DO (mg/L)	Turbidity (NTU)	ORP (mV)	Temp. (°C)	pH	Sp. Cond. (mS/cm)	Remarks
1239	160	7.16	218.8	113.5	29.86	7.64	23.36	
1244	200	7.18	638.4	119.2	29.38	7.62	23.50	between 1244 and 1315 water tank was
1315	210	6.25	437.2	140.6	30.00	7.55	21.14	dumped.
1320	230	7.19	289.9	142.9	29.58	7.52	21.71	
1325	340	7.31	101.3	147.2	29.46	7.52	15.77	
1330	370	7.09	100.9	149.9	25.81	7.48	23.81	
1335	400	7.09	100.4	151.8	29.15	7.47	23.77	between 1335 and 1357 contractor dumped
1403	420	7.09	103.1	167.4	30.05	7.17	26.94	water in system.
1408	440	7.13	101.0	167.1	28.99	7.17	24.99	
1413	500	7.17	100.6	169.0	28.62	7.11	25.35	

STABILIZATION SUMMARY

Range or Average Pump Rate:		gpm	Purge Water Description:	
Maxium Drawdown during pumping:		ft		
Total quantity of material bailed:		gal	Comments:	Drillers started without development team present.
Total quantity of water discharged by pumping:	500	gal		No total depth, start time, or static water level recorded.

WELL DEVELOPMENT LOG

WELL ID: 55IW10

Project Name:	NAPR SWMU 55		Development Information	Development Method:	Air lift
Project Number:	378718	Start Date:	4/30/2013		
Installation Date:		Start Time:	1111		
Development Team:	John Santoputio/HOU	End Date:	4/30/2013		
		End Time:	1136		
Log Book ID/Page:					
Well Depth:	47.45 ft btoc		Contractor Information	Purging Equipment:	
Well Diameter:	2 in	Development:	Jaca & Sierra Geotechnical		
Screened Interval:	ft btoc		Services		
Static Water Level:	8.78 ft btoc	Equipment:			
Well Materials:					

WELL STABILIZATION DATA

Time	Volume Removed	DO (mg/L)	Turbidity (NTU)	ORP (mV)	Temp. (°C)	pH	Sp. Cond. (mS/cm)	Remarks
1111	44	6.76	1483.3	123.1	29.55	7.31	38.89	
1116	88	6.75	1421.1	135.3	28.96	7.38	40.29	
1121	130	6.76	343.6	138.3	28.86	7.39	41.01	
1126	175	6.27	222.7	137.8	28.89	7.38	41.14	
1131	185	6.5	200.2	128.2	28.81	7.39	41.34	
1136	200	6.73	100.9	117.9	28.73	7.37	41.39	

STABILIZATION SUMMARY

Range or Average Pump Rate:		gpm	Purge Water Description:	
Maxium Drawdown during pumping:		ft		
Total quantity of material bailed:		gal	Comments:	
Total quantity of water discharged by pumping:	200	gal		

WELL DEVELOPMENT LOG

WELL ID: 55IW11

Project Name:	NAPR SWMU 55		Development Information	Development Method:	Air lift
Project Number:	378718	Start Date:	5/1/2013		
Installation Date:		Start Time:	1335		
Development Team:		End Date:	5/1/2013		
		End Time:	1422		
Log Book ID/Page:					
Well Depth:	ft btoc		Contractor Information	Purging Equipment:	
Well Diameter:	2 in	Development:	Jaca & Sierra Geotechnical		
Screened Interval:	ft btoc		Services		
Static Water Level:	ft btoc	Equipment:			
Well Materials:					

WELL STABILIZATION DATA

Time	Volume Removed	DO (mg/L)	Turbidity (NTU)	ORP (mV)	Temp. (°C)	pH	Sp. Cond. (mS/cm)	Remarks
1340	-	7.74	>1600	173.6	20.89	8.65	0.900	
1345	-	7.68	>1600	182.6	29.76	8.43	1.192	
1350	-	7.66	1565.5	181.2	30.00	8.47	1.409	
1355	-	-	-	-	-	-	-	
1400	-	7.34	1249.8	188.1	30.60	8.50	1.906	
1410	50	7.62	1039.4	185.1	30.31	8.49	1.949	
1415	60	7.82	577.3	179.8	30.24	8.50	2.002	
Done	70	-	-	-	-	-	-	

STABILIZATION SUMMARY

Range or Average Pump Rate:		gpm	Purge Water Description:	
Maxium Drawdown during pumping:		ft		
Total quantity of material bailed:		gal	Comments:	
Total quantity of water discharged by pumping:	70	gal		

WELL DEVELOPMENT LOG

WELL ID: 55IW12

Project Name:	NAPR SWMU 55		Development Information	Development Method:	Air lift
Project Number:	378718	Start Date:	5/1/2013		
Installation Date:		Start Time:	1242		
Development Team:		End Date:	5/1/2013		
		End Time:	1325		
Log Book ID/Page:					
Well Depth:	22.67 ft btoc		Contractor Information	Purging Equipment:	
Well Diameter:	2 in	Development:	Jaca & Sierra Geotechnical		
Screened Interval:	ft btoc		Services		
Static Water Level:	12.30 ft btoc	Equipment:			
Well Materials:					

WELL STABILIZATION DATA

Time	Volume Removed	DO (mg/L)	Turbidity (NTU)	ORP (mV)	Temp. (°C)	pH	Sp. Cond. (mS/cm)	Remarks
1255	-	7.00	1603.5	112.8	31.87	8.39	2.121	
1300	-	6.33	1594.2	140.3	31.29	8.35	2.307	
1305	50	7.61	1595.4	164.8	31.28	8.35	2.523	
1310	-	7.81	1595.6	170.5	31.31	8.32	2.548	
1315	-	7.69	1590.4	162.5	30.97	8.43	2.686	
1320	-	7.72	1484.2	164.9	30.98	8.47	2.769	
1325	75	7.51	1121.6	168.4	30.98	8.48	2.792	

STABILIZATION SUMMARY

Range or Average Pump Rate:		gpm	Purge Water Description:	
Maxium Drawdown during pumping:		ft		
Total quantity of material bailed:		gal	Comments:	
Total quantity of water discharged by pumping:	80	gal		

Appendix E
Survey Location Plan of SWMU 7/8 and SWMU 55

COORDINATES & ELEVATIONS OF WELLS

POINT	NORTHING	EASTING	ELEV. PVC PIPE INNER WELL CASING	GROUND. ELEV. (SLAB)	DESCRIPTION
247	146038.643	782144.763	15.599	13.734	MW02
248	146043.154	782150.421	16.403	14.594	UGW05
249	146044.409	782145.423	15.481	13.940	PV1
250	146054.245	782140.986	15.790	13.611	PV2
251	146064.467	782141.833	16.048	13.782	MW01
252	146044.941	782136.049	11.485	13.265	UGW22
253	145936.919	782080.823	13.167	11.034	UGW04
259	145880.404	782095.953	10.909	11.012	UGW26
260	145947.163	782241.196	14.337	12.818	UGW12
262	145938.917	782216.227	11.229	12.148	RW04
266	145867.445	782356.829	13.707	12.251	UGW13
268	145847.988	782343.334	10.499	12.068	RW5
272	145760.906	782482.759	12.660	11.073	UGW17
274	145745.379	782487.518	9.972	11.741	RW06
278	145675.172	782631.343	12.604	11.123	UGW19
280	145666.133	782603.838	8.769	11.450	RW7
284	145568.145	782726.433	13.965	11.579	UGW21
286	145572.471	782736.361	10.002	11.628	RW08
290	145555.187	782670.774	13.869	10.848	55MW06
292	145558.493	782866.616	13.814	10.913	55MW05
294	145564.642	782517.060	14.594	12.021	55MW07
296	145619.039	782468.230	13.801	12.368	UGW15
298	145515.312	782591.686	16.188	13.710	55iw01
300	145510.380	782605.070	16.120	13.478	55iw02
302	145502.745	782600.900	15.468	13.436	7MW27
304	145493.296	782615.746	16.026	13.406	55iw04
306	145485.289	782604.157	15.600	12.925	55iw03
308	145455.346	782603.329	10.493	10.650	7MW24
309	145439.125	782651.888	14.815	11.975	55MW02
311	145440.848	782657.970	14.886	11.929	55MW01
312	145452.645	782518.937	9.790	9.941	7MW22
313	145351.515	782493.910	7.025	7.019	7MW10
314	145279.483	782452.640	6.646	6.779	7MW21
315	145260.592	782612.596	10.163	7.471	55MW09
317	145277.791	782617.159	10.161	7.510	55MW10
319	145775.956	782271.533	14.643	13.337	UGW18
321	145832.149	781929.960	10.359	8.728	UGW08
323	145776.615	781913.670	11.035	8.998	UGW06
325	145681.312	781773.247	6.587	6.582	7MW14
326	145614.044	781920.328	10.833	9.261	UGW10
328	145402.651	781749.882	8.107	8.168	7MW12
329	145474.942	782135.205	9.786	8.150	UGW11
331	146316.645	781579.545	10.594	10.848	chMW02
332	146344.104	781493.440	12.632	10.979	UGW-13
335	145974.362	781827.550	10.087	8.458	UGW07
337	145714.115	781869.789	8.525	8.639	7MW13
338	145558.893	782520.907	14.549	11.983	55MW08
341	145466.883	782698.006	16.400	13.356	55MW04
344	145376.177	782594.557	9.061	9.267	7MW23
345	145470.719	782691.495	16.657	13.697	55MW03
346	145433.608	782989.233	13.536	11.130	7MW20
350	146148.317	781749.814	11.555	9.787	UGW06
351	146101.392	781497.098	9.164	9.324	UGW20-
352	146077.096	781391.560	8.310	8.357	7MW26
353	146443.737	781522.301	14.512	11.763	chMW05
355	146479.150	781477.468	14.378	11.591	chMW06
357	146545.959	781398.767	14.243	12.218	7MW25
359	146224.384	781563.732	9.463	9.751	chMW01
360	146346.319	781691.877	13.906	12.173	gw02
362	146414.646	781674.002	23.227	20.703	470MW03
364	146451.004	781668.881	28.478	25.803	7MW01a
366	146487.649	781663.530	33.167	30.243	470MW01
368	146513.033	781631.770	34.524	31.686	chMW08
370	146606.191	781701.222	52.462	50.011	chMW10
372	146474.154	781740.109	32.875	30.069	chMW07
374	146457.986	781820.914	25.227	27.035	chMW09
376	146395.938	781765.162	16.861	15.862	chMW04
378	146381.968	781872.741	18.167	15.311	chMW03
380	146260.718	781842.987	14.227	11.611	7MW15
382	146255.749	781845.656	13.494	11.319	gw03
387	146956.170	782018.969	75.515	73.272	7MW18
389	146694.573	781861.757	54.561	51.819	CHRW08
391	146661.737	781850.901	54.213	51.727	UGW25
393	146655.790	781793.663	54.157	51.478	CHRW09
395	146600.651	781844.397	50.198	47.419	CHRW06
397	146663.188	781916.789	53.918	51.153	CHRW07
399	146714.237	782417.147	79.368	77.007	7MW03
402	147045.701	782203.256	82.648	80.745	7MW04
408	147276.858	782500.455	91.342	88.807	UGW34
410	147143.674	782557.884	79.181	77.563	UGW24
413	147241.940	782957.806	87.516	84.727	UGW32
415	147363.133	782874.307	117.072	114.553	7MW19
418	146687.181	782078.970	59.625	56.703	CHRW15
420	146623.369	782814.283	61.420	59.210	7MW09
422	146845.533	782405.374	62.197	60.369	UGW2
424	146908.956	782206.435	47.849	45.218	7MW17
426	146489.614	782311.056	69.452	67.040	UGW23
428	146545.842	782221.770	48.640	45.733	7MW28a
431	146157.112	782108.962	15.971	15.838	PW06
432	146159.230	782099.751	17.749	15.337	PW03
434	146156.950	782098.178	13.996	15.594	MW03
435	146158.141	782101.623	17.529	15.186	PW05
436	146152.281	782096.113	16.708	15.031	UGW01
438	146146.519	782095.629	16.684	14.678	MW04
440	146264.462	782103.691	18.128	18.917	RW02
441	146286.232	782118.535	20.997	19.302	UGW04
445	146309.198	782075.874	21.989	19.052	CHRW01
447	146417.491	781988.936	20.251	17.866	7MW16
449	146532.901	781954.130	22.359	19.586	CHRW02
451	146589.033	781948.949	25.530	22.646	CHRW05
453	146598.097	781962.697	22.454	22.625	MTMW03
454	146591.110	781974.514	21.720	21.946	AW02
455	146605.083	781978.398	22.521	22.645	AW01
456	146614.780	781972.655	23.692	23.612	MTMW01
457	146611.654	781997.477	25.219	23.374	UGW03
459	146599.472	781990.912	22.478	23.104	MTMW02
460	146587.084	781984.798	22.260	22.282	MTMW04
461	146583.940	781968.686	20.590	21.419	RW01
462	146632.171	781989.137	28.470	23.634	CHRW04
468	145475.374	782874.261	11.465	11.805	7MW08
470	146268.039	782090.697	21.614	20.199	CHRW11
472	146317.662	782087.995	24.799	23.204	CHRW10
478	146532.474	782018.377	24.462	21.735	CHRW14
480	146556.308	782068.118	27.263	24.360	CHRW15
482	146367.885	782029.577	19.489	16.726	CHRW22
483	146393.648	782073.755	20.146	17.528	CHRW24
486	146706.193	782004.389	58.023	55.306	CHRW17

* FINAL LOCATION AND ELEVATION DATA OF WELLS TAKEN IN FEBRUARY 5, 2010.

NEW COORDINATES & ELEVATIONS OF WELLS

POINT	NORTHING	EASTING	ELEV. PVC PIPE INNER WELL CASING	GROUND. ELEV. (SLAB)	DESCRIPTION
500	146299.706	782120.816	22.301	19.594	CHRW34
*504	146347.859	782132.713	26.185	23.362	CHRW33
508	146352.636	782084.459	20.537	17.207	CHRW13
518	146435.928	781973.734	22.249	19.445	CHRW36
*522	146491.976	781940.681	22.730	19.745	CHRW25
*526	146500.379	781991.913	22.917	20.287	CHRW26
530	146467.631	782030.068	23.086	20.185	CHRW37
*534	146508.354	782055.103	25.975	23.121	CHRW27
541	146600.726	782067.214	29.272	26.562	CHRW39
*545	146581.299	782031.723	26.728	23.878	CHRW03
549	146582.730	781994.522	25.181	22.101	CHRW40
556	146500.235	782088.603	26.372	23.581	CHRW38
*560	146546.385	782109.648	27.925	25.313	CHRW28
*564	146230.658	782122.002	21.001	21.049	CHRW19
*568	146288.952	782158.993	29.085	29.091	CHRW12
*572	146270.786	782037.621	24.870	21.891	CHRW20
576	146345.830	781985.324	29.220	26.102	CHRW33
*589	146157.896	782062.887	17.107	14.057	CHRW18
*596	146639.133	782156.339	60.911	57.969	CHRW29
*606	146296.358	781969.932	20.611	17.751	CHRW21
610	146260.817	781905.181	14.954	12.174	CHRW31
623	145348.184	782499.093	10.487	7.490	55MW11
633	145361.790	782602.733	12.692	10.291	55MW14
646	145735.603	782086.584	9.579	9.771	UGW9
650	145698.133	782009.249	9.143	9.215	7MW11
674	145158.869	782659.083	8.175	8.305	55MW20
678	145151.969	782662.038	8.082	8.330	55MW19
682	145245.939	782722.993	8.871	9.038	55MW18
686	145325.396	782776.501	9.617	9.783	55MW17
693	145439.302	782758.071	14.292	11.479	55MW15
694	145443.135	782751.194	14.364	11.479	55MW16
734	147281.164	783301.983	113.513	110.531	UGW33
738	146391.120	781692.581	19.484	16.638	CHRW44
742	146441.908	781695.095	28.421	25.611	CHRW43
743	146480.861	781697.599	33.286	30.523	CHRW42
750	146539.674	781697.504	43.823	41.026	CHRW41
751	146367.282	781930.467	20.496	17.906	CHRW32
758	146240.585	781945.521	14.652	11.828	CHRW45
759	146165.289	781329.499	11.714	9.170	CHMW12
766	146412.164	781425.949	13.060	10.338	CHMW11
770	146329.270	782189.602	36.937	36.945	CHRW35
774	146735.144	782156.063	42.934	39.517	CHRW30

* FINAL LOCATION AND ELEVATION DATA OF WELLS PREVIOUSLY TAKEN.
* NEW DATA TAKEN MARCH-APRIL 2010.

NOTES

1- ALL DISTANCES ARE EXPRESSED IN FEETS.

2- THE HORIZONTAL AND VERTICAL CONTROL IS REFERRED TO THE FOLLOWINGS DRAWINGS FOUND:

A. THE "VERTICAL CONTROL MAP" (RE-ESTABLISHMENT OF BENCH MARKS) FROM THE U.S. NAVAL STATION ROOSEVELT ROADS, MADE BY VILLATE & ASSOC. A/E CONSULTANTS. DATED IN FEBRUARY 5, 1991. STA. PROJ. NO. 8470099.

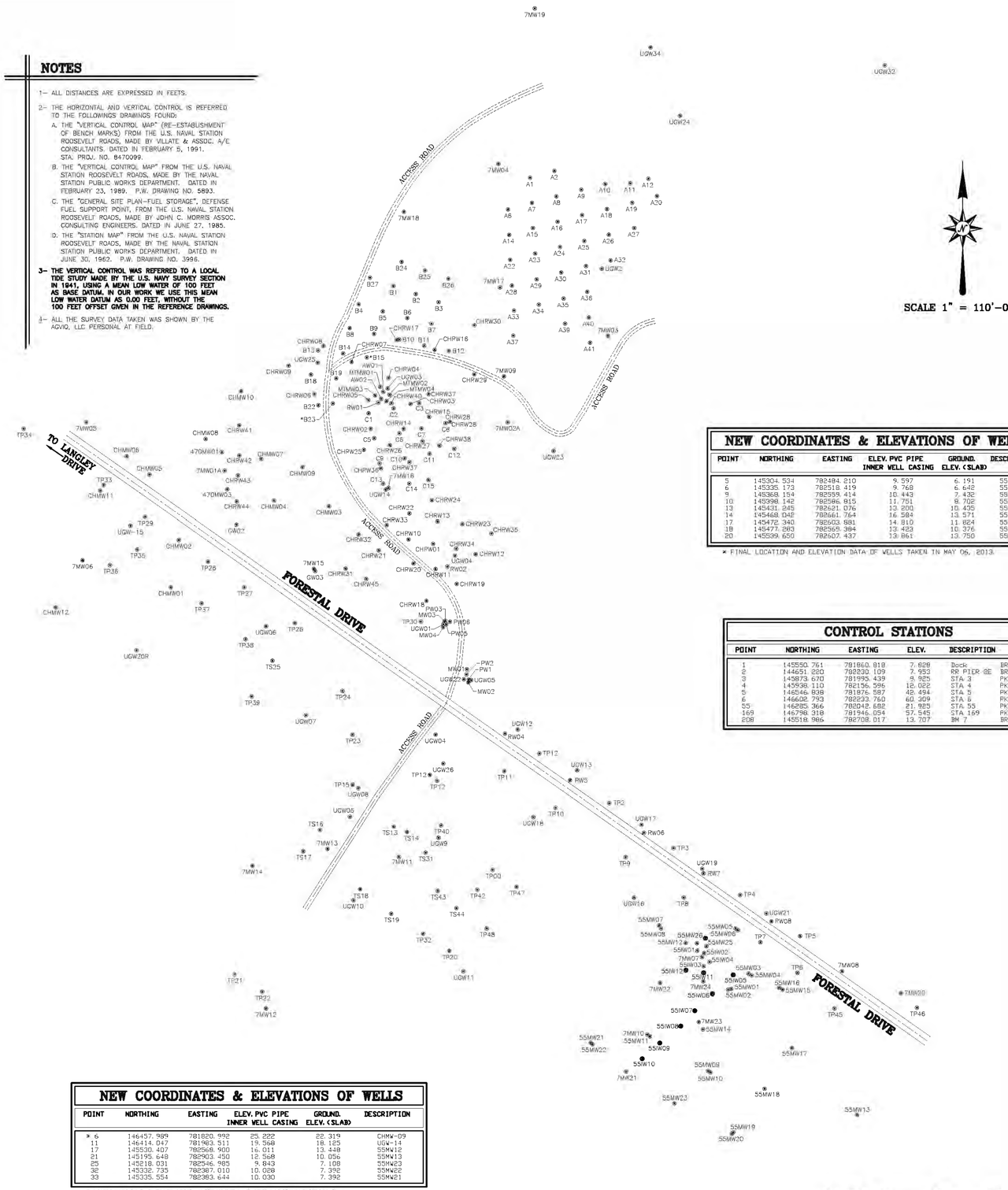
B. THE "VERTICAL CONTROL MAP" FROM THE U.S. NAVAL STATION ROOSEVELT ROADS, MADE BY THE NAVAL STATION PUBLIC WORKS DEPARTMENT. DATED IN FEBRUARY 23, 1989. P.W. DRAWING NO. 5893.

C. THE "GENERAL SITE PLAN-FUEL STORAGE", DEFENSE FUEL SUPPORT POINT, FROM THE U.S. NAVAL STATION ROOSEVELT ROADS, MADE BY JOHN C. MORRIS ASSOC. CONSULTING ENGINEERS. DATED IN JUNE 27, 1985.

D. THE "STATION MAP" FROM THE U.S. NAVAL STATION ROOSEVELT ROADS, MADE BY THE NAVAL STATION STATION PUBLIC WORKS DEPARTMENT. DATED IN JUNE 30, 1962. P.W. DRAWING NO. 3996.

3- THE VERTICAL CONTROL WAS REFERRED TO A LOCAL TIDE STUDY MADE BY THE U.S. NAVY SURVEY SECTION IN 1941, USING A MEAN LOW WATER OF 100 FEET AS BASE DATUM. IN OUR WORK WE USE THIS MEAN LOW WATER DATUM AS 0.00 FEET, WITHOUT THE 100 FEET OFFSET GIVEN IN THE REFERENCE DRAWINGS.

4- ALL THE SURVEY DATA TAKEN WAS SHOWN BY THE AGVIO, LLC PERSONAL AT FIELD.



NEW COORDINATES & ELEVATIONS OF WELLS

POINT	NORTHING	EASTING	ELEV. PVC PIPE INNER WELL CASING	GROUND. ELEV. (SLAB)	DESCRIPTION
* 6	146457.989	781820.992	25.222	22.319	CHMW-09
11	146414.047	781903.511	19.568	18.125	UGW-14
17	145530.407	782568.900	16.011	13.448	55MW12
21	145195.648	782903.450	12.568	10.056	55MW13
25	145218.031	782546.985	9.843	7.108	55MW23
32	145332.735	782387.010	10.028	7.392	55MW22
33	145335.554	782383.644	10.030	7.392	55MW21

* FINAL LOCATION AND ELEVATION DATA OF WELLS PREVIOUSLY TAKEN.
* NEW DATA TAKEN APRIL 21, 2010.

NEW COORDINATES & ELEVATIONS OF WELLS

POINT	NORTHING	EASTING	ELEV. PVC PIPE INNER WELL CASING	GROUND. ELEV. (SLAB)	DESCRIPTION
5	145304.534	782484.210	9.597	6.191	55IW10
6	145335.173	782518.419	9.768	6.642	55IW09
9	145368.154	782559.414	10.443	7.432	55IW08
10	145398.142	782586.815	11.751	8.702	55IW07
13	145431.245	782621.076	13.200	10.435	55IW06
14	145468.042	782661.764	16.584	13.571	55IW05
17	145472.340	782603.881	14.810	11.824	55IW11
18	145477.283	782569.384	13.423	10.376	55IW12
20	145539.650	782507.437	13.861	10.750	55MW26

* FINAL LOCATION AND ELEVATION DATA OF WELLS TAKEN IN MAY 06, 2013.

CONTROL STATIONS

POINT	NORTHING	EASTING	ELEV.	DESCRIPTION	
1	145550.761	781860.818	7.828	Dock	BRASS DISK
2	144651.220	782830.109	7.953	RR PIER @E	BRASS DISK
3	143873.670	781995.439	5.925	STA 3	PK NAIL
4	145938.110	782156.596	18.022	STA 4	PK NAIL
5	146546.838	781876.587	40.494	STA 5	PK NAIL
6	146602.793	782233.760	60.309	STA 6	PK NAIL
55	146285.366	782042.682	21.925	STA 55	PK NAIL
169	146798.318	781946.054	57.545	STA 169	PK NAIL
208	145518.986	782708.017	13.707	BM 7	BRASS DISK

DRAWING TITLE: SURVEY LOCATION PLAN SWMUs 7/8 & 55

PROJECT NAME: SOIL SAMPLINGS, TEST PIT & WELLS AT SWMUs 7/8, 54 & 55. PROJECT # 1748, CTO-JM04

PROJECT LOCATION: NAVAL ACTIVITY (NAPR) ENSENADA HONDA WARD CEIBA, PUERTO RICO

REVISIONS

NUM.	DATE	REMARKS
1-3	FEB./MAR./APR.2010	ADDITIONAL MONITORING WELLS
4	MAY 10, 2010	ADDITIONAL MONITORING WELLS

THIS SURVEY PLAN IS PROPERTY OF PJDC INC. PROFESSIONAL LAND SURVEYORS. ALL THE MATHEMATICAL AND GEOMETRICAL DATA ARE NOT TO BE REPRODUCED OR COPIED, IN WHOLE OR IN PART, WITHOUT THE WRITTEN CONSENT OF PJDC INC. THIS STATEMENT IS PERSUANT TO THE RULES OF ETHICS FOR ENGINEERS AND LAND SURVEYORS (ART. 4 RULE AND ART. 5 RULE) APPROVED BY THE C.I.A.P.R. ON AUGUST 1994.

I HEREBY CERTIFY THAT A PRECISE SURVEY OF THE PREMISES SHOWN IN THIS PLAN WAS MADE UNDER MY BEST KNOWLEDGE AND SUPERVISION, AND MEETS THE MINIMUM STANDARD REQUIREMENTS FOR THE PRACTICE OF LAND SURVEY IN P.R. ESTABLISHED BY THE COLLEGE OF ENGINEERS AND LAND SURVEYORS OF PUERTO RICO.

CERTIFY CORRECT

PEDRO J. DAVILA COLON
SURVEYOR, LIC. NO. 9323

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PJDC

FIELD WORK BY: F. NAZARIO

CALCULATION BY: G. RODRIGUEZ
DRAWING BY: G. RODRIGUEZ, J. NIEVES
CADD DWG NAME: 1009A-7-8-Fts.dwg
DATE: JULY 29, 2009
SCALE: 1"=110'
PLAN. NO.: JOB-1009A

01/01

Appendix F
Summary of Waste Characterization Sample Results and Waste Manifests

Waste Characetrization - Soil Analytical Results (TCLP)

Data Summary Table

SWMU55

Naval Activity Puerto Rico

Location			SPLW	SPUP
Sample ID			JM04-SPLW-041813	JM04-SPUP-041813
Sample Depth (ft)			0 - 0	0 - 0
Sample Date			4/18/2013	4/18/2013
Analyte	**Units**	**TCLP** [SL]		
SW6010C (MG/L)				
ARSENIC	MG/L	5	0.01 U	0.01 U
BARIUM	MG/L	100	**0.36 J**	**0.029 J**
CADMIUM	MG/L	1	**0.0032 J**	0.0025 U
CHROMIUM, TOTAL	MG/L	5	0.005 U	0.005 U
LEAD	MG/L	5	0.0075 U	0.0075 U
SELENIUM	MG/L	1	**0.012 J**	0.02 U
SILVER	MG/L	5	0.005 U	0.005 U
SW7470A (MG/L)				
Mercury	MG/L	0.2	0.0002 U	0.0002 U
SW8081B (MG/L)				
CHLORDANE	MG/L	0.03	0.0005 U	0.0005 U
ENDRIN	MG/L	0.02	0.0001 U	0.0001 U
GAMMA BHC (LINDANE)	MG/L	0.4	0.0001 U	0.0001 U
HEPTACHLOR	MG/L	0.008	0.0001 U	0.0001 U
HEPTACHLOR EPOXIDE	MG/L	0.008	0.0001 U	0.0001 U
METHOXYCHLOR	MG/L	10	0.0001 U	0.0001 U
TOXAPHENE	MG/L	0.5	0.01 U	0.01 U
SW8151A (MG/L)				
2,4-D (DICHLOROPHENOXYACETIC ACID)	MG/L	10	0.0015 U	0.0015 U
SILVEX (2,4,5-TP)	MG/L	1	0.0015 U	0.0015 U
SW8260B (MG/L)				
1,1-DICHLOROETHENE	MG/L	0.7	0.008 U	0.008 U
1,2-DICHLOROETHANE	MG/L	0.5	0.008 U	0.008 U
BENZENE	MG/L	0.5	0.008 U	0.008 U
CARBON TETRACHLORIDE	MG/L	0.5	0.02 U	0.02 U
CHLOROBENZENE	MG/L	100	0.008 U	0.008 U
CHLOROFORM	MG/L	6	0.008 U	0.008 U
METHYL ETHYL KETONE (2-BUTANONE)	MG/L	200	0.02 U	0.02 U
TETRACHLOROETHENE (PCE)	MG/L	0.7	0.02 U	0.02 U
TRICHLOROETHENE (TCE)	MG/L	0.5	0.008 U	0.008 U
VINYL CHLORIDE	MG/L	0.2	0.008 U	0.008 U

Waste Characetrization - Soil Analytical Results (TCLP)

Data Summary Table

SWMU55

Naval Activity Puerto Rico

Location			SPLW	SPUP
Sample ID			JM04-SPLW-041813	JM04-SPUP-041813
Sample Depth (ft)			0 - 0	0 - 0
Sample Date			4/18/2013	4/18/2013
Analyte	**Units**	**TCLP SL**		
SW8270D (MG/L)				
1,4-DICHLOROBENZENE	MG/L	7.5	0.0025 U	0.0025 U
2,4,5-TRICHLOROPHENOL	MG/L	400	0.0025 U	0.0025 U
2,4,6-TRICHLOROPHENOL	MG/L	2	0.0025 U	0.0025 U
2,4-DINITROTOLUENE	MG/L	0.13	0.0025 U	0.0025 U
2-METHYLPHENOL (O-CRESOL)	MG/L	200	0.0025 U	0.0025 U
3 & 4-Methylphenol	MG/L	--	0.0025 U	0.0025 U
CRESOLS, TOTAL	MG/L	200	0.005 U	0.005 U
HEXACHLOROBENZENE	MG/L	0.13	0.0025 U	0.0025 U
HEXACHLOROBUTADIENE	MG/L	0.5	0.0025 U	0.0025 U
HEXACHLOROETHANE	MG/L	3	0.0025 U	0.0025 U
NITROBENZENE	MG/L	2	0.0025 U	0.0025 U
PENTACHLOROPHENOL	MG/L	100	0.0025 U	0.0025 U
PYRIDINE	MG/L	5	0.025 U	0.025 U

Notes:

NA = Not analyzed

J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

mg/l = Milligrams per Liter

ug/kg = Micrograms per Kilogram

Bold indicates the analyte was detected

Shading indicates the analyte exceded screening criteria

TCLP SL - EPA TCLP Screening Limit

Waste Characetrization - Soil Analytical Results

Data Summary Table

SWMU55

Naval Activity Puerto Rico

Location		**SPLW**		**SPUP**	
Sample ID		**JM04-SPLW-041813**	**JM04-SPLW-041813D**	**JM04-SPUP-041813**	**JM04-SPUP-041813D**
Sample Depth (ft)		**0 - 0**	**0 - 0**	**0 - 0**	**0 - 0**
Sample Date		**4/18/2013**	**4/18/2013**	**4/18/2013**	**4/18/2013**
Analyte	**Units**				
SW1030 (NONE)					
Ignitability	NONE	0 U	NA	0 U	0 U
SW8082A (UG/KG)					
PCB-1016 (AROCLOR 1016)	UG/KG	21 U	NA	21.2 U	NA
PCB-1221 (AROCLOR 1221)	UG/KG	42.1 U	NA	42.5 U	NA
PCB-1232 (AROCLOR 1232)	UG/KG	21 U	NA	21.2 U	NA
PCB-1242 (AROCLOR 1242)	UG/KG	21 U	NA	21.2 U	NA
PCB-1248 (AROCLOR 1248)	UG/KG	21 U	NA	21.2 U	NA
PCB-1254 (AROCLOR 1254)	UG/KG	21 U	NA	21.2 U	NA
PCB-1260 (AROCLOR 1260)	UG/KG	21 U	NA	21.2 U	NA
SW9045D (PH UNITS)					
pH	PH UNITS	8.84	8.85	9.4	NA

Notes:

NA = Not analyzed

J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

mg/l = Milligrams per Liter

ug/kg = Micrograms per Kilogram

Bold indicates the analyte was detected

Waste Characetrization - Water Analytical Results

Data Summary Table

SWMU55

Naval Activity Puerto Rico

Location			TD491
Sample ID			JM04-TD491-120612
Sample Depth (ft)			0 - 0
Sample Date			12/6/2012
Analyte	**Units**	**TCLP** [SL]	
SW8260B (UG/L)			
1,1,1-TRICHLOROETHANE	UG/L	--	0.2 U
1,1,2,2-TETRACHLOROETHANE	UG/L	--	0.2 U
1,1,2-TRICHLOROETHANE	UG/L	--	0.2 U
1,1-DICHLOROETHANE	UG/L	--	0.2 U
1,1-DICHLOROETHENE	UG/L	700	0.5 U
1,2,3-TRICHLOROBENZENE	UG/L	--	0.2 U
1,2,4-TRICHLOROBENZENE	UG/L	--	0.2 U
1,2-DIBROMO-3-CHLOROPROPANE	UG/L	--	0.2 U
1,2-DIBROMOETHANE (EDB)	UG/L	--	0.2 U
1,2-DICHLOROBENZENE	UG/L	--	0.2 U
1,2-DICHLOROETHANE	UG/L	500	0.2 U
1,2-DICHLOROPROPANE	UG/L	--	0.2 U
1,3-DICHLOROBENZENE	UG/L	--	0.2 U
1,4-DICHLOROBENZENE	UG/L	7500	0.2 U
2-HEXANONE	UG/L	--	1 U
ACETONE	UG/L	--	1 U
BENZENE	UG/L	500	0.2 U
BROMOCHLOROMETHANE	UG/L	--	0.5 U
BROMODICHLOROMETHANE	UG/L	--	0.2 U
BROMOFORM	UG/L	--	0.5 U
BROMOMETHANE	UG/L	--	0.5 U
CARBON DISULFIDE	UG/L	--	0.5 U
CARBON TETRACHLORIDE	UG/L	500	0.5 U
CHLOROBENZENE	UG/L	100000	0.2 U
CHLOROETHANE	UG/L	--	0.5 U
CHLOROFORM	UG/L	6000	0.2 U
CHLOROMETHANE	UG/L	--	0.2 U
cis-1,2-DICHLOROETHYLENE	UG/L	--	**0.652 J**
cis-1,3-DICHLOROPROPENE	UG/L	--	0.2 U
CYCLOHEXANE	UG/L	--	0.5 U
DIBROMOCHLOROMETHANE	UG/L	--	0.2 U
DICHLORODIFLUOROMETHANE	UG/L	--	0.2 U
ETHYL BENZENE	UG/L	--	0.2 U
FREON 113	UG/L	--	0.5 U
Isopropylbenzene	UG/L	--	0.2 U

METHYL ACETATE	UG/L	--	2 U
METHYL ETHYL KETONE (2-BUTANONE)	UG/L	200000	0.5 U
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTAN	UG/L	--	0.5 U
METHYL TERT-BUTYL ETHER (MTBE)	UG/L	--	0.2 U
METHYLCYCLOHEXANE	UG/L	--	0.2 U
METHYLENE CHLORIDE	UG/L	--	0.5 U
STYRENE	UG/L	--	0.2 U
TETRACHLOROETHENE (PCE)	UG/L	700	0.5 U
TOLUENE	UG/L	--	0.2 U
trans-1,2-DICHLOROETHENE	UG/L	--	0.2 U
trans-1,3-DICHLOROPROPENE	UG/L	--	0.2 U
TRICHLOROETHENE (TCE)	UG/L	500	**48.5 =**
TRICHLOROFLUOROMETHANE	UG/L	--	0.2 U
VINYL CHLORIDE	UG/L	200	0.2 U
XYLENES, TOTAL	UG/L	--	0.6 U

Notes:

Bold indicates the analyte was detected

Shading indicates the analyte exceded screening criteria

NA = Not analyzed

J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

ug/l = Micrograms per Liter

TCLP ^{SL} - EPA TCLP Screening Limit

AGVIQ ROSEVELT ROADS CEIBA
CONTAMINATED SOIL DISPOSAL
CONTRACT AV13-3A007

PO Ammount	270	Tons
Disposed	387.77	Tons
Diference	-117.77	Tons

General Trash Disposal	1	Ton

PICKUP DATE	DELIVERY DATE	MANIFEST #	TONELAGE
6/10/2013	6/11/2013	28494	14.79
6/10/2013	6/11/2013	28495	16.99
6/10/2013	6/11/2013	31604	15.83
6/12/2013	6/12/2013	31605	19.86
6/12/2013	6/12/2013	31606	13.16
6/12/2013	6/12/2013	31603	15.31
6/13/2013	6/13/2013	31608	19.21
6/13/2013	6/13/2013	31607	11.65
6/13/2013	6/13/2013	31609	13.62
6/17/2013	6/17/2013	31610	13.55
6/17/2013	6/17/2013	31611	14.18
6/17/2013	6/17/2013	31612	16.89
6/18/2013	6/18/2013	31615	14.15
6/18/2013	6/18/2013	31616	14.66
6/18/2013	6/18/2013	31617	17.18
6/19/2013	6/19/2013	31618	14.57
6/19/2013	6/19/2013	31619	13.97
6/19/2013	6/19/2013	31620	18.74
6/20/2013	6/20/2013	32882	14.63
6/20/2013	6/20/2013	32883	15.01
6/20/2013	6/20/2013	32884	15.66
6/20/2013	6/20/2013	32885	20.12
6/21/2013	6/21/2013	32886	14.63
6/21/2013	6/21/2013	32887	14.81
6/21/2013	6/21/2013	32888	14.6
TOTALS			387.77

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

HT.0266

28494

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location	e. Generator's Mailing Address
US NAVY Naval Activity PR Bldg. - 102 Roosevelt Roads f. Phone: Ceiba, PR	US NAVY 102 Roosevelt Drive-Ceiba, PR g. Phone
If owner of the generating facility differs from the generator, provide:	
h. Owner's Name	i. Owner's Phone No.

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No	Type	n. Total Quantity	o. Unit Wt/Vol
421713/166	5-15-2016	Non-hazardous Soil			12	

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations, AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
Pedro Ruiz	[signature]	9/11/2015

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Caribe Hydrocleaning Corp.
PO Box 790 Toa Baja, PR 00954

b. Phone: 787-635-1110

c. Driver Name (Print)	d. Signature	e. Date
Fernando Vargas	[signature]	10-6-15

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address	c. US EPA Number	d. Discrepancy Indication Space
(787) 841-7775 PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P.R. 00732 b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address	c. Responsible Agency Name and Address
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

2294025

SITE	TICKET	GRID

WEIGHMASTER

DATE IN	TIME IN
DATE OUT	TIME OUT
VEHICLE	ROLL OFF
REFERENCE	ORIGIN

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL

NET AMOU

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CHANGE

CHECK NO

REPUBLIC SERVICES

REV 11/09

SIGNATURE

RI

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

28495

If waste is asbestos waste: complete Sections I, II, III and IV
If waste is **NOT** asbestos waste: complete Sections I, II and III

I. GENERATOR (Generator completes (a-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location	e. Generator's Mailing Address
US NAVAL Naval Activity PR Hdq./192 Forrestal Drive Ceiba, PR	US NAVY 192 Forrestal Drive Ceiba, PR
f. Phone:	g. Phone:
If owner of the generating facility differs from the generator, provide:	
h. Owner's Name:	i. Owner's Phone No.

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	Type	n. Total Quantity	o. Unit Wt/Vol
4217L0784	5/15/2014	Non-hazardous Soil			15yds.	

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
Pedro Diaz	[signature]	6/10/2013

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address: Caribe Hydrocleaning Corp. PO Box 70 Toa Baja, PR 00626

b. Phone: 787-750-1112

c. Driver Name (Print)	d. Signature	e. Date
Manuel Rosario Co	[signature]	6-10-13

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address: (787) 841-7775	c. US EPA Number	d. Discrepancy Indication Space
PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P.R. 00732 b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date
[illegible]	[illegible]	[illegible]

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both.

2282979

SITE	TICKET	ORID

WEIGHMASTER

DATE IN	TIME IN
DATE OUT	**TIME OUT**
VEHICLE	**ROLL OFF**

REFERENCE	ORIGIN

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL

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REPUBLIC SERVICES

REV 11/09

SIGNATURE

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

HP-11775

316.4

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location	e. Generator's Mailing Address
US NAVY Naval Activity PR Disp-VI Recreational Dr. Ceiba, PR f. Phone:	US NAVY 192 Recreational Drive Ceiba, PR g. Phone:
If owner of the generating facility differs from the generator, provide:	
h. Owner's Name:	i. Owner's Phone No.

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
421713184	3/13/14	[illegible]			15	[illegible]

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
[illegible]	[signature]	[illegible]

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Caribe Dumpsterworks Corp.
PO Box 700 Toa Baja, PR 00952A

b. Phone: 787-620-1110

HP-11775

c. Driver Name (Print)	d. Signature	e. Date
Manuel Hernandez	[signature]	6/18/2013

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address: (787) 841-7775	c. US EPA Number	d. Discrepancy Indication Space:
PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P.R. 00732 b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date
[illegible]	[signature]	06/11/2013

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both.

2282951

SITE	TICKET	GRID
WEIGHMASTER		
DATE IN		TIME IN
DATE OUT		TIME OUT
VEHICLE		ROLL OFF
REFERENCE	ORIGIN	

PONCE SANITARY LANDFILL
RD 500 AVENIDA BARAMAYA FINAL
BO.LA COTORRA
PONCE PR 00731

013276 - 0208
CARIBE HYTEC/US NAVY NAVAL ACTIVITY PR
BLDG 192 FORRESTAL DRIVE

CEIBA, PR 00735
Contract# N62472-92-D-

CHE11775

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
		Gross Weight 62,220.00 lb				
		Tare Weight 30,560.00 lb				
		Net Weight 31,660.00 lb 15.83 TN				
15.83	TN	MG C1 SW3CONT SOIL				
15.00	YD	MG C1 SW3CONT SOIL				
1.00	LD	CO C1 ENVIRONMENTAL FEE				
1.00	LD	01 C1 FUEL RECOVERY FEE				

NET AMOU

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CHANGE

CHECK NO

REPUBLIC SERVICES

REV 11/09

SIGNATURE Nelly C. Hernandez

RS

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

R19575

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

51605

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location:	e. Generator's Mailing Address:
US NAVY - Naval activity PR Sig. 192 Farragut Drive Ceiba, PR 00735	Naval Activity PR Sig. 192 Farragut Drive Ceiba, PR 00735
f. Phone: 787-256-7139	g. Phone:
If owner of the generating facility differs from the generator, provide:	
h. Owner's Name:	i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
411737184	5/15/2014	[illegible]			20 yds.	

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations, AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
Pedro Berrios	[signature]	

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Caribe Hydroblasting Corp.
PO Box 790 Naguabo, PR 00718

b. Phone: 787-236-1110

c. Driver Name (Print)	d. Signature	e. Date
[illegible]	[signature]	6.12.13

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address: (787) 841-2775 PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P. R. 00732	c. US EPA Number	d. Discrepancy Indication Space:
b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date
[illegible]		

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both.

2294197

SITE	TICKET	GRID

WEIGHMASTER

DATE IN	TIME IN
[illegible]	
DATE OUT	**TIME OUT**
[illegible] June 2012	[illegible] pm
VEHICLE	**ROLL OFF**
REFERENCE	**ORIGIN**
[illegible]	

[illegible] SANITARY LANDFILL
[illegible] AVENUE [illegible]
[illegible]
[illegible] 60750

[illegible] 0300
[illegible] HYDROLYS NAVY [illegible] ACTIVITY [illegible]
[illegible] WEST FIRESTAL DRIVE

[illegible]

CONTRACTS [illegible]
GROSS WEIGHT [illegible] LB
TARE WEIGHT [illegible] LB

[illegible] [illegible]
DISCOUNT - SCALE TICKET

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
[illegible]	TN	[illegible] SEDIMENT SOIL				
[illegible]	TN	[illegible] SEDIMENT SOIL				
[illegible]	LS	[illegible] ENVIRONMENTAL FEE				
[illegible]	LS	[illegible] FUEL RECOVERY FEE				

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CHECK NU

REPUBLIC SERVICES

REV 11/09

SIGNATURE [illegible]

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

31676

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location	e. Generator's Mailing Address
[illegible] Activity PR Disp. 192 Technical Drive Ceiba, PR 00735 f. Phone 787-[illegible]	[illegible] Activity PR Disp. 192 Technical Dr. Ceiba, PR 00735 g. Phone
If owner of the generating facility differs from the generator, provide:	
h. Owner's Name	i. Owner's Phone No.

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
421T13/194	1/15/2014	Non-Hazardous Soil				

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

[illegible]	[illegible]	
p. Generator Authorized Agent Name (Print)	q. Signature	r. Date

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address
Caribe Hydrocleaning Corp.
PO Box 240 Fajardo, PR 00738
b. Phone: 787-[illegible]-1110

[illegible]		[illegible]
c. Driver Name (Print)	d. Signature	e. Date

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address (787) 841-7775	c. US EPA Number	d. Discrepancy Indication Space
PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P.R. 00732 b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address	c. Responsible Agency Name and Address
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable: % Non-Friable:

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

2294195

SITE	TICKET	GRID

WEIGHMASTER
[illegible]

DATE IN	TIME IN
[illegible]	

DATE OUT	TIME OUT
[illegible]	[illegible]

VEHICLE	ROLL OFF

REFERENCE	ORIGIN
[illegible]	

FENCE SANITARY LANDFILL
[illegible]
[illegible]
[illegible]

[illegible]
[illegible]
[illegible]

[illegible]

[illegible]
[illegible]
[illegible]

[illegible]
[illegible]

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]				

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REPUBLIC SERVICES

REV 11/09

SIGNATURE _____

R

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

31603

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location:	e. Generator's Mailing Address:
[illegible] Naval Station Bldg. 192 Pascottal Drive Cecilia, PR f. Phone: 787-[illegible]	Naval Security Gp Bldg. 192 Pascottal Drive Cecilia, PR 00735 g. Phone:
If owner of the generating facility differs from the generator, provide:	
h. Owner's Name:	i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
[illegible]	5-15-94	Non-Hazardous Soil			15 yds	

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
[illegible]	[illegible]	[illegible]

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
[illegible] Transportation Corp.
PO Box 200
[illegible], PR [illegible]

b. Phone:

c. Driver Name (Print)	d. Signature	e. Date
[illegible]	[illegible]	[illegible]

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address: (787) 841-7775 PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P.R. 00732 b.	c. US EPA Number IDF-58-0008	d. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate:

e. Name of Authorized Agent (Print)	f. Signature	g. Date

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address: b. Phone:	c. Responsible Agency Name and Address: d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

2294133

SITE	TICKET	GRID

WEIGHMASTER

DATE IN	TIME IN
[illegible]	
DATE OUT	**TIME OUT**
[illegible]	[illegible]
VEHICLE	**ROLL OFF**
REFERENCE	**ORIGIN**
[illegible]	

PONCE SANITARY LANDFILL
[illegible]
[illegible]
[illegible]

[illegible]
[illegible]
[illegible]

[illegible]

CONTRACT: [illegible]
[illegible] WEIGHT [illegible] LB
TARE WEIGHT [illegible] LB

[illegible]
[illegible]

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
[illegible]	TN	[illegible]				
[illegible]	YD	[illegible]				
1.00	LD	[illegible] ENVIRONMENTAL FEE				
1.00	LD	[illegible] FUEL RECOVERY FEE				

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REPUBLIC SERVICES

REV 11/09

SIGNATURE _____

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

R19575

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

31606

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location	e. Generator's Mailing Address
Naval Activity PR Disp. 192 Kennedy Drive Ceiba, PR 00735	Naval Activity PR Disp. 192 Kennedy Drive Ceiba, PR 00735
f. Phone: 787-256-[illegible]	g. Phone
If owner of the generating facility differs from the generator, provide:	
h. Owner's Name	i. Owner's Phone No.

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	Type	n. Total Quantity	o. Unit Wt/Vol
421713184	3/13/2014	Non-Hazardous Soil			20 yd³	

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations. AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
[illegible]	[illegible]	

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address
Costa Hydroblasting Corp.
PO Box 700 Penuelas, PR 00624
b. Phone: 787-836-1110

c. Driver Name (Print)	d. Signature	e. Date
[illegible]	[illegible]	6/13/13

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address: (787) 841-7775	c. US EPA Number	d. Discrepancy Indication Space
PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P.R. 00732 b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

2284337

SITE	TICKET	GRID

WEIGHMASTER
[illegible]

DATE IN	TIME IN
[illegible]	

DATE OUT	TIME OUT
[illegible]	[illegible]

VEHICLE	ROLL OFF

REFERENCE	ORIGIN
[illegible]	

FORCE SANITARY LANDFILL
[illegible]
[illegible]
FORCE PA [illegible]

[illegible]
[illegible]
[illegible]

[illegible]

Customer [illegible]
[illegible] Gross Weight [illegible] lb
Tare Weight [illegible] lb

[illegible]
Amount [illegible]

QTY	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]				

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REPUBLIC SERVICES

REV 11/09

SIGNATURE [illegible]

FI

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

31607

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location	e. Generator's Mailing Address
[illegible] Security [illegible] [illegible] Personal Drive Ceiba, PR 00735 f. Phone: 787-[illegible]	[illegible] Security P.R. Adm. Personal Drive [illegible] Ceiba, PR 00735 g. Phone

If owner of the generating facility differs from the generator, provide:

h. Owner's Name	i. Owner's Phone No.

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
421713/104	3/15/2014	Non-Hazardous Solid			15	Y

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
[illegible]	[signature]	06-12-1[illegible]

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
[illegible] Transportation Corp.
[illegible] Ponce, PR
b. [illegible] 787-[illegible]

c. Driver Name (Print)	d. Signature	e. Date
[illegible]	[signature]	06-12-1[illegible]

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address	c. US EPA Number	d. Discrepancy Indication Space
PONCE LANDFILL (787) 841-7775 AVE. BARAMAYA #500 PONCE, P. R. 00732 b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate:

e. Name of Authorized Agent (Print)	f. Signature	g. Date

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

2294335

SITE	TICKET	GRID

WEIGHMASTER

DATE IN	TIME IN
[illegible]	

DATE OUT	TIME OUT
[illegible]	[illegible]

VEHICLE	ROLL OFF

REFERENCE	ORIGIN
[illegible]	

FORCE SANITARY LANDFILL
[illegible] MANAWA TRAIL
BLDG [illegible]
FORCE FL 32753

[illegible] - [illegible]
ONSITE HYDROLUG AND HAUL ACTIVITY IN
BLDG [illegible] FORRESTAL DRIVE

[illegible]

COMMERCIAL [illegible]
GO Gross Weight [illegible] lb
Tare Weight [illegible] lb

[illegible]
TRANSFER - SCALE TICKET

QTY	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
[illegible]	TN	[illegible] DISCOUNT SOIL				
[illegible]	YD	[illegible] DISCOUNT SOIL				
[illegible]	LB	[illegible] ENVIRONMENTAL FEE				
[illegible]	LB	[illegible] FUEL RECOVERY FEE				

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REPUBLIC SERVICES

REV 11/09

SIGNATURE _____

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NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

31609

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

e. Generator's Name and Location:	e. Generator's Mailing Address:
[illegible] Naval Activity PR Maq. 192 Sampedal Drive Ceiba, PR 00735	Naval Activity PR Maq. 192 Sampedal Drive Ceiba, PR 00735
f. Phone: 787-[illegible]	g. Phone:
If owner of the generating facility differs from the generator, provide:	
h. Owner's Name:	i. Owner's Phone No.

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
433713164	5/15/14	Non-Hazardous Soil			15 yd.	

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
[illegible]	[illegible]	[illegible]

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address: [illegible] Transporting Corp. PO Box 700 Salinas, PR 00624

b. Phone: 787-[illegible]-1110

c. Driver Name (Print)	d. Signature	e. Date
[illegible]	[illegible]	[illegible]

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address: (787) 841-7775 PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P.R. 00732 b.	c. US EPA Number: IDF-58-0008	d. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both.

2294336

SITE	TICKET	GRID

WEIGHMASTER

DATE IN: TRUCKER JUAN P

TIME IN:

DATE OUT: 13 June 2013

TIME OUT: 1:13 pm

VEHICLE:

ROLL OFF:

REFERENCE: CHE1778

ORIGIN:

PONCE SANITARY LANDFILL
RD 500 AVENIDA BARRANCA (TRAIL)
BO.LA CONCHA
PONCE PR 00731

013276 - 3290
CARIBE HYDRO/US NAVY NAVAL ACTIVITY PR
BLDG 192 FORRESTAL DRIVE

CEIBA, PR 00735
Contract: N62170-13-A-SL
Net Gross Weight 58,040.00 lb
Tare Weight 30,880.00 lb

MAN-HAUL CEIBA
Inbound - SCALE TICKET

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
13.[illegible]	TN	MG CL 3 SEDIMENT SOIL				
15.[illegible]	TN	MG CL 3 SEDIMENT SOIL				
1.00	LD	[illegible] ENVIRONMENTAL FEE				
1.00	LD	[illegible] FUEL RECOVERY FEE				

NET AMOUNT

TENDERED

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REPUBLIC SERVICES

REV 11/09

SIGNATURE

HS

ALLIED WASTE SERVICES
A REPUBLIC SERVICES COMPANY

31610

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

HP-0266

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location	e. Generator's Mailing Address
US NAVY- Naval Activity PR Bldg. 192 Forrestal Drive f. Phone: Ceiba, PR 00735 787-286-9139	Naval Activity PR Bldg. 192 Forrestal Drive/ Ceiba, PR 00735 g. Phone:
If owner of the generating facility differs from the generator, provide: h. Owner's Name:	i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
421713718A	5/15/13	Non-Hazardous Soil			15	Y

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
Pedro Ruiz		17-06-13

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Caribe Hydroblasting Corp.
PO Box 790 Peñuelas, PR 00624
b. Phone: 787-836-1110

c. Driver Name (Print)	d. Signature	e. Date
Ramon Vega		17-06-13

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address: (787) 841-7775	c. US EPA Number	d. Discrepancy Indication Space:
PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P. R. 00732 b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date
Ramon Vega		17-06-13

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

2234616

SITE	TICKET	GRID

WEIGHMASTER: 30 642605

DATE IN	TIME IN
17/06/2013 JUAN F	
DATE OUT	**TIME OUT**
17 June 2013	1:12 pm
VEHICLE	**ROLL OFF**
REFERENCE	**ORIGIN**
CHE0266	

PONCE SANITARY LANDFILL
RD 500 AVENIDA BARAMAYA FINAL
BO.LA COTORRA
PONCE PR 00731

013276 -- 0208
CARIBE HYDRO/US NAVY NAVAL ACTIVITY PR
BLDG 192 FORRESTAL DRIVE

CEIBA, PR 00735

Contract: #4217137184/SL
00 Gross Weight 58,040.00 lb
Tare Weight 30,940.00 lb
Net Weight 27,100.00 lb 13.55 TN

MA.31610 CEIBA
Inbound - SCALE TICKET

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
13.55	TN	VG C1 S93CONT SOIL				
15.00	YD	VG C1 S93CONT SOIL				
1.00	LD	[illegible] C1 ENVIRONMENTAL FEE				
1.00	LD	01 C1 FUEL RECOVERY FEE				

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REPUBLIC SERVICES

REV 11/09

SIGNATURE

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ALLIED WASTE SERVICES
A REPUBLIC SERVICES COMPANY

31611

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location:	e. Generator's Mailing Address:
US NAVY-Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 f. Phone: 787-286-9139	Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 g. Phone:
If owner of the generating facility differs from the generator, provide h. Owner's Name:	i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
4217137184	5/15/14	Non-Hazardous Soil			15 yds	

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
[illegible]	[signature]	6-17-13

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Caribe Hydroblasting Corp.
PO Box 790 Peñuelas, PR 00624
b. Phone: 787-836-1110

c. Driver Name (Print)	d. Signature	e. Date
Manuel Ferrer	[signature]	6-17-13

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address: (787) 841-7775	c. US EPA Number	d. Discrepancy Indication Space:
PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P.R. 00732 b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

2294615

SITE	TICKET	GRID

WEIGHMASTER: 30 642604

DATE IN	TIME IN
JP00088 JUAN P	

DATE OUT	TIME OUT
17 June 2013	1:05 pm

VEHICLE	ROLL OFF

REFERENCE	ORIGIN
CHE11725	

PONCE SANITARY LANDFILL
KM 500 AVENIDA BARAMAYA FINAL
BO. LA DOTORRA
PONCE PR 00731

013276 - 0208
CARIBE HYDRO/US NAVY NAVAL ACTIVITY PR
BLDG 192 FORRESTAL DRIVE

CEIBA, PR 00735

Contract: N42171371B4/SL
00 Gross Weight 59,420.00 lb
Tare Weight 31,060.00 lb
Net Weight 28,360.00 lb 14.18 TN

MA.31611 CEIBA
Inbound - SCALE TICKET

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
14.18	TN	VG C1 SUBCONT SOIL				
15.00	YD	VG C1 SUBCONT SOIL				
1.00	LD	C1 C1 ENVIRONMENTAL FEE				
1.00	LD	D1 C1 FUEL RECOVERY FEE				

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CHANGE
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REPUBLIC SERVICES

REV 11/09

SIGNATURE _____

R

ALLIED WASTE SERVICES
A REPUBLIC SERVICES COMPANY

31612

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

RP9575

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location:	e. Generator's Mailing Address:
US NAVY-Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 f. Phone: 787-836-9139	Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 g. Phone:
If owner of the generating facility differs from the generator, provide: h. Owner's Name:	i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
4217137184	5/15/14	Non-Hazardous Soil			20 yds	

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions. I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
Pedro Ruiz		

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Caribe Hydroblasting Corp.
PO Box 790 Peñuelas, PR 00624
b. Phone: 787-836-1110

c. Driver Name (Print)	d. Signature	e. Date
Nestor L. Hernández	Nestor L. Hernández	6/17/13

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address: (787) 841-7775	c. US EPA Number	d. Discrepancy Indication Space:
PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P.R. 00732 b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

2294618

SITE	TICKET	GRID

WEIGHMASTER: 30 642607

DATE IN	TIME IN
JP00088 JUAN P	

DATE OUT	TIME OUT
17 June 2013	1:16 pm

VEHICLE	ROLL OFF

REFERENCE	ORIGIN
CHE9575	

PONCE SANITARY LANDFILL
RD 500 AVENIDA BARAMAYA FINAL
BO.LA COTORRA
PONCE PR 00731

013276 - 0208
CARIBE HYDRO/US NAVY NAVAL ACTIVITY PR
BLDG 192 FORRESTAL DRIVE

CEIBA, PR 00735

Contract: #4217137184/SL
00 Gross Weight 62,760.00 lb
Tare Weight 29,040.00 lb
Net Weight 33,720.00 lb 16.86 TN

MA.31612 CEIBA
Inbound - SCALE TICKET

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
16.86	TN	VG C1 SW3CONT SOIL				
20.00	YD	VG C1 SW3CONT SOIL				
1.00	LD	0 C1 ENVIRONMENTAL FEE				
1.00	LD	01 C1 FUEL RECOVERY FEE				

NET AMOU

TENDERE

CHANGE

CHECK N

REPUBLIC SERVICES

REV 11/09

SIGNATURE Nasty Hernandez

R

111 C26

ALLIED WASTE SERVICES
A REPUBLIC SERVICES COMPANY

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

31615

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location:	e. Generator's Mailing Address:
US NAVY-Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 f. Phone: 787-286-9139	Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 g. Phone:
If owner of the generating facility differs from the generator, provide: h. Owner's Name:	i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
4217137184	5/15/2014	Non-Hazardous Soil			15	Y

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions. I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

Pedro Ruiz		15-06-13
p. Generator Authorized Agent Name (Print)	q. Signature	r. Date

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Caribe Hydroblasting Corp.
PO Box 790 Peñuelas, PR 00624

b. Phone: 787-836-1110

HP-0200

Juan Vega		15-06-13
c. Driver Name (Print)	d. Signature	e. Date

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address: (787) 841-7775 PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P.R. 00732 b.	c. US EPA Number IDF-58-0008	d. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

		6/15/13
e. Name of Authorized Agent (Print)	f. Signature	g. Date

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address: b. Phone:	c. Responsible Agency Name and Address: d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

2294733

SITE	TICKET	GRID

WEIGHMASTER: 30 642721

DATE IN	TIME IN
WM177001 WALTER M	

DATE OUT	TIME OUT
18 June 2013	11:33 am

VEHICLE	ROLL OFF

REFERENCE	ORIGIN
CHE0266	

PONCE SANITARY LANDFILL
RD 500 AVENIDA BARAMAYA FINAL
BO.LA COTORRA
PONCE PR 00731

013276 - 0208
CARIBE HYDRO/US NAVY NAVAL ACTIVITY PR
BLDG 192 FORRESTAL DRIVE

CEIBA, PR 00735

Contract: #4217137184/SL
00 Gross Weight 58,960.00 lb
Tare Weight 30,660.00 lb
Net Weight 28,300.00 lb 14.15 TN

MA31615 CEIBA
Inbound - SCALE TICKET

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
14.15	TN	VG C1 SWECONT SOIL				
15.00	YD.	VG C1 SWECONT SOIL				
1.00	LD	C) C1 ENVIRONMENTAL FEE				
1.00	LD	01 C1 FUEL RECOVERY FEE				

NET AMOUNT

TENDERED

CHANGE

CHECK NO

REPUBLIC SERVICES

REV 11/09

SIGNATURE

RS

ALLIED WASTE SERVICES
A REPUBLIC SERVICES COMPANY

31616

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

HP 11775

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location:	e. Generator's Mailing Address:
US NAVY-Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 f. Phone: 787-286-9139	Naval Activity PR Bldg. 192 Forrestal Drive. Ceiba, PR 00735 g. Phone:
If owner of the generating facility differs from the generator, provide: h. Owner's Name:	i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
4217137184	5/15/2014	Non-Hazardous Soil			15 yds	

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
Pedro Ruiz		6-19-13

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Caribe Hydroblasting Corp.
PO Box 790 Penuelas, PR 00624
b. Phone: 787-836-1110

c. Driver Name (Print)	d. Signature	e. Date
Wanda Ferrer		6-19-13

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address:	c. US EPA Number	d. Discrepancy Indication Space:
(787) 841-7775 PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P.R. 00732 b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date
		06/16/13

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

2294750

SITE	TICKET	GRID

WEIGHMASTER: 30 642738

DATE IN	TIME IN
WM177001 WALTER M	

DATE OUT	TIME OUT
18 June 2013	12:36 pm

VEHICLE	ROLL OFF

REFERENCE	ORIGIN
CHE11775	

PONCE SANITARY LANDFILL
RD 500 AVENIDA BARAMAYA FINAL
BO.LA COTORRA
PONCE PR 00731

013276 -- 0208
CARIBE HYDRO/US NAVY NAVAL ACTIVITY PR
BLDG 192 FORRESTAL DRIVE

CEIBA, PR 00735
Contract: #421713718A/SL MA31616 CEIBA
00 Gross Weight 60,540.00 lb Inbound - SCALE TICKET
Tare Weight 31,220.00 lb
Net Weight 29,320.00 lb 14.66 TN

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
14.66	TN	VG C1 SWECONT SOIL				
15.00	YD	VG C1 SWECONT SOIL				
1.00	LD	C1 C1 ENVIRONMENTAL FEE				
1.00	LD	01 C1 FUEL RECOVERY FEE				

NET AMOUNT

TENDERED

CHANGE

CHECK NO

REPUBLIC SERVICES

REV 11/09

SIGNATURE

RS

ALLIED WASTE SERVICES
A REPUBLIC SERVICES COMPANY

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

RP9575

31617

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location:	e. Generator's Mailing Address:
US NAVY-Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 f. Phone: 787-286-9139	Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 g. Phone:
If owner of the generating facility differs from the generator, provide: h. Owner's Name:	i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
4217137184	5/15/2014	Non-Hazardous Soil			20 yds	

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions. I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
Pedro Ruiz	[signature]	

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Caribe Hydroblasting Corp.
PO Box 790 Peñuelas, PR 00624

b. Phone: 787-836-1110

c. Driver Name (Print)	d. Signature	e. Date
Alex. J. Hernandez	[signature]	6/18/13

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address:	c. US EPA Number	d. Discrepancy Indication Space:
(787) 841-7775 PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P. R. 00732 b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date
Willy Molina	[signature]	6/18/13

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

2294748

SITE	TICKET	GRID

WEIGHMASTER: 30 642736

DATE IN: WM177001 WALTER M

TIME IN:

DATE OUT: 16 June 2013

TIME OUT: 12:39 pm

VEHICLE:

ROLL OFF:

REFERENCE: CHE9575

ORIGIN:

PONCE SANITARY LANDFILL
RD 500 AVENIDA BARAMAYA FINAL
BO.LA CUTONRA
PONCE PR 00731

013276 - 0208
CARIBE HYDRO/US NAVY NAVAL ACTIVITY PR
BLDG 192 FORRESTAL DRIVE

CEIBA, PR 00735

Contract: #4217137164/SL
00 Gross Weight 63,120.00 lb
Tare Weight 28,760.00 lb
Net Weight 34,360.00 lb 17.18 TN

MA31617 CEIBA
Inbound - SCALE TICKET

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
17.18	TN	VG E1 SWHCONT SOIL				
20.00	YD	VG E1 SWHCONT SOIL				
1.00	LD	CO E1 ENVIRONMENTAL FEE				
1.00	LD	01 E1 FUEL RECOVERY FEE				

NET AMOU

TENDERE

CHANGE

CHECK N

REPUBLIC SERVICES

REV 11/09

SIGNATURE Mark L. Henning

R

MP-0266

ALLIED WASTE SERVICES
A REPUBLIC SERVICES COMPANY

31618

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location:	e. Generator's Mailing Address:
US NAVY-Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 f. Phone: 787-286-9139	Naval Activity PR Bldg. 192 Forrestal Drife Ceiba, PR 00735 g. Phone:
If owner of the generating facility differs from the generator, provide: h. Owner's Name:	i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
4217137184	5/15/2014	Non-Hazardous Soil			15	Y

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
Pedro Ruiz		19-06-13

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Caribe Hydroblasting Corp.
PO Box 790 Peñuelas, PR 00624
b. Phone: 787-836-1110

c. Driver Name (Print)	d. Signature	e. Date
Ramon Vargas		19-06-13

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address: (787) 841-7775	c. US EPA Number	d. Discrepancy Indication Space:
PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P.R. 00732 b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date
		6/19/13

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
Caribe Hydroblasting Corp. PO Box 790 Peñuelas, PR 00624 b. Phone: 787-836-1110	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

2294899

SITE	TICKET	GRID

WEIGHMASTER

DATE IN	TIME IN
30 642386	
DATE OUT	**TIME OUT**
JP000080 JUAN P	
VEHICLE	**ROLL OFF**
19 June 2013	12:52 pm
REFERENCE	**ORIGIN**

PONCE SANITARY LANDFILL
RD 500 AVENIDA BARAMAYA FINAL
BO.LA COTORRA
PONCE PR 00731

013276 - 0208
CARIBE HYDRO/US NAVY NAVAL ACTIVITY PR
BLDG 192 FORRESTAL DRIVE

CEIBA, PR 00735
Contract: N62171371184/SL

CHE0266

MA.31618 CEIBA
Inbound - SCALE TICKET

00 Gross Weight 60,060.00 lb
Tare Weight 30,920.00 lb
Net Weight 29,140.00 lb 14.57 TN

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
14.57	TN	03 C1 SW3CONT SOIL				
15.00	YD	03 C1 SW3CONT SOIL				
1.00	LD	03 C1 ENVIRONMENTAL FEE				
1.00	LD	01 C1 FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

REPUBLIC SERVICES

/ 11/09

SIGNATURE

RS-F04-4p

ALLIED WASTE SERVICES
A REPUBLIC SERVICES COMPANY

31619

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

IAP 11775

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location:	e. Generator's Mailing Address:
US NAVY-Naaval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 f. Phone: 787-286-9139	Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 g. Phone:
If owner of the generating facility differs from the generator, provide: h. Owner's Name:	i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
4217137184	5/15/2014	Non-Hazardous Soil			15 yds	

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions. I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
Pedro Ruiz	[illegible]	6-19-13

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Caribe Hydroblasting Corp.
PO Box 790 Peñuelas, PR 00624
b. Phone: 787-836-1110

c. Driver Name (Print)	d. Signature	e. Date
Manuel Rosa	[illegible]	6-19-13

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address:	c. US EPA Number	d. Discrepancy Indication Space:
PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P.R. 00732 (787) 841-7775 b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date
	[illegible]	6/19/13

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

2294900

SITE	TICKET	GRID

WEIGHMASTER

DATE IN	TIME IN
30 642887	
DATE OUT	**TIME OUT**
JF00088 JUAN F	
VEHICLE	**ROLL OFF**
19 June 2013	12:54 pm
REFERENCE	**ORIGIN**

PONCE SANITARY LANDFILL
RD 500 AVENIDA BARAMAYA FINAL
BO.LA COTORRA
PONCE PR 00731

013276 - 0208
CARIBE HYDRO/US NAVY NAVAL ACTIVITY PR
BLDG 192 FORRESTAL DRIVE

CHE1175

CEIBA, PR 00735
Contract: #4217137164/SL MA.31619 CEIBA
00 Gross Weight 58,940.00 lb Inbound SCALE TICKET

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
		Tare Weight 31,100.00 lb				
		Net Weight 27,940.00 lb 13.97 TN				
13.97	TN	00 C1 SUBCONT SOIL				
15.00	YD	00 C1 SUBCONT SOIL				
1.00	LD	00 C1 ENVIRONMENTAL FEE				
1.00	LD	01 C1 FUEL RECOVERY FEE				

NET AMOU

TENDERE

CHANG

CHECK N

REPUBLIC SERVICES

REV 11/09

SIGNATURE

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

ALLIED WASTE SERVICES
A REPUBLIC SERVICES COMPANY

31620

RP. 9575

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location:	e. Generator's Mailing Address:
US NAVY-Naval Activity PR Bldg. 192Forrestal Drive Ceiba, PR 00735 f. Phone: 787-286-9139	Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 g. Phone:
If owner of the generating facility differs from the generator, provide: h. Owner's Name:	i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
4217137184	5/15/2014	Non-Hazardous Soil			20 yds	

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
Pedro Ruiz	[signature]	

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Caribe Hydroblasting Corp.
PO Box 790 Peñuelas, PR 00624

b. Phone: 787-836-1110

c. Driver Name (Print)	d. Signature	e. Date
Nestor L. Hernandez	[signature]	6/19/13

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address:	c. US EPA Number	d. Discrepancy Indication Space:
(787) 841-7775 PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P.R. 00732 b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date
		6/19/13

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

2294901

SITE	TICKET	GRID

WEIGHMASTER

DATE IN	TIME IN
30 642888	
DATE OUT	**TIME OUT**
JF000088 JUAN F	
VEHICLE	**ROLL OFF**
19 June 2013	12:57 PM
REFERENCE	**ORIGIN**

PONCE SANITARY LANDFILL
RD 500 AVENIDA BARAMAYA FINAL
BO.LA COTORRA
PONCE PR 00731

013276 - 0208
CARIBE HYDRO/US NAVY NAVAL ACTIVITY PR
BLDG 192 FORRESTAL DRIVE

CEIBA, PR 00735
Contract: #421713718A/SL
00 Gross Weight 66,960.00 lb
Tare Weight 29,480.00 lb
Net Weight 37,480.00 lb 18.74 TN

CHE9575

MA.31620 CEIBA
Inbound SCALE TICKET

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
18.74	TN	/G C1 SWECONT SOIL				
20.00	YD	/G C1 SWECONT SOIL				
1.00	LD	C1 ENVIRONMENTAL FEE				
1.00	LD	01 C1 FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

REPUBLIC SERVICES

/09

SIGNATURE Nerty L. Hernandez

RS-F04-4pt

ALLIED WASTE SERVICES
A REPUBLIC SERVICES COMPANY

32882

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

HP-0266

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location:	e. Generator's Mailing Address:
US NAVY-Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 f. Phone: 787-286-9139	Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 g. Phone:
If owner of the generating facility differs from the generator, provide: h. Owner's Name:	i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
4217137184	5/15/2014	Non-Hazardous Soil			15	Y

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
Pedro Ruiz	[signature]	20-06-13

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Caribe Hydroblasting Corp.
PO Box 790 Peñuelas, PR 00624

b. Phone: 787-836-1110

c. Driver Name (Print)	d. Signature	e. Date
Ramon Vega	[signature]	20-06-13

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address:	c. US EPA Number	d. Discrepancy Indication Space:
(787) 841-7775 PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P.R. 00732 b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date
	[signature]	6/20/13

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

2281019

SITE	TICKET	GRID

WEIGHMASTER

20 443006

DATE IN	TIME IN
TE00080 JUAN P	
DATE OUT	**TIME OUT**
20 June 2013	1:12 p.m.
VEHICLE	**ROLL OFF**

REFERENCE	ORIGIN
CHE0266	

PONCE SANITARY LANDFILL
RD 500 AVENIDA BARAMAYA FINAL
BO.LA COTORRA
PONCE PR 00731

013276 - 0208
CARIBE HYDRO/US NAVY NAVAL ACTIVITY PR
BLDG 192 FORRESTAL DRIVE

CEIBA, PR 00735
Contract: #4217137184/SL
00 Gross Weight 60,240.00 lb
Tare Weight 30,980.00 lb
Net Weight 29,260.00 lb 14.63 TN

MA.32882 CEIBA
Inbound - SCALE TICKET

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
14.63	TN	VG C1 SWECONT SOIL				
15.00	YD	VG C1 SWECONT SOIL				
1.00	LD	C0 C1 ENVIRONMENTAL FEE				
1.00	LD	01 C1 FUEL RECOVERY FEE				

NET AMOUN
TENDERED
CHANGE
CHECK NO.

REPUBLIC SERVICES

REV 11/09

SIGNATURE

RS-

ALLIED WASTE SERVICES
A REPUBLIC SERVICES COMPANY

32883

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location:	e. Generator's Mailing Address:
US NAVY-Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 f. Phone: 787-286-9139	Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 g. Phone
If owner of the generating facility differs from the generator, provide: h. Owner's Name:	i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
4217137184	5/16/2014	Non-Hazardous Soil			15 yds	

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions. I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
Pedro Ruiz		6-20-13

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Caribe Hydroblasting Corp.
PO Box 790 Penuelas, PR 00624
b. Phone: 787-836-1110

c. Driver Name (Print)	d. Signature	e. Date
Marco L Ferrer		6-20-13

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address: (787) 841-7775	c. US EPA Number	d. Discrepancy Indication Space:
PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P.R. 00732 b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date
		6/20/13

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

2281021

SITE	TICKET	GRID
WEIGHMASTER		
DATE IN		TIME IN
DATE OUT		TIME OUT
VEHICLE		ROLL OFF
REFERENCE	ORIGIN	

PONCE SANITARY LANDFILL
RD 500 AVENIDA BARAMAYA FINAL
BO.LA COTORRA
PONCE PR 00731

013276 -- 0208
CARIBE HYDRO/US NAVY NAVAL ACTIVITY PR
BLDG 192 FORRESTAL DRIVE

CEIBA, PR 00735
Contract: #4217137184/SL
00 Gross Weight 61,140.00 lb
Tare Weight 31,120.00 lb
Net Weight 30,020.00 lb 15.01 TN

MA.32383 CEIBA
Inbound -- SCALE TICKET

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
15.01	TN	VG C1 SW/CONT SOIL				
15.00	YD	VG C1 SW/CONT SOIL				
1.00	LD	10 C1 ENVIRONMENTAL FEE				
1.00	LD	01 C1 FUEL RECOVERY FEE				

NET AMOU

TENDERE

CHANGE

CHECK N

REPUBLIC SERVICES

REV 11/09

SIGNATURE

R

MF 2054

ALLIED WASTE SERVICES
A REPUBLIC SERVICES COMPANY

32884

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location:	e. Generator's Mailing Address:
US NAVY-Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 f. Phone: 787-286-9139	Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 g. Phone:
If owner of the generating facility differs from the generator, provide: h. Owner's Name:	i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
4217137184	5/15/2014	Non-Hazardous Soil			15	Y

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
Pedro Ruiz		

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Caribe Hydroblasting Corp.
PO Box 790 Peñuelas, PR 00624
b. Phone: 787-836-1110

c. Driver Name (Print)	d. Signature	e. Date
Pedro Ruiz		6-20-13

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address: (787) 841-7775	c. US EPA Number	d. Discrepancy Indication Space:
PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P.R. 00732 b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date
		6/20/13

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

2281027

SITE	TICKET	GRID

WEIGHMASTER

DATE IN	TIME IN
DATE OUT	TIME OUT
VEHICLE	ROLL OFF
REFERENCE	ORIGIN

PONCE SANITARY LANDFILL
RD 500 AVENIDA BARAMAYA FINAL
BO.LA COTORRA
PONCE PR 00731

013276 - 0208
CARIBE HYDRO/US NAVY NAVAL ACTIVITY PR
BLDG 192 FORRESTAL DRIVE
CEIBA, PR 00735
Contract: N42171371B4/SL
00 Gross Weight 62,700.00 lb
Tare Weight 31,380.00 lb
Net Weight 31,320.00 lb 15.66 TN

MA.32884 CEIBA
Inbound - SCALE TICKET

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
15.66	TN	VG C1 SWBCONT SOIL				
15.00	YD	VG C1 SWBCONT SOIL				
1.00	LD	01 C1 ENVIRONMENTAL FEE				
1.00	LD	01 C1 FUEL RECOVERY FEE				

NET AMOUNT

TENDERED

CHANGE

CHECK NO

REPUBLIC SERVICES

REV 11/09

SIGNATURE Pedro

RS

ALLIED WASTE SERVICES
A REPUBLIC SERVICES COMPANY

32885

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

RP. 9575

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location:	e. Generator's Mailing Address:
US NAVY-Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 f. Phone: 787-285-9139	Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 g. Phone:
If owner of the generating facility differs from the generator, provide: h. Owner's Name:	i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
4217137184	5/15/2014	Non-Hazardous Soil			20 yds	

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
Pedro Ruiz		

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Caribe Hydroblasting Corp.
PO Box 790 Penuelas, PR 00624
b. Phone: 787-836-1110

c. Driver Name (Print)	d. Signature	e. Date
Nestor L. Hernandez		6/20/13

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address: (787) 841-7775	c. US EPA Number	d. Discrepancy Indication Space:
PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P.R. 00732 b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date
		6/20/13

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

2281022

SITE	TICKET	GRID

WEIGHMASTER

DATE IN	TIME IN
DATE OUT	TIME OUT
VEHICLE	ROLL OFF
REFERENCE	ORIGIN

PONCE SANITARY LANDFILL
RD 500 AVENIDA BARAMAYA FINAL
BO.LA COTORRA
PONCE PR 00731

013276 - 0209
CARIBE HYDRO/US NAVY NAVAL ACTIVITY PR
BLDG 192 FORRESTAL DRIVE

CEIBA, PR 00735
Contract: #4217137184/SL
00 Gross Weight 69,080.00 lb
Tare Weight 28,840.00 lb
Net Weight 40,240.00 lb 20.12 TN

MA.32885 CEIBA
Inbound - SCALE TICKET

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
20.12	TN	VG C1 SUBCONT SOIL				
20.00	YD	VG C1 SUBCONT SOIL				
1.00	LD	01 C1 ENVIRONMENTAL FEE				
1.00	LD	01 C1 FUEL RECOVERY FEE				

NET AMOUNT

TENDERED

CHANGE

CHECK NO

REPUBLIC SERVICES

REV 11/09

SIGNATURE Matt Hamilton

RS

ALLIED WASTE SERVICES
A REPUBLIC SERVICES COMPANY

32886

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

11PC266

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location:	e. Generator's Mailing Address:
US NAVY-Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 f. Phone: 787-286-9139	Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 g. Phone:
If owner of the generating facility differs from the generator, provide: h. Owner's Name:	i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
4217137184	5/15/2014	Non-hazardous Soil			15	Y

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
Pedro Ruiz		21-06-13

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Caribe Hydroblasting Corp.
PO Box 790 Peñuelas, PR 00624
b. Phone: 787-836-1110

c. Driver Name (Print)	d. Signature	e. Date
		21-06-13

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address: (787) 841-7775	c. US EPA Number	d. Discrepancy Indication Space:
PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P.R. 00732 b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date
		6/21/13

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

2281164

SITE	TICKET	GRID

WEIGHMASTER: 30 643151

DATE IN	TIME IN
JF00088 JUAN F	

DATE OUT	TIME OUT
21 June 2013	12:57 pm

VEHICLE	ROLL OFF

REFERENCE	ORIGIN
CHE0266	

PONCE SANITARY LANDFILL
RD 500 AVENIDA BARAMAYA FINAL
BO.LA COTORRA
PONCE PR 00731

013276 - 0208
CARIBE HYDRO/US NAVY NAVAL ACTIVITY PR
BLDG 192 FORRESTAL DRIVE

CEIBA, PR 00735

Contract: N421713719G/SL
00 Gross Weight 60,020.00 lb
Tare Weight 30,760.00 lb
Net Weight 29,260.00 lb 14.63 TN

MA.32836 CEIBA
Inbound - SCALE TICKET

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
14.63	TN	VG C1 SWBCONT SOIL				
15.00	YD	VG C1 SWBCONT SOIL				
1.00	LD	00 C1 ENVIRONMENTAL FEE				
1.00	LD	01 C1 FUEL RECOVERY FEE				

NET AMOU

TENDERE

CHANGE

CHECK N

REPUBLIC SERVICES

REV 11/09

SIGNATURE

R

ALLIED WASTE SERVICES
A REPUBLIC SERVICES COMPANY

32887

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location:	e. Generator's Mailing Address:
US NAVY-Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 f. Phone: 787-286-9139	Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 g. Phone:
If owner of the generating facility differs from the generator, provide: h. Owner's Name:	i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
4217137184	5/15/2014	Non-Hazardous Soil			15yds	

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
Pedro Ruiz	[signature]	6-21-13

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Caribe Hydroblasting Corp.
POBox 790 - Peñuelas, PR 00624
b. Phone: 787-836-1110

c. Driver Name (Print)	d. Signature	e. Date
Mario L. Ferrer	[signature]	6-21-13

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address:	c. US EPA Number	d. Discrepancy Indication Space:
(787) 841-7775 PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P.R. 00732 b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date
	[signature]	6/21/13

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

2281167

SITE	TICKET	GRID
30	543154	

WEIGHMASTER

DATE IN	TIME IN
00088 JUAN P	

DATE OUT	TIME OUT
21 June 2013	1:05 pm

VEHICLE	ROLL OFF

REFERENCE	ORIGIN
CHE11775	

PONCE SANITARY LANDFILL

RD 500 AVENIDA BARAMAYA FINAL
BO.LA COTORRA
PONCE PR 00731

013276 - 0208
CARIBE HYDRO/US NAVY NAVAL ACTIVITY PR
BLDG 192 FORRESTAL DRIVE

CEIBA, PR 00735

Contract: #4217137184/SL
00 Gross Weight 60,840.00 lb
Tare Weight 31,220.00 lb
Net Weight 29,620.00 lb 14.81 TN

MA.32887 CEIBA
Inbound - SCALE TICKET

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
14.81	TN	0G C1 SWECONT SOIL				
15.00	YD	0G C1 SWECONT SOIL				
1.00	LD	C0 C1 ENVIRONMENTAL FEE				
1.00	LD	01 C1 FUEL RECOVERY FEE				

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REPUBLIC SERVICES

REV 11/09

SIGNATURE _____

ALLIED WASTE SERVICES
A REPUBLIC SERVICES COMPANY

32888

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

HP 2052

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location:	e. Generator's Mailing Address:
US NAVY-Naaval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 f. Phone: 787-286-9139	Naval Activity PR Bldg. 192 Forrestal Drive Ceiba, PR 00735 g. Phone:
If owner of the generating facility differs from the generator, provide: h. Owner's Name:	i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
4217137184	5/15/2014	Non-Hazardous Soil			15	Y

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
Pedro Ruiz	[signature]	6-21-13

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Caribe Hydroblasting Corp.
PO Box 790 Peñuelas, PR 00624

b. Phone: 787-836-1110

c. Driver Name (Print)	d. Signature	e. Date
Pedro Ruiz	[signature]	6-21-13

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address:	c. US EPA Number	d. Discrepancy Indication Space:
(787) 841-7775 PONCE LANDFILL AVE. BARAMAYA #500 PONCE, P.R. 00732 b.	IDF-58-0008	

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date
	[signature]	6/21/13

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

2281168

PONCE SANITARY LANDFILL

RD 500 AVENIDA BARAMAYA FINAL
BO.LA COTORRA
PONCE PR 00731

013276 - 0208
CARIBE HYDRO/US NAVY NAVAL ACTIVITY PR
BLDG 192 FORRESTAL DRIVE

CEIBA, PR 00735

SITE	TICKET 94315	GRID
	WEIGHMASTER	
DATE IN 00088 JUAN P		TIME IN
DATE OUT 21 June 2013	1:[illegible] p.m	TIME OUT
VEHICLE		ROLL OFF
REFERENCE CME2054	ORIGIN	

Contract: #421713718#/SL
00 Gross Weight 60,480.00 lb
Tare Weight 31,280.00 lb
Net Weight 29,200.00 lb 14.60 TN

MA. 32888 CEIBA
Inbound - SCALE TICKET

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
14.60	TN	03 C1 SB3CONT SOIL				
15.00	YD	03 C1 SB3CONT SOIL				
1.00	LD	00 C1 ENVIRONMENTAL FEE				
1.00	LD	01 C1 FUEL RECOVERY FEE				

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REPUBLIC SERVICES

REV 11/09

SIGNATURE

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Appendix G
Purge Data

Appendix G

Purge Data

SWMU 55 Plume, Naval Activity Puerto Rico

Well ID	Date/Time	Sampling Event	Temperature (° C)	Specific Conductivity (mS/cm)	Salinity (ppt)	pH	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Comments
7MW07	11/30/2012 9:40	Pre-Corrective Action	29.73	0.959	0.47	7.39	97.8	2.96	8.3	4 gallons purged
	7/8/2013 11:45	Post-Corrective Action	NM	NM	NM	NM	NM	NM	NM	Permanganate observed
	10/24/2013 10:20	Pre-ISB	31.88	3.752	NM	7.13	-116.5	0.15	2.6	7 gallons purged
	5/2/2014 11:00	TCE Plume Stability	33.36	2.156	NM	6.91	130.8	NM	30.5	NA
	8/26/2014 13:55	Bioreactor and Mid-Plume Performance Monitoring	32.33	2.508	NM	6.63	-19.8	0.31	0	27 gallons purged; no odor, clear
	11/17/2014 10:40	TCE Plume Stability	32.8	2.212	NM	6.77	-87.4	2.94	0	3 gallons purged
7MW10	11/28/2012 9:20	Pre-Corrective Action	29.7	7.469	4.08	7.56	-289.9	1.37	5.9	3 gallons purged
	7/8/2013 14:10	Post-Corrective Action	29.44	6.715	NM	7.54	-245.1	0.32	NM	No permanganate observed
	10/22/2013 9:25	Pre-ISB	28.06	2.516	NM	7.69	-223.5	0.35	0	2.9 gallons purged
	4/30/2014 14:40	TCE Plume Stability	26.55	1.928	NM	7.54	-274.9	0.32	4.5	2.2 gallons purged
	11/14/2014 11:00	TCE Plume Stability	28.61	2.263	NM	7.34	-250.2	3.43	2.3	5 gallons purged
7MW21	11/28/2012 13:50	Pre-Corrective Action	28.22	15.51	9.02	7.14	-339.3	0.42	35.4	3.5 gallons purged
7MW22	11/29/2012 10:45	Pre-Corrective Action	30.11	51.59	2.73	7.62	100.2	1.56	1.6	3 gallons purged
	10/23/2013 13:45	Pre-ISB	28.09	4.192	NM	7.04	99.8	0.31	0	4.5 gallons purged
	5/1/2014 10:25	TCE Plume Stability	29.09	4.523	NM	7.07	95.3	0.24	10.0	5 gallons purged
	11/13/2014 15:35	TCE Plume Stability	29.1	4.272	NM	6.85	205.9	0.17	0	3.5 gallons purged
	11/20/2014 15:32	TCE Plume Stability	29.05	4.089	NM	6.96	310.1	0.18	0	5 gallons purged; resampled after Fed Ex cooler containing 11/13 samples lost
7MW23	11/28/12 16:00	Pre-Corrective Action	28.9	43.95	2.01	6.85	-59.3	0.96	77	4 gallons purged
	7/8/13 13:35	Post-Corrective Action	29.47	3.646	NM	6.94	-76.2	0.72	NM	No permanganate observed
	10/22/13 14:17	Pre-ISB	27.94	2.508	NM	7.09	-128.2	0.26	0.1	5 gallons purged
	4/29/14 13:55	TCE Plume Stability	26.75	3.229	NM	7.11	-172.3	0.31	0	2.2 gallons purged
	11/13/14 13:35	TCE Plume Stability	28.35	3.529	NM	7.01	-13.01	3.13	15	5 gallons purged
	11/20/14 15:05	TCE Plume Stability	28.55	3.544	NM	7.21	-149.2	3.07	9.3	5 gallons purged; resampled after Fed Ex cooler containing 11/13 samples lost
7MW24	11/29/12 13:05	Pre-Corrective Action	29.74	4.213	2.16	6.96	213.1	0.84	0	6 gallons purged
	7/8/13 12:00	Post-Corrective Action	NM	NM	NM	NM	NM	NM	NM	Permanganate observed
	10/23/13 14:00	Pre-ISB	30.1	2.207	NM	7.52	229.8	0.17	0	3.3 gallons purged
	5/1/14 14:00	TCE Plume Stability	29.23	3.015	NM	7.28	453.2	0.19	12.3	5 gallons purged
	11/14/14 13:50	TCE Plume Stability	29.88	3.544	NM	7.02	47.6	3.09	8.3	2.5 gallons purged
55IW01[a]	11/30/12 9:30	Pre-Corrective Action	30	0.613	0.3	7.36	203.3	0.3	58.5	6 gallons purged

Appendix G

Purge Data

SWMU 55 Plume, Naval Activity Puerto Rico

Well ID	Date/Time	Sampling Event	Temperature (° C)	Specific Conductivity (mS/cm)	Salinity (ppt)	pH	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Comments
55IW02	11/30/13 11:55	Pre-Corrective Action	31.69	5.466	2.91	NM	225.4	4.15	5.3	3.5 gallons purged
	7/8/13 11:50	Post-Corrective Action	NM	NM	NM	NM	NM	NM	NM	Permanganate observed
	10/24/13 14:30	Pre-ISB	32.26	3.502	NM	7.21	-42.5	0.51	8.3	5 gallons purged
	2/17/14 14:55	Bioreactor and Mid-Plume Performance Monitoring	31.55	3.712	NM	6.72	-13.2	0.03	22.2	5 gallons purged
	5/1/14 14:35	TCE Plume Stability	31.09	4.457	NM	6.51	172	NM	42	NA
	8/27/14 14:45	Bioreactor and Mid-Plume Performance Monitoring	33.28	3.050	NM	6.6	81.9	0.29	3.2	2.5 gallons purged; clear, no odor
	11/14/14 10:00	TCE Plume Stability	31.78	2.858	NM	6.66	26.6	0.24	5.7	4 gallons purged
55IW03	11/29/12 14:00	Pre-Corrective Action	29.48	4.533	2.4	6.92	284.4	0.89	22.4	4.0 gallons purged
	2/17/14 9:40	Bioreactor and Mid-Plume Performance Monitoring	30.03	2.53	NM	7.33	-287.6	0.02	30.9	3.8 gallons purged
55IW04	11/30/12 12:30	Pre-Corrective Action	30.18	6.556	3.55	6.77	418.6	0.48	14.5	6 gallons purged
	7/8/13 11:55	Post-Corrective Action	NM	NM	NM	NM	NM	NM	NM	Permanganage observed
	10/24/13 10:35	Pre-ISB	30.24	5.95	NM	6.99	374.8	0.58	7.4	6 gallons purged
	2/17/14 11:10	Bioreactor and Mid-Plume Performance Monitoring	31.86	4.129	NM	6.78	-36.3	0.04	23.8	4 gallons purged
	5/1/14 10:45	TCE Plume Stability	29.21	5.077	NM	6.52	83.5	NM	210	NA
	8/27/14 13:05	Bioreactor and Mid-Plume Performance Monitoring	31.50	4.55	NM	6.58	123.2	0.27	0	2.25 gallons purged; clear, no odor
	11/14/14 13:50	TCE Plume Stability	30.62	3.899	NM	6.6	97.5	0.23	0.9	3.5 gallons purged
55MW01	11/29/2012 9:35	Pre-Corrective Action	29.72	3.587	1.88	6.95	-174.1	0.35	0	6 gallons purged
	7/8/2013 12:10	Post-Corrective Action	30.06	4.11	NM	7.03	150	2.99	NM	No permanganate observed
	10/23/2013 9:55	Pre-ISB	29.88	13.03	NM	7.63	164.7	0.73	0.1	6 gallons purged
	4/30/2014 11:30	TCE Plume Stability	31.41	1.5	NM	7.13	304	NM	10.1	NA
	11/13/2014 10:55	TCE Plume Stability	29.65	2.531	NM	7.28	-71.2	3.07	16.6	6 gallons purged
	11/20/2014 11:00	TCE Plume Stability	29.83	1.31	NM	7.15	-115.6	2.84	9.5	5 gallons purged; resampled after Fed Ex cooler containing 11/13 samples lost
55BW01	10/24/2013 14:10	Pre-ISB	34.31	3.379	NM	6.55	-124.1	0.12	0	1.3 gallons purged
	2/18/2014 14:20	Bioreactor and Mid-Plume Performance Monitoring	33.94	3.465	NM	6.46	26.2	0.03	4.2	
	5/1/2014 14:25	TCE Plume Stability	35.7	3.632	NM	6.61	-151.6	1.79	10.7	9 gallons purged
	8/27/14 10:15	Bioreactor and Mid-Plume Performance Monitoring	37.38	0.930	NM	6.69	-121.2	0.19	0	2.5 gallons purged; clear, no odor, no NaMNO4 color
	11/14/2014 11:08	TCE Plume Stability	33.76	1.731	NM	6.54	-38.3	0.16	1.5	2.5 gallons purged

Appendix G

Purge Data

SWMU 55 Plume, Naval Activity Puerto Rico

Well ID	Date/Time	Sampling Event	Temperature (° C)	Specific Conductivity (mS/cm)	Salinity (ppt)	pH	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Comments
55MW02	11/29/12 11:20	Pre-Corrective Action	29.75	0.669	0.31	6.96	119.1	0.3	10	6 gallons purged
	7/8/13 12:25	Post-Corrective Action	29.7	0.895	NM	7.35	205	2	NM	No permanganate observed
	10/23/13 13:55	Pre-ISB	29.52	0.752	NM	7.17	191.3	0.38	5.3	6 gallons purged
	4/29/14 14:20	TCE Plume Stability	26.87	0.703	NM	6.86	255	NM	14.3	NA
	11/13/14 9:20	TCE Plume Stability	29.18	0.609	NM	7.11	93.4	3.23	14	4 gallons purged
	11/20/14 9:30	TCE Plume Stability	29.02	0.609	NM	7.41	25.2	3.25	6.6	5 gallons purged; resampled after Fed Ex cooler containing 11/13 samples lost
55MW03	11/29/12 9:05	Pre-Corrective Action	30.7	7.55	4.13	6.77	195.4	0.29	25.5	2.8 gallons purged
55MW04	11/29/12 10:55	Pre-Corrective Action	31.8	1.13	0.55	7.82	158.5	5.35	80.2	3.0 gallons purged
55MW05	11/28/12 10:35	Pre-Corrective Action	29.77	1.681	0.84	6.76	-28.1	0.35	0	3.2 gallons purged
	10/23/13 14:39	Pre-ISB	30.2	7.169	NM	6.65	94.1	0.59	0	6 gallons purged
	4/30/14 10:30	TCE Plume Stability	30.73	3.801	NM	6.76	-97.6	2.10	3.12	8 gallons purged
	11/12/14 11:34	TCE Plume Stability	30.77	5.357	NM	6.62	87.1	0.21	2.0	4 gallons purged
55MW06	11/28/12 8:50	Pre-Corrective Action	29.1	2.032	1.03	6.84	72.2	0.36	0.1	3.0 gallons purged
	10/23/13 10:05	Pre-ISB	30.67	2.195	NM	7.01	66.1	2.41	0	3.25 gallons purged
	4/30/14 14:25	TCE Plume Stability	30.54	3.118	NM	6.86	-5.7	2.09	9.8	9 gallons purged
	11/12/14 13:05	TCE Plume Stability	30.81	3.232	NM	6.73	69.8	0.23	6.3	2.5 gallons purged
55MW07	11/28/12 14:10	Pre-Corrective Action	30.2	4.573	2.41	6.8	337.4	0.35	27.7	4.5 gallons purged
55MW08	11/28/12 12:00	Pre-Corrective Action	30.87	3.073	1.59	6.87	286.8	0.39	19.9	2.5 gallons purged
55MW09	11/28/12 9:20	Pre-Corrective Action	29.94	19.2	11.39	6.86	122.2	0.35	1.6	5 gallons purged
	10/22/13 11:40	Pre-ISB	29.9	16.42	NM	6.95	210.9	0.60	4.9	3 gallons purge; sample
	10/28/13 11:25	Pre-ISB	30.59	17.11	NM	6.93	42.9	0.18	12.9	3.5 gallons purged; re-sample
	5/1/14 14:40	TCE Plume Stability	28.06	19.76	NM	6.8	141.6	0.31	5.7	5.7 gallons purged
	11/17/14 10:32	TCE Plume Stability	30.07	16.08	NM	6.83	315.2	0.26	9.5	4.5 gallons purged
55MW10	11/28/12 10:50	Pre-Corrective Action	29.69	15.37	8.99	7.3	-304.2	0.08	16.1	6 gallons purged
	10/22/13 9:35	Pre-ISB	29.94	8.511	NM	7.41	-138.4	0.56	7.5	2.75 gallons purged; sample
	10/28/13 9:25	Pre-ISB	29.34	10.85	NM	7.33	-185.3	0.26	7.5	3 gallons purged; re-sample
	5/2/14 11:00	TCE Plume Stability	27.18	11.05	NM	7.40	-299.0	0.69	4.8	2.2 gallons purged
	11/17/14 12:53	TCE Plume Stability	29.44	7.802	NM	7.22	-157.6	0.12	8.7	3 gallons purged
55MW11	11/28/12 11:25	Pre-Corrective Action	30.39	13.35	7.65	7.65	-55.9	1.12	120.1	3 gallons purged
	10/22/13 11:37	Pre-ISB	28.14	11.55	NM	7.29	39.4	0.29	0	5.8 gallons purged
	4/30/14 10:40	TCE Plume Stability	27.25	12.6	NM	7.2	132.3	0.47	7.4	4 gallons purged
	11/14/14 9:30	TCE Plume Stability	28.79	13.32	NM	7.2	30.3	6.00	22	5 gallons purged
55MW12	11/29/12 12:05	Pre-Corrective Action	29.39	0.515	0.25	7.36	103.7	4	19.5	3.8 gallons purged
	7/8/13 13:30	Post-Corrective Action	31	0.605	NM	6.88	114.5	3.65	NM	No permanganate observed
	10/23/13 10:02	Pre-ISB	29.70	0.712	NM	7.08	20.8	0.68	0	4 gallons purged
	5/1/14 10:20	TCE Plume Stability	30.72	1.925	NM	6.78	-18.1	2.15	10.9	8 gallons purged
	11/13/14 13:35	TCE Plume Stability	31.51	1.842	NM	6.59	94.7	0.45	0	1.25 gallons purged
	11/20/14 13:26	TCE Plume Stability	31.25	1.757	NM	6.73	49	0.31	3.7	2.5 gallons purged; resampled after Fed Ex cooler containing 11/13 samples lost

Appendix G

Purge Data

SWMU 55 Plume, Naval Activity Puerto Rico

Well ID	Date/Time	Sampling Event	Temperature (° C)	Specific Conductivity (mS/cm)	Salinity (ppt)	pH	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Comments
55MW13	11/29/12 10:25	Pre-Corrective Action	27.11	23.87	14.39	6.85	-295.1	0.26	14.7	3.0 gallons purged
55MW14	11/28/2012 12:50	Pre-Corrective Action	29.36	3.986	2.12	7.11	101.7	0.23	0	6 gallons purged
	7/8/2013 13:50	Post-Corrective Action	29.42	4.836	NM	6.83	76.5	1.42	NM	No permanganate observed
	10/22/2013 14:00	Pre-ISB	28.76	5.036	NM	7.02	460.4	0.69	0	3 gallons purged; sample
	10/28/2013 9:15	Pre-ISB	29.33	5.885	NM	6.78	300.1	0.37	0	5 gallons purged; re-sample
	4/30/2014 10:55	TCE Plume Stability	26.99	4.03	NM	6.84	179.6	0.5	3.7	2.2 gallons purged
	11/13/2014 15:05	TCE Plume Stability	29.39	4.03	NM	6.99	40.2	3.12	0.5	5 gallons purged
	11/20/2014 13:30	TCE Plume Stability	28.92	3.982	NM	6.98	35	3.05	8.5	4.5 gallons purged; resampled after Fed Ex cooler containing 11/13 samples lost
55MW15	11/27/12 13:50	Pre-Corrective Action	30.83	10.31	5.78	6.57	285.2	0.23	55.8	4.2 gallons purged
	10/22/13 14:25	Pre-ISB	31.04	9.19	NM	6.64	208.7	0.34	11.8	6 gallons purged
	4/28/14 14:50	TCE Plume Stability	30.95	10.34	NM	6.41	60.0	2.00	3.5	5 gallons purged
	11/12/14 12:00	TCE Plume Stability	30.85	9.546	NM	6.45	115.1	3.02	18.1	6 gallons purged
55MW16	11/27/12 11:40	Pre-Corrective Action	31.19	4.306	2.08	7.03	228.2	0.65	39	5.3 gallons purged
	10/23/13 10:15	Pre-ISB	31.32	2.801	NM	7.02	165.3	0.28	19.1	3.8 gallons purged
	4/28/14 16:20	TCE Plume Stability	31.6	2.289	NM	7.08	138.7	2.02	8.6	5 gallons purged
	11/12/14 14:30	TCE Plume Stability	30.8	0.989	NM	7.25	81	3.67	18.2	6 gallons purged
55MW17	11/28/12 13:15	Pre-Corrective Action	31.16	10.47	5.86	6.86	87.4	0.26	34	2.2 gallons purged
	10/22/13 13:35	Pre-ISB	30.31	8.195	NM	6.86	178.8	0.25	5.5	3.8 gallons purged; sampled
	10/28/13 14:30	Pre-ISB	30.44	7.803	NM	6.76	308.1	0.5	0.1	6 gallons purged; re-sampled
	4/29/14 13:40	TCE Plume Stability	29.62	8.454	NM	6.8	74.3	2.00	21.7	7 gallons purged
	11/12/14 16:00	TCE Plume Stability	30.12	10.4	NM	6.68	268.1	0.19	4.1	2.5 gallons purged

Appendix G

Purge Data

SWMU 55 Plume, Naval Activity Puerto Rico

Well ID	Date/Time	Sampling Event	Temperature (° C)	Specific Conductivity (mS/cm)	Salinity (ppt)	pH	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Comments
55MW18	11/28/12 11:15	Pre-Corrective Action	30.16	45.18	29.09	6.66	32.5	0.22	105	3.3 gallons purged
	10/22/13 9:45	Pre-ISB	30.68	48.07	NM	6.61	7.1	0.19	17.7	4.2 gallons purged
	4/29/14 9:30	TCE Plume Stability	29.09	41.06	NM	6.61	-75.3	1.77	18.7	5 gallons purged
	11/12/14 16:05	TCE Plume Stability	29.41	42.35	NM	6.56	-30.1	2.80	12.5	5 gallons purged
55MW19	11/28/12 9:10	Pre-Corrective Action	29.58	49.68	32.38	6.58	22.1	0.21	82.9	3.6 gallons purged
55MW20	11/27/12 12:05	Pre-Corrective Action	30.85	24.64	14.86	6.91	-292.1	0.11	18.5	2.5 gallons purged
55MW21	11/27/12 11:45	Pre-Corrective Action	31.32	37.8	23.81	6.84	49.1	1.84	199	3.5 gallons purged
55MW22	11/27/12 13:50	Pre-Corrective Action	31.52	49.15	31.92	6.42	30.2	0.5	260	NA
55MW23	11/29/12 9:20	Pre-Corrective Action	29.1	43.71	28.15	6.8	-10.9	1.6	200	3 gallons purged
55MW24	11/29/12 13:40	Pre-Corrective Action	31.54	0.71	0.34	7.9	99.8	7.53	73.9	4 gallons purged
55MW25	11/29/12 13:45	Pre-Corrective Action	31.86	2.323	1.18	7.26	177.9	2.44	8.2	4.0 gallons purged
	7/8/13 15:15	Post-Corrective Action	33.07	2.489	NM	7.58	-11	1.53	NM	No permanganate observed
	10/24/13 10:43	Pre-ISB	32.14	3.168	NM	6.75	-106.1	0.22	54.8	5.5 gallons purged
	4/30/14 15:30	TCE Plume Stability	32.94	3.430	NM	6.05	-60.2	0.69	18	3.3 gallons purged
	11/13/14 10:56	TCE Plume Stability	33.55	1.674	NM	6.54	-53.3	0.14	1.4	3.5 gallons purged
	11/20/14 10:58	TCE Plume Stability	33.14	1.77	NM	6.62	-50.1	0.22	9.1	2.5 gallons purged; resampled after Fed Ex cooler containing 11/13 samples lost
55MW26	4/12/13 11:25	Pre-Corrective Action	31.36	5.144	6.67	6.67	-85.2	0.8	12.9	3.5 gallons purged
	7/8/13 15:20	Post-Corrective Action	31.21	3.947	NM	6.87	53.1	0.95	NM	No permanganate observed
	10/24/13 10:15	Pre-ISB	31.6	3.35	NM	6.87	215.6	0.83	12.5	4.3 gallons purged
	4/30/14 14:55	TCE Plume Stability	31.22	2.887	NM	6.86	309.2	NM	211	NA
	11/13/14 9:35	TCE Plume Stability	32.22	2.048	NM	6.95	341.3	0.23	0	5 gallons purged
	11/20/14 9:49	TCE Plume Stability	31.99	1.897	NM	7.04	329.8	0.24	9.5	4 gallons purged; resampled after Fed Ex cooler containing 11/13 samples lost

Notes:

[a] 55IW01 was destroyed during installation of ISB in April/May 2013

° C - degrees Celsius

mS/cm - microsiemens per centimeter

mV - millivolt

mg/L - milligram per liter

NTU - nephelometric turbidity unit

NM -not measured

NA - not available

Appendix H
Laboratory Data Packages and Data Validation Reports

(Provided separately on CD)

Laboratory SDGs have been added to NIRIS as seperate files. See list below:

Laboratory SDG	NIRIS Record Number
212112812	N40003_002510
212112812 REV1	N40003_002511
212113005	N40003_002512
213041308	N40003_002513
213102418	N40003_002514
213102418 REV1	N40003_002515
213102530	N40003_002516
213102530 REV1	N40003_002517
213102811	N40003_002518
213102903	N40003_002519
214021812	N40003_002520
214021930	N40003_002521
214042912	N40003_002522
214042912 REV1	N40003_002523
214043008	N40003_002524
214043008 REV1	N40003_002525
214043008 REV2	N40003_002526
214050111	N40003_002527
214050111 REV1	N40003_002528
214050209	N40003_002529
214050304	N40003_002530
214082833	N40003_002531
214082833 REV1	N40003_002532
214082834	N40003_002533
214082834 REV1	N40003_002534
214111307	N40003_002535
214111307 REV1	N40003_002536
214111511	N40003_002537
214111904	N40003_002538
214111904 REV1	N40003_002539
214112116	N40003_002540

NA Puerto Rico

PREPARED FOR:	NA Puerto Rico / SWMU 55 Baseline Groundwater Sampling 2012
FINAL REVIEWER/ INITIAL REVIEWER	Camden Robinson/ Project Chemist/CH2M Hill
COPIES:	Tom Beisel /Project Manager/AGVIQ-CH2M HILL
DATE:	February 1st, 2013
SUBJECT:	Quality Assessment for Samples collected November 28th, 2012 thru November 30th, 2012

This quality assurance memorandum is based upon a review of analytical data generated for the groundwater samples and the associated field quality control samples collected November 28th, 2012 thru November 30th, 2012 at the Naval Activity Puerto Rico in Ceiba, Puerto Rico. The samples were collected as a part of the SWMU 55 Baseline Groundwater sampling event conducted at the site. The specific samples and analytical fractions reviewed are summarized below in Table 1.

The Quality Control areas that were reviewed and the resulting findings are documented within each subsection that follows. Data validation was conducted using the validation criteria outlined in the uniform federal policy- quality assurance project plan (UFP-QAPP CH2M HILL, June 2012), Standard Operating Procedure (SOP) HW-24 Revision 2 Validating Volatile Organic Compounds by Gas Chromatograph/Mass Spectrometry SW-846 Method 8260B, guidance procedures described in the Environmental Protection Agency (EPA *National Functional Guidelines for Organic Data Review (EPA 2008)*, and/or the general guidance provided in the Department of Defense (DOD) Quality Systems Manual - Version 4.2 Final October 2010 (based on NELAC Voted Version – 5 June 2003). Analytical methods and laboratory standard operating procedures (SOPs) presented in the UFP-QAPP were used to evaluate compliance against quality assurance (QA)/QC criteria. If QA/QC criteria were not met, data was considered for qualification.

Samples were submitted to Gulf Coast Analytical Laboratories, Inc. of Baton Rouge, Louisiana for the following analyses: SW-846 8260B Volatile Organic Compounds Trichloroethene, Cis-1,2-Dichloroethene, and Vinyl Chloride, RSK-175 Methane, Ethane, and Ethene, Standard Method 2320B Alkalinity, Standard Method Total Organic Carbon (TOC), Standard Method 4500S2-D Sulfide, and SW-846 9056A Chloride, Nitrate, Nitrite, and Sulfate.

Sample results that were not within the acceptance limits were appended with a qualifying flag, which consisted of a single- or double-letter code that indicated a possible problem with the data. The qualifying flags originated during the data review and validation processes. These also include the secondary, or the two/three-digit "sub-qualifier" flags.

The secondary qualifiers provide the reasoning behind the assignment of a qualifier flag to the data. The secondary qualifiers are presented and defined below.

Attachment 1 lists the changes in data qualifiers, due to the validation process.

The following primary flags were used to qualify the data:

[=] Detected. The analyte was analyzed for and detected at the concentration shown.

[J] Estimated. The analyte was present but the reported value may not be accurate or precise.

[U] Undetected. The analyte was analyzed for but not detected above the method detection limit. The data validator may also apply this qualifier to indicate that a concentration was not detected at significantly greater than that in an associated blank.

[UJ] Detection limit estimated. The analyte was analyzed for but qualified as not detected; the result is estimated.

[UR] Rejected. The data is not useable. The absence of the analyte cannot be verified.

[R] Rejected. The data is not useable.

Secondary Qualifier Codes

Code	Definition
2SH	Second Source Accuracy High
2SL	Second Source Accuracy Low
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BL	Blank
BSH	Blank Spike/LCS Recovery High
BSL	Blank Spike/LCS Recovery Low
CCH	Continuing Calibration Verification Accuracy High
CCL	Continuing Calibration Verification Accuracy Low
DL	Dilution
FB	Field Blank Contamination
FD	Field Duplicate
LD	Laboratory Duplicate
HT	Holding Time
ICH	Initial Calibration High
ICL	Initial Calibration Low
ISH	Internal Standard Area Response High
ISL	Internal Standard Area Response Low
LR	Linear Range (Exceeded calibration range)
MD	Matrix Spike/Matrix Spike Duplicate Precision
MSH	Matrix Spike and/or Matrix Spike Duplicate Recovery High
MSL	Matrix Spike and/or Matrix Spike Duplicate Recovery Low
OT	Other

RE	Re-extraction
RF	Response Factor
SSH	Spiked Surrogate Recovery High
SSL	Spiked Surrogate Recovery Low
TN	Tune
EMPC	Estimated Maximum Possible Concentration

Table 1 - Chemical Analytical Methods – Field and Quality Control Samples

SDG	Sample ID	Lab Sample ID	Matrix	Sample Type	Date Collected	Analyses Performed
212112812	JM04-55MW18-112812	21211281209	GW	N	11/28/2012	[1], [2], [3], [4], [5], [6]
212112812	JM04-55MW06-112812	21211281210	GW	N	11/28/2012	[1], [2], [3], [4], [5], [6]
212112812	JM04-55MW05-112812	21211281211	GW	N	11/28/2012	[1], [2], [3], [4], [5], [6]
212112812	JM04-55MW07-112812	21211281212	GW	N	11/28/2012	[1], [2], [3], [4], [5], [6]
212112812	JM04-55MW19-112812	21211281213	GW	N	11/28/2012	[1]
212112812	JM04-55MW08-112812	21211281214	GW	N	11/28/2012	[1]
212112812	JM04-TB02-112812	21211281215	WQ	TB	11/28/2012	[1]
212112812	JM04-55MW09-112812	21211281216	GW	N	11/28/2012	[1], [2], [3], [4], [5], [6]
212112812	JM04-55MW10-112812	21211281217	GW	N	11/28/2012	[1], [2], [3], [4], [5], [6]
212112812	JM04-55MW14-112812	21211281218	GW	N	11/28/2012	[1], [2], [3], [4], [5], [6]
212112812	JM04-FD01-112812	21211281219	GW	FD	11/28/2012	[1], [2], [3], [4], [5], [6]
212112812	JM04-7MW23-112812	21211281220	GW	N	11/28/2012	[1], [2], [3], [4], [5], [6]
212112812	JM04-7MW10-112812	21211281221	GW	N	11/28/2012	[1], [2], [3], [4], [5], [6]
212112812	JM04-7MW10-112812MS	21211281222	WQ	MS	11/28/2012	[1], [2], [3], [4], [5], [6]
212112812	JM04-7MW10-112812SD	21211281223	WQ	SD	11/28/2012	[1], [2], [3], [4], [5], [6]
212112812	JM04-55MW11-112812	21211281224	GW	N	11/28/2012	[1], [2], [3], [4], [5], [6]
212112812	JM04-7MW21-112812	21211281225	GW	N	11/28/2012	[1]
212112812	JM04-55MW17-112812	21211281226	GW	N	11/28/2012	[1]
212113005	JM04-TB03-112912	21211300501	WQ	TB	11/29/2012	[1]
212113005	JM04-55MW01-112912	21211300502	GW	N	11/29/2012	[1], [2], [3], [4], [5], [6]
212113005	JM04-55MW23-112912	21211300503	GW	N	11/29/2012	[1]

SDG	Sample ID	Lab Sample ID	Matrix	Sample Type	Date Collected	Analyses Performed
212113005	JM04-EB01-112912	21211300504	WQ	EB	11/29/2012	[1], [2], [3], [4], [5], [6]
212113005	JM04-55MW03-112912	21211300505	GW	N	11/29/2012	[1]
212113005	JM04-55MW02-112912	21211300506	GW	N	11/29/2012	[1], [2], [3], [4], [5], [6]
212113005	JM04-55MW04-112912	21211300507	GW	N	11/29/2012	[1]
212113005	JM04-FD01-112912	21211300508	GW	FD	11/29/2012	[1]
212113005	JM04-55MW13-112912	21211300509	GW	N	11/29/2012	[1]
212113005	JM04-EB02-112912	21211300510	WQ	EB	11/29/2012	[1], [2], [3], [4], [5], [6]
212113005	JM04-7MW22-112912	21211300511	GW	N	11/29/2012	[1], [2], [3], [4], [5], [6]
212113005	JM04-55MW12-112912	21211300512	GW	N	11/29/2012	[1], [2], [3], [4], [5], [6]
212113005	JM04-7MW24-112912	21211300513	GW	N	11/29/2012	[1], [2], [3], [4], [5], [6]
212113005	JM04-55IW03-112912	21211300514	GW	N	11/29/2012	[1]
212113005	JM04-55MW24-112912	21211300515	GW	N	11/29/2012	[1]
212113005	JM04-55MW25-112912	21211300516	GW	N	11/29/2012	[1], [2], [3], [4], [5], [6]
212113005	JM04-EB03-112912	21211300517	WQ	EB	11/29/2012	[1], [2], [3], [4], [5], [6]
212113005	JM04-EB04-112912	21211300518	WQ	EB	11/29/2012	[1], [2], [3], [4], [5], [6]
212113005	JM04-TB04-113012	21211300519	WQ	TB	11/30/2012	[1]
212113005	JM04-55IW01-113012	21211300520	GW	N	11/30/2012	[1]
212113005	JM04-7MW07-113012	21211300521	GW	N	11/30/2012	[1], [2], [3], [4], [5], [6]
212113005	JM04-FD01-113012	21211300522	GW	FD	11/30/2012	[1], [2], [3], [4], [5], [6]
212113005	JM04-55IW02-113012	21211300523	GW	N	11/30/2012	[1]
212113005	JM04-55IW04-113012	21211300524	GW	N	11/30/2012	[1]

SDG	Sample ID	Lab Sample ID	Matrix	Sample Type	Date Collected	Analyses Performed

MATRIX CODE

GW – Groundwater
WQ – Water Quality Control Sample

SAMPLE TYPE CODE

N – Native Sample
EB – Equipment Blank
TB – Trip Blank
FD – Field Duplicate
MS – Matrix Spike
SD – Matrix Spike Duplicate

ANALYSIS CODE

[1] – VOC –Trichloroethene, Cis-1,2-Dichloroethene, and Vinyl Chloride by SW-846 method 8260B
[2] – Methane, Ethane, and Ethene by RSK-175
[3] – Alkalinity by Standard Method 2320B
[4] – TOC – Total Organic Carbon by Standard Method 5310B
[5] – Sulfide by Standard Method 4500S2-D
[6] – Anions - Chloride, Nitrate, Nitrite, and Sulfate by SW-846 9056A

Organic Parameters

Quality Control Review

The following list represents the QA/QC measures that were reviewed during the data quality evaluation procedure for organic data.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Method blanks, equipment blanks, and trip blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Surrogate Recoveries** – Surrogate Compounds are added to each sample and the recoveries are used to monitor lab performance and possible matrix interference.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", either laboratory reagent water or Ottawa sand, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and it's duplicate. This information can only be determined when target compounds are detected.
- **GC/MS Tuning** – The mass spectrum of the tuning compound is evaluated for method compliance. The criteria are established to verify the proper mass assignment and mass resolution.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.
- **Internal Standards** – The internal standards (retention time and response) are evaluated for method compliance. The internal standards are used in quantitation of the target parameters and monitor the instrument sensitivity and response for stability during each analysis.

General Package

The chain-of-custody associated with SDG 212112812 also included samples collected that were not part of this review and accordingly not in this report. Only the specific samples listed in table 1 were reviewed for this report. The samples not included in this report were validated by a third party validator.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Volatile Organic Compounds (VOCs) Analyses

Holding Time

All samples analyses were performed within hold time.

GC/MS Instrument Performance

All GC/MS Instrument Performance criteria were met.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

There were no detections in the trip, equipment, and method blank samples.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-7MW10-112812. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Surrogate Recoveries

All surrogate recoveries were within acceptable quality control limits.

Internal Standard Recoveries

All internal standard recoveries were within acceptable quality control limits.

Field Duplicates

Field samples JM04-55MW14-112812, JM04-55MW04-112912, and JM04-7MW07-113012 were collected and analyzed in duplicate. Field duplicate precision objectives were met.

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Dilutions

The samples presented below in table 2 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 2
Dilutions: VOC
NA Puerto Rico SWMU 55 Baseline Groundwater Sampling 2012

Sample ID	Analysis	Dilution Factor
JM04-55MW09-112812	VOC	10X
JM04-55MW10-112812	VOC	5X
JM04-55MW14-112812	VOC	5X
JM04-FD01-112812	VOC	5X
JM04-7MW23-112812	VOC	5X
JM04-55MW11-112812	VOC	5X
JM04-55MW01-112912	VOC	10X
JM04-7MW24-112912	VOC	5X
JM04-55IW03-112912	VOC	10X
JM04-55MW24-112912	VOC	50X
JM04-55IW01-113012	VOC	50X
JM04-7MW07-113012	VOC	100X
JM04-FD01-113012	VOC	100X
JM04-55IW02-113012	VOC	10X

GROUNDWATER PROJECT ACTION LIMITS

All samples collected and analyzed for the month of November 2012 for the volatile organic compound – trichloroethene were less than the groundwater project action limits with the exception of the samples listed below:

Analyte (Volatile List)	Affected Sample	Sample Results (ug/l)	Groundwater Cleanup Target Levels (ug/l)
Trichloroethene	JM04-55IW01-113012	5320	193
Trichloroethene	JM04-55IW02-113012	777	193
Trichloroethene	JM04-55IW03-112912	1070	193
Trichloroethene	JM04-55MW01-112912	948	193
Trichloroethene	JM04-55MW09-112812	1020	193
Trichloroethene	JM04-55MW10-112812	496	193
Trichloroethene	JM04-55MW11-112812	456	193
Trichloroethene	JM04-55MW14-112812	641	193
Trichloroethene	JM04-55MW24-112912	4380	193
Trichloroethene	JM04-7MW07-113012	10300	193
Trichloroethene	JM04-FD01-113012	10200	193
Trichloroethene	JM04-7MW23-112812	397	193
Trichloroethene	JM04-FD01-112812	692	193
Trichloroethene	JM04-7MW24-112912	969	193

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Methane, Ethane, and Ethene Analyses

Holding Time

All samples analyses were performed within hold time.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

There were no detections in the equipment and method blank samples.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-7MW10-112812. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Surrogate Recoveries

All surrogate recoveries were within acceptable quality control limits.

Field Duplicates

Field samples JM04-55MW14-112812 and JM04-7MW07-113012 were collected and analyzed in duplicate. Field duplicate precision objectives were met.

Dilutions

The samples presented below in table 3 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 3
Dilutions: Methane
NA Puerto Rico SWMU 55 Baseline Groundwater Sampling 2012

Sample ID	Analysis	Dilution Factor
JM04-55MW06-112812	Methane	10X
JM04-55MW05-112812	Methane	200X
JM04-55MW10-112812	Methane	50X
JM04-7MW23-112812	Methane	30X
JM04-7MW10-112812	Methane	30X

Data Rejected during the Data Validation Process

Some samples may be analyzed multiple times by the laboratory because of dilution requirements or because spike recoveries are outside the method target acceptance limits. The laboratory reports all analyses; therefore, it is possible that several sample results may exist for a specific sample and analysis. During the data validation, all the sample results are evaluated and the "best answer" for each sample and analysis is chosen, and the other results are rejected.

The initial results for methane noted in Table 3 above were rejected because the samples required a dilution in order to obtain a result within the method target acceptance limits.

Inorganic Parameters

Quality Control Review

The following list represents the QA/QC measures that were reviewed during the data quality evaluation procedure for inorganic data.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Method blanks, equipment blanks, initial calibration, and continuing calibration blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", either laboratory reagent water or Ottawa sand, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and it's duplicate. This information can only be determined when target compounds are detected.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Alkalinity

Holding Time

All samples analyses were performed within hold time.

Blanks

Alkalinity detected in the blank samples is listed in Table 4.

TABLE 4
Blank Contamination: Alkalinity
NA Puerto Rico SWMU 55 Baseline Groundwater Sampling 2012

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
212113005	JM04-EB01-112912	EB	Alkalinity	145	mg/L	JM04-55MW01-112912
	JM04-EB02-112912			147		JM04-55MW02-112912
	JM04-EB03-112912			145		JM04-7MW22-112912
	JM04-EB04-112912			144		JM04-55MW12-112912
						JM04-7MW24-112912
						JM04-55MW25-112912
						JM04-7MW07-113012
						JM04-FD01-113012

Flags were applied to the analytes in the associated samples in the following manner:

When the analytes were detected in the equipment blank, the detected compounds, that were less than 5 times the concentration detected for the analyte listed, were flagged "U" due to possible field contamination with a validation note of "FB". Please note that the laboratory confirmed that the DI water used for the equipment blanks is checked daily for conductivity and pH, and it is the source for all internal method blanks used. The associated method blank results for the samples noted above were non-detect.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Laboratory Duplicates

Laboratory duplicate precision objectives were met.

Field Duplicates

Field samples JM04-55MW14-112812 and JM04-7MW07-113012 were collected and analyzed in duplicate. Field duplicate precision objectives were met.

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for TOC

Holding Time

All samples analyses were performed within hold time.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

TOC detected in the blank samples is listed in Table 5.

TABLE 5
Blank Contamination: TOC
NA Puerto Rico SWMU 55 Baseline Groundwater Sampling 2012

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
212113005	JM04-EB01-112912	EB	TOC	1.9	mg/L	JM04-55MW01-112912
	JM04-EB02-112912			5.1		JM04-55MW02-112912
	JM04-EB03-112912			4.4		JM04-7MW22-112912
	JM04-EB04-112912			5.9		JM04-55MW12-112912
						JM04-7MW24-112912
						JM04-55MW25-112912
						JM04-7MW07-113012
						JM04-FD01-113012

Flags were applied to the analytes in the associated samples in the following manner:

When the analytes were detected in the equipment blank, the detected compounds, that were less than 5 times the concentration detected for the analyte listed, were flagged "U" due to possible field contamination with a validation note of "FB". Please note that the laboratory confirmed that the DI water used for the equipment blanks is checked daily for conductivity and pH, and it is the source for all internal method blanks used. The associated method blank results for the samples noted above were non-detect.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-7MW10-112812. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Field Duplicates

Field samples JM04-55MW14-112812 and JM04-7MW07-113012 were collected and analyzed in duplicate. Field duplicate precision objectives were not met for sample JM04-55MW14-112812; therefore the detect was qualified as estimated "J".

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Dilutions

The samples presented below in table 6 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 6
Dilutions: TOC
NA Puerto Rico SWMU 55 Baseline Groundwater Sampling 2012

Sample ID	Analysis	Dilution Factor
JM04-55MW06-112812	TOC	2X
JM04-55MW05-112812	TOC	2X

TABLE 6
Dilutions: TOC
NA Puerto Rico SWMU 55 Baseline Groundwater Sampling 2012

Sample ID	Analysis	Dilution Factor
JM04-55MW07-112812	TOC	2X
JM04-55MW10-112812	TOC	2X
JM04-55MW11-112812	TOC	2X
JM04-7MW07-113012	TOC	5X

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Sulfide

Holding Time

All samples analyses were performed within hold time.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

There were no detections in the equipment and method blank samples.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-7MW10-112812. Field sample JM04-55MW01-112912 was used as the batch QC MS/MSD sample for the sulfide analysis. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met for all samples except as noted in table 7 below:

TABLE 7
Matrix Spike and Matrix Spike Duplicate Recovery Out of QC Limits: Sulfide
NA Puerto Rico SWMU 55 Baseline Groundwater Sampling 2012

QC Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Qualifiers Applied
Matrix Spike Matrix Spike Duplicate	Sulfide	79% 79%	90-110	JM04-55MW01-112912	Non-Detect-UJ

The quantitation limit for the sample noted above was qualified as estimated "UJ" due to the matrix spike and matrix spike duplicate recoveries were outside the acceptable limit that is listed in Table 7 with a validation note of "MSL" for low percent recovery.

Field Duplicates

Field samples JM04-55MW14-112812 and JM04-7MW07-113012 were collected and analyzed in duplicate. Field duplicate precision objectives were met.

Dilutions

The sample presented below in table 8 was analyzed at the dilution for the analysis indicated. This dilution was required to prevent saturation of the instrument, to allow quantitation of the compound within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compound. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 8
Dilutions: Sulfide
NA Puerto Rico SWMU 55 Baseline Groundwater Sampling 2012

Sample ID	Analysis	Dilution Factor
JM04-55MW01-112912	Sulfide	2X

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Chloride, Nitrate, Nitrite, and Sulfate

Holding Time

All samples analyses were performed within hold time.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

Chloride, Nitrate, and Sulfate detected in the blank samples are listed in Table 9.

TABLE 9
Blank Contamination: Chloride, Nitrate, and Sulfate
NA Puerto Rico SWMU 55 Baseline Groundwater Sampling 2012

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
212113005	JM04-EB01-112912	EB	Chloride	14.3	mg/L	JM04-55MW01-112912
	JM04-EB02-112912			12.9		JM04-55MW02-112912
	JM04-EB03-112912			13.6		JM04-7MW22-112912
	JM04-EB04-112912			13.5		JM04-55MW12-112912
						JM04-7MW24-112912
						JM04-55MW25-112912
						JM04-7MW07-113012
						JM04-FD01-113012
212113005	JM04-EB01-112912	EB	Nitrate	0.293	mg/L	JM04-55MW01-112912
	JM04-EB02-112912			0.372		JM04-55MW02-112912
	JM04-EB03-112912			0.307		JM04-7MW22-112912
	JM04-EB04-112912			0.317		JM04-55MW12-112912
						JM04-7MW24-112912
						JM04-55MW25-112912
						JM04-7MW07-113012
						JM04-FD01-113012
212113005	JM04-EB01-112912	EB	Sulfate	9.52	mg/L	JM04-55MW01-112912
	JM04-EB02-112912			9.42		JM04-55MW02-112912
	JM04-EB03-112912			9.60		JM04-7MW22-112912
	JM04-EB04-112912			9.62		JM04-55MW12-112912

TABLE 9
Blank Contamination: Chloride, Nitrate, and Sulfate
NA Puerto Rico SWMU 55 Baseline Groundwater Sampling 2012

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
						JM04-7MW24-112912
						JM04-55MW25-112912
						JM04-7MW07-113012
						JM04-FD01-113012

Flags were applied to the analytes in the associated samples in the following manner:

When the analytes were detected in the equipment blank, the detected compounds, that were less than 5 times the concentration detected for the analytes listed, were flagged "U" due to possible field contamination with a validation note of "FB". Please note that the laboratory confirmed that the DI water used for the equipment blanks is checked daily for conductivity and pH, and it is the source for all internal method blanks used. The associated method blank results for the samples noted above were non-detect.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-7MW10-112812. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Surrogate Recoveries

All surrogate recoveries were within acceptable quality control limits.

Field Duplicates

Field samples JM04-55MW14-112812 and JM04-7MW07-113012 were collected and analyzed in duplicate. Field duplicate precision objectives were met.

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Dilutions

The samples presented below in table 10 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 10
Dilutions: Anions – Chloride, Nitrate, Nitrite, and Sulfate
NA Puerto Rico SWMU 55 Baseline Groundwater Sampling 2012

Sample ID	Analysis	Dilution Factor
JM04-55MW06-112812	Nitrate and Nitrite	2X
	Sulfate	5X
	Chloride	200X
JM04-55MW05-112812	Nitrate and Nitrite	2X
	Sulfate	2X
	Chloride	100X
JM04-55MW07-112812	Nitrate and Nitrite	5X
	Sulfate	100X
	Chloride	500X
JM04-55MW09-112812	Nitrate and Nitrite	20X
	Sulfate	2000X
	Chloride	2000X
JM04-55MW10-112812	Nitrate and Nitrite	20X
	Sulfate	2000X
	Chloride	2000X
JM04-55MW14-112812	Nitrate and Nitrite	5X
	Sulfate	50X
	Chloride	2000X
JM04-FD01-112812	Nitrate and Nitrite	5X
	Sulfate	50X
	Chloride	2000X
JM04-7MW23-112812	Nitrate and Nitrite	5X
	Sulfate	20X
	Chloride	1000X

TABLE 10
Dilutions: Anions – Chloride, Nitrate, Nitrite, and Sulfate
NA Puerto Rico SWMU 55 Baseline Groundwater Sampling 2012

Sample ID	Analysis	Dilution Factor
JM04-7MW10-112812	Nitrate and Nitrite	10X
	Sulfate	100X
	Chloride	2000X
JM04-55MW11-112812	Nitrate and Nitrite	20X
	Sulfate	100X
	Chloride	2000X
JM04-55MW01-112912	Nitrate and Nitrite	5X
	Sulfate	20X
	Chloride	1000X
JM04-55MW02-112912	Chloride	20x
JM04-7MW22-112912	Nitrate and Nitrite	5X
	Sulfate	500X
	Chloride	500X
JM04-55MW12-112912	Chloride	5X
JM04-7MW24-112912	Nitrate and Nitrite	5X
	Sulfate	20X
	Chloride	1000X
JM04-55MW25-112912	Nitrate and Nitrite	2X
	Sulfate	10X
	Chloride	200X
JM04-7MW07-113012	Sulfate	20X
	Chloride	20X
JM04-FD01-113012	Sulfate	20X
	Chloride	20X

Data Usability

A review of the analytical data submitted regarding the NA Puerto Rico SWMU 55 Baseline Groundwater Sampling 2012, by CH2M HILL has been completed. An overall evaluation of the data indicates that the sample handling, shipment, and analytical procedures have been adequately completed, and that the analytical results should be considered usable as qualified. The validation review demonstrated that the analytical systems were generally in control and the data results can be used in the decision making process.

Data reviewed in this report meet the data quality goals stated in the project quality assurance project plan (QAPP). The data user can use the data recognizing the potential data biases indicated by the data qualifiers assigned to some results. Data was qualified for a subset of results based on equipment blank contamination, low matrix spike and matrix spike duplicate recoveries, and field duplicate imprecision biases.

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW18-112812

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211281209

Level: (low/med) Lab File ID: 2121129p/e1701

% Moisture: not dec. Date Collected: 11/28/12 Time: 1115

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/29/12

Instrument ID: MSV7 Date Analyzed: 11/30/12 Time: 0427

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: EDS

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 495645

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.934	J	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

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212112812 57

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW06-112812

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812

Matrix (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211281210

Level: (low/med) Lab File ID: 2121129p/e1702

% Moisture: not dec. Date Collected: 11/28/12 Time: 0851

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/29/12

Instrument ID: MSV7 Date Analyzed: 11/30/12 Time: 0446

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: JCK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 495645

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.870	J	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

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212112812 62

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW05-112812

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211281211

Level: (low/med) Lab File ID: 2121129p/e1703

% Moisture: not dec. Date Collected: 11/28/12 Time: 1036

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/29/12

Instrument ID: MSV7 Date Analyzed: 11/30/12 Time: 0506

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: EDS

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 495645

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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212112812 67

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW07-112812

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812

Matrix (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211281212

Level: (low/med) Lab File ID: 2121129p/e1704

% Moisture: not dec. Date Collected: 11/28/12 Time: 1411

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/29/12

Instrument ID: MSV7 Date Analyzed: 11/30/12 Time: 0526

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: EDS

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 495645

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	2.75		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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212112812 71

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW19-112812

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211281213

Level: (low/med) Lab File ID: 2121129p/e1705

% Moisture: not dec. Date Collected: 11/28/12 Time: 0910

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/29/12

Instrument ID: MSV7 Date Analyzed: 11/30/12 Time: 0546

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: EDS

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 495645

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	2.00		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW08-112812

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211281214

Level: (low/med) Lab File ID: 2121205p/e1903

% Moisture: not dec. Date Collected: 11/28/12 Time: 1201

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/29/12

Instrument ID: MSV7 Date Analyzed: 12/05/12 Time: 1933

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CGC

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496053

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	2.34		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

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212112812 81

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-TB02-112812

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211281215

Level: (low/med) Lab File ID: 2121205p/e1904

% Moisture: not dec. Date Collected: 11/28/12 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/29/12

Instrument ID: MSV7 Date Analyzed: 12/05/12 Time: 1955

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CGC

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496053

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

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212112812 86

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
JM04-55MW09-112812

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21211281216

Level: (low/med)

Lab File ID: 2121205p/e1909

% Moisture: not dec.

Date Collected: 11/28/12 Time: 0920

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 11/29/12

Instrument ID: MSV7

Date Analyzed: 12/05/12 Time: 2148

Soil Extract Volume: (µL)

Dilution Factor: 10 Analyst: CGC

Soil Aliquot Volume: (µL)

Prep Batch: Analytical Batch: 496053

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	1020		1.61	2.00	10.0
75-01-4	Vinyl chloride	2.00	U	1.27	2.00	10.0
156-59-2	cis-1,2-Dichloroethene	2.00	U	1.03	2.00	10.0

FORM I VOA

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212112812 90

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW10-112812

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211281217

Level: (low/med) Lab File ID: 2121205p/e1910

% Moisture: not dec. Date Collected: 11/28/12 Time: 1100

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/29/12

Instrument ID: MSV7 Date Analyzed: 12/05/12 Time: 2209

Soil Extract Volume: (µL) Dilution Factor: 5 Analyst: CGC

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496053

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	496		0.807	1.00	5.00
75-01-4	Vinyl chloride	18.2		0.636	1.00	5.00
156-59-2	cis-1,2-Dichloroethene	34.0		0.517	1.00	5.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW14-112812

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211281218

Level: (low/med) Lab File ID: 2121205p/e1911

% Moisture: not dec. Date Collected: 11/28/12 Time: 1300

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/29/12

Instrument ID: MSV7 Date Analyzed: 12/05/12 Time: 2231

Soil Extract Volume: (µL) Dilution Factor: 5 Analyst: CGC

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496053

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	641		0.807	1.00	5.00
75-01-4	Vinyl chloride	1.00	U	0.636	1.00	5.00
156-59-2	cis-1,2-Dichloroethene	4.56	J	0.517	1.00	5.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-FD01-112812

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812

Matrix (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211281219

Level: (low/med) Lab File ID: 2121205p/e1912

% Moisture: not dec. Date Collected: 11/28/12 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/29/12

Instrument ID: MSV7 Date Analyzed: 12/05/12 Time: 2252

Soil Extract Volume: (µL) Dilution Factor: 5 Analyst: JCK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496053

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	O	MDL	LOD	LOQ
79-01-6	Trichloroethene	692		0.807	1.00	5.00
75-01-4	Vinyl chloride	1.00	U	0.636	1.00	5.00
156-59-2	cis-1,2-Dichloroethene	4.62	J	0.517	1.00	5.00

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212112812 111

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-7MW23-112812

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812

Matrix (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211281220

Level: (low/med) Lab File ID: 2121205p/e1915

% Moisture: not dec. Date Collected: 11/28/12 Time: 1440

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/29/12

Instrument ID: MSV7 Date Analyzed: 12/06/12 Time: 0008

Soil Extract Volume: (µL) Dilution Factor: 5 Analyst: CGC

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496053

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	397		0.807	1.00	5.00
75-01-4	Vinyl chloride	1.00	U	0.636	1.00	5.00
156-59-2	cis-1,2-Dichloroethene	106		0.517	1.00	5.00

FORM I VOA

C.T

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-7MW10-112812

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211281221

Level: (low/med) Lab File ID: 2121205p/e1897

% Moisture: not dec. Date Collected: 11/28/12 Time: 0930

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/29/12

Instrument ID: MSV7 Date Analyzed: 12/05/12 Time: 1734

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CGC

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496053

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	17.7		0.103	0.200	1.00

CK

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-SSMW11-112812

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812

Matrix (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211281224

Level: (low/med) Lab File ID: 2121206/d1157

% Moisture: not dec. Date Collected: 11/28/12 Time: 1130

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/29/12

Instrument ID: MSV11 Date Analyzed: 12/06/12 Time: 1151

Soil Extract Volume: (µL) Dilution Factor: 5 Analyst: JCK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496113

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	456		0.807	1.00	5.00
75-01-4	Vinyl chloride	1.00	U	0.636	1.00	5.00
156-59-2	cis-1,2-Dichloroethene	10.6		0.517	1.00	5.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-7MW21-112812

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211281225

Level: (low/med) Lab File ID: 2121206/d1158

% Moisture: not dec. Date Collected: 11/28/12 Time: 1355

GC Column: RTX-VMS-30 ID: .25 (mm Date Received: 11/29/12

Instrument ID: MSV11 Date Analyzed: 12/06/12 Time: 1213

Soil Extract Volume: (µL Dilution Factor: 1 Analyst: JCK

Soil Aliquot Volume: (µL Prep Batch: Analytical Batch: 496113

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	1.25		0.103	0.200	1.00

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW17-112812

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812

Matrix (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211281226

Level: (low/med) Lab File ID: 2121206/d1159

% Moisture: not dec. Date Collected: 11/28/12 Time: 1315

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/29/12

Instrument ID: MSV11 Date Analyzed: 12/06/12 Time: 1235

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: JCK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496113

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	59.1		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW18-112812
Lab Code: LA024 Case No.:
Contract:
Matrix: Water
SAS No.: SDG No.: 212112812
Sample wt/vol: 5 Units: mL
Lab Sample ID: 21211281209
Level: (low/med)
Date Collected: 11/28/12 Time: 1115
% Moisture: decanted: (Y/N)
Date Received: 11/29/12
GC Column: GS-Q 30 ID: .53 (mm)
Date Extracted:
Concentrated Extract Volume: 5000 (µL)
Date Analyzed: 12/06/12 Time: 1449
Soil Aliquot Volume: (µL)
Dilution Factor: 1 Analyst: BMR
Injection Volume: 1 (µL)
Prep Method:
GPC Cleanup: (Y/N) N pH:
Analytical Method: RSK-175
Prep Batch: Analytical Batch: 496111
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
CONCENTRATION UNITS: ug/L
Lab File ID: 2121206/v8022

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.329	J	0.135	0.220	1.00
74-85-1	Ethene	0.657	J	0.157	0.290	1.00
74-82-8	Methane	3.82	J	0.486	1.09	5.00

FORM I ORG-1

212112812 519

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name:	GCAL	Sample ID:	JM04-55MW06-112812DL
Lab Code:	LA024 Case No.:	Contract:	
Matrix:	Water	SAS No.:	SDG No.: 212112812
Sample wt/vol:	5 Units: mL	Lab Sample ID:	21211281210DL
Level: (low/med)		Date Collected:	11/28/12 Time: 0851
% Moisture:	decanted: (Y/N)	Date Received:	11/29/12
GC Column:	GS-Q 30 ID: .53 (mm)	Date Extracted:	
Concentrated Extract Volume:	5000 (µL)	Date Analyzed:	12/06/12 Time: 1503
Soil Aliquot Volume:	(µL)	Dilution Factor:	10 Analyst: BMR
Injection Volume:	1 (µL)	Prep Method:	
GPC Cleanup: (Y/N)	N pH:	Analytical Method:	RSK-175
Prep Batch:	Analytical Batch: 496111	Sulfur Cleanup: (Y/N)	N Instrument ID: GCV8A
CONCENTRATION UNITS:	*ug/L*	Lab File ID:	2121206/v8024

CAS NO.	*COMPOUND*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
74-82-8	Methane	186		4.86	10.9	50.0

FORM 1 ORG-1

212112812 523

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 496111
CONCENTRATION UNITS ug/L

Sample ID: JM04-55MW06-112812
Contract:
SAS No.: SDG No.: 212112812
Lab Sample ID: 21211281210
Date Collected: 11/28/12 Time: 0851
Date Received: 11/29/12
Date Extracted:
Date Analyzed: 12/06/12 Time: 1456
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2121206/v8023

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	77.0	~~E~~	0.486	1.09	5.00
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.290	U	0.157	0.290	1.00

R-DL

FORM I ORG-1

212112812 527

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 496111
CONCENTRATION UNITS: ug/L

Sample ID: JM04-55MW05-112812DL
Contract:
SAS No.: SDG No.: 212112812
Lab Sample ID: 21211281211DL
Date Collected: 11/28/12 Time: 1036
Date Received: 11/29/12
Date Extracted:
Date Analyzed: 12/06/12 Time: 1515
Dilution Factor: 200 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2121206/v8026

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	3330		97.2	218	1000

FORM I ORG-1

212112812 531

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 496111
CONCENTRATION UNITS: ug/L

Sample ID: JM04-55MW05-112812
Contract:
SAS No.: SDG No.: 212112812
Lab Sample ID: 21211281211
Date Collected: 11/28/12 Time: 1036
Date Received: 11/29/12
Date Extracted:
Date Analyzed: 12/06/12 Time: 1509
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2121206/v8025

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	1490	~~E~~	0.486	1.09	5.00
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.290	U	0.157	0.290	1.00

R-DL

FORM I ORG-1

212112912 525

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 496111
CONCENTRATION UNITS: ug/L

Sample ID: JM04-55MW07-112812
Contract:
SAS No.: SDG No.: 212112812
Lab Sample ID: 21211281212
Date Collected: 11/28/12 Time: 1411
Date Received: 11/29/12
Date Extracted:
Date Analyzed: 12/06/12 Time: 1522
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2121206/v8027

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.290	U	0.157	0.290	1.00
74-82-8	Methane	1.09	U	0.486	1.09	5.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 496111
CONCENTRATION UNITS: ug/L

Sample ID: JM04-55MW09-112812
Contract:
SAS No.: SDG No.: 212112812
Lab Sample ID: 21211281216
Date Collected: 11/28/12 Time: 0920
Date Received: 11/29/12
Date Extracted:
Date Analyzed: 12/06/12 Time: 1535
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2121206/v8029

CAS NO.	COMPOUND	RESULT	Q	MDL	LQD	LOQ
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.286	J	0.157	0.290	1.00
74-82-8	Methane	1.03	J	0.486	1.09	5.00

FORM 1 ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 496111
CONCENTRATION UNITS: ug/L

Sample ID: JM04-55MW10-112812DL
Contract:
SAS No.: SDG No.: 212112812
Lab Sample ID: 21211281217DL
Date Collected: 11/28/12 Time: 1100
Date Received: 11/29/12
Date Extracted:
Date Analyzed: 12/06/12 Time: 1555
Dilution Factor: 50 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2121206/v8032

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	1110		24.3	54.5	250

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW10-112812
Lab Code: LA024 Case No.:
Contract:
Matrix: Water
SAS No.: SDG No.: 212112812
Sample wt/vol: 5 Units: mL
Lab Sample ID: 21211281217
Level: (low/med)
Date Collected: 11/28/12 Time: 1100
% Moisture: decanted: (Y/N)
Date Received: 11/29/12
GC Column: GS-Q 30 ID: .53 (mm)
Date Extracted:
Concentrated Extract Volume: 5000 (µL)
Date Analyzed: 12/06/12 Time: 1542
Soil Aliquot Volume: (µL)
Dilution Factor: 1 Analyst: BMR
Injection Volume: 1 (µL)
Prep Method:
GPC Cleanup: (Y/N) N pH:
Analytical Method: RSK-175
Prep Batch: Analytical Batch: 496111
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
CONCENTRATION UNITS: *ug/L*
Lab File ID: 2121206/v8030

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	310	~~E~~	0.486	1.09	5.00
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.290	U	0.157	0.290	1.00

R-DL

FORM I ORG-1

C-1

212112912 551

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 496111

Sample ID: JM04-55MW14-112812
Contract:
SAS No.: SDG No.: 212112812
Lab Sample ID: 21211281218
Date Collected: 11/28/12 Time: 1300
Date Received: 11/29/12
Date Extracted:
Date Analyzed: 12/06/12 Time: 1601
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2121206/v8033

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.290	U	0.157	0.290	1.00
74-82-8	Methane	3.27	J	0.486	1.09	5.00

FORM I ORG-1

CA

212112912 555

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL		Sample ID: JM04-FD01-112812	
Lab Code: LA024	Case No:	Contract:	
Matrix: Water		SAS No.:	SDG No.: 212112312
Sample wt/vol: 5	Units: mL	Lab Sample ID: 21211281219	
Level (low/med):		Date Collected: 11/28/12	Time: 0000
% Moisture:	decanted: (Y/N)	Date Received: 11/29/12	
GC Column: GS-Q 30	ID: .53 (mm)	Date Extracted:	
Concentrated Extract Volume: 5000	(µL)	Date Analyzed: 12/06/12	Time: 1615
Soil Aliquot Volume:	(µL)	Dilution Factor: 1	Analyst: BMR
Injection Volume: 1	(µL)	Prep Method:	
GPC Cleanup: (Y/N) N	pH:	Analytical Method: RSK-175	
Prep Batch:	Analytical Batch: 496111	Sulfur Cleanup: (Y/N) N	Instrument ID: GCV8A
CONCENTRATION UNITS: ug/L		Lab File ID: 2121206\v8035	

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.290	U	0.157	0.290	1.00
74-82-8	Methane	3.33	J	0.486	1.09	5.00

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name:	GCAL	Sample ID:	JM04-7MW23-112812DL
Lab Code:	LA024 Case No.:	Contract:	
Matrix:	Water	SAS No.:	SDG No.: 212112812
Sample wt/vol:	5 Units: mL	Lab Sample ID:	21211281220DL
Level: (low/med)		Date Collected:	11/28/12 Time: 1440
% Moisture:	decanted: (Y/N)	Date Received:	11/29/12
GC Column:	GS-Q 30 ID: .53 (mm)	Date Extracted:	
Concentrated Extract Volume:	5000 (µL)	Date Analyzed:	12/06/12 Time: 1632
Soil Aliquot Volume:	(µL)	Dilution Factor:	30 Analyst: BMR
Injection Volume:	1 (µL)	Prep Method:	
GPC Cleanup: (Y/N)	N pH:	Analytical Method:	RSK-175
Prep Batch:	Analytical Batch: 496111	Sulfur Cleanup: (Y/N)	N Instrument ID: GCV8A
CONCENTRATION UNITS:	*ug/L*	Lab File ID:	2121206/v8037

CAS NO.	*COMPOUND*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
74-82-8	Methane	281		14.6	32.7	150

FORM I ORG-1

C-2

212112812 563

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-7MW23-112812
Lab Code: LA024 Case No.:
Contract:
Matrix: Water
SAS No.: SDG No.: 212112812
Sample wt/vol: 5 Units: mL
Lab Sample ID: 21211281220
Level: (low/med)
Date Collected: 11/28/12 Time: 1440
% Moisture: decanted: (Y/N)
Date Received: 11/29/12
GC Column: GS-Q 30 ID: .53 (mm)
Date Extracted:
Concentrated Extract Volume: 5000 (µL)
Date Analyzed: 12/06/12 Time: 1625
Soil Aliquot Volume: (µL)
Dilution Factor: 1 Analyst: BMR
Injection Volume: 1 (µL)
Prep Method:
GPC Cleanup: (Y/N) N pH:
Analytical Method: RSK-175
Prep Batch: Analytical Batch: 496111
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
CONCENTRATION UNITS: ug/L
Lab File ID: 2121206/v8036

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	95.2	E	0.486	1.09	5.00
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.290	U	0.157	0.290	1.00

R-DL

FORM I ORG-1

212112912 557

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 496111
CONCENTRATION UNITS: ug/L

Sample ID: JM04-7MW10-112812DL
Contract:
SAS No.: SDG No.: 212112812
Lab Sample ID: 21211281221DL
Date Collected: 11/28/12 Time: 0930
Date Received: 11/29/12
Date Extracted:
Date Analyzed: 12/06/12 Time: 1704
Dilution Factor: 30 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2121206/v8041

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	290		14.6	32.7	150

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 496111
CONCENTRATION UNITS: ug/L

Sample ID: JM04-7MW10-112812
Contract:
SAS No.: SDG No.: 212112812
Lab Sample ID: 21211281221
Date Collected: 11/28/12 Time: 0930
Date Received: 11/29/12
Date Extracted:
Date Analyzed: 12/06/12 Time: 1638
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2121206/v8038

CAS NO.	COMPOUND	RESULT	Q	MDL	LQD	LOQ
74-82-8	Methane	108	E	0.486	1.09	5.00
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.290	U	0.157	0.290	1.00

R-DL

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH.
Prep Batch: Analytical Batch: 496111
CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-55MW11-112812
Contract:
SAS No.: SDG No.: 212112812
Lab Sample ID: 21211281224
Date Collected: 11/28/12 Time: 1130
Date Received: 11/29/12
Date Extracted:
Date Analyzed: 12/06/12 Time: 1729
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV6A
Lab File ID: 2121206/v8045

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.290	U	0.157	0.290	1.00
74-82-8	Methane	2.84	J	0.486	1.09	5.00

FORM I ORG-1

CA

212112912 579

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281209	JM04-55MW18-112812	Water	11/28/2012 11:15	11/29/2012 10:50

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 09:52	DJH	496017

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	219	1.0	0.19	mg/L CaCO3

212112912 553

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281209	JM04-55MW18-112812	Water	11/28/2012 11:15	11/29/2012 10:50

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/29/2012 18:31	DNM	495625

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	8.0	1.0	0.30	mg/L

212112812 664

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281209	JM04-55MW18-112812	Water	11/28/2012 11:15	11/29/2012 10:50

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 14:42	JEM	495939

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

212112812 665

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281209	JM04-55MW1B-112812	Water	11/28/2012 11:15	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	11/29/2012 17:56	AEL	495634

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	5.00U	25.0	5.00	mg/L
14797-65-0	Nitrite	5.00U	25.0	1.25	mg/L

CT

212112812 666

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281209	JM04-55MW18-112812	Water	11/28/2012 11:15	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1000	12/08/2012 20:08	AEL	496237

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	2460	200	115	mg/L

c-7

212112812 667

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281209	JM04-55MW18-112812	Water	11/28/2012 11:15	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10000	12/10/2012 10:39	DJH	496358

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	20100	1000	630	mg/L

212112812 999

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281210	JM04-55MW06-112812	Water	11/28/2012 08:51	11/29/2012 10:50

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 09:52	DJH	496017

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	486	1.0	0.19	mg/L CaCO3

C.T

212112812 659

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281210	JM04-55MW06-112812	Water	11/28/2012 08:51	11/29/2012 10:50

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	11/30/2012 11:05	DNM	495625

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	5.4	2.0	0.61	mg/L

C.L

212112812 670

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281210	JM04-55MW06-112812	Water	11/28/2012 08:51	11/29/2012 10:50

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 14:08	JEM	495939

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281210	JM04-55MW06-112812	Water	11/28/2012 08:51	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	11/29/2012 18:14	AEL	495634

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.200U	1.00	0.200	mg/L
14797-65-0	Nitrite	0.200U	1.00	0.050	mg/L

212112812 572

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281210	JM04-55MW06-112812	Water	11/28/2012 08:51	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	12/08/2012 21:36	AEL	496237

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	27.1	1.00	0.575	mg/L

212112812 673

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281210	JM04-55MW06-112812	Water	11/28/2012 08:51	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			200	12/08/2012 21:53	AEL	496237

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	362	20.0	12.6	mg/L

C-1

212112812 674

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281211	JM04-55MW05-112812	Water	11/28/2012 10:36	11/29/2012 10:50

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 09:52	DJH	496017

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	523	1.0	0.19	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281211	JM04-55MW05-112812	Water	11/28/2012 10:36	11/29/2012 10:50

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	11/30/2012 11:21	DNM	495625

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	16.9	2.0	0.61	mg/L

ok

212112812 576

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281211	JM04-55MW05-112812	Water	11/28/2012 10:36	11/29/2012 10:50

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 14:40	JEM	495939

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

C-N

212112812 677

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281211	JM04-55MW05-112812	Water	11/28/2012 10:36	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	11/29/2012 18:32	AEL	495634

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.200U	1.00	0.200	mg/L
14797-65-0	Nitrite	0.200U	1.00	0.050	mg/L
14808-79-8	Sulfate	6.44	0.400	0.230	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281211	JM04-55MW05-112812	Water	11/28/2012 10:36	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			100	12/08/2012 22:11	AEL	496237

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	230	10.0	6.30	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281212	JM04-55MW07-112812	Water	11/28/2012 14:11	11/29/2012 10:50

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 09:52	DJH	496017

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	512	1.0	0.19	mg/L CaCO3

212112812 696

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281212	JM04-55MW07-112812	Water	11/28/2012 14:11	11/29/2012 10:50

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	11/30/2012 11:41	DNM	495625

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	8.6	2.0	0.61	mg/L

C-1

212112812 591

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281212	JM04-55MW07-112812	Water	11/28/2012 14:11	11/29/2012 10:50

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 14:43	JEM	495939

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

212112812 S92

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281212	JM04-55MW07-112812	Water	11/28/2012 14:11	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	11/29/2012 18:49	AEL	495634

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	2.50	0.500	mg/L
14797-65-0	Nitrite	0.500U	2.50	0.125	mg/L

212112812 683

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281212	JM04-55MW07-112812	Water	11/28/2012 14:11	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	12/08/2012 22:28	AEL	496237

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1140	50.0	31.5	mg/L

212112812 694

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281212	JM04-55MW07-112812	Water	11/28/2012 14:11	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			100	12/08/2012 22:46	AEL	496237

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	246	20.0	11.5	mg/L

212112812 695

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281216	JM04-55MW09-112812	Water	11/28/2012 09:20	11/29/2012 10:50

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 09:52	DJH	496017

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	364	1.0	0.19	mg/L CaCO3

C·L

212112812 596

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281216	JM04-55MW09-112812	Water	11/28/2012 09:20	11/29/2012 10:50

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/29/2012 19:46	DNM	495625

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	10.3	1.0	0.30	mg/L

CL

212112812 687

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281216	JM04-55MW09-112812	Water	11/28/2012 09:20	11/29/2012 10:50

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 14:09	JEM	495939

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

212112812 C89

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281218	JM04-55MW09-112812	Water	11/28/2012 09:20	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	11/29/2012 19:07	AEL	495634

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	2.00U	10.0	2.00	mg/L
14797-65-0	Nitrite	2.00U	10.0	0.500	mg/L

212112812 899

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281216	JM04-55MW09-112812	Water	11/28/2012 09:20	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2000	12/08/2012 23:04	AEL	496237

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	7480	200	126	mg/L
14808-79-8	Sulfate	1260	400	230	mg/L

C-1

212112812 590

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281217	JM04-55MW10-112812	Water	11/28/2012 11:00	11/29/2012 10:50

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 09:52	DJH	496017

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	892	1.0	0.19	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281217	JM04-55MW10-112812	Water	11/28/2012 11:00	11/29/2012 10:50

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	11/30/2012 11:57	DNM	495625

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	22.1	5.0	1.5	mg/L

C-7

212112812 692

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281217	JM04-55MW10-112812	Water	11/28/2012 11:00	11/29/2012 10:50

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 14:41	JEM	495939

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

C 1

212112812 693

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281217	JM04-55MW10-112812	Water	11/28/2012 11:00	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	11/29/2012 19:24	AEL	495634

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	2.00U	10.0	2.00	mg/L
14797-65-0	Nitrite	2.00U	10.0	0.500	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281217	JM04-55MW10-112812	Water	11/28/2012 11:00	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2000	12/08/2012 23:21	AEL	496237

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	4850	200	126	mg/L
14808-79-8	Sulfate	759	400	230	mg/L

C-2

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281218	JM04-55MW14-112812	Water	11/28/2012 13:00	11/29/2012 10:50

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 09:52	DJH	496017

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	345	1.0	0.19	mg/L CaCO3

c 4

212112812 596

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281218	JM04-55MW14-112812	Water	11/28/2012 13:00	11/29/2012 10:50

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/29/2012 20:27	DNM	495625

CAS#	Parameter	Result		RDL	MDL	Units	
C-012	Total Organic Carbon	3.4	J	1.0	0.30	mg/L	FD

C.T

212112812 697

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281218	JM04-55MW14-112812	Water	11/28/2012 13:00	11/29/2012 10:50

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 14:43	JEM	495939

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

C ٢

212112812 599

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281218	JM04-55MW14-112812	Water	11/28/2012 13:00	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	11/29/2012 19:42	AEL	495634

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.718J	2.50	0.500	mg/L
14797-65-0	Nitrite	0.500U	2.50	0.125	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281218	JM04-55MW14-112812	Water	11/28/2012 13:00	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2000	12/08/2012 23:39	AEL	496237

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1580	200	126	mg/L

212112812 700

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281218	JM04-55MW14-112812	Water	11/28/2012 13:00	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	12/09/2012 00:32	AEL	496237

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	159	10.0	5.75	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281219	JM04-FD01-112812	Water	11/28/2012 00:00	11/29/2012 10:50

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 11:26	DJH	496040

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	336	1.0	0.19	mg/L CaCO3

C-7

212112812 792

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281219	JM04-FD01-112812	Water	11/28/2012 00:00	11/29/2012 10:50

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/29/2012 20:43	DNM	495625

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

C-7

212112812 702

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281219	JM04-FD01-112812	Water	11/28/2012 00:00	11/29/2012 10:50

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 14:08	JEM	495939

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

CA

212112812 704

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281219	JM04-FD01-112812	Water	11/28/2012 00:00	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	11/29/2012 20:00	AEL	495634

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.803J	2.50	0.500	mg/L
14797-65-0	Nitrite	0.500U	2.50	0.125	mg/L

CL

212112812 795

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281219	JM04-FD01-112812	Water	11/28/2012 00:00	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2000	12/09/2012 00:49	AEL	496237

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1720	200	126	mg/L

212112812 706

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281219	JM04-FD01-112812	Water	11/28/2012 00:00	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	12/09/2012 01:07	AEL	496237

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	180	10.0	5.75	mg/L

C2

212112812 707

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281220	JM04-7MW23-112812	Water	11/28/2012 14:40	11/29/2012 10:50

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 09:52	DJH	496017

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	386	1.0	0.19	mg/L CaCO3

212112812 T49

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281220	JM04-7MW23-112812	Water	11/28/2012 14:40	11/29/2012 10:50

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/29/2012 21:00	DNM	495625

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	16.2	1.0	0.30	mg/L

C4

212112812 799

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281220	JM04-7MW23-112812	Water	11/28/2012 14:40	11/29/2012 10:50

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 14:44	JEM	495939

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

C2

212112812 719

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281220	JM04-7MW23-112812	Water	11/28/2012 14:40	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	11/29/2012 20:52	AEL	495634

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	2.50	0.500	mg/L
14797-65-0	Nitrite	0.500U	2.50	0.125	mg/L

C.7

212112812 711

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281220	JM04-7MW23-112812	Water	11/28/2012 14:40	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1000	12/09/2012 01:25	AEL	496237

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1060	100	63.0	mg/L

212112812 712

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281220	JM04-7MW23-112812	Water	11/28/2012 14:40	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	12/09/2012 01:42	AEL	496237

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	130	4.00	2.30	mg/L

C.A

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281221	JM04-7MW10-112812	Water	11/28/2012 09:30	11/29/2012 10:50

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 09:52	DJH	496017

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	423	1.0	0.19	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281221	JM04-7MW10-112812	Water	11/28/2012 09:30	11/29/2012 10:50

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/29/2012 22:18	DNM	495625

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	13.7	1.0	0.30	mg/L

C-1

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281221	JM04-7MW10-112812	Water	11/28/2012 09:30	11/29/2012 10:50

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 14:09	JEM	495939

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

212112812 716

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281221	JM04-7MW10-112812	Water	11/28/2012 09:30	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	11/29/2012 21:10	AEL	495634

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	1.00U	5.00	1.00	mg/L
14797-65-0	Nitrite	1.00U	5.00	0.250	mg/L

C.L

212112812 717

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281221	JM04-7MW10-112812	Water	11/28/2012 09:30	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2000	12/09/2012 02:00	AEL	496237

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1940	200	126	mg/L

C-1

212112812 719

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281221	JM04-7MW10-112812	Water	11/28/2012 09:30	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			100	12/09/2012 02:53	AEL	496237

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	269	20.0	11.5	mg/L

CL

212112812 719

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281224	JM04-55MW11-112812	Water	11/28/2012 11:30	11/29/2012 10:50

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 09:52	DJH	496017

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	459	1.0	0.19	mg/L CaCO3

ch

212112812 730

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281224	JM04-55MW11-112812	Water	11/28/2012 11:30	11/29/2012 10:50

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	11/30/2012 12:51	DNM	495625

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	10.1	2.0	0.61	mg/L

C2

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281224	JM04-55MW11-112812	Water	11/28/2012 11:30	11/29/2012 10:50

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 14:42	JEM	495939

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

C.2

212112812 732

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281224	JM04-55MW11-112812	Water	11/28/2012 11:30	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	11/29/2012 22:03	AEL	495634

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	2.00U	10.0	2.00	mg/L
14797-65-0	Nitrite	2.00U	10.0	0.500	mg/L

ct

212112812 733

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281224	JM04-55MW11-112812	Water	11/28/2012 11:30	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2000	12/09/2012 04:21	AEL	496237

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	4200	200	126	mg/L

CM

212112812 734

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211281224	JM04-55MW11-112812	Water	11/28/2012 11:30	11/29/2012 10:50

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			100	12/09/2012 04:38	AEL	496237

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	655	20.0	11.5	mg/L

c.t

212112812 735

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-TB03-112912

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211300501

Level: (low/med) Lab File ID: 2121206p/d1183

% Moisture: not dec. Date Collected: 11/29/12 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/30/12

Instrument ID: MSV11 Date Analyzed: 12/06/12 Time: 2200

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496172

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
JM04-55MW01-112912

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211300502

Level: (low/med) Lab File ID: 2121206p/d1184

% Moisture: not dec. Date Collected: 11/29/12 Time: 0945

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/30/12

Instrument ID: MSV11 Date Analyzed: 12/06/12 Time: 2225

Soil Extract Volume: (µL) Dilution Factor: 10 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496172

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	948		1.61	2.00	10.0
75-01-4	Vinyl chloride	2.00	U	1.27	2.00	10.0
156-59-2	cis-1,2-Dichloroethene	2.00	U	1.03	2.00	10.0

FORM I VOA

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW23-112912

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211300503

Level: (low/med) Lab File ID: 2121206p/d1185

% Moisture: not dec. Date Collected: 11/29/12 Time: 0925

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/30/12

Instrument ID: MSV11 Date Analyzed: 12/06/12 Time: 2247

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496172

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	48.9		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	1.36		0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-EB01-112912

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211300504

Level: (low/med) Lab File ID: 2121206p/d1186

% Moisture: not dec. Date Collected: 11/29/12 Time: 0800

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/30/12

Instrument ID: MSV11 Date Analyzed: 12/06/12 Time: 2311

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 498172

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

c-2

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW03-112912

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211300505

Level: (low/med) Lab File ID: 2121206p/d1187

% Moisture: not dec. Date Collected: 11/29/12 Time: 0905

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/30/12

Instrument ID: MSV11 Date Analyzed: 12/06/12 Time: 2333

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496172

CONCENTRATION UNITS: *ug/L* Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	29.7		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW02-112912

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211300506

Level: (low/med) Lab File ID: 2121206p/d1188

% Moisture: not dec. Date Collected: 11/29/12 Time: 1130

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/30/12

Instrument ID: MSV11 Date Analyzed: 12/06/12 Time: 2356

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496172

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW04-112912

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21211300507

Level: (low/med)

Lab File ID: 2121206p/d1189

% Moisture: not dec.

Date Collected: 11/29/12 Time: 1055

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 11/30/12

Instrument ID: MSV11

Date Analyzed: 12/07/12 Time: 0019

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL)

Prep Batch: Analytical Batch: 496172

CONCENTRATION UNITS: *ug/L*

Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	2.26		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-FD01-112912

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21211300508

Level: (low/med)

Lab File ID: 2121206p/d1190

% Moisture: not dec.

Date Collected: 11/29/12 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 11/30/12

Instrument ID: MSV11

Date Analyzed: 12/07/12 Time: 0041

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL)

Prep Batch: Analytical Batch: 496172

CONCENTRATION UNITS: *ug/L*

Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	2.03		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

C-2

212113005 64

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW13-112912

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211300509

Level: (low/med) Lab File ID: 2121206p/d1191

% Moisture: not dec. Date Collected: 11/29/12 Time: 1026

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/30/12

Instrument ID: MSV11 Date Analyzed: 12/07/12 Time: 0103

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496172

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: *ug/L*

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-EB02-112912

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211300510

Level: (low/med) Lab File ID: 2121206p/d1192

% Moisture: not dec. Date Collected: 11/29/12 Time: 1145

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/30/12

Instrument ID: MSV11 Date Analyzed: 12/07/12 Time: 0125

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496172

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-7MW22-112912

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211300511

Level: (low/med) Lab File ID: 2121206p/d1193

% Moisture: not dec. Date Collected: 11/29/12 Time: 1045

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/30/12

Instrument ID: MSV11 Date Analyzed: 12/07/12 Time: 0147

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496172

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	4.29		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW12-112912

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21211300512

Level: (low/med)

Lab File ID: 2121206p/d1194

% Moisture: not dec.

Date Collected: 11/29/12 Time: 1206

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 11/30/12

Instrument ID: MSV11

Date Analyzed: 12/07/12 Time: 0209

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL)

Prep Batch: Analytical Batch: 496172

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	3.50		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

212113005 82

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-7MW24-112912

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21211300513

Level: (low/med)

Lab File ID: 2121206p/d1195

% Moisture: not dec.

Date Collected: 11/29/12 Time: 1315

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 11/30/12

Instrument ID: MSV11

Date Analyzed: 12/07/12 Time: 0232

Soil Extract Volume: (µL)

Dilution Factor: 5 Analyst: CLH

Soil Aliquot Volume: (µL)

Prep Batch: Analytical Batch: 496172

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	969		0.807	1.00	5.00
75-01-4	Vinyl chloride	1.00	U	0.636	1.00	5.00
156-59-2	cis-1,2-Dichloroethene	1.00	U	0.517	1.00	5.00

FORM I VOA

C-2

212113005 87

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55IW03-112912

Lab Name: GCAL Contract

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21211300514

Level: (low/med)

Lab File ID: 2121207P/d1240

% Moisture: not dec.

Date Collected: 11/29/12 Time: 1401

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 11/30/12

Instrument ID: MSV11

Date Analyzed: 12/07/12 Time: 2106

Soil Extract Volume: (µL)

Dilution Factor: 10 Analyst: CLH

Soil Aliquot Volume: (µL)

Prep Batch: Analytical Batch: 496269

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	1070		1.61	2.00	10.0
75-01-4	Vinyl chloride	2.00	U	1.27	2.00	10.0
156-59-2	cis-1,2-Dichloroethene	2.00	U	1.03	2.00	10.0

FORM I VOA

C.1

212113005 92

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW24-112912

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211300515

Level: (low/med) Lab File ID: 2121207P/d1241

% Moisture: not dec. Date Collected: 11/29/12 Time: 1340

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/30/12

Instrument ID: MSV11 Date Analyzed: 12/07/12 Time: 2131

Soil Extract Volume: (µL) Dilution Factor: 50 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496269

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	4380		8.07	10.0	50.0
75-01-4	Vinyl chloride	10.0	U	6.36	10.0	50.0
156-59-2	cis-1,2-Dichloroethene	10.0	U	5.17	10.0	50.0

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW25-112912

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21211300516

Level: (low/med)

Lab File ID: 2121207P/d1242

% Moisture: not dec.

Date Collected: 11/29/12 Time: 1345

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 11/30/12

Instrument ID: MSV11

Date Analyzed: 12/07/12 Time: 2153

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL)

Prep Batch: Analytical Batch: 496269

CONCENTRATION UNITS: ug/L

Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	26.9		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-EB03-112912

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211300517

Level: (low/med) Lab File ID: 2121206p/d1199

% Moisture: not dec. Date Collected: 11/29/12 Time: 1400

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/30/12

Instrument ID: MSV11 Date Analyzed: 12/07/12 Time: 0401

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496172

CONCENTRATION UNITS: *ug/L* Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

C-2

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-EB04-112912

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211300518

Level: (low/med) Lab File ID: 2121206p/d1200

% Moisture: not dec. Date Collected: 11/29/12 Time: 1415

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/30/12

Instrument ID: MSV11 Date Analyzed: 12/07/12 Time: 0424

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496172

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-TB04-113012

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21211300519

Level: (low/med)

Lab File ID: 2121206p/d1201

% Moisture: not dec.

Date Collected: 11/30/12 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 12/01/12

Instrument ID: MSV11

Date Analyzed: 12/07/12 Time: 0446

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL)

Prep Batch: Analytical Batch: 496172

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55IW01-113012

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211300520

Level: (low/med) Lab File ID: 2121206p/d1202

% Moisture: not dec Date Collected: 11/30/12 Time: 0930

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 12/01/12

Instrument ID: MSV11 Date Analyzed: 12/07/12 Time: 0508

Soil Extract Volume: (µL) Dilution Factor: 50 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496172

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	5320		8.07	10.0	50.0
75-01-4	Vinyl chloride	10.0	U	6.36	10.0	50.0
156-59-2	cis-1,2-Dichloroethene	10.0	U	5.17	10.0	50.0

FORM I VOA

212113005 113

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-7MW07-113012

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211300521

Level: (low/med) Lab File ID: 2121209p/e2158

% Moisture: not dec. Date Collected: 11/30/12 Time: 0945

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 12/01/12

Instrument ID: MSV7 Date Analyzed: 12/10/12 Time: 0314

Soil Extract Volume: (µL) Dilution Factor: 100 Analyst: EDS

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496363

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	10300		16.1	20.0	100
75-01-4	Vinyl chloride	20.0	U	12.7	20.0	100
156-59-2	cis-1,2-Dichloroethene	217		10.3	20.0	100

FORM I VOA

C-2

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-FD01-113012

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211300522

Level: (low/med) Lab File ID: 2121209p/e2159

% Moisture: not dec. Date Collected: 11/30/12 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 12/01/12

Instrument ID: MSV7 Date Analyzed: 12/10/12 Time: 0336

Soil Extract Volume: (µL) Dilution Factor: 100 Analyst: EDS

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496363

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	10200		16.1	20.0	100
75-01-4	Vinyl chloride	20.0	U	12.7	20.0	100
156-59-2	cis-1,2-Dichloroethene	208		10.3	20.0	100

FORM I VOA

C-7

212113005 130

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55IW02-113012

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211300523

Level: (low/med) Lab File ID: 2121209p/i8390

% Moisture: not dec. Date Collected: 11/30/12 Time: 1200

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 12/01/12

Instrument ID: MSV12 Date Analyzed: 12/10/12 Time: 0356

Soil Extract Volume: (µL) Dilution Factor: 10 Analyst: EDS

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496366

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	777		1.61	2.00	10.0
75-01-4	Vinyl chloride	2.00	U	1.27	2.00	10.0
156-59-2	cis-1,2-Dichloroethene	2.00	U	1.03	2.00	10.0

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55IW04-113012

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212113005

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211300524

Level: (low/med) Lab File ID: 2121209p/8389

% Moisture: not dec. Date Collected: 11/30/12 Time: 1230

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 12/01/12

Instrument ID: MSV12 Date Analyzed: 12/10/12 Time: 0332

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: EDS

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 496366

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	42.5		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 496403

Sample ID: JM04-55MW01-112912
Contract:
SAS No.: SDG No.: 212113005
Lab Sample ID: 21211300502
Date Collected: 11/29/12 Time: 0945
Date Received: 11/30/12
Date Extracted:
Date Analyzed: 12/10/12 Time: 1210
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2121210/v8005

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.290	U	0.157	0.290	1.00
74-82-8	Methane	1.09	U	0.486	1.09	5.00

FORM I ORG-1

212113005 518

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 496403

Sample ID: JM04-EB01-112912
Contract:
SAS No.: SDG No.: 212113005
Lab Sample ID: 21211300504
Date Collected: 11/29/12 Time: 0800
Date Received: 11/30/12
Date Extracted:
Date Analyzed: 12/10/12 Time: 1217
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2121210/v8006

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.290	U	0.157	0.290	1.00
74-82-8	Methane	1.09	U	0.486	1.09	5.00

FORM I ORG-1

CA

212113005 522

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 496403

Sample ID: JM04-55MW02-112912
Contract:
SAS No.: SDG No.: 212113005
Lab Sample ID: 21211300506
Date Collected: 11/29/12 Time: 1130
Date Received: 11/30/12
Date Extracted:
Date Analyzed: 12/10/12 Time: 1225
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2121210/v8007

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.290	U	0.157	0.290	1.00
74-82-8	Methane	1.09	U	0.486	1.09	5.00

FORM I ORG-1

C-2

212113005 526

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-EB02-112912
Lab Code: LA024 Case No.:
Contract:
Matrix: Water
SAS No.: SDG No.: 212113005
Sample wt/vol: 5 Units: mL
Lab Sample ID: 21211300510
Level: (low/med)
Date Collected: 11/29/12 Time: 1145
% Moisture: decanted: (Y/N)
Date Received: 11/30/12
GC Column: GS-Q 30 ID: .53 (mm)
Date Extracted:
Concentrated Extract Volume: 5000 (µL)
Date Analyzed: 12/10/12 Time: 1238
Soil Aliquot Volume: (µL)
Dilution Factor: 1 Analyst: JAR
Injection Volume: 1 (µL)
Prep Method:
GPC Cleanup: (Y/N) N pH:
Analytical Method: RSK-175
Prep Batch: Analytical Batch: 496403
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
CONCENTRATION UNITS: ug/L
Lab File ID: 2121210/v8008

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.290	U	0.157	0.290	1.00
74-82-8	Methane	1.09	U	0.486	1.09	5.00

FORM I ORG-1

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1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 496403

Sample ID: JM04-7MW22-112912

Contract:

SAS No.: SDG No.: 212113005

Lab Sample ID: 21211300511

Date Collected: 11/29/12 Time: 1045

Date Received: 11/30/12

Date Extracted:

Date Analyzed: 12/10/12 Time: 1244

Dilution Factor: 1 Analyst: JAR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

CONCENTRATION UNITS: *ug/L*

Lab File ID: 2121210/v8009

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.290	U	0.157	0.290	1.00
74-82-8	Methane	1.09	U	0.486	1.09	5.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 496403

Sample ID: JM04-55MW12-112912
Contract:
SAS No.: SDG No.: 212113005
Lab Sample ID: 21211300512
Date Collected: 11/29/12 Time: 1206
Date Received: 11/30/12
Date Extracted:
Date Analyzed: 12/10/12 Time: 1250
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2121210/v8010

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.290	U	0.157	0.290	1.00
74-82-8	Methane	1.09	U	0.486	1.09	5.00

FORM I ORG-1

C-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 496403

Sample ID: JM04-7MW24-112912
Contract:
SAS No.: SDG No.: 212113005
Lab Sample ID: 21211300513
Date Collected: 11/29/12 Time: 1315
Date Received: 11/30/12
Date Extracted:
Date Analyzed: 12/10/12 Time: 1259
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

CONCENTRATION UNITS: ug/L
Lab File ID: 2121210/v8011

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.290	U	0.157	0.290	1.00
74-82-8	Methane	1.09	U	0.486	1.09	5.00

FORM I ORG-1

C.2

212113005 542

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 496403

Sample ID: JM04-55MW25-112912
Contract:
SAS No.: SDG No.: 212113005
Lab Sample ID: 21211300516
Date Collected: 11/29/12 Time: 1345
Date Received: 11/30/12
Date Extracted:
Date Analyzed: 12/10/12 Time: 1314
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2121210/v8012

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.290	U	0.157	0.290	1.00
74-82-8	Methane	1.09	U	0.486	1.09	5.00

FORM I ORG-1

C.L

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 496403

Sample ID: JM04-EB03-112912
Contract:
SAS No.: SDG No.: 212113005
Lab Sample ID: 21211300517
Date Collected: 11/29/12 Time: 1400
Date Received: 11/30/12
Date Extracted:
Date Analyzed: 12/10/12 Time: 1319
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2121210/v8013

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.290	U	0.157	0.290	1.00
74-82-8	Methane	1.09	U	0.486	1.09	5.00

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 496403

Sample ID: JM04-EB04-112912

Contract:

SAS No.: SDG No.: 212113005

Lab Sample ID: 21211300518

Date Collected: 11/29/12 Time: 1415

Date Received: 11/30/12

Date Extracted:

Date Analyzed: 12/10/12 Time: 1325

Dilution Factor: 1 Analyst: JAR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

CONCENTRATION UNITS: *ug/L*

Lab File ID: 2121210V8014

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.290	U	0.157	0.290	1.00
74-82-8	Methane	1.09	U	0.486	1.09	5.00

FORM I ORG-1

CA

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name:	GCAL	Sample ID:	JM04-7MW07-113012
Lab Code:	LA024 Case No.:	Contract:	
Matrix:	Water	SAS No.:	SDG No.: 212113005
Sample wt/vol:	5 Units: mL	Lab Sample ID:	21211300521
Level: (low/med)		Date Collected:	11/30/12 Time: 0945
% Moisture:	decanted: (Y/N)	Date Received:	12/01/12
GC Column:	GS-Q 30 ID: .53 (mm)	Date Extracted:	
Concentrated Extract Volume:	5000 (µL)	Date Analyzed:	12/10/12 Time: 1538
Soil Aliquot Volume:	(µL)	Dilution Factor:	1 Analyst: BMR
Injection Volume:	1 (µL)	Prep Method:	
GPC Cleanup: (Y/N)	N pH:	Analytical Method:	RSK-175
Prep Batch:	Analytical Batch: 496403	Sulfur Cleanup: (Y/N)	N Instrument ID: GCV8A
CONCENTRATION UNITS:	*ug/L*	Lab File ID:	2121210/v8025

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.290	U	0.157	0.290	1.00
74-82-8	Methane	1.09	U	0.486	1.09	5.00

FORM I ORG-1

C.K

212113005 558

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 496403

Sample ID: JM04-FD01-113012
Contract:
SAS No.: SDG No.: 212113005
Lab Sample ID: 21211300522
Date Collected: 11/30/12 Time: 0000
Date Received: 12/01/12
Date Extracted:
Date Analyzed: 12/10/12 Time: 1557
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2121210V8027

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.135	0.220	1.00
74-85-1	Ethene	0.290	U	0.157	0.290	1.00
74-82-8	Methane	1.09	U	0.486	1.09	5.00

FORM I ORG-1

C.7

212113005 562

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300502	JM04-55MW01-112912	Water	11/29/2012 09:45	11/30/2012 10:20

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 09:52	DJH	496017

CAS#	Parameter	Result	RDL	MDL	Units	
000000-00-5	Total Alkalinity	439	1.0	0.19	mg/L CaCO3	U-FB

CA

212113005 615

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300502	JM04-55MW01-112912	Water	11/29/2012 09:45	11/30/2012 10:20

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/30/2012 22:07	DNM	495688

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	12.8	1.0	0.30	mg/L

U-FB

ct

212113005 617

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300502	JM04-S5MW01-112912	Water	11/29/2012 09:45	11/30/2012 10:20

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	12/04/2012 16:54	JEM	495969

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.020U	0.040	0.010	mg/L UJ-MSL

C+

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300502	JM04-55MW01-112912	Water	11/29/2012 09:45	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	11/30/2012 12:48	AEL	495699

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	~~0.598J~~	2.50	0.500	mg/L U-FB
14797-65-0	Nitrite	0.500U	2.50	0.125	mg/L

ck

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300502	JM04-55MW01-112912	Water	11/29/2012 09:45	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	12/12/2012 02:07	AEL	496552

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	89.2	4.00	2.30	mg/L U-FB

212113005 620

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300502	JM04-55MW01-112912	Water	11/29/2012 09:45	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1000	12/12/2012 02:25	AEL	496552

CAS#	Parameter	Result	RDL	MDL	Units	
16887-00-6	Chloride	1080	100	63.0	mg/L	U-FB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300504	JM04-EB01-112912	Water	11/29/2012 08:00	11/30/2012 10:20

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 09:52	DJH	496017

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	145	1.0	0.19	mg/L CaCO3

212113005 622

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300504	JM04-EB01-112912	Water	11/29/2012 08:00	11/30/2012 10:20

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/30/2012 22:28	DNM	495688

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	1.9	1.0	0.30	mg/L

NL

212113005 623

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300504	JM04-EB01-112912	Water	11/29/2012 08:00	11/30/2012 10:20

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 16:09	JEM	495969

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

ct

212113005 624

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300504	JM04-EB01-112912	Water	11/29/2012 08:00	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/30/2012 13:41	AEL	495699

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.293J	0.500	0.100	mg/L
14797-65-0	Nitrite	0.100U	0.500	0.025	mg/L
14808-79-8	Sulfate	9.52	0.200	0.115	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300504	JM04-EB01-112912	Water	11/29/2012 08:00	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	12/12/2012 01:14	AEL	496552

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	14.3	0.500	0.315	mg/L

C-2

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300506	JM04-55MW02-112912	Water	11/29/2012 11:30	11/30/2012 10:20

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 09:52	DJH	496017

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	323	1.0	0.19	mg/L CaCO3

4-FB

ch

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300506	JM04-55MW02-112912	Water	11/29/2012 11:30	11/30/2012 10:20

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/30/2012 22:51	DNM	495688

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	6.1	1.0	0.30	mg/L

U-FB

212113005 628

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300506	JM04-55MW02-112912	Water	11/29/2012 11:30	11/30/2012 10:20

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 16:14	JEM	495969

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300506	JM04-55MW02-112912	Water	11/29/2012 11:30	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/30/2012 13:59	AEL	495699

CAS#	Parameter	Result	RDL	MDL	Units	
14797-55-8	Nitrate	~~0.124J~~	0.500	0.100	mg/L	U-FB
14797-65-0	Nitrite	0.100U	0.500	0.025	mg/L	
14808-79-8	Sulfate	~~8.40~~	0.200	0.115	mg/L	U-FB

C-2

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300506	JM04-55MW02-112912	Water	11/29/2012 11:30	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	12/12/2012 03:00	AEL	496552

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	17.9	2.00	1.26	mg/L

U-FB

CL

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300510	JM04-EB02-112912	Water	11/29/2012 11:45	11/30/2012 10:20

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 09:52	DJH	496017

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	147	1.0	0.19	mg/L CaCO3

CK

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300510	JM04-EB02-112912	Water	11/29/2012 11:45	11/30/2012 10:20

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/30/2012 23:13	DNM	495688

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	5.1	1.0	0.30	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300510	JM04-EB02-112912	Water	11/29/2012 11:45	11/30/2012 10:20

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 16:45	JEM	495969

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300510	JM04-EB02-112912	Water	11/29/2012 11:45	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/30/2012 14:17	AEL	495699

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.372J	0.500	0.100	mg/L
14797-65-0	Nitrite	0.100U	0.500	0.025	mg/L
14808-79-8	Sulfate	9.42	0.200	0.115	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300510	JM04-EB02-112912	Water	11/29/2012 11:45	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	12/12/2012 02:42	AEL	496552

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	12.9	0.500	0.315	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300511	JM04-7MW22-112912	Water	11/29/2012 10:45	11/30/2012 10:20

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 11:26	DJH	496040

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	421	1.0	0.19	mg/L CaCO3

U-FB

ok

212113005 637

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300511	JM04-7MW22-112912	Water	11/29/2012 10:45	11/30/2012 10:20

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/30/2012 23:33	DNM	495688

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	12.6	1.0	0.30	mg/L U-FB

212113005 638

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300511	JM04-7MW22-112912	Water	11/29/2012 10:45	11/30/2012 10:20

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 16:14	JEM	495969

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

C1

212113005 635

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300511	JM04-7MW22-112912	Water	11/29/2012 10:45	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	11/30/2012 14:34	AEL	495699

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.745J	2.50	0.500	mg/L U-FB
14797-65-0	Nitrite	0.500U	2.50	0.125	mg/L

c:t

212113005 640

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300511	JM04-7MW22-112912	Water	11/29/2012 10:45	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	12/12/2012 01:49	AEL	496552

CAS#	Parameter	Result	RDL	MDL	Units	
16887-00-6	Chloride	1210	50.0	31.5	mg/L	U-FB
14808-79-8	Sulfate	236	100	57.5	mg/L	U-FB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300512	JM04-55MW12-112912	Water	11/29/2012 12:06	11/30/2012 10:20

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 11:26	DJH	496040

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	250	1.0	0.19	mg/L CaCO3

U-FB

CK

212113005 642

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300512	JM04-55MW12-112912	Water	11/29/2012 12:06	11/30/2012 10:20

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/30/2012 23:52	DNM	495688

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	4.9	1.0	0.30	mg/L

U-FB

c.f

212113005 E43

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300512	JM04-55MW12-112912	Water	11/29/2012 12:06	11/30/2012 10:20

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 16:46	JEM	495969

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

ct

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300512	JM04-55MW12-112912	Water	11/29/2012 12:06	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/30/2012 14:52	AEL	495699

CAS#	Parameter	Result	RDL	MDL	Units	
14797-55-8	Nitrate	0.168J	0.500	0.100	mg/L	U-FB
14797-65-0	Nitrite	0.100U	0.500	0.025	mg/L	
14808-79-8	Sulfate	6.21	0.200	0.115	mg/L	U-FB

ct

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300512	JM04-55MW12-112912	Water	11/29/2012 12:06	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	12/12/2012 01:32	AEL	496552

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	12.7	0.500	0.315	mg/L

U-FB

CN

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300513	JM04-7MW24-112912	Water	11/29/2012 13:15	11/30/2012 10:20

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 11:26	DJH	496040

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	353	1.0	0.19	mg/L CaCO3

U-FB

C-1

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300513	JM04-7MW24-112912	Water	11/29/2012 13:15	11/30/2012 10:20

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/01/2012 00:14	DNM	495688

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	13.0	1.0	0.30	mg/L

U-FB

ck

212113005 648

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300513	JM04-7MW24-112912	Water	11/29/2012 13:15	11/30/2012 10:20

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 16:46	JEM	495969

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

ct

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300513	JM04-7MW24-112912	Water	11/29/2012 13:15	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	11/30/2012 15:45	AEL	495699

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.638J	2.50	0.500	mg/L U-FB
14797-65-0	Nitrite	0.500U	2.50	0.125	mg/L

a.L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300513	JM04-7MW24-112912	Water	11/29/2012 13:15	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1000	12/12/2012 00:04	AEL	496552

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1170	100	63.0	mg/L

U-FB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300513	JM04-7MW24-112912	Water	11/29/2012 13:15	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	12/12/2012 00:57	AEL	496552

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	85.9	4.00	2.30	mg/L U-FB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300516	JM04-55MW25-112912	Water	11/29/2012 13:45	11/30/2012 10:20

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 11:26	DJH	496040

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	306	1.0	0.19	mg/L CaCO3

U-FB

C.L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300516	JM04-55MW25-112912	Water	11/29/2012 13:45	11/30/2012 10:20

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/01/2012 00:41	DNM	495688

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	11.3	1.0	0.30	mg/L

4-FB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300516	JM04-55MW25-112912	Water	11/29/2012 13:45	11/30/2012 10:20

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 16:48	JEM	495969

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300516	JM04-55MW25-112912	Water	11/29/2012 13:45	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	11/30/2012 16:02	AEL	495699

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	~~0.415J~~	1.00	0.200	mg/L U-FB
14797-65-0	Nitrite	0.200U	1.00	0.050	mg/L

C.Y

212113005 656

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300516	JM04-55MW25-112912	Water	11/29/2012 13:45	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	12/11/2012 23:28	AEL	496552

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	48.9	2.00	1.15	mg/L U-FB

M

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300516	JM04-55MW25-112912	Water	11/29/2012 13:45	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			200	12/11/2012 23:46	AEL	496552

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	526	20.0	12.6	mg/L

U-FB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300517	JM04-EB03-112912	Water	11/29/2012 14:00	11/30/2012 10:20

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 11:26	DJH	496040

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	145	1.0	0.19	mg/L CaCO3

ok

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300517	JM04-EB03-112912	Water	11/29/2012 14:00	11/30/2012 10:20

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/01/2012 01:44	DNM	495688

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	4.4	1.0	0.30	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300517	JM04-EB03-112912	Water	11/29/2012 14:00	11/30/2012 10:20

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 16:49	JEM	495969

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

ct

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300517	JM04-EB03-112912	Water	11/29/2012 14:00	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/30/2012 16:20	AEL	495699

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.307J	0.500	0.100	mg/L
14797-65-0	Nitrite	0.100U	0.500	0.025	mg/L
14808-79-8	Sulfate	9.60	0.200	0.115	mg/L

CL

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300517	JM04-EB03-112912	Water	11/29/2012 14:00	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	12/11/2012 23:11	AEL	496552

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	13.6	0.500	0.315	mg/L

212113005 663

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300518	JM04-EB04-112912	Water	11/29/2012 14:15	11/30/2012 10:20

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 11:26	DJH	496040

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	144	1.0	0.19	mg/L CaCO3

rt

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300518	JM04-EB04-112912	Water	11/29/2012 14:15	11/30/2012 10:20

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/01/2012 02:03	DNM	495688

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	5.9	1.0	0.30	mg/L

ct

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300518	JM04-EB04-112912	Water	11/29/2012 14:15	11/30/2012 10:20

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 16:49	JEM	495969

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

cf

212113005 666

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300518	JM04-EB04-112912	Water	11/29/2012 14:15	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/30/2012 16:38	AEL	495699

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.317J	0.500	0.100	mg/L
14797-65-0	Nitrite	0.100U	0.500	0.025	mg/L
14808-79-8	Sulfate	9.62	0.200	0.115	mg/L

CL

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300518	JM04-EB04-112912	Water	11/29/2012 14:15	11/30/2012 10:20

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	12/11/2012 22:53	AEL	496552

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	13.5	0.500	0.315	mg/L

212113005 668

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300521	JM04-7MW07-113012	Water	11/30/2012 09:45	12/01/2012 10:00

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 11:26	DJH	496040

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	384	1.0	0.19	mg/L CaCO3

U-FB

C-L

212113005 669

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300521	JM04-7MW07-113012	Water	11/30/2012 09:45	12/01/2012 10:00

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	12/03/2012 16:19	AEL	495834

CAS#	Parameter	Result	RDL	MDL	Units	
C-012	Total Organic Carbon	6.8	5.0	1.5	mg/L	U-FB

212113005 670

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300521	JM04-7MW07-113012	Water	11/30/2012 09:45	12/01/2012 10:00

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 16:51	JEM	495969

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300521	JM04-7MW07-113012	Water	11/30/2012 09:45	12/01/2012 10:00

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/01/2012 14:40	AEL	495769

CAS#	Parameter	Result	RDL	MDL	Units	
14797-55-8	Nitrate	~~0.164J~~	0.500	0.100	mg/L	U-FB
14797-65-0	Nitrite	0.100U	0.500	0.025	mg/L	

ct

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300521	JM04-7MW07-113012	Water	11/30/2012 09:45	12/01/2012 10:00

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	12/09/2012 04:56	AEL	496237

CAS#	Parameter	Result	RDL	MDL	Units	
16887-00-6	Chloride	53.9	2.00	1.26	mg/L	U-FB
14808-79-8	Sulfate	15.5	4.00	2.30	mg/L	U-FB

ct

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300522	JM04-FD01-113012	Water	11/30/2012 00:00	12/01/2012 10:00

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/05/2012 11:26	DJH	496040

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	373	1.0	0.19	mg/L CaCO3

U-FB

CL

212113005 574

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300522	JM04-FD01-113012	Water	11/30/2012 00:00	12/01/2012 10:00

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/03/2012 17:19	AEL	495834

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	9.1	1.0	0.30	mg/L

U-FB

CL

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300522	JM04-FD01-113012	Water	11/30/2012 00:00	12/01/2012 10:00

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 16:50	JEM	495969

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

CL

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300522	JM04-FD01-113012	Water	11/30/2012 00:00	12/01/2012 10:00

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/01/2012 15:15	AEL	495769

CAS#	Parameter	Result	RDL	MDL	Units	
14797-55-8	Nitrate	~~0.162J~~	0.500	0.100	mg/L	U-FB
14797-65-0	Nitrite	0.100U	0.500	0.025	mg/L	

CL

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21211300522	JM04-FD01-113012	Water	11/30/2012 00:00	12/01/2012 10:00

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	12/09/2012 05:14	AEL	496237

CAS#	Parameter	Result	RDL	MDL	Units	
16887-00-6	Chloride	52.4	2.00	1.26	mg/L	U-FB
14808-79-8	Sulfate	14.8	4.00	2.30	mg/L	U-FB

CL

212113005 678

CH2M Pull 14380 / 212112812 / 1215 / 12

AGVIO
CH2M HILL

1600
Atlanta, GA 30328
Tel No. (770) 604-9182
Fax No. (770) 604-9183

CHAIN-OF-CUSTODY RECORD

COC NUMBER: 378718-112712-01

PROJECT NAME	PROJECT NUMBER	LAB NAME AND CONTACT			FAX AND MAIL REPORTS/EDD TO RECIPIENT 1 (Name and Company)	SDG 212112812
Naval Activity Puerto Rico	378718.20.21.01.07	GCAL			Tom Beisel/CH2M HILL ATL	1000 Abernathy Road, Suite 1600 Atlanta GA,30328 770-604-9182
PROJECT PHASE/SITE/TASK	CTO OR DO NUMBER	LAB PO NUMBER			FAX AND MAIL REPORTS/EDD TO RECIPIENT 2 (Name and Company)	
SWMU 55 Baseline Sampling	N62470-08-D-1006	TBD			ccAmanda Struse/CH2M HILL ATL	1000 Abernathy Road, Suite 1600 Atlanta GA,30328 770-604-9182
PROJECT CONTACT	PROJECT TEL NO AND FAX NO	LAB TEL NO AND FAX NO			FAX AND MAIL REPORTS/EDD TO RECIPIENT 3 (Name and Company)	
Tom Beisel	770.604.9182	615-345-1115 / 615-345-5426				

ITEM	SAMPLE IDENTIFIER	SAMPLE DESCRIPTION/LOCATION	MATRIX (see codes on SOP)	DATE COLLECTED	TIME COLLECTED	DATA PKG LEVEL (see codes on SOP)	TAT (calendar days)	Bottle Type / Number of Bottles	F: VOCs (SW 8260B) (Short List: TCE, DCE and VC)	G: TOC (SM 5310-B)	Alkalinity (SM-2320B), anions	Sulfide (SM 4500S-D)	MEE (RSK-175)		SAMPLE TYPE (see codes on SOP)	COMMENTS/ SCREENING FINDINGS	LAB ID (for lab's use)
1	JM04-55MW15-112712	55MW15	AQ	11/27/12	1400	C/IV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	1
2	JM04-55MW16-112712	55MW16	AQ	11/27/12	1150	C/IV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	2
3	JM04-55MW20-112712	55MW20	AQ	11/27/12	1205	C/IV	14/ day	3	3							VOCs- TCE, DCE and VC	3
4	JM04-55MW20-112712MS	55MW20	AQ	11/27/12	1205	C/IV	14/ day	3	3						MS	VOCs- TCE, DCE and VC	4
5	JM04-55MW20-112712SD	55MW20	AQ	11/27/12	1205	C/IV	14/ day	3	3						MSD	VOCs- TCE, DCE and VC	5
6	JM04-55MW22-112712	55MW22	AQ	11/27/12	1400	C/IV	14/ day	3	3							VOCs- TCE, DCE and VC	6
7	JM04-55MW21-112712	55MW21	AQ	11/27/12	1150	C/IV	14/ day	3	3							VOCs- TCE, DCE and VC	7
8	JM04-TB01-112712	Trip Blank	AQ	lab supplied		C/IV	14/ day	3	3						TB	VOCs- TCE, DCE and VC	8
10																	
11																	
12																	

SAMPLER(S) AND COMPANY (please print)	COURIER AND SHIPPING NUMBER	
Andrew O'Conor, J. High, Simon Kline, J. Frank/CH2M HILL	FedEx: 873693472332	1 cooler / 3.5

RELINQUISHED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Printed Name and Signature: Andrew O'Conor / ATL	11/27/2012	1500	Printed Name and Signature: FedEx / Glaucia	11/28/12	1050
Printed Name and Signature: Andrew O'Conor			Printed Name and Signature		

CH2M HILL

CHAIN-OF-CUSTODY RECORD

COC NUMBER: 378718-112812-02

PROJECT NAME	PROJECT NUMBER	LAB NAME AND CONTACT			FAX AND MAIL REPORTS/EDD TO RECIPIENT 1 (Name and Company)	SDG 212112812
Naval Activity Puerto Rico	378718.20.21.01.07	GCAL			Tom Beisel/CH2M HILL ATL	1000 Abernathy Road, Suite 1600 Atlanta GA,30328 770-604-9182
PROJECT PHASE/SITE/TASK	CTO OR DO NUMBER	LAB PO NUMBER			FAX AND MAIL REPORTS/EDD TO RECIPIENT 2 (Name and Company)	
SWMU 55 Baseline Sampling	N62470-08-D-1006	TBD			cc:Amanda Struse/CH2M HILL	1000 Abernathy Road, Suite 1600 Atlanta GA,30328 770-604-9182
PROJECT CONTACT	PROJECT TEL NO AND FAX NO	LAB TEL NO AND FAX NO			FAX AND MAIL REPORTS/EDD TO RECIPIENT 3 (Name and Company)	
Tom Beisel	770.604.9182	615-345-1115 / 615-345-5426				

ITEM	SAMPLE IDENTIFIER	SAMPLE DESCRIPTION/LOCATION	MATRIX (see codes on SOP)	DATE COLLECTED	TIME COLLECTED	DATA PKG LEVEL (see codes on SOP)	TAT (calendar days)	Bottle Type	P	G	P	P	G		SAMPLE TYPE (see codes on SOP)	COMMENTS, SCREENING READINGS	LAB ID (for lab's use)
								Number of Bottles	VOCs (SW 8260B) (Short List: TCE,DCE	TOC (SM 5310-B)	Alkalinity (SM-2320B), anions	Sulfide (SM 4500S-D)	MEE (RSK-175)				
1	JM04-55MW18-112812	55MW18	AQ	11/28/12	1115	C/IV	14/day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	-09
2	JM04-55MW19-112812	55MW19	AQ	11/28/12	0910	C/IV	14/day	3	3							VOCs- TCE, DCE and VC	13
3	JM04-55MW06-112812	55MW06	AQ	11/28/12	0851	C/IV	14/day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	10
4	JM04-55MW05-112812	55MW05	AQ	11/28/12	1036	C/IV	14/day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	11
5	JM04-55MW08-112812	55MW08	AQ	11/28/12	1201	C/IV	14/day	3	3							VOCs- TCE, DCE and VC	14
6	JM04-55MW07-112812	55MW07	AQ	11/28/12	1411	C/IV	14/day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	12
7	JM04-TB02-112812	Trip Blank	AQ			C/IV	14/day	3	3						TB	VOCs- TCE, DCE and VC	15
8																	
10																	
11																	
12																	

SAMPLER(S) AND COMPANY: (please print)	COURIER AND SHIPPING NUMBER	
Andrew O'Conor, J. High, Simon Kline, J. Frank/CH2M HILL	FedEx: 8736 9347 2343 3 coolers	2.4, 3.1, 2.1 °C

RELINQUISHED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Printed Name and Signature			Printed Name and Signature		
Andrew O'Conor / ATL	11/28/2012	1530			
Printed Name and Signature			Printed Name and Signature		
FED EX			GCAL / Sauer	11/29/12	1050

Distribution: [ ] Original (Laboratory (To be returned with Analytical Report)) [ ] Copy 1 - Project File [ ] Copy 2 - PMO

Form 0CF001 Rev 06/00

AGVIO CH2M HILL

TBU
Atlanta, GA 30328
Tel No: (770) 604-9182
Fax No: (770) 604-9183

CHAIN-OF-CUSTODY RECORD

[1] COC NUMBER: 378718-112812-01

[2] PROJECT NAME:	[3] PROJECT NUMBER:	[5] LAB NAME AND CONTACT:		[11] FAX AND MAIL REPORTS/EDD TO:: RECIPIENT 1 (Name and Company)	SDG 212112812
Naval Activity Puerto Rico	378718.20.21.01.07	GCAL		Tom Beisel/CH2M HILL ATL	1000 Abernathy Road, Suite 1600 Atlanta GA,30328 770-604-9182
[3] PROJECT PHASE/SITE/TASK:	[4] CTO OR DO NUMBER:	[6] LAB PO NUMBER:		[12] FAX AND MAIL REPORTS/EDD TO:: RECIPIENT 2 (Name and Company)	
SWMU 55 Baseline Sampling	N62470-08-D-1006	TBD		ccAmanda Struse/CH2M HILL ATL	1000 Abernathy Road, Suite 1600 Atlanta GA,30328 770-604-9182
[4] PROJECT CONTACT:	[7] PROJECT TEL NO AND FAX NO:	[8] LAB TEL NO AND FAX NO:		[13] FAX AND MAIL REPORTS/EDD TO:: RECIPIENT 3 (Name and Company)	
Tom Beisel	770.604.9182	615-345-1115 / 615-345-5426			

[17] ITEM	[18] SAMPLE IDENTIFIER	[19] SAMPLE DESCRIPTION/LOCATION	[20] MATRIX (see codes on SOP)	[21] DATE COLLECTED	[22] TIME COLLECTED	[23] DATA PKG LEVEL (see codes on SOP)	[24] TAT (calendar days)	Bottle Type / Number of Bottles	P: VOCs (SW 8260B) (Short List: TCE,DCE and VC)	G: TOC (SM 5310-B)	Alkalinity (SM-2320B), anions	Sulfide (SM-4500S-D)	MEE (RSK-175)		[26] SAMPLE TYPE (see codes on SOP)	[27] COMMENTS/ SCREENING READINGS	[28] LAB ID (for lab's use)
1	JM04-55MW09-112812	55MW09	AQ	11/28/12	0920	C/TV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	16
2	JM04-55MW10-112812	55MW10	AQ	11/28/12	1100	C/TV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	17
3	JM04-55MW14-112812	55MW14	AQ	11/28/12	1300	C/TV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	18
4	JM04-FD01-112812		AQ	11/28/12	____	C/TV	14/ day	10	3	2	1	1	3		FD	VOCs- TCE, DCE and VC	19
5	JM04-7MW23-112812	7MW23	AQ	11/28/12	1440	C/TV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	20
6	JM04-7MW10-112812	7MW10	AQ	11/28/12	0930	C/TV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	21
7	JM04-7MW10-112812MS	7MW10	AQ	11/28/12	0930	C/TV	14/ day	10	3	2	1	1	3		MS	VOCs- TCE, DCE and VC	22
8	JM04-7MW10-112812SD	7MW10	AQ	11/28/12	0930	C/TV	14/ day	10	3	2	1	1	3		MSD	VOCs- TCE, DCE and VC	23
10	JM04-55MW11-112812	55MW11	AQ	11/28/12	1130	C/TV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	24
11	JM04-~~55MW21~~ 7MW21-112812	55MW21	AQ	11/28/12	1355	C/TV	14/ day	3	3							VOCs- TCE, DCE and VC	25
12	JM04-55MW17-112812	55MW17	AQ	11/28/12	1315	C/TV	14/ day	3	3							VOCs- TCE, DCE and VC	26

[29] SAMPLER(S) AND COMPANY: (please print)
Andrew O'Conor, J. High, Simon Kline, J. Frank/CH2M HILL

[30] COURIER AND SHIPPING NUMBER:
FedEx: 873693472332

*revised per client 1/30/13

[31] RELINQUISHED BY	DATE	TIME	[32] RECEIVED BY	DATE	TIME
Printed Name and Signature: Andrew O'Conor / ATL	11/28/2012	1530	Printed Name and Signature:		
Printed Name and Signature: FED EX			Printed Name and Signature: GCAL	11/29/12	1150

212112812 1055

CH2M Hill 143801/212113005

AGVIQ CH2M HILL
1600 Atlanta, GA 30328
Tel No. (770) 604-9182
Fax No: (770) 604-9183

CHAIN-OF-CUSTODY RECORD

[1] COC NUMBER: 378718-112912-01

[2] PROJECT NAME	[3] PROJECT NUMBER	[4] LAB NAME AND CONTACT			[11] FAX AND MAIL REPORTS/EDD TO: RECIPIENT 1 (Name and Company)	SDG 212113005
Naval Activity Puerto Rico	378718.20.21.01.07	GCAL			Tom Beisel/CH2M HILL ATL	1000 Abernathy Road, Suite 1600 Atlanta GA,30328 770-604-9182
[5] PROJECT PHASE/SITE/TASK	[6] CTO OR DO NUMBER	[7] LAB PO NUMBER			[12] FAX AND MAIL REPORTS/EDD TO RECIPIENT 2 (Name and Company)	
SWMU 55 Baseline Sampling	N62470-08-D-1006	TBD			ccAmanda Struse/CH2M HILL ATL	1000 Abernathy Road, Suite 1600 Atlanta GA,30328 770-604-9182
[8] PROJECT CONTACT	[9] PROJECT TEL NO AND FAX NO	[10] LAB TEL NO AND FAX NO			[13] FAX AND MAIL REPORTS/EDD TO: RECIPIENT 3 (Name and Company)	
Tom Beisel	770.604.9182	615-345-1115 / 615-345-5426				

[17] ITEM	[18] SAMPLE IDENTIFIER	[19] SAMPLE DESCRIPTION/LOCATION	[20] MATRIX (see codes on SOP)	[21] DATE COLLECTED	[22] TIME COLLECTED	[23] DATA PKG LEVEL (see codes on SOP)	[24] TAT (calendar days)	Bottle Type / Number of Bottles	P / VOCs (SW 8260B) (Short List: TCE, DCE and VC)	G / TOC (SM 5310-B)	P / Alkalinity (SM-2320B), anions	P / Sulfide (SM 4500S-D)	G / MEE (RSK-175)		[26] SAMPLE TYPE (see codes on SOP)	[27] COMMENTS/ SCREENING READINGS	[28] LAB ID (for lab's use)
1	JM04-TB03-112912	Trip Blank	AQ	lab supplied	NA	C/IV	14/ day	3	3							VOCs- TCE, DCE and VC	01
2	JM04-55MW01-112912	55MW01	AQ	11/29/12	9:45	C/IV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	02
3	JM04-55MW23-112912	55MW23	AQ	11/29/12	9:25	C/IV	14/ day	3	3							VOCs- TCE, DCE and VC	03
4	JM04-EB01-112912	Equipment Blank	AQ	11/29/12	8:00	C/IV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	04
5	JM04-55MW03-112912	55MW03	AQ	11/29/12	9:05	C/IV	14/ day	3	3							VOCs- TCE, DCE and VC	05
6	JM04-55MW02-112912	55MW02	AQ	11/29/12	11:30	C/IV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	06
7	JM04-55MW04-112912	55MW04	AQ	11/29/12	10:55	C/IV	14/ day	3	3							VOCs- TCE, DCE and VC	07
8	JM04-FD01-112912	Blind Duplicate	AQ	11/29/12	NA	C/IV	14/ day	3	3							VOCs- TCE, DCE and VC	08
10	JM04-55MW13-112912	55MW13	AQ	11/29/12	10:26	C/IV	14/ day	3	3							VOCs- TCE, DCE and VC	09
11	JM04-EB02-112912	Equipment Blank	AQ	11/29/12	11:45	C/IV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	10
12	JM04-7MW22-112912	7MW22	AQ	11/29/12	10:45	C/IV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	11

[29] SAMPLER(S) AND COMPANY (please print)	[30] COURIER AND SHIPPING NUMBER	
Andrew O'Conor, J. High, Simon Kline, J. Frank/CH2M HILL	FedEx: 873693472354	2.4, 2.8

[32] RELINQUISHED BY	DATE	TIME	[35] RECEIVED BY	DATE	TIME
Printed Name and Signature			Printed Name and Signature		
James Frank [signature]	11/29/2012	1500	Fed Ex / [signature]	11/30/12	1020
Printed Name and Signature			Printed Name and Signature		

CH2M HILL 14380 212113005

AECOM
CH2M HILL

1600
Atlanta, GA 30328
Tel No: (770) 604-9182
Fax No. (770) 604-9183

CHAIN-OF-CUSTODY RECORD

[1] COC NUMBER: 378718-112912-02

[1] PROJECT NAME: Naval Activity Puerto Rico	[2] PROJECT NUMBER: 378718.20.21.01.07	[3] LAB NAME AND CONTACT: GCAL	[11] FAX AND MAIL REPORTS/EDD TO: RECIPIENT 1 (Name and Company): Tom Beisel/CH2M HILL ATL	1000 Abernathy Road, Suite 1600 Atlanta GA,30328 770-604-9182
[7] PROJECT PHASE/SITE/TASK: SWMU 55 Baseline Sampling	[8] CTO OR DO NUMBER: N62470-08-D-1006	[9] LAB PO NUMBER: TBD	[12] FAX AND MAIL REPORTS/EDD TO: RECIPIENT 2 (Name and Company): ccAmanda Struse/CH2M HILL ATL	1000 Abernathy Road, Suite 1600 Atlanta GA,30328 770-604-9182
[4] PROJECT CONTACT: Tom Beisel	[7] PROJECT TEL NO AND FAX NO: 770.604.9182	[10] LAB TEL NO AND FAX NO: 615-345-1115 / 615-345-5426	[13] FAX AND MAIL REPORTS/EDD TO: RECIPIENT 3 (Name and Company):	

[17] ITEM	[18] SAMPLE IDENTIFIER	[19] SAMPLE DESCRIPTION/LOCATION	[20] MATRIX (see codes on SOP)	[21] DATE COLLECTED	[22] TIME COLLECTED	[23] DATA PKG LEVEL (see codes on SOP)	[24] TAT (calendar days)	Bottle Type / Number of Bottles	P VOCs (SW 8260B) (Short List: TCE,DCE and VC)	G TOC (SM 5310-B)	P Alkalinity (SM-2320B), anions	P Sulfide (SM 4500S-D)	G MEE (RSK-175)		[28] SAMPLE TYPE (see codes on SOP)	[29] COMMENTS/ SCREENING READINGS	[30] LAB ID (for lab's use)
1	JM04-55MW12-112912	55MW12	AQ	11/29/12	12:06	C/IV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	12
2	JM04-7MW24-112912	7MW24	AQ	11/29/12	13:15	C/IV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	13
3	JM04-55IW03-112912	55IW03	AQ	11/29/12	14:01	C/IV	14/ day	3	3							VOCs- TCE, DCE and VC	14
4	JM04-55MW24-112912	55MW24	AQ	11/29/12	13:40	C/IV	14/ day	3	3							VOCs- TCE, DCE and VC	15
5	JM04-55MW25-112912	55MW25	AQ	11/29/12	13:45	C/IV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	16
6	JM04-EB03-112912	Equipment Blank	AQ	11/29/12	14:00	C/IV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	17
7	JM04-EB04-112912	Equipment Blank	AQ	11/29/12	14:15	C/IV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	18
8																	
10																	
11																	
12																	

[31] SAMPLER(S) AND COMPANY (please print): Andrew O'Conor, J. High, Simon Kline, J. Frank/CH2M HILL

[40] COURIER AND SHIPPING NUMBER: FedEx: 873693472354

[32] RELINQUISHED BY	DATE	TIME	[33] RECEIVED BY	DATE	TIME
Printed Name and Signature: James Frank	11/29/2012	1500	Printed Name and Signature: FedEx	11/30/12	1020
Printed Name and Signature			Printed Name and Signature		

Distribution: [ ] Original - Laboratory (To be returned with Analytical Report), [ ] Copy 1 - Project File; [ ] Copy 2 - PMO

Form CC1001, Rev 06/00

CH2M HILL / 4380 / 212113005 / 12/11/12

AGVIQ CH2M HILL

1600 Atlanta, GA 30328
Tel No (770) 604-9182
Fax No. (770) 604-9163

CHAIN-OF-CUSTODY RECORD

COC NUMBER: 378718-113012-01A

PROJECT NAME	PROJECT NUMBER	LAB NAME AND CONTACT			FAX AND MAIL REPORTS/EDD TO: RECIPIENT 1 (Name and Company)	
Naval Activity Puerto Rico	378718.30.23.90.40	GCAL			Tom Beisel/CH2M HILL ATL	1000 Abernathy Road, Suite 1600 Atlanta GA,30328 770-604-9182
PROJECT PHASE/SITE/TASK	CTO OR DO NUMBER	LAB PO NUMBER			FAX AND MAIL REPORTS/EDD TO RECIPIENT 2 (Name and Company)	
SWMU 55 Baseline Sampling	N62470-08-D-1006	TBD			ccAmanda Struse/CH2M HILL ATL	1000 Abernathy Road, Suite 1600 Atlanta GA,30328 770-604-9182
PROJECT CONTACT:	PROJECT TEL NO AND FAX NO:	LAB TEL NO AND FAX NO:			FAX AND MAIL REPORTS/EDD TO RECIPIENT 3 (Name and Company)	
Tom Beisel	770.604.9182	615-345-1115 / 615-345-5426				

ITEM	SAMPLE IDENTIFIER	SAMPLE DESCRIPTION/LOCATION	MATRIX (see codes on SOP)	DATE COLLECTED	TIME COLLECTED	DATA PKG LEVEL (see codes on SOP)	TAT (calendar days)	Bottle Type / Number of Bottles	P / VOCs (SW 8260B) (Short List: TCE, DCE and VC)	G / TOC (SM 5310-B)	P / Alkalinity (SM-2320B), anions	P / Sulfide (SM 4500S-D)	G / MEE (RSK-175)		SAMPLE TYPE (see codes on SOP)	COMMENTS/ SCREENING READINGS	LAB ID (for lab's use)
1	JM04-TB04-113012	Trip Blank	AQ	lab supplied	NA	C/IV	14/ day	3	3							VOCs- TCE, DCE and VC	19
2	JM04-55IW01-113012	55IW01	AQ	11/30/12	9:30	C/IV	14/ day	3	3							VOCs- TCE, DCE and VC	20
3	JM04-7MW07-113012	7MW07	AQ	11/30/12	9:45	C/IV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	21
4	JM04-FD01-113012	Blind Duplicate	AQ	11/30/12	NA	C/IV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	22
5	JM04-55IW02-113012	55IW02	AQ	11/30/12	12:00	C/IV	14/ day	3	J							VOCs- TCE, DCE and VC	23
6	JM04-55IW04-113012	55IW04	AQ	11/30/12	12:30	C/IV	14/ day	3	3							VOCs- TCE, DCE and VC	24
7																	
8																	
10																	
11																	
12																	

SAMPLER(S) AND COMPANY: (please print)
Andrew O'Conor, J. High, Simon Kline, J. Frank/CH2M HILL

COURIER AND SHIPPING NUMBER:
FedEx: 873693472365

3.5, 3.6

RELINQUISHED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Printed Name and Signature: James Frank	11/30/2012	1500	Printed Name and Signature: [signature]	12/1/12	1000
Printed Name and Signature:			Printed Name and Signature		

Data Validation Report

JM04 – SMWU 55
Area: Baseline Groundwater Sampling
CH2M Hill Constructors, Inc.

SDG: 212112812 Date: January 30, 2013

Approved For Quality Assurance By:
Christa L. Robinson Date 1/31/13

eDATApro

Environmental Data Professional, LLC
6004 Perkins Road Suite A1 • Baton Rouge, LA 70808 • phone: 225-761-4264 • fax: 225-761-4266

Disclaimer:

The validation performed and reported he rein is bas ed on specifications and procedures presented to eDAT Apro with the associated data package. Any qualifications or review not specified with package requirements was based on direction and/or input from the CH2Mhill project Chemist.

Information contained in this repor t based solely on the hardcopy and/or electronic deliverables that were submi tted to eDAT Apro. EDATApro re serves the rights to modify or change the va lidation report if new information is presented or if this report is determined to be inaccurate or incomplete.

Cover Letter

Validation Report Date: January 30, 2013

Lab Report Date: 12/11/2012

Contract Task Order (CTO) Number: JM-04

Project Name: SMWU-55

Area: Baseline Groundwater Sampling

Sample Delivery Group(s): 21211282

CTO Project Manager: Bethany Garvey

Data validation personnel: Mary Romero/Mike Stewart

Data Deliverables Included:

Validation Report:

✓ Data Validation Report
- ✓ Introduction
- ✓ Data Validation Findings Summary
- ✓ Table 1-1, Summary of Qualified Data
- ✓ Appendix I – Qualified Laboratory Form 1s
- ✓ Appendix II – Chain of Custody
- ✓ Appendix III – Copies of completed checklists
- ✓ EDD with applied data qualifiers

✓ Data Validation Reference Package, including
- ✓ Table 1-2, Acronyms and Abbreviation List
- ✓ Table 1-3, Data Qualifier Reference Table
- ✓ Table 1-4, Qualification Code Reference Table

Approval Signature: _____ Date: January 22, 2013

INTRODUCTION:

CTO Number: JM-04
Project Name: SMWU-55
Area: Baseline Groundwater Sampling
Laboratory: Gulf Coast Analytical Laboratories, Inc.
Laboratory Package No. 212112812
Matrix: Water

Environmental Data Professional, LLC (eDATApro) received one data package containing five field samples, one matrix spike/duplicate pair and one trip blank sample. These samples were validated utilizing CCI-approved checklists based on the Department of Defense Quality System Manual as part of the DOD QSM – Navy Installation Restoration Chemical Data Quality Manual (IRCDQM) and the project specific Scope of Work.

The following samples were reviewed:

Sample ID	Matrix	Lab ID	Parent Sample ID	Collection Date/Time	Analyses
JM04-55MW15-112712	Water	21211281201		11/27/12 14:00	[1-9]
JM04-55MW16-112712	Water	21211281202		11/27/12 11:50	[1-9]
JM04-55MW20-112712	Water	21211281203		11/27/12 12:05	[1]
JM04-55MW20-112712MS	Water	21211281204	JM04-55MW20-112712	11/27/12 12:05	[1]
JM04-55MW20-112712SD	Water	21211281205	JM04-55MW20-112712	11/27/12 12:05	[1]
JM04-55MW22-112712	Water	21211281206		11/27/12 14:00	[1]
JM04-55MW21-112712	Water	21211281207		11/27/12 11:50	[1]
JM04-TB01-112712	Water	21211281208			[1]

Analyses Performed Codes:

[1] – Trichloroethene, Vinyl Chloride and cis-1,2-Dichlorothene – SW-846 8260B
[2] – Methane, Ethane and Ethene – RSK 175
[3] – Total Alkalinity – SM 2320B
[4] – Total Organic Carbon – SM 5310B
[5] – Sulfide – SM 4500S2-D
[6] – Nitrate – SW-846 9056A
[7] – Chloride – SW-846 9056A
[8] – Nitrite – SW-846 9056A
[9] – Sulfate – SW-846 9056A

DATA VALIDATION FINDINGS SUMMARY

I. General Package:

Please note that the project specific analyte lists and project specific reporting limits were evaluated by an AGVIQ CH2M HILL quality assurance chemist.

The chain-of-custody associated with SDG 212112812 also included samples collected on 11/28/2012. As per instructions from the project chemist, only samples collected on 11/27/2012 were reviewed.

Please note that there were not any equipment blanks or field duplicate samples associated with the samples reviewed for this report.

II. Executive Summary:

The findings of this quality assurance report are based upon the comprehensive review of the following data categories: chain of custody documentation, holding times, laboratory method and field blank analyses, surrogate compound recoveries, matrix spike compound recoveries and reproducibility, GCMS mass tuning results, initial and continuing calibration, second source recovery and internal standard area performance summaries, target compound identification, laboratory control sample results, laboratory and blind field duplicate sample results, detection limits/sensitivity, and electronic data deliverables.

The analyses were performed acceptably, but require several qualifying statements; it is recommended that the analytical data be used only with the qualifying statements provided below. Any aspects of the data, which are not discussed in this report, should be considered qualitatively and quantitatively valid as reported, based on the deliverables reviewed.

III. Organic Analyses:

- **Trichloroethene, Vinyl Chloride and cis-1,2-Dichlorothene – SW-846 8260B:**

  All quality assurance and quality control (QA/QC) components presented by the laboratory satisfied method and data review acceptance criteria; therefore, no data qualifications were necessary.

- **Methane, Ethane and Ethene – RSK 175:**

  All quality assurance and quality control (QA/QC) components presented by the laboratory satisfied method and data review acceptance criteria; therefore, no data qualifications were necessary.

- **Total Alkalinity – SM 2320B:**

  All quality assurance and quality control (QA/QC) components presented by the laboratory satisfied method and data review acceptance criteria; therefore, no data qualifications were necessary.

- **Total Organic Carbon – SM 5310B:**

The laboratory diluted the samples JM04-55MW15-112712 and JM04-55MW16-112712 to ensure the results were within the calibration range. The laboratory adjusted the reporting limits accordingly.

All quality assurance and quality control (QA/QC) components presented by the laboratory satisfied method and data review acceptance criteria; therefore, no data qualifications were necessary.

- **Sulfide – SM 4500S2-D:**

  All quality assurance and quality control (QA/QC) components presented by the laboratory satisfied method and data review acceptance criteria; therefore, no data qualifications were necessary.

- **Nitrate – SW-846 9056A:**

  The laboratory noted that chemical or physical interference necessitated a dilution for samples JM04-55MW15-112712 and JM04-55MW16-112712. Th e laboratory adjusted the reporting limits accordingly.

  All quality assurance and quality control (QA/QC) components presented by the laboratory satisfied method and data review acceptance criteria; therefore, no data qualifications were necessary.

- **Chloride – SW-846 9056A:**

  The laboratory diluted the samples JM04-55MW15-112712 and JM04-55MW16-112712 to ensure the results were within the calibration range. The laboratory adjusted the reporting limits accordingly.

  All quality assurance and quality control (QA/QC) components presented by the laboratory satisfied method and data review acceptance criteria; therefore, no data qualifications were necessary.

- **Nitrite – SW-846 9056A:**

  The laboratory noted that chemical or physical interference necessitated a dilution for samples JM04-55MW15-112712 and JM04-55MW16-112712. Th e laboratory adjusted the reporting limits accordingly.

  All quality assurance and quality control (QA/QC) components presented by the laboratory satisfied method and data review acceptance criteria; therefore, no data qualifications were necessary.

- **Sulfate – SW-846 9056A:**

  The laboratory diluted the samples JM04-55MW15-112712 and JM04-55MW16-112712 to ensure the results were within the calibration range. The laboratory adjusted the reporting limits accordingly.

  All quality assurance and quality control (QA/QC) components presented by the laboratory satisfied method and data review acceptance criteria; therefore, no data qualifications were necessary.

TABLE 1-1

SUMMARY OF QUALIFIED DATA

No qualifications were applied to this data package.

TABLE 1-2

ACRONYMS AND ABBREVIATIONS

%R – Percent Recovery

%D – Percent Difference

EDD – Electronic Data Deliverable

LCS – Laboratory Control Sample

LCSD – Laboratory Control Sample Duplicate

MS – Matrix Spike

MSD – Matrix Spike Duplicate

QC – Quality Control

TABLE 1-3

DATA QUALIFIER REFERENCE

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
J	The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicated the presence of an analyte for which there was presumptive evidence to make a "tentative identification"	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet the quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. (Note: Analyte may or not be present)
G	The analyte detected in the associated field, equipment, and/or trip blank.	The analyte detected in the associated field, equipment, and/or trip blank.
B	The analyte detected in the associated method and/or calibration blank	The analyte detected in the associated method and/or calibration blank

TABLE 1-4

QUALIFICATION CODE REFERENCE

No qualifications were applied to this data package.

Appendix I
Form 1 Data (Qualified)

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW15-112712

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812

Matrix (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211281201

Level: (low/med) Lab File ID: 2121129pfe1693

% Moisture: not dec. Date Collected: 11/27/12 Time: 1400

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/28/12

Instrument ID: MSV7 Date Analyzed: 11/30/12 Time: 0147

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: EDS

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 495645

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ	01	02
79-01-6	Trichloroethene	18.5		0.161	0.200	1.00		
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00	U	U
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00	U	U

01 - Rev Qual
02 - Qual Code
N

FORM I VOA

212112812 29

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
JM04-55MW16-112712

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812

Matrix (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211281202

Level: (low/med) Lab File ID: 2121129p/e1694

% Moisture: not dec. Date Collected: 11/27/12 Time: 1150

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/28/12

Instrument ID: MSV7 Date Analyzed: 11/30/12 Time: 0207

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: EDS

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 495645

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ	01	02
79-01-6	Trichloroethene	4.46		0.161	0.200	1.00		
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00	U	
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00	U	

01-Reviewed
02-Qual Code
N

FORM I VOA

212112812 21

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
JM04-55MW20-112712

Lab Name: GCAL Contract:
Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812
Matrix: (soil/water) Water
Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211261203
Level: (low/med) Lab File ID: 2121129p/e1695
% Moisture: not dec. Date Collected: 11/27/12 Time: 1205
GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/28/12
Instrument ID: MSV7 Date Analyzed: 11/30/12 Time: 0227
Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: EDS
Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 495645
Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ	01	02
79-01-6	Trichloroethene	3.37		0.161	0.200	1.00		
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00	4	
156-59-2	cis-1,2-Dichloroethene	28.4		0.103	0.200	1.00		

01-Rev Qual
02-Qual Code
M

FORM I VOA

212112812 35

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW22-112712

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812

Matrix (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211281206

Level: (low/med) Lab File ID: 2121129p/e1706

% Moisture: not dec. Date Collected: 11/27/12 Time: 1400

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/28/12

Instrument ID: MSV7 Date Analyzed: 11/30/12 Time: 0607

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: JCK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 495645

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ	01	02
79-01-6	Trichloroethene	0.413	J	0.161	0.200	1.00	55	
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00	55	
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00	55	

01 Rev Qual
02 Qual Code
nl

FORM I VOA

212112812 43

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW21-112712

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211281207

Level: (low/med) Lab File ID: 2121129pfe1699

% Moisture: not dec. Date Collected: 11/27/12 Time: 1150

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/28/12

Instrument ID: MSV7 Date Analyzed: 11/30/12 Time: 0347

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: EDS

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 495645

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ	01	02
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00	I	S
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00		
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00		

01_Rev Qual
02 - Qual Code
N

FORM I VOA

212112812 49

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-TB01-112712

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 212112812

Matrix (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21211281208

Level: (low/med) Lab File ID: 2121129p/e1700

% Moisture: not dec. Date Collected: 11/27/12 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/28/12

Instrument ID: MSV7 Date Analyzed: 11/30/12 Time: 0407

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: EDS

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 495645

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ	01	02
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00	4	
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00		
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00	1	

01 - Rev Dual
02 - Dual Code
nl

FORM I VOA

212112812 53

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 496111

Sample ID: JM04-55MW15-112712
Contract:
SAS No.: SDG No.: 212112812
Lab Sample ID: 21211281201
Date Collected: 11/27/12 Time: 1400
Date Received: 11/28/12
Date Extracted:
Date Analyzed: 12/06/12 Time: 1358
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2121206/v8019

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ	01	02
74-84-0	Ethane	0.220	U	0.135	0.220	1.00	U	
74-85-1	Ethene	0.290	U	0.157	0.290	1.00	U	
74-82-8	Methane	1.13	J	0.486	1.09	5.00	J	

01 Reviewed
02 Qual Code
MA

FORM 1 ORG-1

212112812 511

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 496111

Sample ID: JM04-55MW18-112712
Contract:
SAS No.: SDG No.: 212112812
Lab Sample ID: 21211281202
Date Collected: 11/27/12 Time: 1150
Date Received: 11/28/12
Date Extracted:
Date Analyzed: 12/06/12 Time: 1443
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2121206V8021

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ	Q1	Q2
74-84-0	Ethane	0.220	U	0.135	0.220	1.00	U	
74-85-1	Ethene	0.290	U	0.157	0.290	1.00	U	
74-82-8	Methane	1.07	J	0.486	1.09	5.00	J	

Q1 - Rev 2 nd
Q2 - 2nd Code
nd

FORM I ORG-1

212112812 515

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/29/2012 09:18	JEM	495599

01 02

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	501	1.0	0.19	mg/L CaCO3

01 Rev Qual
02 Qual Code
ml

212112912 650

SM 2320B Alkalinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/29/2012 09:16	JEM	495599

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	585	1.0	0.19	mg/L CaCO3

01-Rev Qual
02-Qual Code
ol

212112812 657

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	11/30/2012 10:31	DNM	495603

01 02

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	13.1	5.0	1.5	mg/L

01-Rev Qual
02-Qual Code
ND

SM 5310B TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	11/30/2012 11:23	DHM	495603

01 02

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	12.2	2.0	0.61	mg/L

01-Rev 2nd
02-2nd Code
N

212112912 659

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 14:04	JEM	495939

01 02

CAS#	Parameter	Result	RDL	MDL	Units	
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L	u

01_Rev Qual
02_Qual Code
ml

212112812 652

SM 4500S2- D Sulfide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	12/04/2012 14:03	JEM	495939

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

01-Raw Result
02-Qual Code
- ND

212112812 659

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch	
			10	11/28/2012 15:42	AEL	495538	01 02

CAS#	Parameter	Result	RDL	MDL	Units	
14797-55-8	Nitrate	1.00U	5.00	1.00	mg/L	U

01 - Rev Qual
02 - Qual Code.
Nl

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	11/29/2012 09:30	AEL	495538

01 02

CAS#	Parameter	Result	RDL	MDL	Units
14797-65-0	Nitrite	2.00U	10.0	0.500	mg/L

4

01-Rev Qual
02-Qual Code
nl

212112812 655

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch	
			5	11/28/2012 16:34	AEL	495538	01 02

CAS#	Parameter	Result	RDL	MDL	Units	
14797-55-8	Nitrate	0.500U	2.50	0.500	mg/L	u
14797-65-0	Nitrite	0.500U	2.50	0.125	mg/L	u

01 - Rev Dil
02 - Dil Code
ml

212112812 660

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2000	11/28/2012 23:55	AEL	495538

01 02

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	3680	200	126	mg/L

01 - Reviewed
02 - Qual code
nd

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1000	11/29/2012 00:48	AEL	495538

01 02

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1170	100	63.0	mg/L

01-Raw Sul
02-Sul Cade
al

212112812 661

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch	
			200	11/29/2012 10:23	AEL	486538	01 02

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	273	40.0	23.0	mg/L

01-Reviewed
02-Qual code
nl

212112812 656

SW-846 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			100	11/29/2012 11:18	AEL	495538

01 02

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	112	20.0	11.5	mg/L

01-Rev Qual
02-Qual Code
ml

212112812 662

Appendix II
Chain of Custody

CH2M DUE 14380 12/21/12 8/12/12/17/12

AGVIQ CH2M HILL

1600 Atlanta, GA 30328
Tel No: (770) 604-9182
Fax No: (770) 604-9183

CHAIN-OF-CUSTODY RECORD

COC NUMBER: 378718-112712-01

PROJECT NAME:	PROJECT NUMBER:	LAB NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO: RECIPIENT 1 (Name and Company)	SDG 21211281 2
Naval Activity Puerto Rico	378718.20.21.01.07	GCAL	Tom Beisel/CH2M HILL ATL	1000 Abernathy Road, Suite 1600 Atlanta GA,30328 770-604-9182
PROJECT PHASE/SITE/TASK:	CTO OR DO NUMBER:	LAB PO NUMBER:	FAX AND MAIL REPORTS/EDD TO: RECIPIENT 2 (Name and Company)	
SWMU 55 Baseline Sampling	N62470-08-D-1006	TBD	ccAmanda Struse/CH2M HILL ATL	1000 Abernathy Road, Suite 1600 Atlanta GA,30328 770-604-9182
PROJECT CONTACT:	PROJECT TEL NO AND FAX NO:	LAB TEL NO AND FAX NO:	FAX AND MAIL REPORTS/EDD TO: RECIPIENT 3 (Name and Company)	
Tom Beisel	770.604.9182	615-345-1115 / 615-345-5426		

ITEM	SAMPLE IDENTIFIER	SAMPLE DESCRIPTION/LOCATION	MATRIX (see codes on SOP)	DATE COLLECTED	TIME COLLECTED	DATA PKG LEVEL (see codes on SOP)	TAT (calendar days)	Bottle Type / Number of Bottles	P: VOCs (SW 8260B) (Short List: TCE, DCE and VC)	G: TOC (SM 5310-B)	Alkalinity (SM-2320B), anions	Sulfide (SM 4500S-D)	MEE (RSK-175)		SAMPLE TYPE (see codes on SOP)	COMMENTS/ SCREENING READINGS	LAB ID (for lab's use)
1	JM04-55MW15-112712	55MW15	AQ	11/27/12	1400	C/IV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	1
2	JM04-55MW16-112712	55MW16	AQ	11/27/12	1150	C/IV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	2
3	JM04-55MW20-112712	55MW20	AQ	11/27/12	1205	C/IV	14/ day	3	3							VOCs- TCE, DCE and VC	3
4	JM04-55MW20-112712MS	55MW20	AQ	11/27/12	1205	C/IV	14/ day	3	3						MS	VOCs- TCE, DCE and VC	4
5	JM04-55MW20-112712SD	55MW20	AQ	11/27/12	1205	C/IV	14/ day	3	3						MSD	VOCs- TCE, DCE and VC	5
6	JM04-55MW22-112712	55MW22	AQ	11/27/12	1400	C/IV	14/ day	3	3							VOCs- TCE, DCE and VC	6
7	JM04-55MW21-112712	55MW21	AQ	11/27/12	1150	C/IV	14/ day	3	3							VOCs- TCE, DCE and VC	7
8	JM04-TB01-112712	Trip Blank	AQ	lab supplied		C/IV	14/ day	3	3						TB	VOCs- TCE, DCE and VC	8
10																	
11																	
12																	

SAMPLER(S) AND COMPANY, (please print): Andrew O'Conor, J. High, Simon Kline, J. Frank/CH2M HILL

COURIER AND SHIPPING NUMBER: FedEx: 873693472332

1 cooler 3.5

RELINQUISHED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Printed Name and Signature: Andrew O'Conor / ATL	11/27/2012	1500	Printed Name and Signature: FedEx / Gaussia	11/28/12	1050
Printed Name and Signature: Andrew O'Conor			Printed Name and Signature:		

21211281 2 1053

CH2M HILL
1600
Atlanta, GA 30328
Tel No. (770) 604-9182
Fax No. (770) 604-9183

CHAIN-OF-CUSTODY RECORD

[1] COC NUMBER: 378718-112812-02

[2] PROJECT NAME:	[3] PROJECT NUMBER:	[4] LAB NAME AND CONTACT:	[11] FAX AND MAIL REPORTS/EDD TO:: RECIPIENT 1 (Name and Company)	SDG 212112812
Naval Activity Puerto Rico	378718.20.21.01.07	GCAL	Tom Belsel/CH2M HILL ATL	1000 Abernathy Road, Suite 1600 Atlanta GA,30328 770-604-9182
[5] PROJECT PHASE/SITE/TASK:	[6] CTO OR DO NUMBER:	[7] LAB PO NUMBER:	[12] FAX AND MAIL REPORTS/EDD TO:: RECIPIENT 2 (Name and Company)	
SWMU 55 Baseline Sampling	N62470-08-D-1006	TBD	cc:Amanda Struse/CH2M HILL	1000 Abernathy Road, Suite 1600 Atlanta GA,30328 770-604-9182
[8] PROJECT CONTACT:	[9] PROJECT TEL NO AND FAX NO.	[10] LAB TEL NO AND FAX NO:	[13] FAX AND MAIL REPORTS/EDD TO:: RECIPIENT 3 (Name and Company)	
Tom Belsel	770.604.9182	615-345-1115 / 615-345-5426		

[17] ITEM	[18] SAMPLE IDENTIFIER	[19] SAMPLE DESCRIPTION/LOCATION	[20] MATRIX (see codes on SOP)	[21] DATE COLLECTED	[22] TIME COLLECTED	[23] DATA PKG LEVEL (see codes on SOP)	[24] TAT (calendar days)	Bottle Type / Number of Bottles	P / VOCs (SW 8260B) (Short List: TCE,DCE	G / TOC (SM 5310-B)	P / Alkalinity (SM-2320B), anions	P / Sulfide (SM 4500S-D)	G / MEE (RSK-175)	[26] SAMPLE TYPE (see codes on SOP)	[27] COMMENTS/ SCREENING READINGS	[28] LAB ID (for lab'r use)
1	JM04-55MW18-112812	55MW18	AQ	11/28/12	1115	C/TV	14/ day	10	3	2	1	1	3		VOCs- TCE, DCE and VC	-09
2	JM04-55MW19-112812	55MW19	AQ	11/28/12	0910	C/TV	14/ day	3	3						VOCs- TCE, DCE and VC	13
3	JM04-55MW06-112812	55MW06	AQ	11/28/12	0851	C/TV	14/ day	10	3	2	1	1	3		VOCs- TCE, DCE and VC	10
4	JM04-55MW05-112812	55MW05	AQ	11/28/12	1036	C/TV	14/ day	10	3	2	1	1	3		VOCs- TCE, DCE and VC	11
5	JM04-55MW08-112812	55MW08	AQ	11/28/12	1201	C/TV	14/ day	3	3						VOCs- TCE, DCE and VC	14
6	JM04-55MW07-112812	55MW07	AQ	11/28/12	1411	C/TV	14/ day	10	3	2	1	1	3		VOCs- TCE, DCE and VC	12
7	JM04-TB02-112812	Trip Blank	AQ			C/TV	14/ day	3	3					TB	VOCs- TCE, DCE and VC	15
8																
10																
11																
12																

[29] SAMPLER(S) AND COMPANY: (please print)
Andrew O'Conor, J. High, Simon Kline, J. Frank/CH2M HILL

[30] COURIER AND SHIPPING NUMBER:
FedEx: 8736 9347 2343

3 coolers 2.4, 3.1, 2.1 °C

[31] RELINQUISHED BY	DATE	TIME	[32] RECEIVED BY	DATE	TIME
Printed Name and Signature: Andrew O'Conor / ATL	11/28/2012	1530	Printed Name and Signature:		
Printed Name and Signature: FED EX			Printed Name and Signature: GCAL / Cfaucier	11/29/12	1050

Distribution: [ ] Original - Laboratory (To be returned with Analytical Report); [ ] Copy 1 - Project File; [ ] Copy 2 - PMO

Form ECS001, Rev 06/00

212112812 1054

CH2M HILL

1000 Abernathy, GA 30328
Tel No: (770) 604-9182
Fax No: (770) 604-9183

CHAIN-OF-CUSTODY RECORD

[1] COC NUMBER: 378718-112812-01

[2] PROJECT NAME:	[3] PROJECT NUMBER:	[4] LAB NAME AND CONTACT:			[11] FAX AND MAIL REPORTS/EDD TO:: RECIPIENT 1 (Name and Company)	SDG 212112812
Naval Activity Puerto Rico	378718.20.21.01.07	GCAL			Tom Beisel/CH2M HILL ATL	1000 Abernathy Road, Suite 1600 Atlanta GA,30328 770-604-9182
[5] PROJECT PHASE/SITE/TASK:	[6] CTO OR DO NUMBER:	[7] LAB PO NUMBER:			[12] FAX AND MAIL REPORTS/EDD TO:: RECIPIENT 2 (Name and Company)	
SWMU 55 Baseline Sampling	N62470-08-D-1006	TBD			ccAmanda Struse/CH2M HILL ATL	1000 Abernathy Road, Suite 1600 Atlanta GA,30328 770-604-9182
[8] PROJECT CONTACT:	[9] PROJECT TEL NO AND FAX NO:	[10] LAB TEL NO AND FAX NO:			[13] FAX AND MAIL REPORTS/EDD TO:: RECIPIENT 3 (Name and Company)	
Tom Beisel	770.604.9182	615-345-1115 / 615-345-5426				

[14] ITEM	[15] SAMPLE IDENTIFIER	[16] SAMPLE DESCRIPTION/LOCATION	[17] MATRIX (see codes on SOP)	[18] DATE COLLECTED	[19] TIME COLLECTED	[20] DATA FIELD LEVEL (see codes on SOP)	[21] TAT (calendar days)	Bottle Type: Number of Bottles	F: VOCs (SW 8260B) (Short List: TCE,DCE and VC)	G: TOC (SM 5310-B)	Alkalinity (SM 2320B), anions	Sulfide (SM 4500S-D)	RKE (RSK-175)		[22] SAMPLE TYPE (see codes on SOP)	[23] COMMENTS/ SCREENING READINGS	[24] LAB ID (for lab's use)
1	JM04-55MW09-112812	55MW09	AQ	11/28/12	0920	C/TV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	16
2	JM04-55MW10-112812	55MW10	AQ	11/28/12	1100	C/TV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	17
3	JM04-55MW14-112812	55MW14	AQ	11/28/12	1300	C/TV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	18
4	JM04-FD01-112812		AQ	11/28/12	____	C/TV	14/ day	10	3	2	1	1	3		FD	VOCs- TCE, DCE and VC	19
5	JM04-7MW23-112812	7MW23	AQ	11/28/12	1440	C/TV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	20
6	JM04-7MW10-112812	7MW10	AQ	11/28/12	0930	C/TV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	21
7	JM04-7MW10-112812MS	7MW10	AQ	11/28/12	0930	C/TV	14/ day	10	3	2	1	1	3		MS	VOCs- TCE, DCE and VC	22
8	JM04-7MW10-112812SD	7MW10	AQ	11/28/12	0930	C/TV	14/ day	10	3	2	1	1	3		MSD	VOCs- TCE, DCE and VC	23
10	JM04-55MW11-112812	55MW11	AQ	11/28/12	1120	C/TV	14/ day	10	3	2	1	1	3			VOCs- TCE, DCE and VC	24
11	JM04-55MW21-112812	55MW21	AQ	11/28/12	1345	C/TV	14/ day	3	3							VOCs- TCE, DCE and VC	25
12	JM04-55MW17-112812	55MW17	AQ	11/28/12	1315	C/TV	14/ day	3	3							VOCs- TCE, DCE and VC	26

[25] SAMPLER(S) AND COMPANY: (please print)
Andrew O'Conor, J. High, Simon Kline, J. Frank/CH2M HILL

[26] COURIER AND SHIPPING NUMBER:
FedEx: 873693472332

[27] RELINQUISHED BY	DATE	TIME	[28] RECEIVED BY	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Andrew O'Conor / ATL	11/28/2012	1530			
Printed Name and Signature:			Printed Name and Signature:		
FED EX			GCAL	11/29/12	1050

212112812 1955

NA Puerto Rico

PREPARED FOR:	NA Puerto Rico / SWMU 55 Baseline-2 Groundwater Sampling 2013
FINAL REVIEWER/ INITIAL REVIEWER	Camden Robinson/ Project Chemist/CH2M Hill
COPIES:	Tom Beisel /Project Manager/AGVIQ-CH2M HILL
DATE:	June 10th, 2013
SUBJECT:	Quality Assessment for Samples collected April 12th, 2013

This quality assurance memorandum is based upon a review of analytical data generated for the groundwater samples and the associated field quality control samples collected April 12th, 2013 at the Naval Activity Puerto Rico in Ceiba, Puerto Rico. The samples were collected as a part of the SWMU 55 Baseline-2 Groundwater sampling event conducted at the site. The specific samples and analytical fractions reviewed are summarized below in Table 1.

The Quality Control areas that were reviewed and the resulting findings are documented within each subsection that follows. Data validation was conducted using the validation criteria outlined in the uniform federal policy- quality assurance project plan (UFP-QAPP CH2M HILL, June 2012), Standard Operating Procedure (SOP) HW-24 Revision 2 Validating Volatile Organic Compounds by Gas Chromatograph/Mass Spectrometry SW-846 Method 8260B, guidance procedures described in the Environmental Protection Agency (EPA *National Functional Guidelines for Organic Data Review (EPA 2008)*, and/or the general guidance provided in the Department of Defense (DOD) Quality Systems Manual - Version 4.2 Final October 2010 (based on NELAC Voted Version – 5 June 2003). Analytical methods and laboratory standard operating procedures (SOPs) presented in the UFP-QAPP were used to evaluate compliance against quality assurance (QA)/QC criteria. If QA/QC criteria were not met, data was considered for qualification.

Samples were submitted to Gulf Coast Analytical Laboratories, Inc. of Baton Rouge, Louisiana for the following analyses: SW-846 8260B Volatile Organic Compounds Trichloroethene, Cis-1,2-Dichloroethene, and Vinyl Chloride.

Sample results that were not within the acceptance limits were appended with a qualifying flag, which consisted of a single- or double-letter code that indicated a possible problem with the data. The qualifying flags originated during the data review and validation processes. These also include the secondary, or the two/three-digit "sub-qualifier" flags. The secondary qualifiers provide the reasoning behind the assignment of a qualifier flag to the data. The secondary qualifiers are presented and defined below.

Attachment 1 lists the changes in data qualifiers, due to the validation process.

The following primary flags were used to qualify the data:

[=] Detected. The analyte was analyzed for and detected at the concentration shown.

[J] Estimated. The analyte was present but the reported value may not be accurate or precise.

[U] Undetected. The analyte was analyzed for but not detected above the method detection limit. The data validator may also apply this qualifier to indicate that a concentration was not detected at significantly greater than that in an associated blank.

[UJ] Detection limit estimated. The analyte was analyzed for but qualified as not detected; the result is estimated.

[UR] Rejected. The data is not useable. The absence of the analyte cannot be verified.

[R] Rejected. The data is not useable.

Secondary Qualifier Codes

Code	Definition
2SH	Second Source Accuracy High
2SL	Second Source Accuracy Low
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BL	Blank
BSH	Blank Spike/LCS Recovery High
BSL	Blank Spike/LCS Recovery Low
CCH	Continuing Calibration Verification Accuracy High
CCL	Continuing Calibration Verification Accuracy Low
DL	Dilution
FB	Field Blank Contamination
FD	Field Duplicate
LD	Laboratory Duplicate
HT	Holding Time
ICH	Initial Calibration High
ICL	Initial Calibration Low
ISH	Internal Standard Area Response High
ISL	Internal Standard Area Response Low
LR	Linear Range (Exceeded calibration range)
MD	Matrix Spike/Matrix Spike Duplicate Precision
MSH	Matrix Spike and/or Matrix Spike Duplicate Recovery High
MSL	Matrix Spike and/or Matrix Spike Duplicate Recovery Low
OT	Other
RE	Re-extraction
RF	Response Factor
SSH	Spiked Surrogate Recovery High
SSL	Spiked Surrogate Recovery Low
TN	Tune
EMPC	Estimated Maximum Possible Concentration

Table 1 - Chemical Analytical Methods – Field and Quality Control Samples

SDG	Sample ID	Lab Sample ID	Matrix	Sample Type	Date Collected	Analyses Performed
213041308	JM04-55MW26-041213	21304130801	GW	N	04/12/2013	[1]
213041308	JM04-FD01-041213	21304130802	GW	FD	04/12/2013	[1]
213041308	JM04-55MW26-041213MS	21304130803	WQ	MS	04/12/2013	[1]
213041308	JM04-55MW26-041213SD	21304130804	WQ	SD	04/12/2013	[1]
213041308	JM04-EB01-041213	21304130805	WQ	EB	04/12/2013	[1]
213041308	JM04-TB01-041213	21304130806	WQ	TB	04/12/2013	[1]

MATRIX CODE

GW – Groundwater
WQ – Water Quality Control Sample

SAMPLE TYPE CODE

N – Native Sample
EB – Equipment Blank
TB – Trip Blank
FD – Field Duplicate
MS – Matrix Spike
SD – Matrix Spike Duplicate

ANALYSIS CODE

[1] – VOC –Trichloroethene, Cis-1,2-Dichloroethene, and Vinyl Chloride by SW-846 method 8260B

Organic Parameters

Quality Control Review

The following list represents the QA/QC measures that were reviewed during the data quality evaluation procedure for organic data.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Method blanks, equipment blanks, and trip blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Surrogate Recoveries** – Surrogate Compounds are added to each sample and the recoveries are used to monitor lab performance and possible matrix interference.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", either laboratory reagent water or Ottawa sand, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and it's duplicate. This information can only be determined when target compounds are detected.
- **GC/MS Tuning** – The mass spectrum of the tuning compound is evaluated for method compliance. The criteria are established to verify the proper mass assignment and mass resolution.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.
- **Internal Standards** – The internal standards (retention time and response) are evaluated for method compliance. The internal standards are used in quantitation of the target parameters and monitor the instrument sensitivity and response for stability during each analysis.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Volatile Organic Compounds (VOCs) Analyses

Holding Time

All samples analyses were performed within hold time.

GC/MS Instrument Performance

All GC/MS Instrument Performance criteria were met.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

There were no detections in the trip, equipment, and method blank samples.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-55MW26-041213. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Surrogate Recoveries

All surrogate recoveries were within acceptable quality control limits.

Internal Standard Recoveries

All internal standard recoveries were within acceptable quality control limits.

Field Duplicates

Field sample JM04-55MW26-041213 was collected and analyzed in duplicate. Field duplicate precision objectives were met.

Rejected Data

No data were rejected based upon the validation process for this sampling event.

GROUNDWATER PROJECT ACTION LIMITS

All samples collected and analyzed for the month of April 2013 for the volatile organic compound – trichloroethene were less than the groundwater project action limits.

Data Usability

A review of the analytical data submitted regarding the NA Puerto Rico SWMU 55 Baseline-2 Groundwater Sampling 2013, by CH2M HILL has been completed. An overall evaluation of the data indicates that the sample handling, shipment, and analytical procedures have been adequately completed, and that the analytical results should be considered usable as qualified. The validation review demonstrated that the analytical systems were generally in control and the data results can be used in the decision making process.

Data reviewed in this report meet the data quality goals stated in the project quality assurance project plan (QAPP).

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-55MW26-041213

Lab Name: GCAL Contract

Lab Code. LA024 Case No.: SAS No.: SDG No.: 213041308

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21304130801

Level. (low/med)

Lab File ID: 2130414/j4057

% Moisture: not dec.

Date Collected: 04/12/13 Time: 1126

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 04/13/13

Instrument ID: MSV12

Date Analyzed: 04/14/13 Time 1738

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst JCK

Soil Aliquot Volume. (µL)

Prep Batch. Analytical Batch: 505170

Analytical Method SW-846 8260B

CONCENTRATION UNITS ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LQD	LOQ
79-01-6	Trichloroethene	16.4		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-FD01-041213

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No 213041308

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21304130802

Level: (low/med) Lab File ID: 2130414/j4050

% Moisture: not dec Date Collected: 04/12/13 Time 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 04/13/13

Instrument ID: MSV12 Date Analyzed: 04/14/13 Time: 1305

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 505170

Analytical Method: SW-846 8260B

CONCENTRATION UNITS ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	15.9		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

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213041308 23

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-FB01-041213

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No: 213041308

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21304130805

Level: (low/med) Lab File ID: 2130413p/j4014

% Moisture: not dec Date Collected: 04/12/13 Time: 1155

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 04/13/13

Instrument ID: MSV12 Date Analyzed: 04/13/13 Time: 2357

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 505169

Analytical Method: SW-846 8260B

CONCENTRATION UNITS ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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213041308 23

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-TB01-041213

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213041308

Matrix (soil/water) Water

Sample wt/vol 5 (g/ml) mL Lab Sample ID: 21304130806

Level (low/med) Lab File ID: 2130413p/j4015

% Moisture: not dec Date Collected: 04/12/13 Time 0000

GC Column RTX-VMS-30 ID. .25 (mm) Date Received: 04/13/13

Instrument ID. MSV12 Date Analyzed: 04/14/13 Time. 0018

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst. LBH

Soil Aliquot Volume. (µL) Prep Batch Analytical Batch: 505169

CONCENTRATION UNITS ug/L Analytical Method SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59 2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

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CH2M Hill / 4380 / 213041308 / 4/13/13

CHAIN OF CUSTODY RECORD

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Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

COC# 378718-041213-01

Report to:
Client: Tom Beisel
Address: 1000 ABERNATHY RD. SUITE 1600 ATL GA 30339
Contact:
Phone:
E-mail: Tom.beisel@ch2m.com

Bill to:
Client: SAME AS REPORT.
Address:
Contact:
Phone:
E-mail:

P.O. Number: 378718
Project Name/Number: NAPR SWMU 55 / 378718.30.23.90.40
Sampled By: Aaron D'Conner / ATL

GCAL use only:
Custody Seal used ☑ yes ☐ no
intact ☑ yes ☐ no
Temperature °C 2.6

☐ Dissolved Analysis Requested
☐ Field filtered
☐ Lab filtered

Analytical Requests & Method: VOCs (8260B) * SHORT LIST

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	HCL	Preservative
	4/12	1126		✓	JM04-55MW26-041213	3	X	01
	4/12	—		✓	JM04-FD01-041213	3	X	02
	4/12	1126		✓	JM04-55MW26-041213MS	3	X	MS 03
	4/12	1126		✓	JM04-55MW26-041213SD	3	X	MSD 04
	4/12	1155		✓	JM04-EB01-041213	3	X	EQUIPMENT BLANK 05
	4/12	LAB supplied			JM04-TB01-041213	3	X	06

Air Bill No: 8614 8225 3059

Turn Around Time (Business Days): ☑ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☐ Standard (Per Contract/Quote)

Relinquished by (Signature)	Date: 4/12/13	Time: 1400	Received by (Signature): Fedex	Date	Time
Relinquished by (Signature): Fedex	Date:	Time:	Received by (Signature): Allison	Date: 4/13/13	Time: 0940
Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time

Note: * SHORT LIST: TCE, DCE AND VC
* 24hr TAT

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

WHITE: CLIENT FINAL REPORT • CANARY: CLIENT

NA Puerto Rico

PREPARED FOR:	NA Puerto Rico / SWMU 55 Pre-ISB Sampling 2013
FINAL REVIEWER/ INITIAL REVIEWER	Camden Robinson/ Project Chemist/CH2M Hill
COPIES:	Tom Beisel /Project Manager/AGVIQ-CH2M HILL
DATE:	January 22nd, 2014
SUBJECT:	Quality Assessment for Samples collected October 22nd, 2013 thru October 28th, 2013

This quality assurance memorandum is based upon a review of analytical data generated for the groundwater samples and the associated field quality control samples collected October 22nd, 2013 thru October 28th, 2013 at the Naval Activity Puerto Rico in Ceiba, Puerto Rico. The samples were collected as a part of the SWMU 55 Pre-ISB sampling event conducted at the site. The specific samples and analytical fractions reviewed are summarized below in Table 1.

The Quality Control areas that were reviewed and the resulting findings are documented within each subsection that follows. Data validation was conducted using the validation criteria outlined in the uniform federal policy- quality assurance project plan (UFP-QAPP CH2M HILL, June 2012), Standard Operating Procedure (SOP) HW-24 Revision 2 Validating Volatile Organic Compounds by Gas Chromatograph/Mass Spectrometry SW-846 Method 8260B, guidance procedures described in the Environmental Protection Agency (EPA *National Functional Guidelines for Organic Data Review (EPA 2008)*, and/or the general guidance provided in the Department of Defense (DOD) Quality Systems Manual - Version 4.2 Final October 2010 (based on NELAC Voted Version – 5 June 2003). Analytical methods and laboratory standard operating procedures (SOPs) presented in the UFP-QAPP were used to evaluate compliance against quality assurance (QA)/QC criteria. If QA/QC criteria were not met, data was considered for qualification.

Samples were submitted to Gulf Coast Analytical Laboratories, Inc. of Baton Rouge, Louisiana for the following analyses: SW-846 8260B Volatile Organic Compounds Trichloroethene, Cis-1,2-Dichloroethene, and Vinyl Chloride, RSK-175 Methane, Ethane, and Ethene, SW-846 6010C Dissolved Iron, Calculation Ferric iron, Standard Method 2320B Alkalinity, Standard Method Total Organic Carbon (TOC), Standard Method 4500S2-D Sulfide, and SW-846 9056A Chloride, Nitrate, Nitrite, and Sulfate.

Sample results that were not within the acceptance limits were appended with a qualifying flag, which consisted of a single- or double-letter code that indicated a possible problem with the data. The qualifying flags originated during the data review and validation processes. These also include the secondary, or the two/three-digit "sub-qualifier" flags.

The secondary qualifiers provide the reasoning behind the assignment of a qualifier flag to the data. The secondary qualifiers are presented and defined below.

Attachment 1 lists the changes in data qualifiers, due to the validation process.

The following primary flags were used to qualify the data:

[=] Detected. The analyte was analyzed for and detected at the concentration shown.

[J] Estimated. The analyte was present but the reported value may not be accurate or precise.

[U] Undetected. The analyte was analyzed for but not detected above the method detection limit. The data validator may also apply this qualifier to indicate that a concentration was not detected at significantly greater than that in an associated blank.

[UJ] Detection limit estimated. The analyte was analyzed for but qualified as not detected; the result is estimated.

[UR] Rejected. The data is not useable. The absence of the analyte cannot be verified.

[R] Rejected. The data is not useable.

Secondary Qualifier Codes

Code	Definition
2SH	Second Source Accuracy High
2SL	Second Source Accuracy Low
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BL	Blank
BSH	Blank Spike/LCS Recovery High
BSL	Blank Spike/LCS Recovery Low
CCH	Continuing Calibration Verification Accuracy High
CCL	Continuing Calibration Verification Accuracy Low
DL	Dilution
EB	Equipment Blank Contamination
FD	Field Duplicate
LD	Laboratory Duplicate
HT	Holding Time
ICH	Initial Calibration High
ICL	Initial Calibration Low
ISH	Internal Standard Area Response High
ISL	Internal Standard Area Response Low
LR	Linear Range (Exceeded calibration range)
MD	Matrix Spike/Matrix Spike Duplicate Precision
MSH	Matrix Spike and/or Matrix Spike Duplicate Recovery High
MSL	Matrix Spike and/or Matrix Spike Duplicate Recovery Low
OT	Other
RE	Re-extraction
RF	Response Factor
SSH	Spiked Surrogate Recovery High
SSL	Spiked Surrogate Recovery Low
TN	Tune
EMPC	Estimated Maximum Possible Concentration

Table 1 - Chemical Analytical Methods – Field and Quality Control Samples

SDG	Sample ID	Lab Sample ID	Matrix	Sample Type	Date Collected	Analyses Performed
213102811	JM04-55MW15-102213	21310281101	GW	N	10/22/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102811	JM04-7MW10-102213	21310281102	GW	N	10/22/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102811	JM04-55MW11-102213	21310281103	GW	N	10/22/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102811	JM04-7MW23-102213	21310281104	GW	N	10/22/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102811	JM04-55MW18-102213	21310281108	GW	N	10/22/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102811	JM04-TB01-102213	21310281111	WQ	TB	10/22/2013	[1]
213102418	JM04-55MW01-102313	21310241801	GW	N	10/23/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102418	JM04-55MW12-102313	21310241802	GW	N	10/23/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102418	JM04-FD02-102313	21310241803	GW	FD	10/23/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102418	JM04-55MW16-102313	21310241804	GW	N	10/23/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102418	JM04-55MW02-102313	21310241805	GW	N	10/23/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102418	JM04-7MW24-102313	21310241806	GW	N	10/23/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102418	JM04-55MW06-102313	21310241807	GW	N	10/23/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102418	JM04-55MW06-102313 MS	21310241808	WQ	MS	10/23/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102418	JM04-55MW06-102313 SD	21310241809	WQ	SD	10/23/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102418	JM04-7MW22-102313	21310241810	GW	N	10/23/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102418	JM04-EB01-102313	21310241811	WQ	EB	10/23/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102418	JM04-TB02-102313	21310241812	WQ	TB	10/23/2013	[1]
213102418	JM04-55MW05-102313	21310241813	GW	N	10/23/2013	[1], [2], [3], [4], [5], [6], [7], [8]

SDG	Sample ID	Lab Sample ID	Matrix	Sample Type	Date Collected	Analyses Performed
213102418	JM04-EB02-102313	21310241814	WQ	EB	10/23/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102530	JM04-7MW07-102413	21310253001	GW	N	10/24/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102530	JM04-7MW07-102413 MS	21310253002	WQ	MS	10/24/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102530	JM04-7MW07-102413 SD	21310253003	WQ	SD	10/24/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102530	JM04-55MW25-102413	21310253004	GW	N	10/24/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102530	JM04-55MW26-102413	21310253005	GW	N	10/24/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102530	JM04-55IW04-102413	21310253006	GW	N	10/24/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102530	JM04-EB03-102413	21310253007	WQ	EB	10/24/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102530	JM04-EB04-102413	21310253008	WQ	EB	10/24/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102530	JM04-55IW02-102413	21310253009	GW	N	10/24/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102530	JM04-55BW01-102413	21310253010	GW	N	10/24/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102530	JM04-TB03-102413	21310253011	WQ	TB	10/24/2013	[1]
213102903	JM04-55MW14-102813	21310290301	GW	N	10/28/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102903	JM04-FD03-102813	21310290302	GW	FD	10/28/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102903	JM04-55MW09-102813	21310290303	GW	N	10/28/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102903	JM04-55MW10-102813	21310290304	GW	N	10/28/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102903	JM04-55MW17-102813	21310290305	GW	N	10/28/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102903	JM04-FD01-102813	21310290306	GW	FD	10/28/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102903	JM04-TB04-102813	21310290307	WQ	TB	10/28/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102903	JM04-EB05-102813	21310290308	WQ	EB	10/28/2013	[1], [2], [3], [4], [5], [6], [7], [8]
213102903	JM04-EB06-102813	21310290309	WQ	EB	10/28/2013	[1], [2], [3], [4], [5], [6], [7], [8]

SDG	Sample ID	Lab Sample ID	Matrix	Sample Type	Date Collected	Analyses Performed

MATRIX CODE

GW – Groundwater
WQ – Water Quality Control Sample

SAMPLE TYPE CODE

N – Native Sample
EB – Equipment Blank
TB – Trip Blank
FD – Field Duplicate
MS – Matrix Spike
SD – Matrix Spike Duplicate

ANALYSIS CODE

[1] – VOC –Trichloroethene, Cis-1,2-Dichloroethene, and Vinyl Chloride by SW-846 method 8260B
[2] – Methane, Ethane, and Ethene by RSK-175
[3] – Dissolved Iron by SW-846 method 6010C
[4] – Ferric Iron by Calculation
[5] – Alkalinity by Standard Method 2320B
[6] – TOC – Total Organic Carbon by Standard Method 5310B
[7] – Sulfide by Standard Method 4500S2-D
[8] – Anions - Chloride, Nitrate, Nitrite, and Sulfate by SW-846 9056A

Organic Parameters

Quality Control Review

The following list represents the QA/QC measures that were reviewed during the data quality evaluation procedure for organic data.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Method blanks, equipment blanks, and trip blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Surrogate Recoveries** – Surrogate Compounds are added to each sample and the recoveries are used to monitor lab performance and possible matrix interference.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", either laboratory reagent water or Ottawa sand, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and it's duplicate. This information can only be determined when target compounds are detected.
- **GC/MS Tuning** – The mass spectrum of the tuning compound is evaluated for method compliance. The criteria are established to verify the proper mass assignment and mass resolution.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.
- **Internal Standards** – The internal standards (retention time and response) are evaluated for method compliance. The internal standards are used in quantitation of the target parameters and monitor the instrument sensitivity and response for stability during each analysis.

Inorganic Parameters

Quality Control Review

The following list represents the QA/QC measures that were reviewed during the data quality evaluation procedure for organic data.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Method blanks, initial calibration blanks, continuing calibration blanks, and equipment blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", either laboratory reagent water or Ottawa sand, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and it's duplicate. This information can only be determined when target compounds are detected.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.
- **ICP Serial Dilution** – The serial dilution of samples quantitated by ICP determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is sufficiently high, the serial dilution analysis must agree within a 10% difference of the original determination after correction for dilution.
- **Post Digest Spike Sample** – The post digest spike sample indicates the possible presence of matrix interferences in the sample.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Volatile Organic Compounds (VOCs) Analyses

Holding Time

All samples analyses were performed within hold time.

GC/MS Instrument Performance

All GC/MS Instrument Performance criteria were met.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

There were no detections in the trip, equipment, and method blank samples.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-55MW06-102313 and JM04-7MW07-102413. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Surrogate Recoveries

All surrogate recoveries were within acceptable quality control limits.

Internal Standard Recoveries

All internal standard recoveries were within acceptable quality control limits.

Field Duplicates

Field samples JM04-55MW12-102313, JM04-55MW17-102813, and JM04-55MW14-102813 were collected and analyzed in duplicate. Field duplicate precision objectives were met.

Dilutions

The samples presented below in table 2 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to

reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 2
Dilutions: VOC
NA Puerto Rico SWMU 55 Baseline Pre-ISB Sampling 2013

Sample ID	Analysis	Dilution Factor
JM04-55MW01-102313	VOC	5X
JM04-55MW11-102213	VOC	5X
JM04-55MW14-102813	VOC	5X
JM04-FD03-102813	VOC	5X
JM04-55MW09-102813	VOC	10X
JM04-55MW10-102813	VOC	5X

Rejected Data

No data were rejected based upon the validation process for this sampling event.

GROUNDWATER PROJECT ACTION LIMITS

All samples collected and analyzed for the month of October 2013 for the volatile organic compound – trichloroethene were less than the groundwater project action limits with the exception of the samples listed below:

Analyte (Volatile List)	Affected Sample	Sample Results (ug/l)	Groundwater Cleanup Target Levels (ug/l)
Trichloroethene	JM04-55MW01-102313	492	193
Trichloroethene	JM04-55MW09-102813	1010	193
Trichloroethene	JM04-55MW10-102813	344	193
Trichloroethene	JM04-55MW11-102213	476	193
Trichloroethene	JM04-55MW14-102813	626	193
Trichloroethene	JM04-FD03-102813	614	193

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Methane, Ethane, and Ethene Analyses

Holding Time

All samples analyses were performed within hold time.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

Methane detected in the blank samples is listed in Table 3.

TABLE 3
Blank Contamination: Methane
NA Puerto Rico SWMU 55 Baseline Pre-ISB Sampling 2013

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
213102530	JM04-EB04-102413	EB	Methane	1.29	ug/L	JM04-55MW02-102313 JM04-55MW15-102213

Flags were applied to the analyte in the associated samples in the following manner:

When the analyte was detected in the equipment blank, the detected compounds, that were less than 5 times the concentration detected for the analyte listed and below the limit of quantitation (LOQ), were flagged "U" due to possible field contamination with a validation note of "EB". The detects that were above the limit of quantitation (LOQ) were qualified as estimated "JB" for equipment blanks due to possible field contamination with a validation note of "EB.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-55MW06-102313 and JM04-7MW07-102413. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Field Duplicates

Field samples JM04-55MW12-102313, JM04-55MW17-102813, and JM04-55MW14-102813 were collected and analyzed in duplicate. Field duplicate precision objectives were met.

Dilutions

The samples presented below in table 4 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 4
Dilutions: Methane
NA Puerto Rico SWMU 55 Pre-ISB Sampling 2013

Sample ID	Analysis	Dilution Factor
JM04-55MW12-102313	Methane	10X
JM04-FD02-102313	Methane	10X
JM04-7MW07-102413	Methane	300X
JM04-55MW25-102413	Methane	300X
JM04-55IW04-102413	Methane	100X
JM04-55IW02-102413	Methane	200X
JM04-55BW01-102413	Methane	200X
JM04-7MW23-102213	Methane	10X
JM04-55MW10-102813	Methane	30X

Data Rejected during the Data Validation Process

Some samples may be analyzed multiple times by the laboratory because of dilution requirements or because spike recoveries are outside the method target acceptance limits. The laboratory reports all analyses; therefore, it is possible that several sample results may exist for a specific sample and analysis. During the data validation, all the sample results are evaluated and the "best answer" for each sample and analysis is chosen, and the other results are rejected.

The initial results for methane noted in Table 4 above were rejected because the samples required a dilution in order to obtain a result within the method target acceptance limits.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Dissolved Iron and Ferric Iron Analyses

Holding Time

All samples analyses were performed within hold time.

Instrument Calibration

All Initial and Continuing Calibration criteria were met.

Low Level Spike Calibration Verification

All low level spike calibration verification criteria were met.

Interference Check Sample

The interference check standard criteria were met.

Serial Dilution

All serial dilution criteria were met.

Post Digest Spike

All post digest spike criteria were met.

Blanks

There were no detects in the initial calibration, continuing calibration, method blank, and equipment blank samples.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-55MW06-102313 and JM04-7MW07-102413. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Field Duplicates

Field samples JM04-55MW12-102313, JM04-55MW17-102813, and JM04-55MW14-102813 were collected and analyzed in duplicate. Field duplicate precision objectives were met.

Dilutions

The samples presented below in table 5 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 5
Dilutions: Dissolved Iron
NA Puerto Rico SWMU 55 Pre-ISB Sampling 2013

Sample ID	Analysis	Dilution Factor
JM04-55MW18-102213	Dissolved Iron	2X

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Alkalinity

Holding Time

All samples analyses were performed within hold time.

Blanks

Alkalinity detected in the blank samples is listed in Table 6.

TABLE 6
Blank Contamination: Alkalinity
NA Puerto Rico SWMU 55 Pre-ISB Sampling 2013

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected

TABLE 6
Blank Contamination: Alkalinity
NA Puerto Rico SWMU 55 Pre-ISB Sampling 2013

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
213102418	JM04-EB01-102313	EB	Alkalinity	142	mg/L	JM04-55MW16-102313 JM04-7MW24-102313 JM04-55MW26-102413
213102530	JM04-EB03-102413	EB	Alkalinity	142	mg/L	JM04-55MW06-102313 JM04-55MW05-102313 JM04-55IW04-102413
213102530	JM04-EB04-102413	EB	Alkalinity	144	mg/L	JM04-55MW01-102313 JM04-55MW02-102313 JM04-55IW02-102413 JM04-55MW15-102213
213102902	JM04-EB06-102813	EB	Alkalinity	141	mg/L	JM04-55MW14-102813 JM04-FD03-102813 JM04-FD01-102813

Flags were applied to the analyte in the associated samples in the following manner:

When the analyte was detected in the equipment blank, the detected compounds, that were less than 5 times the concentration detected for the analyte listed and below the limit of quantitation (LOQ), were flagged "U" due to possible field contamination with a validation note of "EB". The detects that were above the limit of quantitation (LOQ) were qualified as estimated "JB" for equipment blanks due to possible field contamination with a validation note of "EB.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Laboratory Duplicates

Laboratory duplicate precision objectives were met.

Field Duplicates

Field samples JM04-55MW12-102313, JM04-55MW17-102813, and JM04-55MW14-102813 were collected and analyzed in duplicate. Field duplicate precision objectives were met.

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for TOC

Holding Time

All samples analyses were performed within hold time.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

TOC detected in the blank samples is listed in Table 7.

TABLE 7
Blank Contamination: TOC
NA Puerto Rico SWMU 55 Pre-ISB Sampling 2013

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
213102418	JM04-EB01-102313	EB	TOC	0.49	mg/L	JM04-55MW26-102413
213102530	JM04-EB03-102413	EB	TOC	1.1	mg/L	JM04-55MW06-102313 JM04-55MW05-102313
213102530	JM04-EB04-102413	EB	TOC	0.91	mg/L	JM04-55MW01-102313 JM04-55MW15-102213
213102902	JM04-EB06-102813	EB	TOC	0.80	mg/L	JM04-FD03-102813 JM04-55MW17-102813 JM04-FD01-102813
213102811	Method Blank	MB	TOC	0.33	mg/L	JM04-55MW11-102213
213102903	Method Blank	MB	TOC	0.33	mg/L	JM04-55MW10-102813
213102903	Continuing Calibration Blank	CCB	TOC	0.5004	mg/L	JM04-55MW10-102813

Flags were applied to the analyte in the associated samples in the following manner:

When the analyte was detected in the equipment blank, method blank, and/or continuing calibration blanks, the detected compounds, that were less than 5 times the concentration detected for the analyte listed and below the limit of quantitation (LOQ), were flagged "U" due to possible field and/or laboratory contamination with a validation note of "EB" for field contamination or "BL" for method blank and continuing calibration contamination. The detects that were above the limit of quantitation (LOQ) were qualified as estimated "JB" for equipment blanks due to possible field contamination with a validation note of "EB or "B" for method blank and/or continuing calibration blank due to possible laboratory contamination with a validation note of "BL".

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-55MW06-102313 and JM04-7MW07-102413. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Field Duplicates

Field samples JM04-55MW12-102313, JM04-55MW17-102813, and JM04-55MW14-102813 were collected and analyzed in duplicate. Field duplicate precision objectives were not met for the samples listed in table 8 below:

TABLE 8
Field Duplicate RPD Out of QC Limits: TOC
NA Puerto Rico SWMU 55 Pre-ISB Sampling 2013

Compound	Affected Samples	%RPD
TOC	JM04-55MW17-102813 / JM04-FD01-102813	78.4%
TOC	JM04-55MW14-102813 / JM04-FD03-102813	66.7%

Sample heterogeneity is suspected due to field duplicate imprecision.

Dilutions

The samples presented below in table 9 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 9
Dilutions: TOC
NA Puerto Rico SWMU 55 Baseline Pre-ISB Sampling 2013

Sample ID	Analysis	Dilution Factor
JM04-55MW01-102313	TOC	2X
JM04-55MW16-102313	TOC	2X
JM04-7MW24-102313	TOC	2X
JM04-55MW06-102313	TOC	2X
JM04-7MW22-102313	TOC	2X
JM04-55MW05-102313	TOC	2X
JM04-7MW07-102413	TOC	10X
JM04-55MW25-102413	TOC	5X
JM04-55MW26-102413	TOC	2X
JM04-55IW04-102413	TOC	2X
JM04-55IW02-102413	TOC	2X
JM04-55BW01-102413	TOC	10X
JM04-55MW10-102813	TOC	5X
JM04-FD01-102813	TOC	2X

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Sulfide

Holding Time

All samples analyses were performed within hold time.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

There were no detections in the equipment and method blank samples.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-55MW06-102313 and JM04-7MW07-102413. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met for all samples except as noted in table 10 below:

TABLE 10
Matrix Spike and Matrix Spike Duplicate Recovery Out of QC Limits: Sulfide
NA Puerto Rico SWMU 55 Pre-ISB Sampling 2013

QC Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Qualifiers Applied
Matrix Spike	Sulfide	70%	90-110	JM04-7MW07-102413	Non-Detect-UJ
Matrix Spike Duplicate		65%			

The quantitation limit for the sample noted above was qualified as estimated "UJ" due to the matrix spike and matrix spike duplicate recoveries were outside the acceptable limit that is listed in Table 10 with a validation note of "MSL" for low percent recovery.

Field Duplicates

Field samples JM04-55MW12-102313, JM04-55MW17-102813, and JM04-55MW14-102813 were collected and analyzed in duplicate. Field duplicate precision objectives were met.

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Chloride, Nitrate, Nitrite, and Sulfate

Holding Time

All samples analyses were performed within hold time.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

Chloride, Nitrate, and Sulfate detected in the blank samples is listed in Table 11.

TABLE 11
Blank Contamination: Chloride, Nitrate, and Sulfate
NA Puerto Rico SWMU 55 Pre-ISB Sampling 2013

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
213102418	JM04-EB01-102313	EB	Chloride	17	mg/L	JM04-55MW16-102313 JM04-7MW24-102313 JM04-55MW26-102413 JM04-55BW01-102413 JM04-55MW18-102213
213102418	JM04-EB02-102313	EB	Chloride	1.355	mg/L	JM04-7MW10-102213 JM04-7MW23-102213
213102530	JM04-EB03-102413	EB	Chloride	18	mg/L	JM04-55MW06-102313 JM04-55MW05-102313 JM04-55IW04-102413
213102530	JM04-EB04-102413	EB	Chloride	16.2	mg/L	JM04-55MW01-102313 JM04-55MW02-102313 JM04-7MW07-102413 JM04-55MW25-102413 JM04-55IW02-102413 JM04-55MW15-102213
213102902	JM04-EB06-102813	EB	Chloride	17.8	mg/L	JM04-55MW14-102813 JM04-FD03-102813 JM04-55MW17-102813 JM04-FD01-102813
213102418	JM04-EB01-102313	EB	Sulfate	9.18	mg/L	JM04-55MW16-102313 JM04-7MW24-102313 JM04-55MW26-102413 JM04-55MW18-102213

TABLE 11
Blank Contamination: Chloride, Nitrate, and Sulfate
NA Puerto Rico SWMU 55 Pre-ISB Sampling 2013

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
213102530	JM04-EB03-102413	EB	Sulfate	9.19	mg/L	JM04-55MW06-102313 JM04-55MW05-102313 JM04-55IW04-102413
213102530	JM04-EB04-102413	EB	Sulfate	9.12	mg/L	JM04-55MW01-102313 JM04-55MW02-102313 JM04-7MW07-102413 JM04-55MW25-102413 JM04-55IW02-102413 JM04-55MW15-102213
213102902	JM04-EB06-102813	EB	Sulfate	9.15	mg/L	JM04-55MW14-102813 JM04-FD03-102813 JM04-55MW17-102813 JM04-FD01-102813
213102530	JM04-EB04-102413	EB	Nitrate	0.384	mg/L	JM04-55MW01-102313
213102902	JM04-EB06-102813	EB	Nitrate	0.362	mg/L	JM04-FD03-102813

Flags were applied to the analyte in the associated samples in the following manner:

When the analyte was detected in the equipment blank, the detected compounds, that were less than 5 times the concentration detected for the analyte listed and below the limit of quantitation (LOQ), were flagged "U" due to possible field contamination with a validation note of "EB". The detects that were above the limit of quantitation (LOQ) were qualified as estimated "JB" for equipment blanks due to possible field contamination with a validation note of "EB.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-55MW06-102313 and JM04-7MW07-102413. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met for all analytes except as noted in table 12 below:

TABLE 12
Matrix Spike and Matrix Spike Duplicate Recovery Out of QC Limits: Sulfate
NA Puerto Rico SWMU 55 Pre-ISB Sampling 2013

QC Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Qualifiers Applied
Matrix Spike	Sulfate	49%	80-120	JM04-7MW07-102413	Detect-J
Matrix Spike Duplicate		49%			

The result for the sample noted above was qualified as estimated "J" due to the matrix spike and matrix spike duplicate recoveries were outside the acceptable limit that is listed in Table 12 with a validation note of "MSL" for low percent recovery.

Surrogate Recoveries

All surrogate recoveries were within acceptable quality control limits.

Field Duplicates

Field samples JM04-55MW12-102313, JM04-55MW17-102813, and JM04-55MW14-102813 were collected and analyzed in duplicate. Field duplicate precision objectives were met.

Dilutions

The samples presented below in table 13 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 13
Dilutions: Anions – Chloride, Nitrate, Nitrite, and Sulfate
NA Puerto Rico SWMU 55 Pre-ISB Sampling 2013

Sample ID	Analysis	Dilution Factor
JM04-55MW01-102313	Nitrate and Nitrite	5X
	Sulfate	5X
	Chloride	500X

TABLE 13
Dilutions: Anions – Chloride, Nitrate, Nitrite, and Sulfate
NA Puerto Rico SWMU 55 Pre-ISB Sampling 2013

Sample ID	Analysis	Dilution Factor
JM04-55MW12-102313	Chloride	20X
JM04-FD02-102313	Chloride	20X
JM04-55MW16-102313	Nitrate and Nitrite	5X
	Sulfate	10X
	Chloride	200X
JM04-55MW02-102313	Sulfate	20X
	Chloride	
JM04-7MW24-102313	Nitrate and Nitrite	5X
	Sulfate	20X
	Chloride	1000X
JM04-55MW06-102313	Nitrate and Nitrite	5X
	Sulfate	200X
	Chloride	200X
JM04-7MW22-102313	Nitrate and Nitrite	5X
	Sulfate	500X
	Chloride	500X
JM04-55MW05-102313	Nitrate and Nitrite	5X
	Sulfate	20X
	Chloride	1000X
JM04-EB01-102313	Chloride	10X
JM04-7MW07-102413	Nitrate and Nitrite	5X
	Sulfate	5X
	Chloride	500X
JM04-55MW25-102413	Nitrate and Nitrite	5X
	Sulfate	5X
	Chloride	500X
JM04-55MW26-102413	Nitrate and Nitrite	5X
	Sulfate	20X
	Chloride	500X

TABLE 13
Dilutions: Anions – Chloride, Nitrate, Nitrite, and Sulfate
NA Puerto Rico SWMU 55 Pre-ISB Sampling 2013

Sample ID	Analysis	Dilution Factor
JM04-55IW04-102413	Nitrate and Nitrite	5X
	Sulfate	20X
	Chloride	500X
JM04-55IW02-102413	Nitrate and Nitrite	5X
	Sulfate	10X
	Chloride	500X
JM04-55BW01-102413	Nitrate and Nitrite	5X
	Sulfate	5X
	Chloride	500X
JM04-EB03-102413	Chloride	10X
JM04-EB04-102413	Chloride	10X
JM04-55MW15-102213	Nitrate and Nitrite	10X
	Sulfate	10X
	Chloride	1000X
JM04-7MW10-102213	Nitrate and Nitrite	5X
	Sulfate	20X
	Chloride	500X
JM04-55MW11-102213	Nitrate and Nitrite	20X
	Sulfate	100X
	Chloride	2000X
JM04-7MW23-102213	Nitrate and Nitrite	5X
	Sulfate	10X
	Chloride	500X
JM04-55MW18-102213	Nitrate and Nitrite	50X
	Sulfate	5000X
	Chloride	5000X
JM04-55MW14-102813	Nitrate and Nitrite	10X
	Sulfate	50X
	Chloride	1000X

TABLE 13
Dilutions: Anions – Chloride, Nitrate, Nitrite, and Sulfate
NA Puerto Rico SWMU 55 Pre-ISB Sampling 2013

Sample ID	Analysis	Dilution Factor
JM04-FD03-102813	Nitrate and Nitrite	5X
	Sulfate	50X
	Chloride	500X
JM04-55MW09-102813	Nitrate and Nitrite	20X
	Sulfate	2000X
	Chloride	2000X
JM04-55MW10-102813	Nitrate and Nitrite	10X
	Sulfate	200X
	Chloride	1000X
JM04-55MW17-102813	Nitrate and Nitrite	5X
	Sulfate	50X
	Chloride	500X
JM04-FD01-102813	Nitrate and Nitrite	5X
	Sulfate	50X
	Chloride	10X

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Data Usability

A review of the analytical data submitted regarding the NA Puerto Rico SWMU 55 Pre-ISB Sampling, by CH2M HILL has been completed. An overall evaluation of the data indicates that the sample handling, shipment, and analytical procedures have been adequately completed, and that the analytical results should be considered usable as qualified. The validation review demonstrated that the analytical systems were generally in control and the data results can be used in the decision making process.

Data reviewed in this report meet the data quality goals stated in the project quality assurance project plan (QAPP). The data user can use the data recognizing the potential data biases indicated by the data qualifiers assigned to some results. Data was qualified for a subset of results based on equipment blank, method blank, and/or continuing calibration blank contamination, low matrix spike and matrix spike duplicate recoveries, and field duplicate imprecision biases.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW01-102313

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102418

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310241801

Level: (low/med) Lab File ID: 2131026/k2352

% Moisture: not dec. Date Collected: 10/23/13 Time: 1015

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/24/13

Instrument ID: MSV12 Date Analyzed: 10/26/13 Time: 1850

Soil Extract Volume: (µL) Dilution Factor: 5 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 518609

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	492		0.807	1.00	5.00
75-01-4	Vinyl chloride	1.00	U	0.636	1.00	5.00
156-59-2	cis-1,2-Dichloroethene	1.00	U	0.517	1.00	5.00

FORM I VOA

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW12-102313

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102418

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21310241802

Level: (low/med)

Lab File ID: 2131026/k2341

% Moisture: not dec.

Date Collected: 10/23/13 Time: 1015

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 10/24/13

Instrument ID: MSV12

Date Analyzed: 10/26/13 Time: 1454

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL)

Prep Batch: Analytical Batch: 518609

CONCENTRATION UNITS: ug/L

Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	3.15		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-FD02-102313

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102418

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310241803

Level: (low/med) Lab File ID: 2131026/k2342

% Moisture: not dec. Date Collected: 10/23/13 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/24/13

Instrument ID: MSV12 Date Analyzed: 10/26/13 Time: 1515

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 518609

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	3.01		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW16-102313

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102418

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21310241804

Level: (low/med)

Lab File ID: 2131026/k2343

% Moisture: not dec.

Date Collected: 10/23/13 Time: 1016

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 10/24/13

Instrument ID: MSV12

Date Analyzed: 10/26/13 Time: 1536

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL)

Prep Batch: Analytical Batch: 518609

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	1.11		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

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FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW02-102313

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102418

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21310241805

Level: (low/med)

Lab File ID: 2131026/k2344

% Moisture: not dec.

Date Collected: 10/23/13 Time: 1405

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 10/24/13

Instrument ID: MSV12

Date Analyzed: 10/26/13 Time: 1557

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL)

Prep Batch: Analytical Batch: 518609

CONCENTRATION UNITS: ug/L

Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-7MW24-102313

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102418

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21310241806

Level: (low/med)

Lab File ID: 2131026/k2345

% Moisture: not dec.

Date Collected: 10/23/13 Time: 1401

GC Column: RTX-VMS-30 ID .25 (mm)

Date Received: 10/24/13

Instrument ID: MSV12

Date Analyzed: 10/26/13 Time: 1618

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL)

Prep Batch: Analytical Batch: 518609

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	77.3		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.973	J	0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-55MW06-102313

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102418

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310241807

Level: (low/med) Lab File ID: 2131101P/k2665

% Moisture: not dec. Date Collected: 10/23/13 Time: 1005

GC Column: RTX-VMS-30 ID: 25 (mm) Date Received: 10/24/13

Instrument ID: MSV12 Date Analyzed: 11/01/13 Time: 2332

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: JCK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 519091

CONCENTRATION UNITS: *ug/L* Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-7MW22-102313

Lab Name: GCAL Contract:

Lab Code: LA024 Case No. SAS No.: SDG No.: 213102418

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310241810

Level: (low/med) Lab File ID: 2131026/k2346

% Moisture: not dec. Date Collected: 10/23/13 Time: 1600

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/24/13

Instrument ID: MSV12 Date Analyzed: 10/26/13 Time: 1640

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 518609

CONCENTRATION UNITS: *ug/L* Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	4.21		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-EB01-102313

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102418

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21310241811

Level: (low/med)

Lab File ID: 2131026/k2347

% Moisture: not dec.

Date Collected: 10/23/13 Time: 1435

GC Column: RTX-VMS-30 ID: 25 (mm)

Date Received: 10/24/13

Instrument ID: MSV12

Date Analyzed: 10/26/13 Time: 1701

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL)

Prep Batch: Analytical Batch: 518609

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-TB02-102313

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102418

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310241812

Level: (low/med) Lab File ID: 2131026/k2348

% Moisture: not dec. Date Collected: 10/23/13 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/24/13

Instrument ID: MSV12 Date Analyzed: 10/26/13 Time: 1722

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 518609

CONCENTRATION UNITS: *ug/L* Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-55MW05-102313

Lab Name: GCAL Contract

Lab Code: LA024 Case No SAS No.: SDG No: 213102418

Matrix: (soil/water) Water

Sample wt/vol 5 (g/ml) ml Lab Sample ID. 21310241813

Level: (low/med) Lab File ID: 2131026/k2349

% Moisture: not dec Date Collected: 10/23/13 Time: 1440

GC Column: RTX-VMS-30 ID: 25 (mm) Date Received: 10/24/13

Instrument ID: MSV12 Date Analyzed: 10/26/13 Time: 1743

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 518609

Analytical Method: SW 846 8260B

CONCENTRATION UNITS ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis 1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-EB02-102313

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102418

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310241814

Level: (low/med) Lab File ID: 2131026/k2350

% Moisture: not dec. Date Collected: 10/23/13 Time: 1530

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/24/13

Instrument ID: MSV12 Date Analyzed: 10/26/13 Time: 1804

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 518609

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

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ORGANICS ANALYSIS DATA SHEET

Lab Name:	GCAL	Sample ID:	JM04-55MW01-102313
Lab Code:	LA024 Case No.:	Contract:	
Matrix:	Water	SAS No.:	SDG No.: 213102418
Sample wt/vol:	5 Units: mL	Lab Sample ID:	21310241801
Level: (low/med)		Date Collected:	10/23/13 Time: 1015
% Moisture:	decanted: (Y/N)	Date Received:	10/24/13
GC Column:	GS-Q 30 ID: .53 (mm)	Date Extracted:	
Concentrated Extract Volume:	5000 (µL)	Date Analyzed:	11/04/13 Time: 1100
Soil Aliquot Volume:	(µL)	Dilution Factor:	1 Analyst: BMR
Injection Volume:	1 (µL)	Prep Method:	
GPC Cleanup: (Y/N)	N pH:	Analytical Method:	RSK-175
Prep Batch:	Analytical Batch: 519184	Sulfur Cleanup: (Y/N)	N Instrument ID: GCV8A
CONCENTRATION UNITS:	*ug/L*	Lab File ID:	2131104/v8006

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	5.00

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 519184

CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-55MW12-102313

Contract:

SAS No.: SDG No.: 213102418

Lab Sample ID: 21310241802

Date Collected: 10/23/13 Time: 1015

Date Received: 10/24/13

Date Extracted:

Date Analyzed: 11/04/13 Time: 1109

Dilution Factor: 1 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2131104/v8007

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ	
74-82-8	Methane	84.6	E	0.435	1.09	5.00	R-DL
74-84-0	Ethane	0.220	U	0.087	0.220	1.00	
74-85-1	Ethene	0.290	U	0.071	0.290	1.00	

FORM I ORG-1

C.A

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519184
CONCENTRATION UNITS: ug/L

Sample ID: JM04-55MW12-102313DL
Contract:
SAS No.: SDG No.: 213102418
Lab Sample ID: 21310241802DL
Date Collected: 10/23/13 Time: 1015
Date Received: 10/24/13
Date Extracted:
Date Analyzed: 11/04/13 Time: 1115
Dilution Factor: 10 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131104/v8008

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	219		4.35	10.9	50.0

FORM I ORG-1

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1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519184
CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-FD02-102313
Contract:
SAS No.: SDG No.: 213102418
Lab Sample ID: 21310241803
Date Collected: 10/23/13 Time: 0000
Date Received: 10/24/13
Date Extracted:
Date Analyzed: 11/04/13 Time: 1120
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131104/v8009

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	102	E	0.435	1.09	5.00
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

R-DL

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519184
CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-FD02-102313DL
Contract:
SAS No.: SDG No.: 213102418
Lab Sample ID: 21310241803DL
Date Collected: 10/23/13 Time: 0000
Date Received: 10/24/13
Date Extracted:
Date Analyzed: 11/04/13 Time: 1126
Dilution Factor: 10 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131104/v8010

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	262		4.35	10.9	50.0

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519184

Sample ID: JM04-55MW16-102313
Contract:
SAS No.: SDG No.: 213102418
Lab Sample ID: 21310241804
Date Collected: 10/23/13 Time: 1016
Date Received: 10/24/13
Date Extracted:
Date Analyzed: 11/04/13 Time: 1132
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131104/v8011

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	5.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519184

Sample ID: JM04-55MW02-102313
Contract:
SAS No.: SDG No.: 213102418
Lab Sample ID: 21310241805
Date Collected: 10/23/13 Time: 1405
Date Received: 10/24/13
Date Extracted:
Date Analyzed: 11/04/13 Time: 1137
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131104/v8012

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	0.442	J	0.435	1.09	5.00

4-EB

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519184
CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-7MW24-102313
Contract:
SAS No.: SDG No.: 213102418
Lab Sample ID: 21310241806
Date Collected: 10/23/13 Time: 1401
Date Received: 10/24/13
Date Extracted:
Date Analyzed: 11/04/13 Time: 1144
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131104/v8013

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	5.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: 53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519184
CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-55MW06-102313
Contract:
SAS No.: SDG No.: 213102418
Lab Sample ID: 21310241807
Date Collected: 10/23/13 Time: 1005
Date Received: 10/24/13
Date Extracted:
Date Analyzed: 11/04/13 Time: 1150
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131104/v8014

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	14.1		0.435	1.09	5.00

FORM I ORG-1

C-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519184
CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-7MW22-102313
Contract:
SAS No.: SDG No.: 213102418
Lab Sample ID: 21310241810
Date Collected: 10/23/13 Time: 1600
Date Received: 10/24/13
Date Extracted:
Date Analyzed: 11/04/13 Time: 1217
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131104/v8018

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	5.00

FORM I ORG-1

C.A

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519184
CONCENTRATION UNITS: ug/L

Sample ID: JM04-EB01-102313
Contract:
SAS No.: SDG No.: 213102418
Lab Sample ID: 21310241811
Date Collected: 10/23/13 Time: 1435
Date Received: 10/24/13
Date Extracted:
Date Analyzed: 11/04/13 Time: 1224
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131104/v8019

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	5.00

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519184
CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-55MW05-102313
Contract:
SAS No.: SDG No.: 213102418
Lab Sample ID: 21310241813
Date Collected: 10/23/13 Time: 1440
Date Received: 10/24/13
Date Extracted:
Date Analyzed: 11/04/13 Time: 1231
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131104/v8020

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	9.97		0.435	1.09	5.00

FORM I ORG-1

C-U

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519184

Sample ID: JM04-EB02-102313
Contract:
SAS No.: SDG No.: 213102418
Lab Sample ID: 21310241814
Date Collected: 10/23/13 Time: 1530
Date Received: 10/24/13
Date Extracted:
Date Analyzed: 11/04/13 Time: 1237
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131104/v8021

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	5.00

FORM I ORG-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW01-102313
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102418
Level: (low / med)
% Solids:
Lab Sample ID: 21310241801
Date Received: 10/24/13
Time: 0930
Date Collected: 10/23/13
Time: 1015

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0433
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0433

CA

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW12-102313
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102418
Level: (low / med)
% Solids:
Lab Sample ID: 21310241802
Date Received: 10/24/13
Time: 0930
Date Collected: 10/23/13
Time: 1015

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0441
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0441

CA

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-FD02-102313
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102418
Level: (low / med)
% Solids:
Lab Sample ID: 21310241803
Date Received: 10/24/13
Time: 0930
Date Collected: 10/23/13
Time: 0000

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0448
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0448

ok

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW16-102313
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102418
Level: (low / med)
% Solids:
Lab Sample ID: 21310241804
Date Received: 10/24/13
Time: 0930
Date Collected: 10/23/13
Time: 1016

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0455
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0455

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW02-102313
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102418
Level: (low / med)
% Solids:
Lab Sample ID: 21310241805
Date Received: 10/24/13
Time: 0930
Date Collected: 10/23/13
Time: 1405

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0502
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0502

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-7MW24-102313
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102418
Level: (low / med)
% Solids:
Lab Sample ID: 21310241806
Date Received: 10/24/13
Time: 0930
Date Collected: 10/23/13
Time: 1401

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0509
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0509

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW06-102313
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102418
Level: (low / med)
% Solids:
Lab Sample ID: 21310241807
Date Received: 10/24/13
Time: 0930
Date Collected: 10/23/13
Time: 1005

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.079	mg/L	J	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0315
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0315

CL

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-7MW22-102313
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102418
Level: (low / med)
% Solids:
Lab Sample ID: 21310241810
Date Received: 10/24/13
Time: 0930
Date Collected: 10/23/13
Time: 1600

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0516
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0516

C-1

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-EB01-102313
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102418
Level: (low / med)
% Solids:
Lab Sample ID: 21310241811
Date Received: 10/24/13
Time: 0930
Date Collected: 10/23/13
Time: 1435

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0537
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0537

CL

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW05-102313
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102418
Level: (low / med)
% Solids:
Lab Sample ID: 21310241813
Date Received: 10/24/13
Time: 0930
Date Collected: 10/23/13
Time: 1440

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.19	mg/L	J	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0545
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0545

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-EB02-102313
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102418
Level: (low / med)
% Solids:
Lab Sample ID: 21310241814
Date Received: 10/24/13
Time: 0930
Date Collected: 10/23/13
Time: 1530

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0552
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0552

FORM I - IN

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241801	JM04-55MW01-102313	Water	10/23/2013 10:15	10/24/2013 09:30

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 09:17	DMT	518814

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	518	1.0	0.26	mg/L CaCO3 TB-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241801	JM04-55MW01-102313	Water	10/23/2013 10:15	10/24/2013 09:30

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	10/27/2013 19:28	JEM	518655

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	5.3	2.0	0.60	mg/L JB·EB

C·L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241801	JM04-55MW01-102313	Water	10/23/2013 10:15	10/24/2013 09:30

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/25/2013 13:11	DMT	518534

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241801	JM04-55MW01-102313	Water	10/23/2013 10:15	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	10/24/2013 19:53	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.651J	1.00	0.250	mg/L U-EB
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L
14808-79-8	Sulfate	48.4	1.00	0.250	mg/L JB-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241801	JM04-55MW01-102313	Water	10/23/2013 10:15	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	10/24/2013 20:10	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	884	100	25.0	mg/L

JB-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241802	JM04-55MW12-102313	Water	10/23/2013 10:15	10/24/2013 09:30

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 09:17	DMT	518814

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	258	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241802	JM04-55MW12-102313	Water	10/23/2013 10:15	10/24/2013 09:30

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/26/2013 10:24	JEM	518520

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	8.9	1.0	0.30	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241802	JM04-55MW12-102313	Water	10/23/2013 10:15	10/24/2013 09:30

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/25/2013 13:11	DMT	518534

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241802	JM04-55MW12-102313	Water	10/23/2013 10:15	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/24/2013 20:28	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.100U	0.200	0.050	mg/L
14797-65-0	Nitrite	0.100U	0.200	0.050	mg/L
14808-79-8	**Sulfate**	**5.09**	**0.200**	**0.050**	**mg/L**

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241802	JM04-55MW12-102313	Water	10/23/2013 10:15	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/25/2013 12:56	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	49.1	4.00	1.00	mg/L

C1

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241803	JM04-FD02-102313	Water	10/23/2013 00:00	10/24/2013 09:30

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 09:17	DMT	518814

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	254	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241803	JM04-FD02-102313	Water	10/23/2013 00:00	10/24/2013 09:30

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/26/2013 10:42	JEM	518520

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	9.5	1.0	0.30	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241803	JM04-FD02-102313	Water	10/23/2013 00:00	10/24/2013 09:30

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/25/2013 13:04	DMT	518534

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241803	JM04-FD02-102313	Water	10/23/2013 00:00	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/24/2013 21:03	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.100U	0.200	0.050	mg/L
14797-65-0	Nitrite	0.100U	0.200	0.050	mg/L
14808-79-8	**Sulfate**	**5.13**	**0.200**	**0.050**	**mg/L**

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241803	JM04-FD02-102313	Water	10/23/2013 00:00	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/25/2013 13:14	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	48.0	4.00	1.00	mg/L

213102418 428

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241804	JM04-55MW16-102313	Water	10/23/2013 10:16	10/24/2013 09:30

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 09:17	DMT	518814

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	500	1.0	0.26	mg/L CaCO3

JB-EB

CA

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241804	JM04-55MW16-102313	Water	10/23/2013 10:16	10/24/2013 09:30

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	10/27/2013 19:48	JEM	518655

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	9.4	2.0	0.60	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241804	JM04-55MW16-102313	Water	10/23/2013 10:16	10/24/2013 09:30

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/25/2013 13:12	DMT	518534

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

C-1

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241804	JM04-55MW16-102313	Water	10/23/2013 10:16	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	10/24/2013 21:37	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241804	JM04-55MW16-102313	Water	10/23/2013 10:16	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	10/25/2013 10:20	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	67.7	2.00	0.500	mg/L JB-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241804	JM04-55MW16-102313	Water	10/23/2013 10:16	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			200	10/25/2013 10:37	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	536	40.0	10.0	mg/L JB-EB

CA

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241805	JM04-55MW02-102313	Water	10/23/2013 14:05	10/24/2013 09:30

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 09:17	DMT	518814

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	341	1.0	0.26	mg/L CaCO3

JB-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241805	JM04-55MW02-102313	Water	10/23/2013 14:05	10/24/2013 09:30

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/26/2013 11:21	JEM	518520

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

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241805	JM04-55MW02-102313	Water	10/23/2013 14:05	10/24/2013 09:30

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/25/2013 13:15	DMT	518534

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241805	JM04-55MW02-102313	Water	10/23/2013 14:05	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/24/2013 21:55	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.100U	0.200	0.050	mg/L
14797-65-0	Nitrite	0.100U	0.200	0.050	mg/L

c\

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241805	JM04-55MW02-102313	Water	10/23/2013 14:05	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/25/2013 10:54	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	22.5	4.00	1.00	mg/L JB-EB
14808-79-8	Sulfate	11.6	4.00	1.00	mg/L

CA

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241806	JM04-7MW24-102313	Water	10/23/2013 14:01	10/24/2013 09:30

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 09:17	DMT	518814

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	617	1.0	0.26	mg/L CaCO3

JB-ER

C-1

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241806	JM04-7MW24-102313	Water	10/23/2013 14:01	10/24/2013 09:30

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	10/27/2013 20:07	JEM	518655

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	14.7	2.0	0.60	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241806	JM04-7MW24-102313	Water	10/23/2013 14:01	10/24/2013 09:30

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/25/2013 13:14	DMT	518534

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241806	JM04-7MW24-102313	Water	10/23/2013 14:01	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	10/24/2013 23:04	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L

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GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241806	JM04-7MW24-102313	Water	10/23/2013 14:01	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/24/2013 23:22	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	76.6	4.00	1.00	mg/L

JB-EB

C.1

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241806	JM04-7MW24-102313	Water	10/23/2013 14:01	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1000	10/24/2013 23:39	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	481	200	50.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241807	JM04-55MW06-102313	Water	10/23/2013 10:05	10/24/2013 09:30

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/06/2013 16:19	DMT	519467

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	460	1.0	0.26	mg/L CaCO3

JB-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241807	JM04-55MW06-102313	Water	10/23/2013 10:05	10/24/2013 09:30

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	10/27/2013 20:30	JEM	518655

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	1.9J	2.0	0.60	mg/L U-CB

C.L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241807	JM04-55MW06-102313	Water	10/23/2013 10:05	10/24/2013 09:30

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/25/2013 13:07	DMT	518534

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241807	JM04-55MW06-102313	Water	10/23/2013 10:05	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	10/24/2013 23:57	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241807	JM04-55MW06-102313	Water	10/23/2013 10:05	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			200	10/25/2013 00:49	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	473	40.0	10.0	mg/L JB-EB
14808-79-8	Sulfate	52.1	40.0	10.0	mg/L

C.L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241810	JM04-7MW22-102313	Water	10/23/2013 16:00	10/24/2013 09:30

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 09:17	DMT	518814

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	439	1.0	0.26	mg/L CaCO3

C1

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241810	JM04-7MW22-102313	Water	10/23/2013 16:00	10/24/2013 09:30

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	10/27/2013 22:38	JEM	518655

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	5.2	2.0	0.60	mg/L

C4

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241810	JM04-7MW22-102313	Water	10/23/2013 16:00	10/24/2013 09:30

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/25/2013 13:24	DMT	518534

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

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GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241810	JM04-7MW22-102313	Water	10/23/2013 16:00	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	10/25/2013 01:41	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1080	100	25.0	mg/L
14808-79-8	Sulfate	239	100	25.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241810	JM04-7MW22-102313	Water	10/23/2013 16:00	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	10/25/2013 02:33	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.501J	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L

rL

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241811	JM04-EB01-102313	Water	10/23/2013 14:35	10/24/2013 09:30

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 09:17	DMT	518814

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	142	1.0	0.26	mg/L CaCO3

CL

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241811	JM04-EB01-102313	Water	10/23/2013 14:35	10/24/2013 09:30

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/26/2013 14:40	JEM	518520

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	0.49J	1.0	0.30	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241811	JM04-EB01-102313	Water	10/23/2013 14:35	10/24/2013 09:30

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/25/2013 13:16	DMT	518534

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241811	JM04-EB01-102313	Water	10/23/2013 14:35	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/25/2013 02:50	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.258	0.200	0.050	mg/L
14797-65-0	Nitrite	0.171J	0.200	0.050	mg/L
14808-79-8	Sulfate	9.18	0.200	0.050	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241811	JM04-EB01-102313	Water	10/23/2013 14:35	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	10/25/2013 11:12	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	17.0	2.00	0.500	mg/L

CK

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241813	JM04-55MW05-102313	Water	10/23/2013 14:40	10/24/2013 09:30

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 09:17	DMT	518814

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	470	1.0	0.26	mg/L CaCO3

JB-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241813	JM04-55MW05-102313	Water	10/23/2013 14:40	10/24/2013 09:30

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	10/27/2013 23:00	JEM	518655

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	6.6	2.0	0.60	mg/L

JB-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241813	JM04-55MW05-102313	Water	10/23/2013 14:40	10/24/2013 09:30

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/25/2013 13:21	DMT	518534

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

C.A

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241813	JM04-55MW05-102313	Water	10/23/2013 14:40	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	10/25/2013 03:08	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241813	JM04-55MW05-102313	Water	10/23/2013 14:40	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1000	10/25/2013 03:25	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2330	200	50.0	mg/L

JB-CB

C.A

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241813	JM04-55MW05-102313	Water	10/23/2013 14:40	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/25/2013 11:29	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	129	4.00	1.00	mg/L

JB EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241814	JM04-EB02-102313	Water	10/23/2013 15:30	10/24/2013 09:30

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 15:52	DMT	518827

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	0.50U	1.0	0.26	mg/L CaCO3

C.1

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241814	JM04-EB02-102313	Water	10/23/2013 15:30	10/24/2013 09:30

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/26/2013 15:21	JEM	518520

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

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241814	JM04-EB02-102313	Water	10/23/2013 15:30	10/24/2013 09:30

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/25/2013 13:23	DMT	518534

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310241814	JM04-EB02-102313	Water	10/23/2013 15:30	10/24/2013 09:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	10/25/2013 03:43	AEL	518462

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	**Chloride**	**0.271J**	**0.400**	**0.100**	**mg/L**
14797-55-8	Nitrate	0.200U	0.400	0.100	mg/L
14797-65-0	Nitrite	0.200U	0.400	0.100	mg/L
14808-79-8	Sulfate	0.200U	0.400	0.100	mg/L

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-7MW07-102413

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102530

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310253001

Level: (low/med) Lab File ID: 2131103p/e4556

% Moisture: not dec. Date Collected: 10/24/13 Time: 1025

GC Column: RTX-VMS-30 ID: 25 (mm) Date Received: 10/25/13

Instrument ID: MSV11 Date Analyzed: 11/03/13 Time: 2225

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 519167

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.509	J	0.161	0.200	1.00
75-01-4	Vinyl chloride	1.64		0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	79.5		0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW25-102413

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102530

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310253004

Level: (low/med) Lab File ID: 2131103p/e4565

% Moisture: not dec. Date Collected: 10/24/13 Time: 1100

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/25/13

Instrument ID: MSV11 Date Analyzed: 11/04/13 Time: 0147

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 519167

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.664	J	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	5.85		0.103	0.200	1.00

FORM I VOA

CF

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04 55MW26-102413

Lab Name: GCAL Contract:

Lab Code: 1 A024 Case No. SAS No.: SDG No.: 213102530

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310253005

Level: (low/med) Lab File ID: 2131103p/e4566

% Moisture: not dec. Date Collected: 10/24/13 Time: 1017

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/25/13

Instrument ID: MSV11 Date Analyzed: 11/04/13 Time: 0209

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 519167

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	24.8		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-55IW04-102413

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102530

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310253006

Level: (low/med) Lab File ID: 2131103p/e4567

% Moisture: not dec. Date Collected: 10/24/13 Time: 1035

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/25/13

Instrument ID: MSV11 Date Analyzed: 11/04/13 Time: 0232

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 519167

Analytical Method: SW-846 8260B

CONCENTRATION UNITS ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	37.1		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	4.91		0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-EB03-102413

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102530

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310253007

Level: (low/med) Lab File ID: 2131103p/e4568

% Moisture: not dec. Date Collected: 10/24/13 Time: 0720

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/25/13

Instrument ID: MSV11 Date Analyzed: 11/04/13 Time: 0254

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 519167

CONCENTRATION UNITS: *ug/L* Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

C-1

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-EB04-102413

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.. SAS No.: SDG No.: 213102530

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310253008

Level: (low/med) Lab File ID: 2131103p/e4569

% Moisture: not dec. Date Collected: 10/24/13 Time: 0725

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/25/13

Instrument ID: MSV11 Date Analyzed: 11/04/13 Time: 0317

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 519167

CONCENTRATION UNITS: *ug/L* Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55IW02-102413

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102530

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310253009

Level: (low/med) Lab File ID: 2131103p/e4570

% Moisture: not dec. Date Collected: 10/24/13 Time: 1435

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/25/13

Instrument ID: MSV11 Date Analyzed: 11/04/13 Time: 0340

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 519167

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	5.72		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	20.7		0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55BW01-102413

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102530

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310253010

Level: (low/med) Lab File ID: 2131103p/e4571

% Moisture: not dec. Date Collected: 10/24/13 Time: 1411

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/25/13

Instrument ID: MSV11 Date Analyzed: 11/04/13 Time: 0402

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 519167

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.744	J	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	1.56		0.103	0.200	1.00

FORM I VOA

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-TB03-102413

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102530

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21310253011

Level: (low/med)

Lab File ID: 2131103p/e4572

% Moisture: not dec.

Date Collected: 10/24/13 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 10/25/13

Instrument ID: MSV11

Date Analyzed: 11/04/13 Time: 0425

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL)

Prep Batch: Analytical Batch: 519167

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

C.1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 519392

CONCENTRATION UNITS: ug/L

Sample ID: JM04-7MW07-102413

Contract:

SAS No.: SDG No.: 213102530

Lab Sample ID: 21310253001

Date Collected: 10/24/13 Time: 1025

Date Received: 10/25/13

Date Extracted:

Date Analyzed: 11/06/13 Time: 1054

Dilution Factor: 1 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2131106/v8005

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	4690	~~E~~	0.435	1.09	5.00
74-84-0	Ethane	0.368	J	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

R-DL

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519392

Sample ID: JM04-7MW07-102413DL
Contract:
SAS No.: SDG No.: 213102530
Lab Sample ID: 21310253001DL
Date Collected: 10/24/13 Time: 1025
Date Received: 10/25/13
Date Extracted:
Date Analyzed: 11/06/13 Time: 1119
Dilution Factor: 300 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

CONCENTRATION UNITS: *ug/L*
Lab File ID: 2131106/v8008

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	8180		131	327	1500

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 519392

CONCENTRATION UNITS: ug/L

Sample ID: JM04-55MW25-102413

Contract:

SAS No.: SDG No.: 213102530

Lab Sample ID: 21310253004

Date Collected: 10/24/13 Time: 1100

Date Received: 10/25/13

Date Extracted:

Date Analyzed: 11/06/13 Time: 1150

Dilution Factor: 1 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2131106/v8011

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	5160	~~E~~	0.435	1.09	5.00
74-84-0	Ethane	0.314	J	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

R-DL

C.T

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519392
CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-55MW25-102413DL
Contract:
SAS No.: SDG No.: 213102530
Lab Sample ID: 21310253004DL
Date Collected: 10/24/13 Time: 1100
Date Received: 10/25/13
Date Extracted:
Date Analyzed: 11/06/13 Time: 1157
Dilution Factor: 300 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131106/v8012

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	8090		131	327	1500

FORM I ORG-1

C.L

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH
Prep Batch: Analytical Batch: 519392
CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-55MW26-102413
Contract:
SAS No.: SDG No.: 213102530
Lab Sample ID: 21310253005
Date Collected: 10/24/13 Time: 1017
Date Received: 10/25/13
Date Extracted:
Date Analyzed: 11/06/13 Time: 1202
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131106/v8013

CAS NO.	COMPOUND	RESULT	Q	MDL	LQD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	0.767	J	0.435	1.09	5.00

FORM I ORG-1

CL

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519392

Sample ID: JM04-55IW04-102413
Contract:
SAS No.: SDG No.: 213102530
Lab Sample ID: 21310253006
Date Collected: 10/24/13 Time: 1035
Date Received: 10/25/13
Date Extracted:
Date Analyzed: 11/06/13 Time: 1210
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131106/v8014

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LQD	LOQ
74-82-8	Methane	1010	~~E~~	0.435	1.09	5.00
74-84-0	Ethane	0.152	J	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

R-DL

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name:	GCAL	Sample ID:	JM04-55IW04-102413DL
Lab Code:	LA024 Case No.:	Contract:	
Matrix:	Water	SAS No.:	SDG No.: 213102530
Sample wt/vol:	5 Units: mL	Lab Sample ID:	21310253006DL
Level: (low/med)		Date Collected:	10/24/13 Time: 1035
% Moisture:	decanted: (Y/N)	Date Received:	10/25/13
GC Column:	GS-Q 30 ID: .53 (mm)	Date Extracted:	
Concentrated Extract Volume:	5000 (µL)	Date Analyzed:	11/06/13 Time: 1223
Soil Aliquot Volume:	(µL)	Dilution Factor:	100 Analyst: BMR
Injection Volume:	1 (µL)	Prep Method:	
GPC Cleanup: (Y/N)	N pH:	Analytical Method:	RSK-175
Prep Batch:	Analytical Batch: 519392	Sulfur Cleanup: (Y/N)	N Instrument ID: GCV8A
CONCENTRATION UNITS:	*ug/L*	Lab File ID:	2131106/v8016

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	2380		43.5	109	500

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FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519392

CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-EB03-102413
Contract:
SAS No.: SDG No.: 213102530
Lab Sample ID: 21310253007
Date Collected: 10/24/13 Time: 0720
Date Received: 10/25/13
Date Extracted:
Date Analyzed: 11/06/13 Time: 1229
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131106/v8017

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.00	J	0.435	1.09	5.00

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FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519392

Sample ID: JM04-EB04-102413
Contract:
SAS No.: SDG No.: 213102530
Lab Sample ID: 21310253008
Date Collected: 10/24/13 Time: 0725
Date Received: 10/25/13
Date Extracted:
Date Analyzed: 11/06/13 Time: 1235
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131106/v8018

CONCENTRATION UNITS: *ug/L*

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.29	J	0.435	1.09	5.00

FORM I ORG-1

c-f

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No

Matrix: Water

Sample wt/vol. 5 Units: mL

Level. (low/med)

% Moisture: decanted: (Y/N)

GC Column GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup. (Y/N) N pH

Prep Batch Analytical Batch: 519392

CONCENTRATION UNITS ug/L

Sample ID: JM04-55IW02-102413

Contract.

SAS No.. SDG No.. 213102530

Lab Sample ID: 21310253009

Date Collected: 10/24/13 Time: 1435

Date Received. 10/25/13

Date Extracted.

Date Analyzed: 11/06/13 Time: 1241

Dilution Factor: 1 Analyst: BMR

Prep Method:

Analytical Method. RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2131106/v8019

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	2570	E	0.435	1.09	5.00
74-84-0	Ethane	0.450	J	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 519392

CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-55IW02-102413DL

Contract:

SAS No.: SDG No.: 213102530

Lab Sample ID: 21310253009DL

Date Collected: 10/24/13 Time: 1435

Date Received: 10/25/13

Date Extracted:

Date Analyzed: 11/06/13 Time: 1247

Dilution Factor: 200 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2131106/v8020

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	6260		87.0	218	1000

C-1

FORM 1 ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519392

Sample ID: JM04-55BW01-102413
Contract:
SAS No.: SDG No.: 213102530
Lab Sample ID: 21310253010
Date Collected: 10/24/13 Time: 1411
Date Received: 10/25/13
Date Extracted:
Date Analyzed: 11/06/13 Time: 1254
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131106/v8021

CONCENTRATION UNITS ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	2660	~~E~~	0.435	1.09	5.00
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

R-DL

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name:	GCAL	Sample ID:	JM04-55BW01-102413DL
Lab Code:	LA024 Case No.:	Contract:	
Matrix:	Water	SAS No.:	SDG No.: 213102530
Sample wt/vol:	5 Units: mL	Lab Sample ID:	21310253010DL
Level: (low/med)		Date Collected:	10/24/13 Time: 1411
% Moisture:	decanted: (Y/N)	Date Received:	10/25/13
GC Column:	GS-Q 30 ID: .53 (mm)	Date Extracted:	
Concentrated Extract Volume:	5000 (µL)	Date Analyzed:	11/06/13 Time: 1309
Soil Aliquot Volume:	(µL)	Dilution Factor:	200 Analyst: BMR
Injection Volume:	1 (µL)	Prep Method:	
GPC Cleanup: (Y/N)	N pH:	Analytical Method:	RSK-175
Prep Batch:	Analytical Batch: 519392	Sulfur Cleanup: (Y/N)	N Instrument ID: GCV8A
CONCENTRATION UNITS:	*ug/L*	Lab File ID:	2131106/v8023

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	5720		87.0	218	1000

FORM I ORG-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-7MW07-102413
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102530
Level: (low / med)
% Solids:
Lab Sample ID: 21310253001
Date Received: 10/25/13
Time: 1045
Date Collected: 10/24/13
Time: 1025

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	3.41	mg/L		0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 1626
Ferric Iron (Di	1.88	mg/L		0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 1626

C.P

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW25-102413
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102530
Level: (low / med)
% Solids:
Lab Sample ID: 21310253004
Date Received: 10/25/13
Time: 1045
Date Collected: 10/24/13
Time: 1100

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	3.12	mg/L		0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 1700
Ferric Iron (Di	0.53	mg/L		0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 1700

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID: JM04-55MW26-102413

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 213102530

Level: (low / med) % Solids:

Lab Sample ID: 21310253005

Date Received: 10/25/13 Time: 1045

Date Collected: 10/24/13 Time: 1017

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 1707
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 1707

CT

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55IW04-102413
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102530
Level: (low / med)
% Solids:
Lab Sample ID: 21310253006
Date Received: 10/25/13
Time: 1045
Date Collected: 10/24/13
Time: 1035

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 1714
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 1714

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID: JM04-EB03-102413

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 213102530

Level: (low / med) % Solids:

Lab Sample ID: 21310253007

Date Received: 10/25/13 Time: 1045

Date Collected: 10/24/13 Time: 0720

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 1740
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 1740

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-EB04-102413
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102530
Level: (low / med)
% Solids:
Lab Sample ID: 21310253008
Date Received: 10/25/13
Time: 1045
Date Collected: 10/24/13
Time: 0725

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 1747
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 1747

cf

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55IW02-102413
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102530
Level: (low / med)
% Solids:
Lab Sample ID: 21310253009
Date Received: 10/25/13
Time: 1045
Date Collected: 10/24/13
Time: 1435

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.082	mg/L	J	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 1755
Ferric Iron (Di	0.082	mg/L	J	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 1755

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID JM04-55BW01-102413
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102530
Level: (low / med)
% Solids:
Lab Sample ID: 21310253010
Date Received: 10/25/13
Time: 1045
Date Collected: 10/24/13
Time: 1411

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolv	2.06	mg/L		0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 1801
Ferric Iron (D	1.22	mg/L		0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 1801

FORM I - IN

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253001	JM04-7MW07-102413	Water	10/24/2013 10:25	10/25/2013 10:45

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/06/2013 16:19	DMT	519467

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	1110	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253001	JM04-7MW07-102413	Water	10/24/2013 10:25	10/25/2013 10:45

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	10/30/2013 22:09	JEM	518781

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	181	10.0	3.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253001	JM04-7MW07-102413	Water	10/24/2013 10:25	10/25/2013 10:45

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 12:01	DMT	518744

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L US-mSL

c.t

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253001	JM04-7MW07-102413	Water	10/24/2013 10:25	10/25/2013 10:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	10/25/2013 21:24	AEL	518465

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	403	100	25.0	mg/L JB-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253001	JM04-7MW07-102413	Water	10/24/2013 10:25	10/25/2013 10:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	10/25/2013 22:51	AEL	518465

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L
14808-79-8	Sulfate	2.77	1.00	0.250	mg/L

JB MSLt

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253004	JM04-55MW25-102413	Water	10/24/2013 11:00	10/25/2013 10:45

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 07:56	DJH	518852

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	1200	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253004	JM04-55MW25-102413	Water	10/24/2013 11:00	10/25/2013 10:45

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	10/30/2013 13:55	JEM	518781

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	220	5.0	1.5	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253004	JM04-55MW25-102413	Water	10/24/2013 11:00	10/25/2013 10:45

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 12:11	DMT	518744

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253004	JM04-55MW25-102413	Water	10/24/2013 11:00	10/25/2013 10:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	10/25/2013 23:43	AEL	518465

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L
14808-79-8	Sulfate	0.392J	1.00	0.250	mg/L u-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253004	JM04-55MW25-102413	Water	10/24/2013 11:00	10/25/2013 10:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	10/26/2013 00:00	AEL	518465

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	290	100	25.0	mg/L JB-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253005	JM04-55MW26-102413	Water	10/24/2013 10:17	10/25/2013 10:45

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 07:56	DJH	518852

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	438	1.0	0.26	mg/L CaCO3

JB-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253005	JM04-55MW26-102413	Water	10/24/2013 10:17	10/25/2013 10:45

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	10/30/2013 14:21	JEM	518781

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	4.7	2.0	0.60	mg/L JB-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253005	JM04-55MW26-102413	Water	10/24/2013 10:17	10/25/2013 10:45

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 12:00	DMT	518744

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

c.1

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253005	JM04-55MW26-102413	Water	10/24/2013 10:17	10/25/2013 10:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	10/26/2013 00:18	AEL	518465

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253005	JM04-55MW26-102413	Water	10/24/2013 10:17	10/25/2013 10:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	10/26/2013 00:35	AEL	518465

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	755	100	25.0	mg/L JB-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253005	JM04-55MW26-102413	Water	10/24/2013 10:17	10/25/2013 10:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/26/2013 13:18	AEL	518465

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	76.9	4.00	1.00	mg/L

JB-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253006	JM04-55IW04-102413	Water	10/24/2013 10:35	10/25/2013 10:45

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 07:56	DJH	518852

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	493	1.0	0.26	mg/L CaCO3

JB-EB

CH

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253006	JM04-55IW04-102413	Water	10/24/2013 10:35	10/25/2013 10:45

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	10/30/2013 14:39	JEM	518781

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	23.0	2.0	0.60	mg/L

C9

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253006	JM04-55IW04-102413	Water	10/24/2013 10:35	10/25/2013 10:45

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 12:10	DMT	518744

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

CK

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253006	JM04-55IW04-102413	Water	10/24/2013 10:35	10/25/2013 10:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	10/26/2013 00:52	AEL	518465

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1020	100	25.0	mg/L

JB-EB

213102530 400

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253006	JM04-55IW04-102413	Water	10/24/2013 10:35	10/25/2013 10:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	10/26/2013 01:45	AEL	518465

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253006	JM04-55IW04-102413	Water	10/24/2013 10:35	10/25/2013 10:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/26/2013 13:36	AEL	518465

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	83.4	4.00	1.00	mg/L

JB-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253007	JM04-EB03-102413	Water	10/24/2013 07:20	10/25/2013 10:45

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 07:56	DJH	518852

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	142	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253007	JM04-EB03-102413	Water	10/24/2013 07:20	10/25/2013 10:45

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 15:59	JEM	518781

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	1.1	1.0	0.30	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253007	JM04-EB03-102413	Water	10/24/2013 07:20	10/25/2013 10:45

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 11:54	DMT	518744

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253007	JM04-EB03-102413	Water	10/24/2013 07:20	10/25/2013 10:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/26/2013 02:02	AEL	518465

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	**Nitrate**	**0.384**	**0.200**	**0.050**	**mg/L**
14797-65-0	Nitrite	0.100U	0.200	0.050	mg/L
14808-79-8	**Sulfate**	**9.19**	**0.200**	**0.050**	**mg/L**

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253007	JM04-EB03-102413	Water	10/24/2013 07:20	10/25/2013 10:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	10/26/2013 14:28	AEL	518465

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	18.0	2.00	0.500	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253008	JM04-EB04-102413	Water	10/24/2013 07:25	10/25/2013 10:45

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 07:56	DJH	518852

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	144	1.0	0.26	mg/L CaCO3

213102530 408

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253008	JM04-EB04-102413	Water	10/24/2013 07:25	10/25/2013 10:45

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 16:15	JEM	518781

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	0.91J	1.0	0.30	mg/L

c1

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253008	JM04-EB04-102413	Water	10/24/2013 07:25	10/25/2013 10:45

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 11:55	DMT	518744

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253008	JM04-EB04-102413	Water	10/24/2013 07:25	10/25/2013 10:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/26/2013 02:19	AEL	518465

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	**Nitrate**	**0.384**	**0.200**	**0.050**	**mg/L**
14797-65-0	Nitrite	0.100U	0.200	0.050	mg/L
14808-79-8	**Sulfate**	**9.12**	**0.200**	**0.050**	**mg/L**

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253008	JM04-EB04-102413	Water	10/24/2013 07:25	10/25/2013 10:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	10/26/2013 14:45	AEL	518465

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	16.2	2.00	0.500	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253009	JM04-55IW02-102413	Water	10/24/2013 14:35	10/25/2013 10:45

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 07:56	DJH	518852

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	552	1.0	0.26	mg/L CaCO3

JB-EB

CA

213102530 413

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253009	JM04-55IW02-102413	Water	10/24/2013 14:35	10/25/2013 10:45

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	10/30/2013 16:33	JEM	518781

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	66.9	2.0	0.60	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253009	JM04-55IW02-102413	Water	10/24/2013 14:35	10/25/2013 10:45

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 12:13	DMT	518744

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

213102530 415

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253009	JM04-55IW02-102413	Water	10/24/2013 14:35	10/25/2013 10:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	10/26/2013 02:37	AEL	518465

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L

213102530 416

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253009	JM04-55IW02-102413	Water	10/24/2013 14:35	10/25/2013 10:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	10/26/2013 02:54	AEL	518465

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	679	100	25.0	mg/L

JB-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253009	JM04-55IW02-102413	Water	10/24/2013 14:35	10/25/2013 10:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	10/26/2013 15:03	AEL	518465

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	55.8	2.00	0.500	mg/L

JB-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253010	JM04-55BW01-102413	Water	10/24/2013 14:11	10/25/2013 10:45

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 07:56	DJH	518852

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	1480	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253010	JM04-55BW01-102413	Water	10/24/2013 14:11	10/25/2013 10:45

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	10/30/2013 16:49	JEM	518781

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	174	10.0	3.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253010	JM04-55BW01-102413	Water	10/24/2013 14:11	10/25/2013 10:45

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 12:12	DMT	518744

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253010	JM04-55BW01-102413	Water	10/24/2013 14:11	10/25/2013 10:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	10/26/2013 03:12	AEL	518465

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L
14808-79-8	Sulfate	0.500U	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310253010	JM04-55BW01-102413	Water	10/24/2013 14:11	10/25/2013 10:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	10/26/2013 03:29	AEL	518465

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	281	100	25.0	mg/L JB-EB

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW15-102213

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102811

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310281101

Level: (low/med) Lab File ID: 2131104/e4597

% Moisture: not dec. Date Collected: 10/22/13 Time: 1445

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/23/13

Instrument ID: MSV11 Date Analyzed: 11/04/13 Time: 1446

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 519191

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	13.5		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-7MW10-102213

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102811

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310281102

Level: (low/med) Lab File ID: 2131101P/k2685

% Moisture: not dec. Date Collected: 10/22/13 Time: 0930

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/23/13

Instrument ID: MSV12 Date Analyzed: 11/02/13 Time: 0647

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: JCK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 519091

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LQD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	9.85		0.103	0.200	1.00

FORM I VOA

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW11-102213

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102811

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310281103

Level: (low/med) Lab File ID: 2131104/e4601

% Moisture: not dec. Date Collected: 10/22/13 Time: 1150

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/23/13

Instrument ID: MSV11 Date Analyzed: 11/04/13 Time: 1617

Soil Extract Volume: (µL) Dilution Factor: 5 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 519191

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	476		0.807	1.00	5.00
75-01-4	Vinyl chloride	1.00	U	0.636	1.00	5.00
156-59-2	cis-1,2-Dichloroethene	5.66		0.517	1.00	5.00

FORM I VOA

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-7MW23-102213

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102811

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21310281104

Level: (low/med)

Lab File ID: 2131104/e4602

% Moisture: not dec.

Date Collected: 10/22/13 Time: 1430

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 10/23/13

Instrument ID: MSV11

Date Analyzed: 11/04/13 Time: 1640

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL)

Prep Batch: Analytical Batch: 519191

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	3.97		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	13.5		0.103	0.200	1.00

c.L

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW18-102213

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102811

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310281108

Level: (low/med) Lab File ID: 2131103/k2752

% Moisture: not dec. Date Collected: 10/22/13 Time: 0946

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/23/13

Instrument ID: MSV12 Date Analyzed: 11/03/13 Time: 1832

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: JCK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 519160

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LQD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM 1 VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-TB01-102213

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102811

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310281111

Level: (low/med) Lab File ID: 2131103/k2753

% Moisture: not dec. Date Collected: 10/22/13 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/23/13

Instrument ID: MSV12 Date Analyzed: 11/03/13 Time: 1853

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: JCK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 519160

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: 53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519028
CONCENTRATION UNITS: ug/L

Sample ID: JM04-55MW15-102213
Contract:
SAS No.: SDG No.: 213102811
Lab Sample ID: 21310281101
Date Collected: 10/22/13 Time: 1445
Date Received: 10/23/13
Date Extracted:
Date Analyzed: 11/01/13 Time: 1355
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131101/v8020

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	2.57	J	0.435	1.09	5.00

U-EB

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519028
CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-7MW10-102213
Contract:
SAS No.: SDG No.: 213102811
Lab Sample ID: 21310281102
Date Collected: 10/22/13 Time: 0930
Date Received: 10/23/13
Date Extracted:
Date Analyzed: 11/01/13 Time: 1404
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131101/v8021

CAS NO.	COMPOUND	RESULT	Q	MDL	LQD	LQQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	37.0		0.435	1.09	5.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519028

Sample ID: JM04-55MW11-102213
Contract:
SAS No.: SDG No.: 213102811
Lab Sample ID: 21310281103
Date Collected: 10/22/13 Time: 1150
Date Received: 10/23/13
Date Extracted:
Date Analyzed: 11/01/13 Time: 1413
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131101/v8022

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.50	J	0.435	1.09	5.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519028
CONCENTRATION UNITS: ug/L

Sample ID: JM04-7MW23-102213
Contract:
SAS No.: SDG No.: 213102811
Lab Sample ID: 21310281104
Date Collected: 10/22/13 Time: 1430
Date Received: 10/23/13
Date Extracted:
Date Analyzed: 11/01/13 Time: 1419
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131101/v8023

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ	
74-82-8	Methane	103	E	0.435	1.09	5.00	R-DL
74-84-0	Ethane	0.220	U	0.087	0.220	1.00	
74-85-1	Ethene	0.290	U	0.071	0.290	1.00	

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID .53 (mm)
Concentrated Extract Volume 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519028
CONCENTRATION UNITS ug/l

Sample ID: JM04-7MW23-102213DL
Contract:
SAS No.: SDG No 213102811
Lab Sample ID: 21310281104DL
Date Collected: 10/22/13 Time 1430
Date Received: 10/23/13
Date Extracted:
Date Analyzed: 11/01/13 Time 1427
Dilution Factor: 10 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131101/v8024

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	270		4.35	10.9	50.0

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519028
CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-55MW18-102213
Contract:
SAS No.: SDG No.: 213102811
Lab Sample ID: 21310281108
Date Collected: 10/22/13 Time: 0946
Date Received: 10/23/13
Date Extracted:
Date Analyzed: 11/01/13 Time: 1433
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131101/v8025

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.52	J	0.435	1.09	5.00

FORM I ORG-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW15-102213
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102811
Level: (low / med)
% Solids:
Lab Sample ID: 21310281101
Date Received: 10/23/13
Time: 0945
Date Collected: 10/22/13
Time: 1445

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/01/13 2211
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/01/13 2211

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-7MW10-102213
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102811
Level: (low / med)
% Solids:
Lab Sample ID: 21310281102
Date Received: 10/23/13
Time: 0945
Date Collected: 10/22/13
Time: 0930

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/01/13 2301
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/01/13 2301

C-4

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW11-102213
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102811
Level: (low / med)
% Solids:
Lab Sample ID: 21310281103
Date Received: 10/23/13
Time: 0945
Date Collected: 10/22/13
Time: 1150

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/01/13 2308
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/01/13 2308

C.L

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-7MW23-102213
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102811
Level: (low / med)
% Solids:
Lab Sample ID: 21310281104
Date Received: 10/23/13
Time: 0945
Date Collected: 10/22/13
Time: 1430

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.31	mg/L		0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/01/13 2314
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/01/13 2314

cf

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW18-102213
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102811
Level: (low / med)
% Solids:
Lab Sample ID: 21310281108
Date Received: 10/23/13
Time: 0945
Date Collected: 10/22/13
Time: 0946

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.49	mg/L		0.10	0.20	0.40	SW-846 6010C Dissolved	P	11/04/13 1622
Ferric Iron (Di	0.20	mg/L	U	0.10	0.20	0.40	SW-846 6010C Dissolved	P	11/04/13 1622

FORM I - IN

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281101	JM04-55MW15-102213	Water	10/22/2013 14:45	10/23/2013 09:45

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/28/2013 15:53	DMT	518736

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	468	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281101	JM04-55MW15-102213	Water	10/22/2013 14:45	10/23/2013 09:45

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	10/30/2013 17:09	JEM	518781

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	7.0	5.0	1.5	mg/L

JS-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281101	JM04-55MW15-102213	Water	10/22/2013 14:45	10/23/2013 09:45

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 11:49	DMT	518744

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281101	JM04-55MW15-102213	Water	10/22/2013 14:45	10/23/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	10/24/2013 02:58	AEL	518778

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	1.00U	2.00	0.500	mg/L
14797-65-0	Nitrite	1.00U	2.00	0.500	mg/L

C-1

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281101	JM04-55MW15-102213	Water	10/22/2013 14:45	10/23/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1000	10/24/2013 04:59	AEL	518778

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2800	200	50.0	mg/L JB-EB

ok

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281101	JM04-55MW15-102213	Water	10/22/2013 14:45	10/23/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			100	10/30/2013 00:26	AEL	518797

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	194	20.0	5.00	mg/L

JB-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281102	JM04-7MW10-102213	Water	10/22/2013 09:30	10/23/2013 09:45

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/28/2013 15:53	DMT	518736

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	314	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281102	JM04-7MW10-102213	Water	10/22/2013 09:30	10/23/2013 09:45

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 18 0[illegible]	JEM	518781

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	2.1	1.0	0.30	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281102	JM04-7MW10-102213	Water	10/22/2013 09:30	10/23/2013 09:45

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 11:42	DMT	518744

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281102	JM04-7MW10-102213	Water	10/22/2013 09:30	10/23/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	10/24/2013 12:39	AEL	518778

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.563J	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281102	JM04-7MW10-102213	Water	10/22/2013 09:30	10/23/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	10/24/2013 03:15	AEL	518778

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	519	100	25.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281102	JM04-7MW10-102213	Water	10/22/2013 09:30	10/23/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/29/2013 23:34	AEL	518797

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	86.1	4.00	1.00	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281103	JM04-55MW11-102213	Water	10/22/2013 11:50	10/23/2013 09:45

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/28/2013 15:53	DMT	518736

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	436	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281103	JM04-55MW11-102213	Water	10/22/2013 11:50	10/23/2013 09:45

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 18:19	JEM	518781

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	~~0.49J~~	1.0	0.30	mg/L U-BL

C L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281103	JM04-55MW11-102213	Water	10/22/2013 11:50	10/23/2013 09:45

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 11:45	DMT	518744

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281103	JM04-55MW11-102213	Water	10/22/2013 11:50	10/23/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/24/2013 02:23	AEL	518778

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	2.00U	4.00	1.00	mg/L
14797-65-0	Nitrite	2.00U	4.00	1.00	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281103	JM04-55MW11-102213	Water	10/22/2013 11:50	10/23/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2000	10/24/2013 04:25	AEL	518778

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	4020	400	100	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281103	JM04-55MW11-102213	Water	10/22/2013 11:50	10/23/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			100	10/29/2013 23:51	AFL	518797

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	410	20.0	5.00	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281104	JM04-7MW23-102213	Water	10/22/2013 14:30	10/23/2013 09:45

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/28/2013 15:53	DMT	518736

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	640	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281104	JM04-7MW23-102213	Water	10/22/2013 14:30	10/23/2013 09:45

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	10/30/2013 18:38	JEM	518781

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	4.5	2.0	0.60	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281104	JM04-7MW23-102213	Water	10/22/2013 14:30	10/23/2013 09:45

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			-	10/29/2013 11:46	DMT	518744

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281104	JM04-7MW23-102213	Water	10/22/2013 14:30	10/23/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	10/24/2013 02:40	AEL	518778

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281104	JM04-7MW23-102213	Water	10/22/2013 14:30	10/23/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	10/24/2013 04:42	AEL	518778

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	389	100	25.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281104	JM04-7MW23-102213	Water	10/22/2013 14:30	10/23/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	10/30/2013 00:09	AEL	518797

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	69.8	2.00	0.500	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281108	JM04-55MW18-102213	Water	10/22/2013 09:46	10/23/2013 09:45

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/28/2013 15:53	DM1	518736

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	231	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281108	JM04-55MW18-102213	Water	10/22/2013 09:46	10/23/2013 09:45

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 20:08	JEM	518781

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	3.9	1.0	0.30	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281108	JM04-55MW18-102213	Water	10/22/2013 09:46	10/23/2013 09:45

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 11:44	DMT	518744

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281108	JM04-55MW18-102213	Water	10/22/2013 09:46	10/23/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	10/24/2013 01:31	AEL	518778

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	5.00U	10.0	2.50	mg/L
14797-65-0	Nitrite	5.00U	10.0	2.50	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310281108	JM04-55MW18-102213	Water	10/22/2013 09:46	10/23/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5000	10/24/2013 04:07	AEL	518778

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	18400	1000	250	mg/L 37 CB
14808-79-8	Sulfate	2100	1000	250	mg/L 35 CB

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW14-102813

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102903

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310290301

Level: (low/med) Lab File ID: 2131104/e4605

% Moisture: not dec. Date Collected: 10/28/13 Time: 0915

GC Column: RTX-VMS-30 ID: 25 (mm) Date Received: 10/29/13

Instrument ID: MSV11 Date Analyzed: 11/04/13 Time: 1749

Soil Extract Volume: (µL) Dilution Factor: 5 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 519191

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	626		0.807	1.00	5.00
75-01-4	Vinyl chloride	1.00	U	0.636	1.00	5.00
156-59-2	cis-1,2-Dichloroethene	9.18		0.517	1.00	5.00

FORM I VOA

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-FD03-102813

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102903

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310290302

Level: (low/med) Lab File ID: 2131104/e4606

% Moisture: not dec. Date Collected: 10/28/13 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/29/13

Instrument ID: MSV11 Date Analyzed: 11/04/13 Time: 1812

Soil Extract Volume: (µL) Dilution Factor: 5 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 519191

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	614		0.807	1.00	5.00
75-01-4	Vinyl chloride	1.00	U	0.636	1.00	5.00
156-59-2	cis-1,2-Dichloroethene	9.36		0.517	1.00	5.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW09-102813

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102903

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21310290303

Level: (low/med)

Lab File ID: 2131104/e4607

% Moisture: not dec.

Date Collected: 10/28/13 Time: 1126

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 10/29/13

Instrument ID: MSV11

Date Analyzed: 11/04/13 Time: 1835

Soil Extract Volume: (µL)

Dilution Factor: 10 Analyst: CLH

Soil Aliquot Volume: (µL)

Prep Batch: Analytical Batch: 519191

Analytical Method: SW-846 8260B

CONCENTRATION UNITS ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	1010		1.61	2.00	10.0
75-01-4	Vinyl chloride	2.00	U	1.27	2.00	10.0
156-59-2	cis-1,2-Dichloroethene	2.00	U	1.03	2.00	10.0

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW10-102813

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102903

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310290304

Level: (low/med) Lab File ID: 2131104/e4608

% Moisture: not dec. Date Collected: 10/28/13 Time: 0926

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/29/13

Instrument ID: MSV11 Date Analyzed: 11/04/13 Time: 1858

Soil Extract Volume: (µL) Dilution Factor: 5 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 519191

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	344		0.807	1.00	5.00
75-01-4	Vinyl chloride	86.2		0.636	1.00	5.00
156-59-2	cis-1,2-Dichloroethene	33.7		0.517	1.00	5.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW17-102813

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102903

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310290305

Level: (low/med) Lab File ID: 2131104/e4609

% Moisture: not dec. Date Collected: 10/28/13 Time: 1445

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/29/13

Instrument ID: MSV11 Date Analyzed: 11/04/13 Time: 1921

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 519191

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	32.5		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.610	J	0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-FD01-102813

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102903

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310290306

Level: (low/med) Lab File ID: 2131104/e4610

% Moisture: not dec. Date Collected: 10/28/13 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/29/13

Instrument ID: MSV11 Date Analyzed: 11/04/13 Time: 1944

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 519191

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	32.1		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.583	J	0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-TB04-102813

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102903

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21310290307

Level: (low/med)

Lab File ID: 2131104/e4611

% Moisture: not dec.

Date Collected: 10/28/13 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 10/29/13

Instrument ID: MSV11

Date Analyzed: 11/04/13 Time: 2007

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL)

Prep Batch:

Analytical Batch: 519191

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

C-Y

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-EB05-102813

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102903

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21310290308

Level: (low/med)

Lab File ID: 2131104p/f3309

% Moisture: not dec.

Date Collected: 10/28/13 Time: 1330

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 10/29/13

Instrument ID: MSV7

Date Analyzed: 11/05/13 Time: 0154

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: CEK

Soil Aliquot Volume: (µL)

Prep Batch: Analytical Batch: 519255

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

C-4

213102903 61

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-EB06-102813

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 213102903

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21310290309

Level: (low/med) Lab File ID: 2131104p/f3310

% Moisture: not dec. Date Collected: 10/28/13 Time: 1530

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 10/29/13

Instrument ID: MSV7 Date Analyzed: 11/05/13 Time: 0214

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CEK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 519255

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 519393

CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-55MW14-102813

Contract:

SAS No.: SDG No.: 213102903

Lab Sample ID: 21310290301

Date Collected: 10/28/13 Time: 0915

Date Received: 10/29/13

Date Extracted:

Date Analyzed: 11/06/13 Time: 1705

Dilution Factor: 1 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2131106/v8043

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	5.00

FORM I ORG-1

C1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519393
CONCENTRATION UNITS: ug/L

Sample ID: JM04-FD03-102813
Contract:
SAS No.: SDG No.: 213102903
Lab Sample ID: 21310290302
Date Collected: 10/28/13 Time: 0000
Date Received: 10/29/13
Date Extracted:
Date Analyzed: 11/06/13 Time: 1712
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131106V8044

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	0.470	J	0.435	1.09	5.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519393

Sample ID: JM04-55MW09-102813
Contract:
SAS No.: SDG No.: 213102903
Lab Sample ID: 21310290303
Date Collected: 10/28/13 Time: 1126
Date Received: 10/29/13
Date Extracted:
Date Analyzed: 11/06/13 Time: 1718
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131106A8045

CONCENTRATION UNITS: *ug/L*

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.153	J	0.071	0.290	1.00
74-82-8	Methane	1.06	J	0.435	1.09	5.00

FORM I ORG-1

c-4

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519393

Sample ID: JM04-55MW10-102813
Contract:
SAS No.: SDG No.: 213102903
Lab Sample ID: 21310290304
Date Collected: 10/28/13 Time: 0926
Date Received: 10/29/13
Date Extracted:
Date Analyzed: 11/06/13 Time: 1724
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131106/v8046

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	311	~~E~~	0.435	1.09	5.00
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.366	J	0.071	0.290	1.00

R-DL

FORM I ORG-1

c1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519393

Sample ID: JM04-55MW10-102813DL
Contract:
SAS No.: SDG No.: 213102903
Lab Sample ID: 21310290304DL
Date Collected: 10/28/13 Time: 0926
Date Received: 10/29/13
Date Extracted:
Date Analyzed: 11/06/13 Time: 1730
Dilution Factor: 30 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131106/v8047

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	835		13.1	32.7	150

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519393

Sample ID: JM04-55MW17-102813
Contract:
SAS No.: SDG No.: 213102903
Lab Sample ID: 21310290305
Date Collected: 10/28/13 Time: 1445
Date Received: 10/29/13
Date Extracted:
Date Analyzed: 11/06/13 Time: 1736
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131106/v8048

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	2.81	J	0.435	1.09	5.00

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 519393

CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-FD01-102813

Contract:

SAS No.: SDG No.: 213102903

Lab Sample ID: 21310290306

Date Collected: 10/28/13 Time: 0000

Date Received: 10/29/13

Date Extracted:

Date Analyzed: 11/06/13 Time: 1748

Dilution Factor: 1 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2131106/v8050

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	2.99	J	0.435	1.09	5.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519393
CONCENTRATION UNITS: ug/L

Sample ID: JM04-EB05-102813
Contract:
SAS No.: SDG No.: 213102903
Lab Sample ID: 21310290308
Date Collected: 10/28/13 Time: 1330
Date Received: 10/29/13
Date Extracted:
Date Analyzed: 11/06/13 Time: 1754
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131106/v8051

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	5.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 519393

Sample ID: JM04-EB06-102813
Contract:
SAS No.: SDG No.: 213102903
Lab Sample ID: 21310290309
Date Collected: 10/28/13 Time: 1530
Date Received: 10/29/13
Date Extracted:
Date Analyzed: 11/06/13 Time: 1803
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2131106/v6052

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	5.00

FORM I ORG-1

C 1

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID: JM04-55MW14-102813

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 213102903

Level: (low / med) % Solids:

Lab Sample ID: 21310290301

Date Received: 10/29/13 Time: 0945

Date Collected: 10/28/13 Time: 0915

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/01/13 2328
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/01/13 2328

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-FD03-102813
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102903
Level: (low / med)
% Solids:
Lab Sample ID: 21310290302
Date Received: 10/29/13
Time: 0945
Date Collected: 10/28/13
Time: 0000

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/01/13 2334
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/01/13 2334

ok

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW09-102813
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102903
Level: (low / med)
% Solids:
Lab Sample ID: 21310290303
Date Received: 10/29/13
Time: 0945
Date Collected: 10/28/13
Time: 1126

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/01/13 2356
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/01/13 2356

CL

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID: JM04-55MW10-102813

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 213102903

Level: (low / med) % Solids:

Lab Sample ID: 21310290304

Date Received: 10/29/13 Time: 0945

Date Collected: 10/28/13 Time: 0926

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.24	mg/L		0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0002
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0002

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW17-102813
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102903
Level: (low / med)
% Solids:
Lab Sample ID: 21310290305
Date Received: 10/29/13
Time: 0945
Date Collected: 10/28/13
Time: 1445

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0008
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0008

CL

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-FD01-102813
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102903
Level: (low / med)
% Solids:
Lab Sample ID: 21310290306
Date Received: 10/29/13
Time: 0945
Date Collected: 10/28/13
Time: 0000

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0015
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0015

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-EB05-102813
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102903
Level: (low / med)
% Solids:
Lab Sample ID: 21310290308
Date Received: 10/29/13
Time: 0945
Date Collected: 10/28/13
Time: 1330

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0022
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0022

CH

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-EB06-102813
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 213102903
Level: (low / med)
% Solids:
Lab Sample ID: 21310290309
Date Received: 10/29/13
Time: 0945
Date Collected: 10/28/13
Time: 1530

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0029
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	11/02/13 0029

FORM I - IN

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290301	JM04-55MW14-102813	Water	10/28/2013 09:15	10/29/2013 09:45

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 11:26	DJH	518871

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	334	1.0	0.26	mg/L CaCO3

JB-EB

C-1

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290301	JM04-55MW14-102813	Water	10/28/2013 09:15	10/29/2013 09:45

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 21:04	JEM	518781

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	4.2	1.0	0.30	mg/L J-FD

CP

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290301	JM04-55MW14-102813	Water	10/28/2013 09:15	10/29/2013 09:45

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/04/2013 18:34	DMT	519220

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

ok

213102903 450

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290301	JM04-55MW14-102813	Water	10/28/2013 09:15	10/29/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	10/29/2013 15:44	AEL	518797

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	1.00U	2.00	0.500	mg/L
14797-65-0	Nitrite	1.00U	2.00	0.500	mg/L

c-1

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290301	JM04-55MW14-102813	Water	10/28/2013 09:15	10/29/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1000	10/29/2013 16:37	AEL	518797

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1120	200	50.0	mg/L

JB-EB

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GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290301	JM04-55MW14-102813	Water	10/28/2013 09:15	10/29/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	11/02/2013 00:36	JEM	519017

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	109	10.0	2.50	mg/L

JB-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290302	JM04-FD03-102813	Water	10/28/2013 00:00	10/29/2013 09:45

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 11:26	DJH	518871

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	337	1.0	0.26	mg/L CaCO3

JB-EB

C.A

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290302	JM04-FD03-102813	Water	10/28/2013 00:00	10/29/2013 09:45

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 21:25	JEM	518781

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	2.1	1.0	0.30	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290302	JM04-FD03-102813	Water	10/28/2013 00:00	10/29/2013 09:45

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/04/2013 18:36	DMT	519220

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290302	JM04-FD03-102813	Water	10/28/2013 00:00	10/29/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	10/29/2013 17:29	AEL	518797

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	**Nitrate**	**0.522J**	**1.00**	**0.250**	**mg/L** U-EB
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L

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GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290302	JM04-FD03-102813	Water	10/28/2013 00:00	10/29/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	10/29/2013 17:46	AEL	518797

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1210	100	25.0	mg/L

JB-EB

CA

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290302	JM04-FD03-102813	Water	10/28/2013 00:00	10/29/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	11/02/2013 01:29	JEM	519017

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	113	10.0	2.50	mg/L JB-EB

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GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290303	JM04-55MW09-102813	Water	10/28/2013 11:26	10/29/2013 09:45

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 11:26	DJH	518871

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	447	1.0	0.26	mg/L CaCO3

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213102903 460

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290303	JM04-55MW09-102813	Water	10/28/2013 11:26	10/29/2013 09:45

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 21:48	JEM	518781

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	4.0	1.0	0.30	mg/L

c L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290303	JM04-55MW09-102813	Water	10/28/2013 11:26	10/29/2013 09:45

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/04/2013 18:37	DMT	519220

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

C-L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290303	JM04-55MW09-102813	Water	10/28/2013 11:26	10/29/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/29/2013 18:03	AEL	518797

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	2.00U	4.00	1.00	mg/L
14797-65-0	Nitrite	2.00U	4.00	1.00	mg/L

c. L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290303	JM04-55MW09-102813	Water	10/28/2013 11:26	10/29/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2000	10/29/2013 18:21	AEL	518797

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	5340	400	100	mg/L
14808-79-8	Sulfate	853	400	100	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290304	JM04-55MW10-102813	Water	10/28/2013 09:26	10/29/2013 09:45

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 11:26	DJH	518871

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	719	1.0	0.26	mg/L CaCO3

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GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290304	JM04-55MW10-102813	Water	10/28/2013 09:26	10/29/2013 09:45

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	11/01/2013 09:42	JEM	518945

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	2.6J	5.0	1.5	mg/L U-BL

C.A

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290304	JM04-55MW10-102813	Water	10/28/2013 09:26	10/29/2013 09:45

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/04/2013 18:37	DMT	519220

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.024	0.020	0.005	mg/L

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GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290304	JM04-55MW10-102813	Water	10/28/2013 09:26	10/29/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	10/29/2013 19:13	AEL	518797

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	1.00U	2.00	0.500	mg/L
14797-65-0	Nitrite	1.00U	2.00	0.500	mg/L

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GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290304	JM04-55MW10-102813	Water	10/28/2013 09:26	10/29/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1000	10/29/2013 19:30	AEL	518797

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	3020	200	50.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290304	JM04-55MW10-102813	Water	10/28/2013 09:26	10/29/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			200	11/02/2013 01:47	JEM	519017

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	444	40.0	10.0	mg/L

C K

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290305	JM04-55MW17-102813	Water	10/28/2013 14:45	10/29/2013 09:45

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 11:26	DJH	518871

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	394	1.0	0.26	mg/L CaCO3

C. L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290305	JM04-55MW17-102813	Water	10/28/2013 14:45	10/29/2013 09:45

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/31/2013 20:28	JEM	518945

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	3.1	1.0	0.30	mg/L JB-EBA

ck

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290305	JM04-55MW17-102813	Water	10/28/2013 14:45	10/29/2013 09:45

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/04/2013 18:38	DMT	519220

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

ok

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290305	JM04-55MW17-102813	Water	10/28/2013 14:45	10/29/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	10/29/2013 19:48	AEL	518797

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L

C·L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290305	JM04-55MW17-102813	Water	10/28/2013 14:45	10/29/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	10/29/2013 20:05	AEL	518797

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1540	100	25.0	mg/L

JB-EB

c.f

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290305	JM04-55MW17-102813	Water	10/28/2013 14:45	10/29/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	11/02/2013 02:05	JEM	519017

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	141	10.0	2.50	mg/L

JB-EB

c.h

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290306	JM04-FD01-102813	Water	10/28/2013 00:00	10/29/2013 09:45

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 11:26	DJH	518871

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	401	1.0	0.26	mg/L CaCO3

JB-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290306	JM04-FD01-102813	Water	10/28/2013 00:00	10/29/2013 09:45

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	11/01/2013 10:33	JEM	518945

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	7.1	2.0	0.60	mg/L

JB-EB,F

ch

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290306	JM04-FD01-102813	Water	10/28/2013 00:00	10/29/2013 09:45

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/04/2013 18:39	DMT	519220

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290306	JM04-FD01-102813	Water	10/28/2013 00:00	10/29/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	10/29/2013 20:23	AEL	518797

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L

C.1

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290306	JM04-FD01-102813	Water	10/28/2013 00:00	10/29/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	10/29/2013 20:40	AEL	518797

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1560	100	25.0	mg/L

JB-EB

ck

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290306	JM04-FD01-102813	Water	10/28/2013 00:00	10/29/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	11/02/2013 02:22	JEM	519017

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	143	10.0	2.50	mg/L JB-EB

c 1

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290308	JM04-EB05-102813	Water	10/28/2013 13:30	10/29/2013 09:45

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 13:00	DJH	518886

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	0.50U	1.0	0.26	mg/L CaCO3

C·L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290308	JM04-EB05-102813	Water	10/28/2013 13:30	10/29/2013 09:45

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/31/2013 22:33	JEM	518945

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

C·L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290308	JM04-EB05-102813	Water	10/28/2013 13:30	10/29/2013 09:45

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/04/2013 18:41	DMT	519220

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

c.1

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290308	JM04-EB05-102813	Water	10/28/2013 13:30	10/29/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 20:57	AEL	518797

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	**Chloride**	**0.141J**	**0.200**	**0.050**	**mg/L**
14797-55-8	Nitrate	0.100U	0.200	0.050	mg/L
14797-65-0	Nitrite	0.100U	0.200	0.050	mg/L
14808-79-8	Sulfate	0.100U	0.200	0.050	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290309	JM04-EB06-102813	Water	10/28/2013 15:30	10/29/2013 09:45

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/30/2013 11:26	DJH	518871

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	141	1.0	0.26	mg/L CaCO3

o.k

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290309	JM04-EB06-102813	Water	10/28/2013 15:30	10/29/2013 09:45

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/31/2013 22:57	JEM	518945

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	0.80J	1.0	0.30	mg/L

C-1

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290309	JM04-EB06-102813	Water	10/28/2013 15:30	10/29/2013 09:45

SM 4500-S2- D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	11/04/2013 18:42	DMT	519220

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290309	JM04-EB06-102813	Water	10/28/2013 15:30	10/29/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/29/2013 21:15	AEL	518797

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	**Nitrate**	**0.362**	**0.200**	**0.050**	**mg/L**
14797-65-0	Nitrite	0.100U	0.200	0.050	mg/L
14808-79-8	**Sulfate**	**9.15**	**0.200**	**0.050**	**mg/L**

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21310290309	JM04-EB06-102813	Water	10/28/2013 15:30	10/29/2013 09:45

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	11/02/2013 03:15	JEM	519017

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	17.8	2.00	0.500	mg/L

GCAL

ANALYTICAL LABORATORIES, LLC

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Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

CHAIN OF CUSTODY RECORD

GCAL USE ONLY

COC# 378718-102313-1

Report to:
Client: Tom Beisel
Address: 1000 Abernathy Rd STE 1000
Atlanta GA 30328
Contact: Tom Beisel
Phone: 770-604-9182
E-mail: Thomas.Beisel@ch2m.com

Bill to:
Client: CH2MHILL
Address: PER CONTRACT
Contact: Amanda Struse
Phone: 972-663-2350
E-mail:

P.O. Number: 378718
Project Name/Number: GTO-JM04 SWMU55 PRE-ISB
Sampled By: B. BURKINGSTOCK, A. O'CONOR, P. JOHNSON & J. FRANK

GCAL use only:
Custody Seal used ☐ yes ☐ no
intact ☐ yes ☐ no
Temperature °C 3.8, 2.7, 2.5, 3.9

☐ Dissolved Analysis Requested
☐ Field filtered
☐ Lab filtered

Analytical Requests & Method

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	VOC 8260B (TCE, PCE & VC)	MBE RSK-175	Anions (NO_2, NO_3, Seq Cl)	Alkalinity (ALKT) SM2320B	Sulfide SM4500-S2-F	TOC SW 5310-B	Dissolved Metals 6020C					Preservative
							HCl	–	–	–	$ZnAc_2$ $NaOH$	H_2SO_4	HNO_3					
W	10/23/13	1015		✓	JM04-55MW01-102313	12	3	3	1	1	1	2	1					VOC's for (TCE, PCE & VC)
W	10/23/13	1015		✓	JM04-55-MW12-102313	12	3	3	1	1	1	2	1					
W	10/23/13	—		✓	JM04-FD02-102313	12	3	3	1	1	1	2	1					
W	10/23/13	1016		✓	JM04-55MW16-102313	12	3	3	1	1	1	2	1					
W	10/23/13	1405		✓	JM04-55MW02-102313	12	3	3	1	1	1	2	1					
W	10/23/13	1401		✓	JM04-7MW24-102313	12	3	3	1	1	1	2	1					
W	10/23/13	1005		✓	JM04-55MW06-102313	12	3	3	1	1	1	2	1					
W	10/23/13	1005		✓	JM04-55MW06-102313 MS	12	3	3	1	~~1~~	1	2	1					
W	10/23/13	1005		✓	JM04-55MW06-102313 SD	12	3	3	1	~~1~~	1	2	1					
W	10/23/13	1006		✓	JM04-7MW22-102313	12	3	3	1	1	1	2	1					
W	10/23/13	1435		✓	JM04-EB01-102313	12	3	3	1	1	1	2	1					
W	10/23/13	—		✓	JM04-TB02-102313	3	3											
W	10/23/13	1440		✓	JM04-55MW05-102313	12	3	3	1	1	1	2	1					

Air Bill No: 8035 1539 4948

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☒ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Jamie E. Frank	10/23/13	1700			
Fed Ex	10/24/13	1015	[illegible]	10/24/13	1430
		930			

Note:

Client ID: 4380 - CH2M Hill Constructors
SDG: 213102418
Due Date: 11/04/13

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

Matrix[1]: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

We cannot accept verbal changes. Please email written changes to your PM.

WHITE: CLIENT FINAL REPORT ~~CANARY~~: CLIENT

GCAL

ANALYTICAL LABORATORIES, LLC

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Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

CHAIN OF CUSTODY RECORD

GCAL USE ONLY

COC# 378718-102313-2

Report to:
Client:
Address:
Contact: SEE P.1
Phone:
E-mail:

Bill to:
Client:
Address:
Contact: SEE P.1
Phone:
E-mail:

P.O. Number
Project Name/Number
Sampled By:

GCAL use only:
Custody Seal
used ☐ yes ☐ no
intact ☐ yes ☐ no
Temperature °C

☐ Dissolved Analysis Requested
☐ Field filtered
☐ Lab filtered

Analytical Requests, Method

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	VOC 8260B (TCE, DCE & VC)	MBE RSK 175	Alkalinity, NO2, NO3, Sol Cl	Alkalinity SM 2320B	Sulfide SM 4500-S2-F	TOC SM 5310B	Dissolved Metals Fe, Mn				Preservative
W	10/30/13	1530		✓	JM04-EB02-102313	12	3	3	1	1	1	2	1				VOC FOR TCE, DCE & VC

Air Bill No: 8035 1539 4948

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☑ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
James E Frank	10/23/13	1700			
Sedix	10/24/13	930	[illegible]	10/24/13	9:3[illegible]

Note:

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

Client ID: 4380 - CH2M Hill Constructors
SDG: 213102418
Due Date: 11/04/13

WHITE: CLIENT FINAL REPORT - SECONDARY: CLIENT

Matrix[1]: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

We cannot accept verbal changes. Please email written changes to your PM.

GCAL ANALYTICAL LABORATORIES, LLC

CHAIN OF CUSTODY RECORD

GCAL USE ONLY

7979 GSRI Ave., Baton Rouge, LA 70820-7402
Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

COC # 378718-102413-1A

Report to:
Client: Tom Beisel
Address: 10000 Abernathy Rd STE 1600
Atlanta, GA 30328
Contact: Tom Beisel
Phone: 770-604-9182
E-mail: Thomas.Beisel@cham.com

Bill to:
Client: CH2MHILL
Address: PER CONTRACT
Contact: Amanda Struse
Phone: 972-603-2350
E-mail:

P.O. Number: 378718
Project Name/Number: CTO-JM04 SWMU 55 PRE-ISB

Sampled By: B. BURKINGSTOCK, P. JOHNSON, A. OCALOK & J. FRANK

Analytical Requests & Method

GCAL use only:
Custody Seal used ☑ yes ☐ no
intact ☑ yes ☐ no
Temperature °C 2.9 3.1 3.4
C83.6 E22

☐ Dissolved Analysis Requested
☐ Field filtered
☐ Lab filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	VOC 8260 (TCE, DCE & VC)	MBE RSK-175	Anions (NO3, NO2, SO4, Cl-) 300.0	Alkalinity SM 2320B	Sulfide 4500-S2-H	TOC SM 5310B-13	Diss. Metals 6010C
							HCl	-	-	-	HNO3 & ZnAc	HCl	HNO3
W	10/24/13	1025		✓	JM04-7MW07-102413	12	3	3	1	1	1	2	1
W	10/24/13	1025		✓	JM04-7MW07-102413 MS	12	3	3	1	~~BPM~~	1	2	1
W	10/24/13	1025		✓	JM04-7MW07-102413 SD	12	3	3	1	~~BPM~~	1	2	1
W	10/24/13	1100		✓	JM04-55MW25-102413	12	3	3	1	1	1	2	1
W	10/24/13	1017		✓	JM04-55MW26-102413	12	3	3	1	1	1	2	1
W	10/24/13	1035		✓	JM04-55IW04-102413	12	3	3	1	1	1	2	1
W	10/24/13	0720		✓	JM04-EB02-102413	12	3	3	1	1	1	2	1
W	10/24/13	0725		✓	JM04-EB04-102413	12	3	3	1	1	1	2	1
W	10/24/13	1436		✓	JM04-55IW02-102413	12	3	3	1	1	1	2	1
W	10/24/13	1411		✓	JM04-55BW01-102413	12	3	3	1	1	1	2	1
W	10/24/13			✓	JM04-TB03-102413	3	3						

Preservative
OC's (TCE, DCE & VC) 2/12
2
3
4
5
6
7
8
9
10
11

Client ID: 4380 - CH2M Hill Constructors
SDG: 213102530
Due Date: 11/05/13

Air Bill No: 8035 1539 4960 & 8035 1539 4981 & ~~8035~~ 8035 1539 4992

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☑ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time
Larry E Frank	10/24/13	1800			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
FedEx	10/25/13	1045	Courier	10/25/13	1045
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Note:

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

WHITE: CLIENT FINAL REPORT CANARY: CLIENT

Matrix[1]: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

We cannot accept verbal changes. Please email written changes to your PM.

GCAL

ANALYTICAL LABORATORIES, INC.

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Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

CHAIN OF CUSTODY RECORD

GCAL USE ONLY

378718-
COC# 102213-01

Report to:
Client: Tom Beisel
Address: 1000 Abernathy Rd STE 1600
Atlanta GA 30328
Contact: Tom Beisel
Phone: 770-604-9182
E-mail: Thomas.Beisel@ch2m.com

Bill to:
Client: CH2MHILL
Address: PER CONTRACT
Contact: Amanda Strube
Phone: 972-663-2350
E-mail:

P.O. Number: 378718
Project Name/Number: CTO-JM04 SWMU 55 PRE-ISB

Sampled By: B. Burnino Stark, Andrew O'Connor, Packer Johnson, J Frank

Analytical Requests & Method

GCAL use only:
Custody Seal used ☐ yes ☐ no
intact ☐ yes ☐ no
Temperature °C 4.1, 3.9
EZZ

☐ Dissolved Analysis Requested
☐ Field filtered
☐ Lab filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	VOC (TCE, DCE & VC)	MEE (RSK 175)	Ammonia (NH_3, SO_4, Cl)	Alkalinity	Sulfide	TOC	Dissolved Metals					Preservative	
							HCl	HCl	—	—	ZnAc NaOH	HCl	HNO_3						
W	10/22/13	1445		✓	JM04-55MW15-102213	12	3	3	1	1	1	2	1					VOC → TCE, DCE & VC ONLY	2
W	10/22/13	0930		✓	JM04-7MW10-102213	12	3	3	1	1	1	2	1						3
W	10/22/13	1150		✓	JM04-55MW11-102213	12	3	3	1	1	1	2	1						4
W	10/22/13	1430		✓	JM04-7MW23-102213	12	3	3	1	1	1	2	1						5
W	10/22/13	0940		✓	JM04-55MW16-102213	12	3	3	1	1	1	2	1	*					6
W	10/22/13	1141		✓	JM04-55MW09-102213	12	3	3	1	1	1	2	1	*					7
W	10/22/13	1400		✓	JM04-55MW14-102213	12	3	3	1	1	1	2	1	*					8
W	10/22/13	0940		✓	JM04-55MW18-102213	12	3	3	1	1	1	2	1						9
W	10/22/13	1330		✓	JM04-55MW17-102213	12	3	3	1	1	1	2	1	*					10
W	10/22/13	—		✓	JM04-FD01-102213	12	3	3	1	1	1	2	1	*					11
W	—	—		✓	JM04-TB01-102213	3	3												

Client ID: 4380 - CH2M Hill Constructors
SDG: 213102811
Due Date: 11/01/13

Air Bill No: 8035 1539 4959

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☑ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
James E Frank	10/22/13	1700			
FEDEX	10/23/13	0945	[signature]	10/23/13	0945
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Note: * samples will be re-collected per client 10-23-13 EJM

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

Matrix[1]: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

We cannot accept verbal changes. Please email written changes to your PM.

WHITE: CLIENT FINAL REPORT - CANARY: CLIENT

GCAL ANALYTICAL LABORATORIES, LLC

CHAIN OF CUSTODY RECORD

GCAL USE ONLY

378718-
COC# 102213-01

7979 GSRI Ave., Baton Rouge, LA 70820-7402
Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

Report to:
Client: Tom Beisel
Address: 1000 Abernathy Rd STE 1600
Atlanta GA 30328
Contact: Tom Beisel
Phone: 770-604-9182
E-mail: Thomas.Beisel@ch2m.com

Bill to:
Client: CH2MHILL
Address: PER CONTRACT
Contact: Amanda Strase
Phone: 972-663-2350
E-mail:

P.O. Number: 378718
Project Name/Number: CTO-JM04 SUMMIT 55 PRE-ISB

Sampled By: B. BURKINGSTOCK, ANDREW O'CONOR, PARKER JOHNSON, J. FRANK

GCAL use only:
Custody Seal used ☐ yes ☐ no
intact ☐ yes ☐ no
Temperature °C 4.1, 3.9
EZZ

☐ Dissolved Analysis Requested
☐ Field filtered
☐ Lab filtered

Analytical Requests & Method

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	VOC 8260B TCE, DCE & VC	MBE FROM 175	Anions (NO_2, NO_3, SO_4, Cl) 9056	Alkalinity ALET	Sulfide SM18	TOC	Dissolved Metals 6020B					Preservative
							HCl				ZnAc NaOH	HCl	HNO_3					
W	10/22/13	1445		✓	JM04-55MW15-102213	12	3	3	1	1	1	2	1				1	VOC → TCE, DCE & VC ONLY
W	10/22/13	0930		✓	JM04-7MW10-102213	12	3	3	1	1	1	2	1				2	
W	10/22/13	1150		✓	JM04-55MW11-102213	12	3	3	1	1	1	2	1				3	
W	10/22/13	1430		✓	JM04-7MW23-102213	12	3	3	1	1	1	2	1				4	
W	10/22/13	0940		✓	JM04-55MW10-102213	12	3	3	—	—	—	—	—				5	
W	10/22/13	1141		✓	JM04-55MW09-102213	12	3	3	—	—	—	—	—				6	
W	10/22/13	1400		✓	JM04-55MW14-102213	12	3	3	—	—	—	—	—				7	
W	10/22/13	0946		✓	JM04-55MW18-102213	12	3	3	1	1	1	2	1				8	
W	10/22/13	1336		✓	JM04-55MW17-102213	12	3	3	—	—	—	—	—				9	
W	10/22/13	—		✓	JM04-FD01-102213	12	3	3	—	—	—	—	—				10	
W	—	—		✓	JM04-TB01-102213	3	3										11	

Air Bill No: 8035 1539 4959

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☒ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
James E Frank	10/22/13	1700			
FEDEX	10/23/13	0945	[signature]	10/23/13	0945

Note:

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

Matrix[1]: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply

We cannot accept verbal changes. Please email written changes to your PM.

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2131822811 5559

GCAL

ANALYTICAL LABORATORIES, LLC

7979 GSRI Ave., Baton Rouge, LA 70820-7402
Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

CHAIN OF CUSTODY RECORD

GCAL USE ONLY

COC# 378718-102813-01A

Report to:
Client: Tom Beisel
Address: 10000 Abernathy Rd STE 1600
Atlanta GA 30328
Contact: Tom Beisel
Phone: 770-604-9182
E-mail: Thomas.Beisel@ch2m.com

Bill to:
Client: CH2MHILL
Address: PER CONTRACT
Contact: Amanda Struse
Phone: 972-663-2350
E-mail:

P.O. Number: 378718
Project Name/Number: GTO-JM04 SWMU 55 PRE-ISB
Sampled By: A. O'Conor & J. Frank

Analytical Requests & Method

GCAL use only:
Custody Seal used ☑ yes ☐ no
intact ☑ yes ☐ no
Temperature °C 4.9 3.2 E24

☐ Dissolved Analysis Requested
☐ Field filtered
☐ Lab filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	VOC 8260 TCL, PLUS 3 VC	MEE RSK	ANIONS & ALK	SULFIDE	TOC	DISS METAL FE					
W	10/28/13	0915		✓	JM04-55MW14-102813	10	3	2	1	1	2	1					
W	10/28/13	—		✓	JM04-FD03-102813	10	3	2	1	1	2	1					
W	10/28/13	1126		✓	JM04-55MW09-102813	10	3	2	1	1	2	1					
W	10/28/13	0926		✓	JM04-55MW10-102813	10	3	2	1	1	2	1					
W	10/28/13	1445		✓	JM04-55MW17-102813	10	3	2	1	1	2	1					
W	10/28/13	—		✓	JM04-FD01-102813	10	3	2	1	1	2	1					
W	10/28/13	—		✓	JM04-TB04-102813	3	3										
W	10/28/13	1330		✓	JM04-EB05-102813	10	3	2	1	1	2	1					
W	10/28/13	1530		✓	JM04-EB06-102813	10	3	2	1	1	2	1					

Preservative: 1 2 3 4 5 6 7 8 9

Client ID: 4380 - CH2M Hill Constructors
SDG: 213102903
Due Date: 11/07/13

Air Bill No: 8035 1539 5017 & 8035 1539 5028

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☒ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Jerry Frank	10/28/13	1700			
Todd Fox	10/29/13	945	[illegible]	10/29/13	945
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Note:

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

Matrix[1]: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

We cannot accept verbal changes. Please email written changes to your PM.

WHITE: CLIENT FINAL REPORT - CANARY: CLIENT

NA Puerto Rico

PREPARED FOR:	NA Puerto Rico / SWMU 55 Groundwater Sampling 1st Semi-Annual 2014
FINAL REVIEWER/ INITIAL REVIEWER	Camden Robinson/ Project Chemist/CH2M Hill
COPIES:	Tom Beisel /Project Manager/AGVIQ-CH2M HILL
DATE:	April 8th, 2014
SUBJECT:	Quality Assessment for Samples collected February 17th, 2014 thru February 18th, 2014

This quality assurance memorandum is based upon a review of analytical data generated for the groundwater samples and the associated field quality control samples collected February 17th, 2014 thru February 18th, 2014 at the Naval Activity Puerto Rico in Ceiba, Puerto Rico. The samples were collected as a part of the SWMU 55 Groundwater Sampling 1st Semi-Annual sampling event conducted at the site. The specific samples and analytical fractions reviewed are summarized below in Table 1.

The Quality Control areas that were reviewed and the resulting findings are documented within each subsection that follows. Data validation was conducted using the validation criteria outlined in the uniform federal policy- quality assurance project plan (UFP-QAPP CH2M HILL, June 2012), Standard Operating Procedure (SOP) HW-24 Revision 2 Validating Volatile Organic Compounds by Gas Chromatograph/Mass Spectrometry SW-846 Method 8260B, guidance procedures described in the Environmental Protection Agency (EPA *National Functional Guidelines for Organic Data Review (EPA 2008)*, and/or the general guidance provided in the Department of Defense (DOD) Quality Systems Manual - Version 4.2 Final October 2010 (based on NELAC Voted Version – 5 June 2003). Analytical methods and laboratory standard operating procedures (SOPs) presented in the UFP-QAPP were used to evaluate compliance against quality assurance (QA)/QC criteria. If QA/QC criteria were not met, data was considered for qualification.

Samples were submitted to Gulf Coast Analytical Laboratories, Inc. of Baton Rouge, Louisiana for the following analyses: SW-846 8260B Volatile Organic Compounds Trichloroethene, Cis-1,2-Dichloroethene, and Vinyl Chloride and Standard Method 5310B Total Organic Carbon (TOC.

Sample results that were not within the acceptance limits were appended with a qualifying flag, which consisted of a single- or double-letter code that indicated a possible problem with the data. The qualifying flags originated during the data review and validation processes. These also include the secondary, or the two/three-digit "sub-qualifier" flags. The secondary qualifiers provide the reasoning behind the assignment of a qualifier flag to the data. The secondary qualifiers are presented and defined below.

Attachment 1 lists the changes in data qualifiers, due to the validation process.

The following primary flags were used to qualify the data:

[=] Detected. The analyte was analyzed for and detected at the concentration shown.

[J] Estimated. The analyte was present but the reported value may not be accurate or precise.

[U] Undetected. The analyte was analyzed for but not detected above the method detection limit. The data validator may also apply this qualifier to indicate that a concentration was not detected at significantly greater than that in an associated blank.

[UJ] Detection limit estimated. The analyte was analyzed for but qualified as not detected; the result is estimated.

[UR] Rejected. The data is not useable. The absence of the analyte cannot be verified.

[R] Rejected. The data is not useable.

Secondary Qualifier Codes

Code	Definition
2SH	Second Source Accuracy High
2SL	Second Source Accuracy Low
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BL	Blank
BSH	Blank Spike/LCS Recovery High
BSL	Blank Spike/LCS Recovery Low
CCH	Continuing Calibration Verification Accuracy High
CCL	Continuing Calibration Verification Accuracy Low
DL	Dilution
EB	Equipment Blank Contamination
FD	Field Duplicate
LD	Laboratory Duplicate
HT	Holding Time
ICH	Initial Calibration High
ICL	Initial Calibration Low
ISH	Internal Standard Area Response High
ISL	Internal Standard Area Response Low
LR	Linear Range (Exceeded calibration range)
MD	Matrix Spike/Matrix Spike Duplicate Precision
MSH	Matrix Spike and/or Matrix Spike Duplicate Recovery High
MSL	Matrix Spike and/or Matrix Spike Duplicate Recovery Low
OT	Other
RE	Re-extraction
RF	Response Factor
SSH	Spiked Surrogate Recovery High
SSL	Spiked Surrogate Recovery Low
TN	Tune
EMPC	Estimated Maximum Possible Concentration

Table 1 - Chemical Analytical Methods – Field and Quality Control Samples

SDG	Sample ID	Lab Sample ID	Matrix	Sample Type	Date Collected	Analyses Performed
214021812	JM04-IW03-021714	21402181201	GW	N	02/17/2014	[1], [2]
214021812	JM04-IW04-021714	21402181202	GW	N	02/17/2014	[1], [2]
214021812	JM04-FD01-021714	21402181203	GW	FD	02/17/2014	[1], [2]
214021812	JM04-TB01-021714	21402181204	WQ	TB	02/17/2014	[1]
214021812	JM04-IW02-021714	21402181205	GW	N	02/17/2014	[1], [2]
214021930	JM04-BRW01-021814	21402193001	GW	N	02/18/2014	[1], [2]
214021930	JM04-BRW01-021814MS	21402193002	WQ	MS	02/18/2014	[1], [2]
214021930	JM04-BRW01-021814SD	21402193003	WQ	SD	02/18/2014	[1], [2]
214021930	JM04-7MW07-021814	21402193004	GW	N	02/18/2014	[1], [2]
214021930	JM04-EB01-021814	21402193005	WQ	EB	02/18/2014	[1], [2]
214021930	JM04-TB02-021814	21402193006	WQ	TB	02/18/2014	[1]

MATRIX CODE

GW – Groundwater
WQ – Water Quality Control Sample

SAMPLE TYPE CODE

N – Native Sample
EB – Equipment Blank
TB – Trip Blank
FD – Field Duplicate
MS – Matrix Spike
SD – Matrix Spike Duplicate

ANALYSIS CODE

[1] – VOC –Trichloroethene, Cis-1,2-Dichloroethene, and Vinyl Chloride by SW-846 method 8260B
[2] – TOC – Total Organic Carbon by Standard Method 5310B

Organic Parameters

Quality Control Review

The following list represents the QA/QC measures that were reviewed during the data quality evaluation procedure for organic data.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Method blanks, equipment blanks, and trip blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Surrogate Recoveries** – Surrogate Compounds are added to each sample and the recoveries are used to monitor lab performance and possible matrix interference.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", either laboratory reagent water or Ottawa sand, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and it's duplicate. This information can only be determined when target compounds are detected.
- **GC/MS Tuning** – The mass spectrum of the tuning compound is evaluated for method compliance. The criteria are established to verify the proper mass assignment and mass resolution.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.
- **Internal Standards** – The internal standards (retention time and response) are evaluated for method compliance. The internal standards are used in quantitation of the target parameters and monitor the instrument sensitivity and response for stability during each analysis.

Inorganic Parameters

Quality Control Review

The following list represents the QA/QC measures that were reviewed during the data quality evaluation procedure for organic data.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Method blanks, initial calibration blanks, continuing calibration blanks, and equipment blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", either laboratory reagent water or Ottawa sand, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and it's duplicate. This information can only be determined when target compounds are detected.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Volatile Organic Compounds (VOCs) Analyses

Holding Time

All samples analyses were performed within hold time.

GC/MS Instrument Performance

All GC/MS Instrument Performance criteria were met.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

There were no detections in the trip, equipment, and method blank samples.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field sample JM04-BRW01-021814. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Surrogate Recoveries

All surrogate recoveries were within acceptable quality control limits, except as noted in Table 2 below:

TABLE 2
Surrogate Recoveries Out of QC Limits: VOC
NA Puerto Rico SWMU 55 Groundwater Sampling 1st Semi-annual 2014

SDG	Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Flag
214021930	JM04-BRW01-021814	4-Bromofluorobenzene	136%	75-120	JM04-BRW01-021814	Detects-J

The results for the sample listed above were qualified as estimated with a "J" for detects due to surrogate recoveries were outside the acceptable limits that are listed in Table 2 with a validation note of "SSH" for high recovery.

Internal Standard Recoveries

All internal standard recoveries were within acceptable quality control limits.

Field Duplicates

Field sample JM04-IW04-021714 was collected and analyzed in duplicate. Field duplicate precision objectives were met.

Dilutions

The samples presented below in table 3 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 3
Dilutions: VOC
NA Puerto Rico SWMU 55 Groundwater Sampling 1st Semi-annual 2014

Sample ID	Analysis	Dilution Factor
JM04-IW04-021714	VOC	2X
JM04-FD01-021714	VOC	2X

Rejected Data

No data were rejected based upon the validation process for this sampling event.

GROUNDWATER PROJECT ACTION LIMITS

All samples collected and analyzed for the month of February 2014 for the volatile organic compound – trichloroethene were less than the groundwater project action limits.

Minor Technical Issues for TOC

Holding Time

All samples analyses were performed within hold time.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

There were no detections in the initial calibration, continuing calibration, equipment, and method blank samples.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field sample JM04-BRW01-021814. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Field Duplicates

Field sample JM04-IW04-021714 was collected and analyzed in duplicate. Field duplicate precision objectives were met.

Dilutions

The samples presented below in table 4 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 4
Dilutions: TOC
NA Puerto Rico SWMU 55 Groundwater Sampling 1st Semi-annual 2014

Sample ID	Analysis	Dilution Factor
JM04-IW03-021714	TOC	5X

TABLE 4
Dilutions: TOC
NA Puerto Rico SWMU 55 Groundwater Sampling 1st Semi-annual 2014

Sample ID	Analysis	Dilution Factor
JM04-IW04-021714	TOC	5X
JM04-FD01-021714	TOC	5X
JM04-IW02-021714	TOC	5X
JM04-BRW01-021814	TOC	10X
JM04-7MW07-021814	TOC	5X

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Data Usability

A review of the analytical data submitted regarding the NA Puerto Rico SWMU 55 Groundwater Sampling 1st Semi-Annual 2014, by CH2M HILL has been completed. An overall evaluation of the data indicates that the sample handling, shipment, and analytical procedures have been adequately completed, and that the analytical results should be considered usable as qualified. The validation review demonstrated that the analytical systems were generally in control and the data results can be used in the decision making process.

Data reviewed in this report meet the data quality goals stated in the project quality assurance project plan (QAPP). The data user can use the data recognizing the potential data biases indicated by the data qualifiers assigned to some results. Data was qualified based on high surrogate bias.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-IW03-021714

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214021812

Matrix (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21402181201

Level: (low/med) Lab File ID: 2140219/e9202

% Moisture: not dec. Date Collected: 02/17/14 Time: 0945

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 02/18/14

Instrument ID: MSV11 Date Analyzed: 02/19/14 Time: 1454

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CEK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 525884

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	78.0		0.161	0.200	1.00
75-01-4	Vinyl chloride	2.86		0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	7.71		0.103	0.200	1.00

FORM I VOA

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-IW04-021714

Lab Name: GCAL Contract:

Lab Code: LA024 Case No: SAS No.: SDG No.: 214021812

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21402181202

Level: (low/med) Lab File ID: 2140219/e0203

% Moisture: not dec. Date Collected: 02/17/14 Time: 1115

GC Column: RTX-VMS-30 ID .25 (mm) Date Received: 02/18/14

Instrument ID: MSV11 Date Analyzed: 02/19/14 Time: 1520

Soil Extract Volume: (µL) Dilution Factor: 2 Analyst: CEK

Soil Aliquot Volume: (µL) Prep Batch Analytical Batch: 525884

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	193		0.323	0.400	2.00
75-01-4	Vinyl chloride	3.23		0.254	0.400	2.00
156-59-2	cis-1,2-Dichloroethene	6.31		0.207	0.400	2.00

FORM I VOA

214021812 24

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-FD01-021714

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214021812

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21402181203

Level: (low/med) Lab File ID: 2140219/e9204

% Moisture: not dec. Date Collected: 02/17/14 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 02/18/14

Instrument ID: MSV11 Date Analyzed: 02/19/14 Time: 1544

Soil Extract Volume: (µL) Dilution Factor: 2 Analyst: CEK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 525884

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	181		0.323	0.400	2.00
75-01-4	Vinyl chloride	3.06		0.254	0.400	2.00
156-59-2	cis-1,2-Dichloroethene	6.16		0.207	0.400	2.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-TB01-021714

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214021812

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21402181204

Level: (low/med) Lab File ID: 2140219/e9205

% Moisture: not dec Date Collected: 02/17/14 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 02/18/14

Instrument ID: MSV11 Date Analyzed: 02/19/14 Time: 1606

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CEK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 525884

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-IW02-021714

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214021812

Matrix (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21402181205

Level: (low/med) Lab File ID: 2140219/e9206

% Moisture: not dec. Date Collected: 02/17/14 Time: 1500

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 02/18/14

Instrument ID: MSV11 Date Analyzed: 02/19/14 Time: 1629

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CEK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 525884

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	10.7		0.161	0.200	1.00
75-01-4	Vinyl chloride	9.34		0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	6.88		0.103	0.200	1.00

FORM I VOA

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402181201	JM04-IW03-021714	Water	02/17/2014 09:45	02/18/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	02/19/2014 14:59	AEL	525882

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	34.4	5.0	1.5	mg/L

ok

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402181202	JM04-IW04-021714	Water	02/17/2014 11:15	02/18/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	02/19/2014 15:21	AEL	525882

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	30.6	5.0	1.5	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402181203	JM04-FD01-021714	Water	02/17/2014 00:00	02/18/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	02/19/2014 15:41	AEL	525882

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	29.4	5.0	1.5	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402181205	JM04-IW02-021714	Water	02/17/2014 15:00	02/18/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	02/19/2014 16:02	AEL	525882

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	73.2	5.0	1.5	mg/L

CT

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-BRW01-021814

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214021930

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21402193001

Level: (low/med) Lab File ID: 2140221/e9280

% Moisture: not dec. Date Collected: 02/18/14 Time: 1420

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 02/19/14

Instrument ID: MSV11 Date Analyzed: 02/21/14 Time: 1952

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: JCK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 526100

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.419	J	0.103	0.200	1.00

J- SSH

c.t

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-7MW07-021814

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214021930

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21402193004

Level: (low/med) Lab File ID: 2140221/e9288

% Moisture: not dec. Date Collected: 02/18/14 Time: 1520

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 02/19/14

Instrument ID: MSV11 Date Analyzed: 02/21/14 Time: 2257

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: JCK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 526100

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	8.75		0.161	0.200	1.00
75-01-4	Vinyl chloride	18.5		0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	4.13		0.103	0.200	1.00

FORM I VOA

214021930 22

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO
JM04 EB01-021814

Lab Name GCAL Contract

Lab Code LA024 Case No SAS No SDG No. 214021930

Matrix (soil/water) Water

Sample wt/vol. 5 (g/ml) mL Lab Sample ID 21402193005

Level (low/med) Lab File ID 2140221/e3289

% Moisture not dec Date Collected 02/18/14 Time 1545

GC Column RTX-VMS-30 D. 25 (mm) Date Received. 02/19/14

Instrument ID MSV11 Date Analyzed 02/21/14 Time 2321

Soil Extract Volume (µL) Dilution Factor. 1 Analyst JCK

Soil Aliquot Volume: (µL) Prep Batch Analytical Batch. 526100

CONCENTRATION UNITS ug/L Analytical Method SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1 2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-TB02-021914

Lab Name: GCAL Contract:

Lab Code LA024 Case No SAS No: SDG No 214021930

Matrix (soil/water) Water

Sample wt/vol 5 (g/ml) mL Lab Sample ID 2140219006

Level (low/med) Lab File ID: 2140221vs9290

% Moisture not dec. Date Collected 02/18/14 Time 0000

GC Column RTX-VMS-30 ID .25 (mm) Date Received 02/19/14

Instrument ID: MSV11 Date Analyzed 02/21/14 Time: 2344

Soil Extract Volume (µL) Dilution Factor 1 Analyst: JCK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch 526100

Analytical Method SW-846 8260B

CONCENTRATION UNITS ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	J	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	J	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

CA

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402193001	JM04-BRW01-021814	Water	02/18/2014 14:20	02/19/2014 10:35

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	02/20/2014 08.23	JEM	525922

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	62.3	10.0	3.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402193004	JM04-7MW07-021814	Water	02/18/2014 15:20	02/19/2014 10:35

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	02/20/2014 09:31	JEM	525922

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	8.1	5.0	1.5	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402193005	JM04-EB01-021814	Water	02/18/2014 15:45	02/19/2014 10:35

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	02/19/2014 20:49	JEM	525922

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

C.L

GCAL ANALYTICAL LABORATORIES, LLC

CHAIN OF CUSTODY RECORD

7979 Innovation Park Dr., Baton Rouge, LA 70820 7402
Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

Client ID: 4380 - CH2M Hill Constructors
SDG: 214021812
Due Date: 02/27/14

Report to:
Client: Bethany Garvey/CH2MHill
Address: 1000 Abernathy Rd. Ste 1400
Atlanta, GA 30328
Contact: Bethany Garvey
Phone: 678-530-4124
E-mail: 678-579-8176

Bill to:
Client: Per Contract
Address:
Contact:
Phone:
E-mail: bgarvey@ch2m.com

P.O. Number
Project Name/Number
Sampled By:

Analytical Requests & Method: VOC's (TCE, DCE & VC); TOC

GCAL use only:
Custody Seal used ☐ yes ☑ no
intact ☐ yes ☐ no
Temperature °C 5.2 EZZ

☐ Dissolved Analysis Requested
☐ Field filtered
☐ Lab filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	VOC's	TOC									Preservative
W	2/17/14	0945		X	JM04-IW03-021714	5	3	2									1
W	2/17/14	1115		X	JM04-IW04-021714	5	3	2									2
W	2/17/14	—		X	JM04-FD01-021714	5	3	2									3
W	2/17/14	—		X	JM04-TB01-021714	3	3	~~2~~ (0)									4
W	2/17/14	1500		X	JM04-IW02-021714	5	3	2									5

Air Bill No: FedEx 8026716763 69

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☑ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
James Ezrail	2/17/14	1800	Fed Ex		
Fed Ex	2/18/14	1000	[illegible]	2/18/14	1000

Note:

By submitting these samples, you agree to GCAL's terms and conditions contained in our most recent schedule of services

Matrix[1]: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

We cannot accept verbal changes. Please email written changes to your PM.

WHITE: CLIENT FINAL REPORT - CANARY: CLIENT

GCAL ANALYTICAL LABORATORIES, LLC

7979 Innovation Park Dr., Baton Rouge, LA 70820 7402
Phone: 225.769.4900 • Fax: 225.767 5717 • www.gcal.com

CHAIN OF CUSTODY RECORD

GCAL USE ONLY

COC # JM04-021814

Report to:
Client: Bethany Garvey / CH2MHILL
Address: 10000 Abernathy Rd Suite 400
Atlanta, GA 30328
Contact: Bethany Garvey
Phone: 678-530-424
E-mail: 678-579-8176

Bill to:
Client: Per Contract
Address:
Contact:
Phone:
E-mail: bgarvey@ch2m.com

P.O. Number:
Project Name/Number: SWMU 55 / 378718.30.23.90.50

Sampled By: S. KLINE & J. FRANK

GCAL use only:
Custody Seal used ☑ yes ☐ no
intact ☑ yes ☐ no
Temperature °C 3.4 EZZ

☐ Dissolved Analysis Requested
☐ Field filtered
☐ Lab filtered

Analytical Requests & Method

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	VOCs (TCE, DCE & VC)	TOC	Preservative
W	2/18/14	1420		P	JM04-BRW01-021814	5	3	2	1
W	2/18/14	1420		P	JM04-BRW01-021814 MS	5	3	2	2
W	2/18/14	1420		P	JM04-BRW01-021814 SD	5	3	2	3
W	2/18/14	1520		P	JM04-FMW07-021814	5	3	2	4
W	2/18/14	1545		P	JM04-EB01-021814	5	3	2	5
W	2/18/14	—		P	JM04-TB02-021814	3	3		6

Client ID: 4380 - CH2M Hill Constructors
SDG: 214021930
Due Date: 02/28/14

Air Bill No: 8026 7167 6370

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☒ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
James E. Frank	2/18/14				
Relinquished by: (Signature) Fedex	2/19/14	1035	Received by: (Signature)	2/19/14	1035
Relinquished by: (Signature)			Received by: (Signature)		

Note:

By submitting these samples, you agree to GCAL's terms and conditions contained in our most recent schedule of services

WHITE - CLIENT FINAL REPORT - CANARY - CLIENT

NA Puerto Rico

PREPARED FOR:	NA Puerto Rico / SWMU 55 1st Semi-Annual Event - 2
FINAL REVIEWER/ INITIAL REVIEWER	Camden Robinson/ Project Chemist/CH2M Hill
COPIES:	Tom Beisel /Project Manager/AGVIQ-CH2M HILL
DATE:	June 26, 2014
SUBJECT:	Quality Assessment for Samples collected April 28th, 2014 thru May 2nd, 2014

This quality assurance memorandum is based upon a review of analytical data generated for the groundwater samples and the associated field quality control samples collected April 28th, 2014 through May 2nd, 2014 at the Naval Activity Puerto Rico in Ceiba, Puerto Rico. The samples were collected as a part of the SWMU 55 1st Semi-Annual Event - 2 conducted at the site. The specific samples and analytical fractions reviewed are summarized below in Table 1.

The Quality Control areas that were reviewed and the resulting findings are documented within each subsection that follows. Data validation was conducted using the validation criteria outlined in the uniform federal policy- quality assurance project plan (UFP-QAPP CH2M HILL, June 2012), Standard Operating Procedure (SOP) HW-24 Revision 2 Validating Volatile Organic Compounds by Gas Chromatograph/Mass Spectrometry SW-846 Method 8260B, guidance procedures described in the Environmental Protection Agency (EPA *National Functional Guidelines for Organic Data Review (EPA 2008)*, and/or the general guidance provided in the Department of Defense (DOD) Quality Systems Manual - Version 4.2 Final October 2010 (based on NELAC Voted Version – 5 June 2003). Analytical methods and laboratory standard operating procedures (SOPs) presented in the UFP-QAPP were used to evaluate compliance against quality assurance (QA)/QC criteria. If QA/QC criteria were not met, data was considered for qualification.

Samples were submitted to Gulf Coast Analytical Laboratories, Inc. of Baton Rouge, Louisiana for the following analyses: SW-846 8260B Volatile Organic Compounds Trichloroethene, Cis-1,2-Dichloroethene, and Vinyl Chloride, RSK-175 Methane, Ethane, and Ethene, SW-846 6010C Dissolved Iron, Calculation Ferric iron, Standard Method 2320B Alkalinity, Standard Method Total Organic Carbon (TOC), Standard Method 4500S2-D Sulfide, and SW-846 9056A Chloride, Nitrate, Nitrite, and Sulfate.

Sample results that were not within the acceptance limits were appended with a qualifying flag, which consisted of a single- or double-letter code that indicated a possible problem with the data. The qualifying flags originated during the data review and validation processes. These also include the secondary, or the two/three-digit "sub-qualifier" flags.

The secondary qualifiers provide the reasoning behind the assignment of a qualifier flag to the data. The secondary qualifiers are presented and defined below.

Attachment 1 lists the changes in data qualifiers, due to the validation process.

The following primary flags were used to qualify the data:

[=] Detected. The analyte was analyzed for and detected at the concentration shown.

[J] Estimated. The analyte was present but the reported value may not be accurate or precise.

[U] Undetected. The analyte was analyzed for but not detected above the method detection limit. The data validator may also apply this qualifier to indicate that a concentration was not detected at significantly greater than that in an associated blank.

[UJ] Detection limit estimated. The analyte was analyzed for but qualified as not detected; the result is estimated.

[UR] Rejected. The data is not useable. The absence of the analyte cannot be verified.

[R] Rejected. The data is not useable.

Secondary Qualifier Codes

Code	Definition
2SH	Second Source Accuracy High
2SL	Second Source Accuracy Low
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BL	Blank
BSH	Blank Spike/LCS Recovery High
BSL	Blank Spike/LCS Recovery Low
CCH	Continuing Calibration Verification Accuracy High
CCL	Continuing Calibration Verification Accuracy Low
DL	Dilution
EB	Equipment Blank Contamination
FD	Field Duplicate
LD	Laboratory Duplicate
HT	Holding Time
ICH	Initial Calibration High
ICL	Initial Calibration Low
ISH	Internal Standard Area Response High
ISL	Internal Standard Area Response Low
LR	Linear Range (Exceeded calibration range)
MD	Matrix Spike/Matrix Spike Duplicate Precision
MSH	Matrix Spike and/or Matrix Spike Duplicate Recovery High
MSL	Matrix Spike and/or Matrix Spike Duplicate Recovery Low
OT	Other
RE	Re-extraction
RF	Response Factor
SSH	Spiked Surrogate Recovery High
SSL	Spiked Surrogate Recovery Low
TN	Tune
EMPC	Estimated Maximum Possible Concentration

Table 1 - Chemical Analytical Methods – Field and Quality Control Samples

SDG	Sample ID	Lab Sample ID	Matrix	Sample Type	Date Collected	Analyses Performed
214042912	JM04-55MW15-042814	21404291201	GW	N	04/28/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214042912	JM04-55MW16-042814	21404291202	GW	N	04/28/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214042912	JM04-TB01-042814	21404291203	WQ	TB	04/28/2014	[1]
214043008	JM04-55MW18-042914	21404300801	GW	N	04/29/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214043008	JM04-55MW17-042914	21404300802	GW	N	04/29/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214043008	JM04-TB02-042914	21404300803	WQ	TB	04/29/2014	[1]
214043008	JM04-FD01-042914	21404300804	GW	FD	04/29/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214043008	JM04-55MW02-042914	21404300805	GW	N	04/29/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214043008	JM04-7MW23-042914	21404300806	GW	N	04/29/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214043008	JM04-EB01-042914	21404300807	WQ	EB	04/29/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050111	JM04-TB03-043014	21405011101	WQ	TB	04/30/2014	[1]
214050111	JM04-55MW05-043014	21405011102	GW	N	04/30/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050111	JM04-55MW14-043014	21405011103	GW	N	04/30/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050111	JM04-55MW01-043014	21405011104	GW	N	04/30/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050111	JM04-7MW10-043014	21405011105	GW	N	04/30/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050111	JM04-55MW06-043014	21405011106	GW	N	04/30/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050111	JM04-55MW06-043014MS	21405011107	WQ	MS	04/30/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050111	JM04-55MW06-043014SD	21405011108	WQ	SD	04/30/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050111	JM04-55MW25-043014	21405011109	GW	N	04/30/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050111	JM04-55MW26-043014	21405011110	GW	N	04/30/2014	[1], [2], [3], [4], [5], [6], [7], [8]

SDG	Sample ID	Lab Sample ID	Matrix	Sample Type	Date Collected	Analyses Performed
214050111	JM04-FD02-043014	21405011111	GW	FD	04/30/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050209	JM04-TB04-050114	21405020901	WQ	TB	05/01/2014	[1]
214050209	JM04-55MW12-050114	21405020902	GW	N	05/01/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050209	JM04-55IW04-050114	21405020903	GW	N	05/01/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050209	JM04-FD03-050114	21405020904	GW	FD	05/01/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050209	JM04-55MW11-050114	21405020905	GW	N	05/01/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050209	JM04-7MW22-050114	21405020906	GW	N	05/01/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050209	JM04-55BR01-050114	21405020907	GW	N	05/01/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050209	JM04-55MW09-050114	21405020908	GW	N	05/01/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050209	JM04-7MW24-050114	21405020909	GW	N	05/01/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050209	JM04-55IW02-050114	21405020910	GW	N	05/01/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050304	JM04-EB03-050214	21405030401	WQ	EB	05/02/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050304	JM04-EB02-050214	21405030402	WQ	EB	05/02/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050304	JM04-EB04-050214	21405030403	WQ	EB	05/02/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050304	JM04-TB05-050214	21405030404	WQ	TB	05/02/2014	[1]
214050304	JM04-55MW10-050214	21405030405	GW	N	05/02/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050304	JM04-7MW07-050214	21405030406	GW	N	05/02/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050304	JM04-7MW07-050214MS	21405030407	WQ	MS	05/02/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214050304	JM04-7MW07-050214SD	21405030408	WQ	SD	05/02/2014	[1], [2], [3], [4], [5], [6], [7], [8]

SDG	Sample ID	Lab Sample ID	Matrix	Sample Type	Date Collected	Analyses Performed

MATRIX CODE

GW – Groundwater
WQ – Water Quality Control Sample

SAMPLE TYPE CODE

N – Native Sample
EB – Equipment Blank
TB – Trip Blank
FD – Field Duplicate
MS – Matrix Spike
SD – Matrix Spike Duplicate

ANALYSIS CODE

[1] – VOC –Trichloroethene, Cis-1,2-Dichloroethene, and Vinyl Chloride by SW-846 method 8260B
[2] – Methane, Ethane, and Ethene by RSK-175
[3] – Dissolved Iron by SW-846 method 6010C
[4] – Ferric Iron by Calculation
[5] – Alkalinity by Standard Method 2320B
[6] – TOC – Total Organic Carbon by Standard Method 5310B
[7] – Sulfide by Standard Method 4500S2-D
[8] – Anions - Chloride, Nitrate, Nitrite, and Sulfate by SW-846 9056A

Organic Parameters

Quality Control Review

The following list represents the QA/QC measures that were reviewed during the data quality evaluation procedure for organic data.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Method blanks, equipment blanks, and trip blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Surrogate Recoveries** – Surrogate Compounds are added to each sample and the recoveries are used to monitor lab performance and possible matrix interference.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", either laboratory reagent water or Ottawa sand, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and it's duplicate. This information can only be determined when target compounds are detected.
- **GC/MS Tuning** – The mass spectrum of the tuning compound is evaluated for method compliance. The criteria are established to verify the proper mass assignment and mass resolution.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.
- **Internal Standards** – The internal standards (retention time and response) are evaluated for method compliance. The internal standards are used in quantitation of the target parameters and monitor the instrument sensitivity and response for stability during each analysis.

Inorganic Parameters

Quality Control Review

The following list represents the QA/QC measures that were reviewed during the data quality evaluation procedure for organic data.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Method blanks, initial calibration blanks, continuing calibration blanks, and equipment blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", either laboratory reagent water or Ottawa sand, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and it's duplicate. This information can only be determined when target compounds are detected.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.
- **ICP Serial Dilution** – The serial dilution of samples quantitated by ICP determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is sufficiently high, the serial dilution analysis must agree within a 10% difference of the original determination after correction for dilution.
- **Post Digest Spike Sample** – The post digest spike sample indicates the possible presence of matrix interferences in the sample.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Volatile Organic Compounds (VOCs) Analyses

Holding Time

All samples analyses were performed within hold time.

GC/MS Instrument Performance

All GC/MS Instrument Performance criteria were met.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

There were no detections in the trip, equipment, and method blank samples.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-55MW06-043014 and JM04-7MW07-050214. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Surrogate Recoveries

All surrogate recoveries were within acceptable quality control limits.

Internal Standard Recoveries

All internal standard recoveries were within acceptable quality control limits.

Field Duplicates

Field samples JM04-55MW17-042914, JM04-55MW14-043014, and JM04-55MW12-050114 were collected and analyzed in duplicate. Field duplicate precision objectives were met for all samples except as noted in table 2 below:

TABLE 2
Field Duplicate RPD Out of QC Limits: VOC
NA Puerto Rico SWMU 55 1st Semi-annual-2 2014

Compound	Affected Samples	Results
Trichloroethene	JM04-55MW12-050114 / JM04-FD03-050114	2.64ug/l / U

Field duplicate precision could not be calculated for the samples listed; therefore no qualifiers were applied.

Dilutions

The samples presented below in table 3 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 3
Dilutions: VOC
NA Puerto Rico SWMU 55 1st Semi-annual-2 2014

Sample ID	Analysis	Dilution Factor
JM04-55MW10-050214	VOC	2X
JM04-55MW14-043014	VOC	5X
JM04-55MW01-043014	VOC	10X
JM04-FD02-043014	VOC	5X
JM04-55MW11-050114	VOC	2X
JM04-55MW09-050114	VOC	10X

Rejected Data

No data were rejected based upon the validation process for this sampling event.

GROUNDWATER PROJECT ACTION LIMITS

All samples collected and analyzed for the months of April and May 2014 for the volatile organic compound – trichloroethene were less than the groundwater project action limits with the exception of the samples listed below:

Analyte (Volatile List)	Affected Sample	Sample Results (ug/l)	Groundwater Cleanup Target Levels (ug/l)
Trichloroethene	JM04-55MW01-043014	1220	193
Trichloroethene	JM04-55MW09-050114	1010	193
Trichloroethene	JM04-55MW10-050214	314	193
Trichloroethene	JM04-55MW11-050114	359	193
Trichloroethene	JM04-55MW14-043014	608	193
Trichloroethene	JM04-FD02-043014	588	193

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Methane, Ethane, and Ethene Analyses

Holding Time

All samples analyses were performed within hold time.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

Methane detected in the blank samples is listed in Table 4.

TABLE 4
Blank Contamination: Methane
NA Puerto Rico SWMU 55 1st Semi-annual-2 2014

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
214042912	JM04-EB03-050214	EB	Methane	0.812	ug/L	JM04-55MW15-041814
214043008						JM04-55MW18-042914

Flags were applied to the analyte in the associated samples in the following manner:

When the analyte was detected in the equipment blank, the detected compounds, that were less than 5 times the concentration detected for the analyte listed and below the limit of quantitation (LOQ), were flagged "U" due to possible field contamination with a validation note of "EB". The detects that were above the limit of quantitation (LOQ) were qualified as estimated "JB" for equipment blanks due to possible field contamination with a validation note of "EB".

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-55MW06-043014 and JM04-7MW07-050214. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met for all samples except as noted in table 5 below:

TABLE 5
Matrix Spike and Matrix Spike Duplicate Recovery Out of QC Limits: Methane
NA Puerto Rico SWMU 55 1st Semi-annual-2 2014

QC Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Qualifiers Applied
Matrix Spike Matrix Spike Duplicate	Methane	171% 457%	39-120	JM04-7MW07-050214	Due to high methane concentration, the spike recoveries were diluted out; therefore no qualifiers were applied to the parent sample.

Field Duplicates

Field samples JM04-55MW17-042914, JM04-55MW14-043014, and JM04-55MW12-050114 were collected and analyzed in duplicate. Field duplicate precision objectives were met.

Dilutions

The samples presented below in table 6 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 6
Dilutions: Methane
NA Puerto Rico SWMU 55 1st Semi-annual-2 2014

Sample ID	Analysis	Dilution Factor
JM04-7MW23-042914	Methane	200X
JM04-55MW10-050214	Methane	20X
JM04-7MW07-050214	Methane	100X
JM04-55MW05-043014	Methane	30X
JM04-7MW10-043014	Methane	30X
JM04-55MW25-043014	Methane	300X
JM04-55MW26-043014	Methane	10X
JM04-55MW12-050114	Methane	200X
JM04-55IW04-050114	Methane	30X
JM04-FD03-050114	Methane	200X
JM04-55BRW01-050114	Methane	300X
JM04-7MW24-050114	Methane	50X
JM04-55IW02-050114	Methane	100X

Data Rejected during the Data Validation Process

Some samples may be analyzed multiple times by the laboratory because of dilution requirements or because spike recoveries are outside the method target acceptance limits. The laboratory reports all analyses; therefore, it is possible that several sample results may exist for a specific sample and analysis. During the data validation, all the sample results are evaluated and the "best answer" for each sample and analysis is chosen, and the other results are rejected.

The initial results for methane noted in Table 6 above were rejected because the samples required a dilution in order to obtain a result within the method target acceptance limits.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Dissolved Iron and Ferric Iron Analyses

Holding Time

All samples analyses were performed within hold time.

Instrument Calibration

All Initial and Continuing Calibration criteria were met.

Low Level Spike Calibration Verification

All low level spike calibration verification criteria were met.

Interference Check Sample

The interference check standard criteria were met.

Serial Dilution

All serial dilution criteria were met.

Post Digest Spike

All post digest spike criteria were met.

Blanks

There were no detects in the initial calibration, continuing calibration, method blank, and equipment blank samples.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-55MW06-043014and JM04-7MW07-050214. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Field Duplicates

Field samples JM04-55MW17-042914, JM04-55MW14-043014, and JM04-55MW12-050114 were collected and analyzed in duplicate. Field duplicate precision objectives were met.

Dilutions

The sample presented below in table 7 was analyzed at a dilution for the analysis indicated. This dilution was required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. The positive result for the compound reported above the calibration range in the initial analysis has been reported from the diluted analyses.

TABLE 7
Dilutions: Dissolved Iron

Sample ID	Analysis	Dilution Factor
JM04-55MW18-042914	Dissolved Iron	5X

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Alkalinity

Holding Time

All samples analyses were performed within hold time.

Blanks

Alkalinity detected in the blank samples is listed in Table 8.

TABLE 8
Blank Contamination: Alkalinity
NA Puerto Rico SWMU 55 1st Semi-annual-2 2014

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
214042912	JM04-EB03-050214	EB	Alkalinity	143	mg/L	JM04-55MW15-042814
214043008						JM04-55MW16-042814
214050111						JM04-55MW18-042914
214050209						JM04-55MW17-042914
						JM04-FD01-042914
						JM04-55MW05-043014
						JM04-55MW06-043014
						JM04-55MW12-050114
						JM04-FD03-050114
214043008	JM04-EB04-050214	EB	Alkalinity	141	mg/L	JM04-55MW02-042914

TABLE 8
Blank Contamination: Alkalinity
NA Puerto Rico SWMU 55 1st Semi-annual-2 2014

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
214050111						JM04-55MW01-043014
						JM04-55MW26-043014
214043008	JM04-EB01-042914	EB	Alkalinity	141	mg/L	JM04-7MW23-042914
214050111						JM04-55MW14-043014
214050209						JM04-7MW10-043014
						JM04-FD02-043014
						JM04-55MW11-050114
						JM04-55MW09-050114
214050209	JM04-EB02-050214	EB	Alkalinity	140	mg/L	JM04-7MW22-050114
						JM04-7MW24-050114

Flags were applied to the analyte in the associated samples in the following manner:

When the analyte was detected in the equipment blank, the detected compounds, that were less than 5 times the concentration detected for the analyte listed and below the limit of quantitation (LOQ), were flagged "U" due to possible field contamination with a validation note of "EB". The detects that were above the limit of quantitation (LOQ) were qualified as estimated "JB" for equipment blanks due to possible field contamination with a validation note of "EB".

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-55MW06-043014 and JM04-7MW07-050214. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Laboratory Duplicates

Laboratory duplicate precision objectives were met.

Field Duplicates

Field samples JM04-55MW17-042914, JM04-55MW14-043014, and JM04-55MW12-050114 were collected and analyzed in duplicate. Field duplicate precision objectives were met.

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for TOC

Holding Time

All samples analyses were performed within hold time.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

TOC detected in the blank samples is listed in Table 9.

TABLE 9
Blank Contamination: TOC
NA Puerto Rico SWMU 55 1st Semi-annual-2 2014

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
214042912	JM04-EB03-050214	EB	TOC	2.4	mg/L	JM04-55MW15-042814
214043008						JM04-55MW16-042814
214050111						JM04-55MW18-042914
214050209						JM04-55MW17-042914
						JM04-FD01-042914
						JM04-55MW05-043014
						JM04-55MW06-043014
						JM04-55MW12-050114
						JM04-FD03-050114
214043008	JM04-EB04-050214	EB	TOC	2.3	mg/L	JM04-55MW02-042914

TABLE 9
Blank Contamination: TOC
NA Puerto Rico SWMU 55 1st Semi-annual-2 2014

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
214050111						JM04-55MW01-043014
214050209						JM04-55MW26-043014
						JM04-55IW04-050114
						JM04-55IW02-050114
214043008	JM04-EB01-042914	EB	TOC	1.3	mg/L	JM04-7MW23-042914
214050111						JM04-55MW14-043014
214050304						JM04-FD02-043014
214050209						JM04-55MW11-050114
						JM04-55MW09-050114
						JM04-55MW10-050214
						JM04-7MW07-050214
214050209	JM04-EB02-050214	EB	TOC	2.4	mg/L	JM04-7MW22-050114
						JM04-7MW24-050114

Flags were applied to the analyte in the associated samples in the following manner:

When the analyte was detected in the equipment blank, the detected compounds, that were less than 5 times the concentration detected for the analyte listed and below the limit of quantitation (LOQ), were flagged "U" due to possible field contamination with a validation note of "EB". The detects that were above the limit of quantitation (LOQ) were qualified as estimated "JB" for equipment blanks due to possible field contamination with a validation note of "EB".

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-55MW06-043014 and JM04-7MW07-050214. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Field Duplicates

Field samples JM04-55MW17-042914, JM04-55MW14-043014, and JM04-55MW12-050114 were collected and analyzed in duplicate. Field duplicate precision objectives were not met for the samples listed in table 10 below; therefore, results were qualified as estimated "J":

TABLE 10
Field Duplicate RPD Out of QC Limits: TOC
NA Puerto Rico SWMU 55 1st Semi-annual-2 2014

Compound	Affected Samples	%RPD
TOC	JM04-55MW14-043014 / JM04-FD02-043014	59.6%

Dilutions

The samples presented below in table 11 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 11
Dilutions: TOC
NA Puerto Rico SWMU 55 1st Semi-annual-2 2014

Sample ID	Analysis	Dilution Factor
JM04-55MW15-042814	TOC	2X
JM04-55MW16-042814	TOC	2X
JM04-55MW17-042914	TOC	2X
JM04-FD01-042914	TOC	2X
JM04-7MW23-042914	TOC	2X
JM04-55MW10-050214	TOC	5X
JM04-7MW07-050214	TOC	5X
JM04-55MW05-043014	TOC	2X
JM04-55MW01-043014	TOC	2X
JM04-55MW06-043014	TOC	5X
JM04-55MW25-043014	TOC	5X
JM04-55MW12-050114	TOC	5X
JM04-55IW04-050114	TOC	5X

TABLE 11
Dilutions: TOC
NA Puerto Rico SWMU 55 1st Semi-annual-2 2014

Sample ID	Analysis	Dilution Factor
JM04-FD03-050114	TOC	5X
JM04-55MW11-050114	TOC	5X
JM04-7MW22-050114	TOC	5X
JM04-55BRW01-050114	TOC	5X
JM04-55MW09-050114	TOC	5X
JM04-7MW24-050114	TOC	5X
JM04-55IW02-050114	TOC	5X

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Sulfide

Holding Time

All samples analyses were performed within hold time.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

There were no detections in the equipment and method blank samples.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-55MW06-043014 and JM04-7MW07-050214. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met for all samples except as noted in table 12 below:

TABLE 12
Matrix Spike and Matrix Spike Duplicate Recovery Out of QC Limits: Sulfide
NA Puerto Rico SWMU 55 1st Semi-annual-2 2014

QC Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Qualifiers Applied
Matrix Spike	Sulfide	117%	90-110	JM04-55MW06-043014	Sample result was non-detect; therefore no qualifiers are needed.

Field Duplicates

Field samples JM04-55MW17-042914, JM04-55MW14-043014, and JM04-55MW12-050114 were collected and analyzed in duplicate. Field duplicate precision objectives were met.

Laboratory Duplicates

The laboratory duplicate precision objective was not met for the sample noted in table 13 below:

TABLE 13
Laboratory Duplicate Recovery Out of QC Limits: Sulfide
NA Puerto Rico SWMU 55 1st Semi-annual-2 2014

QC Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Qualifiers Applied
Laboratory Duplicate	Sulfide	25%	20%	JM04-55MW26-043014	Detect - J

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Chloride, Nitrate, Nitrite, and Sulfate

Holding Time

All samples analyses were performed within hold time.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

Chloride, Nitrate, and Sulfate detected in the blank samples is listed in Table 14.

TABLE 14
Blank Contamination: Chloride, Nitrate, and Sulfate
NA Puerto Rico SWMU 55 1st Semi-annual-2 2014

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
214042912	JM04-EB03-050214	EB	Chloride	14	mg/L	JM04-55MW15-042814
214043008						JM04-55MW16-042814
214050111						JM04-55MW18-042914
214050209						JM04-55MW17-042914
						JM04-FD01-042914
						JM04-55MW05-043014
						JM04-55MW06-043014
						JM04-55MW12-050114
						JM04-FD03-050114
						JM04-55BRW01-050114
214042912	JM04-EB03-050214	EB	Sulfate	9.73	mg/L	JM04-55MW15-042814
214043008						JM04-55MW16-042814
214050111						JM04-55MW18-042914
214050209						JM04-55MW17-042914
						JM04-FD01-042914
						JM04-55MW05-043014
						JM04-55MW06-043014
						JM04-55MW12-050114
						JM04-FD03-050114
						JM04-55BRW01-050114

TABLE 14
Blank Contamination: Chloride, Nitrate, and Sulfate
NA Puerto Rico SWMU 55 1st Semi-annual-2 2014

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
214043008	JM04-EB04-050214	EB	Chloride	14.1	mg/L	JM04-55MW02-042914
214050111						JM04-55MW01-043014
214050209						JM04-55MW26-043014
						JM04-55IW04-050114
						JM04-55IW02-050114
214043008	JM04-EB04-050214	EB	Sulfate	9.82	mg/L	JM04-55MW02-042914
214050111						JM04-55MW01-043014
214050209						JM04-55MW26-043014
						JM04-55IW04-050114
						JM04-55IW02-050114
214043008	JM04-EB01-042914	EB	Chloride	12.4	mg/L	JM04-7MW23-042914
214050111						JM04-55MW14-043014
214050209						JM04-7MW10-043014
214050304						JM04-FD02-043014
						JM04-55MW11-050114
						JM04-55MW09-050114
						JM04-55MW10-050214
						JM04-7MW07-050214
214043008	JM04-EB01-042914	EB	Sulfate	9.33	mg/L	JM04-7MW23-042914
214050111						JM04-55MW14-043014
214050209						JM04-7MW10-043014
214050304						JM04-FD02-043014
						JM04-55MW11-050114
						JM04-55MW09-050114
						JM04-55MW10-050214
						JM04-7MW07-050214
214050111	JM04-EB01-042914	EB	Nitrate	0.365	mg/L	JM04-55MW14-043014
						JM04-FD02-043014
214050111	JM04-EB04-050214	EB	Nitrate	0.338	mg/L	JM04-55MW01-043014

TABLE 14
Blank Contamination: Chloride, Nitrate, and Sulfate
NA Puerto Rico SWMU 55 1st Semi-annual-2 2014

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
214050111 214050209	JM04-EB02-050214	EB	Chloride	14.1	mg/L	JM04-55MW25-043014 JM04-7MW22-050114 JM04-7MW24-050114
214050209	JM04-EB02-050214	EB	Sulfate	9.48	mg/L	JM04-7MW22-050114 JM04-7MW24-050114
214050209	JM04-EB02-050214	EB	Nitrate	0.336	mg/L	JM04-7MW22-050114
214050111	Method Blank	MB	Chloride	0.088	mg/L	JM04-55MW01-043014
214050111	Continuing Calibration Blank	CCB	Chloride	0.089	mg/L	JM04-55MW01-043014

Flags were applied to the analyte in the associated samples in the following manner:

When the analyte was detected in the equipment blank, method blank, and/or continuing calibration blanks, the detected compounds, that were less than 5 times the concentration detected for the analyte listed and below the limit of quantitation (LOQ), were flagged "U" due to possible field and/or laboratory contamination with a validation note of "EB" for field contamination or "BL" for method blank and continuing calibration contamination. The detects that were above the limit of quantitation (LOQ) were qualified as estimated "JB" for equipment blanks due to possible field contamination with a validation note of "EB" or "B" for method blank and/or continuing calibration blank due to possible laboratory contamination with a validation note of "BL".

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-55MW06-043014 and JM04-7MW07-050214. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Field Duplicates

Field samples JM04-55MW17-042914, JM04-55MW14-043014, and JM04-55MW12-050114 were collected and analyzed in duplicate. Field duplicate precision objectives were met.

Dilutions

The samples presented below in table 15 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 15
Dilutions: Anions – Chloride, Nitrate, Nitrite, and Sulfate
NA Puerto Rico SWMU 55 1st Semi-annual-2 2014

Sample ID	Analysis	Dilution Factor
JM04-55MW15-042814	Nitrate and Nitrite	20X
	Sulfate and Chloride	2000X
JM04-55MW16-042814	Nitrate and Nitrite	5X
	Sulfate and Chloride	500X
JM04-55MW18-042914	Nitrate and Nitrite	50X
	Sulfate	500X
	Chloride	5000X
JM04-55MW17-042914	Nitrate and Nitrite	10X
	Sulfate	50X
	Chloride	2000X
JM04-FD01-042914	Nitrate and Nitrite	10X
	Sulfate	50X
	Chloride	2000C
JM04-55MW02-042914	Nitrate and Nitrite	2X
	Sulfate	2X
	Chloride	10X
JM04-7MW23-042914	Nitrate and Nitrite	5X
	Sulfate	10X
	Chloride	500X
JM04-EB01-042914	Chloride	5X
JM04-55MW05-043014	Nitrate and Nitrite	5X
	Sulfate	10X
	Chloride	500X

TABLE 15
Dilutions: Anions – Chloride, Nitrate, Nitrite, and Sulfate
NA Puerto Rico SWMU 55 1st Semi-annual-2 2014

Sample ID	Analysis	Dilution Factor
JM04-55MW14-043014	Nitrate and Nitrite	10X
	Sulfate	20X
	Chloride	500X
JM04-55MW01-043014	Nitrate and Nitrite	5X
	Sulfate	10X
	Chloride	1000X
JM04-7MW10-043014	Nitrate and Nitrite	25X
	Sulfate	10X
	Chloride	200X
JM04-55MW06-043014	Nitrate and Nitrite	5X
	Sulfate	10X
	Chloride	500X
JM04-55MW25-043014	Nitrate and Nitrite	5X
	Sulfate	5X
	Chloride	200X
JM04-55MW26-043014	Nitrate and Nitrite	20X
	Sulfate	20X
	Chloride	200X
JM04-FD02-043014	Nitrate and Nitrite	10X
	Sulfate	20X
	Chloride	500X
JM04-55MW12-050114	Nitrate, Nitrite, and Sulfate	5X
	Chloride	500X
JM04-55IW04-050114	Nitrate and Nitrite	5X
	Sulfate	20X
	Chloride	500X
JM04-FD03-050114	Nitrate, Nitrite, and Sulfate	2X
	Chloride	200X
JM04-55MW11-050114	Nitrate and Nitrite	20X
	Sulfate and Chloride	2000X

TABLE 15
Dilutions: Anions – Chloride, Nitrate, Nitrite, and Sulfate
NA Puerto Rico SWMU 55 1st Semi-annual-2 2014

Sample ID	Analysis	Dilution Factor
JM04-7MW22-05014	Nitrate and Nitrite	10X
	Sulfate and Chloride	1000X
JM04-55BRW01-050114	Nitrate, Nitrite, and Sulfate	5X
	Chloride	500X
JM04-55MW09-050114	Nitrate and Nitrite	20X
	Sulfate and Chloride	2000X
JM04-7MW24-050114	Nitrate, Nitrite, and Sulfate	5X
	Chloride	500X
JM04-55IW02-050114	Nitrate, Nitrite, and Sulfate	5X
	Chloride	500X

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Data Usability

A review of the analytical data submitted regarding the NA Puerto Rico SWMU 55 1st Semi-annual-2, by CH2M HILL has been completed. An overall evaluation of the data indicates that the sample handling, shipment, and analytical procedures have been adequately completed, and that the analytical results should be considered usable as qualified. The validation review demonstrated that the analytical systems were generally in control and the data results can be used in the decision making process.

Data reviewed in this report meet the data quality goals stated in the project quality assurance project plan (QAPP). The data user can use the data recognizing the potential data biases indicated by the data qualifiers assigned to some results. Data was qualified for a subset of results based on equipment blank, method blank and/or continuing calibration blank contamination, laboratory duplicate and/or field duplicate imprecision biases.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW15-042814

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214042912

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21404291201

Level: (low/med) Lab File ID: 2140502/o6208

% Moisture: not dec. Date Collected: 04/28/14 Time: 1500

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 04/29/14

Instrument ID: MSV5 Date Analyzed: 05/02/14 Time: 1533

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: KRH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531542

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	10.8		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW16-042814

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214042912

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21404291202

Level: (low/med) Lab File ID: 2140502/o6209

% Moisture: not dec. Date Collected: 04/28/14 Time: 1630

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 04/29/14

Instrument ID: MSV5 Date Analyzed: 05/02/14 Time: 1557

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: KRH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531542

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	2.72		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-TB01-042814

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214042912

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21404291203

Level: (low/med) Lab File ID: 2140502/o6210

% Moisture: not dec. Date Collected: 04/28/14 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 04/29/14

Instrument ID: MSV5 Date Analyzed: 05/02/14 Time: 1621

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: KRH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531542

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 532012

Sample ID: JM04-55MW15-042814
Contract:
SAS No.: SDG No.: 214042912
Lab Sample ID: 21404291201
Date Collected: 04/28/14 Time: 1500
Date Received: 04/29/14
Date Extracted:
Date Analyzed: 05/08/14 Time: 1536
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2140508/v8015

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	2.71		0.435	1.09	2.00

JB-EB

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 532012

Sample ID: JM04-55MW16-042814
Contract:
SAS No.: SDG No.: 214042912
Lab Sample ID: 21404291202
Date Collected: 04/28/14 Time: 1630
Date Received: 04/29/14
Date Extracted:
Date Analyzed: 05/08/14 Time: 1545
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2140508/v8016

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	2.00

FORM I ORG-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID: JM04-55MW15-042814

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214042912

Level: (low / med) % Solids:

Lab Sample ID: 21404291201

Date Received: 04/29/14 Time: 1030

Date Collected: 04/28/14 Time: 1500

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 1357
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 1357

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID: JM04-55MW16-042814

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214042912

Level: (low / med) % Solids:

Lab Sample ID: 21404291202

Date Received: 04/29/14 Time: 1030

Date Collected: 04/28/14 Time: 1630

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/07/14 1345
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/07/14 1345

FORM I - IN

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404291201	JM04-55MW15-042814	Water	04/28/2014 15:00	04/29/2014 10:30

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/02/2014 13:28	DJH	531554

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	458	1.0	0.26	mg/L CaCO3

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214042912 245

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404291201	JM04-55MW15-042814	Water	04/28/2014 15:00	04/29/2014 10:30

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	05/01/2014 07:21	KLC2	531314

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	7.7	2.0	0.60	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404291201	JM04-55MW15-042814	Water	04/28/2014 15:00	04/29/2014 10:30

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	04/30/2014 14:59	MDW	531304

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.007J	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404291201	JM04-55MW15-042814	Water	04/28/2014 15:00	04/29/2014 10:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	04/29/2014 14:59	AEL	531233

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	2.00U	4.00	1.00	mg/L
14797-65-0	Nitrite	2.00U	4.00	1.00	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404291201	JM04-55MW15-042814	Water	04/28/2014 15:00	04/29/2014 10:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2000	04/30/2014 02:08	AEL	531233

CAS#	Parameter	Result	RDL	MDL	Units	
16887-00-6	Chloride	3680	400	100	mg/L	TB-LB
14808-79-8	Sulfate	256.1	400	100	mg/L	U-EB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404291202	JM04-55MW16-042814	Water	04/28/2014 16:30	04/29/2014 10:30

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/02/2014 13:28	DJH	531554

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	541	1.0	0.26	mg/L CaCO3

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214042912 ZS4

Revision 1

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404291202	JM04-55MW16-042814	Water	04/28/2014 16:30	04/29/2014 10:30

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	05/01/2014 07:39	KLC2	531314

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	8.3	2.0	0.60	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404291202	JM04-55MW16-042814	Water	04/28/2014 16:30	04/29/2014 10:30

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	04/30/2014 14:59	MDW	531304

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404291202	JM04-55MW16-042814	Water	04/28/2014 16:30	04/29/2014 10:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	04/29/2014 15:52	AEL	531233

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404291202	JM04-55MW16-042814	Water	04/28/2014 16:30	04/29/2014 10:30

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	04/30/2014 03:01	AEL	531233

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	722	100	25.0	mg/L
14808-79-8	Sulfate	~~84.2J~~	100	25.0	mg/L

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW18-042914

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214043008

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21404300801

Level: (low/med) Lab File ID: 2140502/o6223

% Moisture: not dec. Date Collected: 04/29/14 Time: 0940

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 04/30/14

Instrument ID: MSV5 Date Analyzed: 05/02/14 Time: 2142

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531542

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	2.78		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW17-042914

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214043008

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21404300802

Level: (low/med) Lab File ID: 2140502/o6224

% Moisture: not dec. Date Collected: 04/29/14 Time: 1345

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 04/30/14

Instrument ID: MSV5 Date Analyzed: 05/02/14 Time: 2207

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531542

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	63.0		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-TB02-042914

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214043008

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21404300803

Level: (low/med) Lab File ID: 2140502/o6225

% Moisture: not dec. Date Collected: 04/29/14 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 04/30/14

Instrument ID: MSV5 Date Analyzed: 05/02/14 Time: 2231

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531542

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	O	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-FD01-042914

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214043008

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21404300804

Level: (low/med)

Lab File ID: 2140503/o6246

% Moisture: not dec.

Date Collected: 04/29/14 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 04/30/14

Instrument ID: MSV5

Date Analyzed: 05/03/14 Time: 2051

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: ALC

Soil Aliquot Volume: (µL)

Prep Batch:

Analytical Batch: 531608

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	62.9		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.370	J	0.103	0.200	1.00

FORM I VOA

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW02-042914

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214043008

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21404300805

Level: (low/med) Lab File ID: 2140503/o6247

% Moisture: not dec. Date Collected: 04/29/14 Time: 1430

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 04/30/14

Instrument ID: MSV5 Date Analyzed: 05/03/14 Time: 2114

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: ALC

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531608

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.831	J	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-7MW23-042914

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214043008

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21404300806

Level: (low/med) Lab File ID: 2140503/o6241

% Moisture: not dec. Date Collected: 04/29/14 Time: 1356

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 04/30/14

Instrument ID: MSV5 Date Analyzed: 05/03/14 Time: 1851

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: JCK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531608

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	76.0		0.161	0.200	1.00
75-01-4	Vinyl chloride	117		0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	12.1		0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-EB01-042914

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214043008

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21404300807

Level: (low/med) Lab File ID: 2140503/o6242

% Moisture: not dec. Date Collected: 04/29/14 Time: 1515

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 04/30/14

Instrument ID: MSV5 Date Analyzed: 05/03/14 Time: 1915

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: JCK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531608

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: *ug/L*

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 532012

Sample ID: JM04-55MW18-042914
Contract:
SAS No.: SDG No.: 214043008
Lab Sample ID: 21404300801
Date Collected: 04/29/14 Time: 0940
Date Received: 04/30/14
Date Extracted:
Date Analyzed: 05/08/14 Time: 1616
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2140508/v8021

CONCENTRATION UNITS: *ug/L*

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.78	J	0.435	1.09	2.00

U-EB

FORM I ORG-1

214043008 186

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 532012

Sample ID: JM04-55MW17-042914
Contract:
SAS No.: SDG No.: 214043008
Lab Sample ID: 21404300802
Date Collected: 04/29/14 Time: 1345
Date Received: 04/30/14
Date Extracted:
Date Analyzed: 05/08/14 Time: 1622
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2140508/v8022

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	2.00

FORM 1 ORG-1

C1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 532012

Sample ID: JM04-FD01-042914
Contract:
SAS No.: SDG No.: 214043008
Lab Sample ID: 21404300804
Date Collected: 04/29/14 Time: 0000
Date Received: 04/30/14
Date Extracted:
Date Analyzed: 05/08/14 Time: 1627
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2140508/v8023

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	2.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 532012

Sample ID: JM04-55MW02-042914
Contract:
SAS No.: SDG No.: 214043008
Lab Sample ID: 21404300805
Date Collected: 04/29/14 Time: 1430
Date Received: 04/30/14
Date Extracted:
Date Analyzed: 05/08/14 Time: 1633
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2140508/v8024

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	2.00

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 532012

Sample ID: JM04-7MW23-042914

Contract:

SAS No.: SDG No.: 214043008

Lab Sample ID: 21404300806

Date Collected: 04/29/14 Time: 1356

Date Received: 04/30/14

Date Extracted:

Date Analyzed: 05/08/14 Time: 1647

Dilution Factor: 1 Analyst: JAR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2140508/v8026

CONCENTRATION UNITS: *ug/L*

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	1630	E	0.435	1.09	2.00
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.712	J	0.071	0.290	1.00

R-DL

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 532012

Sample ID: JM04-7MW23-042914DL
Contract:
SAS No.: SDG No.: 214043008
Lab Sample ID: 21404300806DL
Date Collected: 04/29/14 Time: 1356
Date Received: 04/30/14
Date Extracted:
Date Analyzed: 05/08/14 Time: 1654
Dilution Factor: 200 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2140508/v8027

CONCENTRATION UNITS: *ug/L*

CAS NO.	COMPOUND	RESULT	Q	MDL	LOO	LOQ
74-82-8	Methane	2460		87.0	218	400

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 532012

Sample ID: JM04-EB01-042914
Contract:
SAS No.: SDG No.: 214043008
Lab Sample ID: 21404300807
Date Collected: 04/29/14 Time: 1515
Date Received: 04/30/14
Date Extracted:
Date Analyzed: 05/08/14 Time: 1700
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2140508V8028

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	2.00

FORM I ORG-1

C-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW18-042914
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214043008
Level: (low / med)
% Solids:
Lab Sample ID: 21404300801
Date Received: 04/30/14
Time: 1000
Date Collected: 04/29/14
Time: 0940

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.30	mg/L	J	0.25	0.50	1.00	SW-846 6010C Dissolved	P	05/08/14 1422
Ferric Iron (Di	0.50	mg/L	U	0.25	0.50	1.00	SW-846 6010C Dissolved	P	05/08/14 1422

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW17-042914
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214043008
Level: (low / med)
% Solids:
Lab Sample ID: 21404300802
Date Received: 04/30/14
Time: 1000
Date Collected: 04/29/14
Time: 1345

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/07/14 1432
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/07/14 1432

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-FD01-042914
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214043008
Level: (low / med)
% Solids:
Lab Sample ID: 21404300804
Date Received: 04/30/14
Time: 1000
Date Collected: 04/29/14
Time: 0000

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/07/14 1438
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/07/14 1438

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID: JM04-55MW02-042914

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214043008

Level: (low / med) % Solids:

Lab Sample ID: 21404300805

Date Received: 04/30/14 Time: 1000

Date Collected: 04/29/14 Time: 1430

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/07/14 1445
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/07/14 1445

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-7MW23-042914
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214043008
Level: (low / med)
% Solids:
Lab Sample ID: 21404300806
Date Received. 04/30/14
Time: 1000
Date Collected: 04/29/14
Time: 1356

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	1.41	mg/L		0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/07/14 1452
Ferric Iron (Di	0.24	mg/L		0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/07/14 1452

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-EB01-042914
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214043008
Level: (low / med)
% Solids:
Lab Sample ID: 21404300807
Date Received: 04/30/14
Time: 1000
Date Collected: 04/29/14
Time: 1515

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/07/14 1458
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/07/14 1458

FORM I - IN

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300801	JM04-55MW18-042914	Water	04/29/2014 09:40	04/30/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/02/2014 13:28	DJH	531554

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	230	1.0	0.26	mg/L CaCO3 JB-EB

01

214043008 349

Revision 1

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300801	JM04-55MW18-042914	Water	04/29/2014 09:40	04/30/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/01/2014 07:57	KLC2	531402

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	2.0	1.0	0.30	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300801	JM04-55MW18-042914	Water	04/29/2014 09:40	04/30/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/01/2014 18:24	MDW	531474

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300801	JM04-55MW18-042914	Water	04/29/2014 09:40	04/30/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	04/30/2014 18:28	DMT	531332

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	5.00U	10.0	2.50	mg/L
14797-65-0	Nitrite	5.00U	10.0	2.50	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300801	JM04-55MW18-042914	Water	04/29/2014 09:40	04/30/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	05/05/2014 14:26	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	1280	100	25.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300801	JM04-55MW18-042914	Water	04/29/2014 09:40	04/30/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5000	05/06/2014 02:45	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units	
16887-00-6	Chloride	15600	1000	250	mg/L	SS LB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300802	JM04-55MW17-042914	Water	04/29/2014 13:45	04/30/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/02/2014 13:28	DJH	531554

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	416	1.0	0.26	mg/L CaCO3

JB-EB

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214043008 SEB

Revision 1

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300802	JM04-55MW17-042914	Water	04/29/2014 13:45	04/30/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	05/01/2014 13:04	KLC2	531402

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	4.8	2.0	0.60	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300802	JM04-55MW17-042914	Water	04/29/2014 13:45	04/30/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/01/2014 18:30	MDW	531474

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300802	JM04-55MW17-042914	Water	04/29/2014 13:45	04/30/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	04/30/2014 19:21	DMT	531332

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	1.00U	2.00	0.500	mg/L
14797-65-0	Nitrite	1.00U	2.00	0.500	mg/L

C.L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300802	JM04-55MW17-042914	Water	04/29/2014 13:45	04/30/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/05/2014 15:01	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	294	10.0	2.50	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300802	JM04-55MW17-042914	Water	04/29/2014 13:45	04/30/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2000	05/05/2014 15:18	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2810	400	100	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300804	JM04-FD01-042914	Water	04/29/2014 00:00	04/30/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/02/2014 13:28	DJH	531554

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	413	1.0	0.26	mg/L CaCO3 JB-EB

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21404300B 361

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300804	JM04-FD01-042914	Water	04/29/2014 00:00	04/30/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	05/01/2014 14:19	KLC2	531402

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	5.1	2.0	0.60	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300804	JM04-FD01-042914	Water	04/29/2014 00:00	04/30/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/01/2014 18:24	MDW	531474

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300804	JM04-FD01-042914	Water	04/29/2014 00:00	04/30/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	04/30/2014 19:39	DMT	531332

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	1.00U	2.00	0.500	mg/L
14797-65-0	Nitrite	1.00U	2.00	0.500	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300804	JM04-FD01-042914	Water	04/29/2014 00:00	04/30/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/05/2014 15:36	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	292	10.0	2.50	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300804	JM04-FD01-042914	Water	04/29/2014 00:00	04/30/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2000	05/05/2014 15:54	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2750	400	100	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300805	JM04-55MW02-042914	Water	04/29/2014 14:30	04/30/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/02/2014 15:58	DJH	531572

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	325	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300805	JM04-55MW02-042914	Water	04/29/2014 14:30	04/30/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/01/2014 08:53	KLC2	531402

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	2.5	1.0	0.30	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300805	JM04-55MW02-042914	Water	04/29/2014 14:30	04/30/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/01/2014 18:31	MDW	531474

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300805	JM04-55MW02-042914	Water	04/29/2014 14:30	04/30/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	04/30/2014 19:56	DMT	531332

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.200U	0.400	0.100	mg/L
14797-65-0	Nitrite	0.200U	0.400	0.100	mg/L
14808-79-8	Sulfate	8.32	0.400	0.100	mg/L JB UB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300805	JM04-55MW02-042914	Water	04/29/2014 14:30	04/30/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	05/05/2014 16:11	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	19.5	2.00	0.500	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300806	JM04-7MW23-042914	Water	04/29/2014 13:56	04/30/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/02/2014 15:58	DJH	531572

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	456	1.0	0.26	mg/L CaCO3

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214043008 372

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300806	JM04-7MW23-042914	Water	04/29/2014 13:56	04/30/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	05/01/2014 14:37	KLC2	531402

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	9.6	2.0	0.60	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300806	JM04-7MW23-042914	Water	04/29/2014 13:56	04/30/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/01/2014 18:31	MDW	531474

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300806	JM04-7MW23-042914	Water	04/29/2014 13:56	04/30/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	04/30/2014 20:14	DMT	531332

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300806	JM04-7MW23-042914	Water	04/29/2014 13:56	04/30/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	05/05/2014 17:39	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	89.9	2.00	0.500	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300806	JM04-7MW23-042914	Water	04/29/2014 13:56	04/30/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	05/05/2014 17:57	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	855	100	25.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300807	JM04-EB01-042914	Water	04/29/2014 15:15	04/30/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/02/2014 15:58	DJH	531572

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	141	1.0	0.26	mg/L CaCO3

214043008 378

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300807	JM04-EB01-042914	Water	04/29/2014 15:15	04/30/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/01/2014 09:41	KLC2	531402

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	1.3	1.0	0.30	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300807	JM04-EB01-042914	Water	04/29/2014 15:15	04/30/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/01/2014 18:32	MDW	531474

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300807	JM04-EB01-042914	Water	04/29/2014 15:15	04/30/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	04/30/2014 20:32	DMT	531332

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.365	0.200	0.050	mg/L
14797-65-0	Nitrite	0.100U	0.200	0.050	mg/L
14808-79-8	Sulfate	9.33	0.200	0.050	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404300807	JM04-EB01-042914	Water	04/29/2014 15:15	04/30/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/05/2014 18:15	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	12.4	1.00	0.250	mg/L

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-TB03-043014

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050111

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405011101

Level: (low/med) Lab File ID: 2140502/o6215

% Moisture: not dec. Date Collected: 04/30/14 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/01/14

Instrument ID: MSV5 Date Analyzed: 05/02/14 Time: 1821

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: KRH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531542

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW05-043014

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050111

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405011102

Level: (low/med) Lab File ID: 2140502/o6216

% Moisture: not dec. Date Collected: 04/30/14 Time: 1035

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/01/14

Instrument ID: MSV5 Date Analyzed: 05/02/14 Time: 1845

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: ALC

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531542

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW14-043014

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050111

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405011103

Level: (low/med) Lab File ID: 2140503/o6236

% Moisture: not dec. Date Collected: 04/30/14 Time: 1056

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/01/14

Instrument ID: MSV5 Date Analyzed: 05/03/14 Time: 1654

Soil Extract Volume: (µL) Dilution Factor: 5 Analyst: JCK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531608

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	608		0.807	1.00	5.00
75-01-4	Vinyl chloride	1.00	U	0.636	1.00	5.00
156-59-2	cis-1,2-Dichloroethene	3.72	J	0.517	1.00	5.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW01-043014

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050111

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405011104

Level: (low/med) Lab File ID: 2140503/o6245

% Moisture: not dec. Date Collected: 04/30/14 Time: 1150

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/01/14

Instrument ID: MSV5 Date Analyzed: 05/03/14 Time: 2028

Soil Extract Volume: (µL) Dilution Factor: 10 Analyst: ALC

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531608

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	1220		1.61	2.00	10.0
75-01-4	Vinyl chloride	2.00	U	1.27	2.00	10.0
156-59-2	cis-1,2-Dichloroethene	2.00	U	1.03	2.00	10.0

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-7MW10-043014

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050111

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405011105

Level: (low/med) Lab File ID: 2140502/o6220

% Moisture: not dec Date Collected: 04/30/14 Time: 1441

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/01/14

Instrument ID: MSV5 Date Analyzed: 05/02/14 Time: 2030

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531542

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	10.9		0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW06-043014

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050111

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405011106

Level: (low/med) Lab File ID: 2140502/o6211

% Moisture: not dec. Date Collected: 04/30/14 Time: 1430

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/01/14

Instrument ID: MSV5 Date Analyzed: 05/02/14 Time: 1645

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: KRH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531542

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: *ug/L*

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW25-043014

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050111

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405011109

Level: (low/med) Lab File ID: 2140502/o6221

% Moisture: not dec. Date Collected: 04/30/14 Time: 1540

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/01/14

Instrument ID: MSV5 Date Analyzed: 05/02/14 Time: 2054

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531542

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.757	J	0.103	0.200	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW26-043014

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050111

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405011110

Level: (low/med) Lab File ID: 2140502/o6222

% Moisture: not dec. Date Collected: 04/30/14 Time: 1510

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/01/14

Instrument ID: MSV5 Date Analyzed: 05/02/14 Time: 2117

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531542

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	33.2		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	2.30		0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-FD02-043014

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050111

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405011111

Level: (low/med) Lab File ID: 2140503/o6237

% Moisture: not dec. Date Collected: 04/30/14 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/01/14

Instrument ID: MSV5 Date Analyzed: 05/03/14 Time: 1718

Soil Extract Volume: (µL) Dilution Factor: 5 Analyst: JCK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531608

CONCENTRATION UNITS: *ug/L* Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	588		0.807	1.00	5.00
75-01-4	Vinyl chloride	1.00	U	0.636	1.00	5.00
156-59-2	cis-1,2-Dichloroethene	3.84	J	0.517	1.00	5.00

FORM I VOA

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 532345

Sample ID: JM04-55MW05-043014
Contract:
SAS No.: SDG No.: 214050111
Lab Sample ID: 21405011102
Date Collected: 04/30/14 Time: 1035
Date Received: 05/01/14
Date Extracted:
Date Analyzed: 05/13/14 Time: 0811
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

CONCENTRATION UNITS: *ug/L*
Lab File ID: 2140513/v8005

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	468	E	0.435	1.09	2.00
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

R-DL

FORM I ORG-1

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1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 532345

Sample ID: JM04-55MW05-043014DL

Contract:

SAS No.: SDG No.: 214050111

Lab Sample ID: 21405011102DL

Date Collected: 04/30/14 Time: 1035

Date Received: 05/01/14

Date Extracted:

Date Analyzed: 05/13/14 Time: 0819

Dilution Factor: 30 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2140513/v8006

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	1230		13.1	32.7	60.0

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 532345

Sample ID: JM04-55MW14-043014

Contract:

SAS No.: SDG No.: 214050111

Lab Sample ID: 21405011103

Date Collected: 04/30/14 Time: 1056

Date Received: 05/01/14

Date Extracted:

Date Analyzed: 05/13/14 Time: 0827

Dilution Factor: 1 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2140513V8007

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LQD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	4.71		0.435	1.09	2.00

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 532345

CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-55MW01-043014

Contract:

SAS No.: SDG No.: 214050111

Lab Sample ID: 21405011104

Date Collected: 04/30/14 Time: 1150

Date Received: 05/01/14

Date Extracted:

Date Analyzed: 05/13/14 Time: 0834

Dilution Factor: 1 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2140513/v8008

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	2.00

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 532345

Sample ID: JM04-7MW10-043014

Contract:

SAS No.: SDG No.: 214050111

Lab Sample ID: 21405011105

Date Collected: 04/30/14 Time: 1441

Date Received: 05/01/14

Date Extracted:

Date Analyzed: 05/13/14 Time: 0840

Dilution Factor: 1 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2140513/v8009

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	265	E	0.435	1.09	2.00
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

R-DL

FORM I ORG-1

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1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 532345

Sample ID: JM04-7MW10-043014DL
Contract:
SAS No.: SDG No.: 214050111
Lab Sample ID: 21405011105DL
Date Collected: 04/30/14 Time: 1441
Date Received: 05/01/14
Date Extracted:
Date Analyzed: 05/13/14 Time: 0847
Dilution Factor: 30 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2140513/v8010

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	722		13.1	32.7	60.0

FORM I ORG-1

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1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 532345

CONCENTRATION UNITS: ug/L

Sample ID: JM04-55MW06-043014

Contract:

SAS No.: SDG No.: 214050111

Lab Sample ID: 21405011106

Date Collected: 04/30/14 Time: 1430

Date Received: 05/01/14

Date Extracted:

Date Analyzed: 05/13/14 Time: 0900

Dilution Factor: 1 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2140513/v8011

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	35.6		0.435	1.09	2.00

FORM I ORG-1

ok

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 532345

CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-55MW25-043014

Contract:

SAS No.: SDG No.: 214050111

Lab Sample ID: 21405011109

Date Collected: 04/30/14 Time: 1540

Date Received: 05/01/14

Date Extracted:

Date Analyzed: 05/13/14 Time: 0943

Dilution Factor: 1 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2140513/v8014

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	2870	E	0.435	1.09	2.00
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

R-DL

FORM I ORG-1

C N

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 532345

CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-55MW25-043014DL

Contract:

SAS No.: SDG No.: 214050111

Lab Sample ID: 21405011109DL

Date Collected: 04/30/14 Time: 1540

Date Received: 05/01/14

Date Extracted:

Date Analyzed: 05/13/14 Time: 0957

Dilution Factor: 300 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2140513/v8016

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	4470		131	327	600

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 532345

Sample ID: JM04-55MW26-043014
Contract:
SAS No.: SDG No.: 214050111
Lab Sample ID: 21405011110
Date Collected: 04/30/14 Time: 1510
Date Received: 05/01/14
Date Extracted:
Date Analyzed: 05/13/14 Time: 1003
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2140513V8017

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	81.1	~~E~~	0.435	1.09	2.00
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

R-DL

FORM I ORG-1

CL

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 532345

Sample ID: JM04-55MW26-043014DL
Contract:
SAS No.: SDG No.: 214050111
Lab Sample ID: 21405011110DL
Date Collected: 04/30/14 Time: 1510
Date Received: 05/01/14
Date Extracted:
Date Analyzed: 05/13/14 Time: 1008
Dilution Factor: 10 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2140513/v8018

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	211		4.35	10.9	20.0

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 532345

Sample ID: JM04-FD02-043014
Contract:
SAS No.: SDG No.: 214050111
Lab Sample ID: 21405011111
Date Collected: 04/30/14 Time: 0000
Date Received: 05/01/14
Date Extracted:
Date Analyzed: 05/13/14 Time: 1014
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2140513/v8019

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	4.36		0.435	1.09	2.00

FORM I ORG-1

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INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW05-043014
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214050111
Level: (low / med)
% Solids:
Lab Sample ID: 21405011102
Date Received: 05/01/14
Time: 1000
Date Collected: 04/30/14
Time: 1035

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.28	mg/L		0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 0307
Ferric Iron (Di	0.23	mg/L		0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 0307

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW14-043014
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214050111
Level: (low / med)
% Solids:
Lab Sample ID: 21405011103
Date Received: 05/01/14
Time: 1000
Date Collected: 04/30/14
Time: 1056

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 0315
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 0315

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW01-043014
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214050111
Level: (low / med)
% Solids:
Lab Sample ID: 21405011104
Date Received: 05/01/14
Time: 1000
Date Collected: 04/30/14
Time: 1150

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 0322
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 0322

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-7MW10-043014
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214050111
Level: (low / med)
% Solids:
Lab Sample ID: 21405011105
Date Received: 05/01/14
Time: 1000
Date Collected: 04/30/14
Time: 1441

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 0330
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 0330

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW06-043014
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214050111
Level: (low / med)
% Solids:
Lab Sample ID: 21405011106
Date Received: 05/01/14
Time: 1000
Date Collected: 04/30/14
Time: 1430

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	J	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 1840
Ferric Iron (Di	0.10	mg/L	J	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 1840

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW25-043014
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214050111
Level: (low / med)
% Solids:
Lab Sample ID: 21405011109
Date Received: 05/01/14
Time: 1000
Date Collected: 04/30/14
Time: 1540

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	7.07	mg/L		0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 0338
Ferric Iron (Di	6.10	mg/L		0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 0338

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW26-043014
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214050111
Level: (low / med)
% Solids:
Lab Sample ID: 21405011110
Date Received: 05/01/14
Time: 1000
Date Collected: 04/30/14
Time: 1510

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 0358
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 0358

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-FD02-043014
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214050111
Level: (low / med)
% Solids:
Lab Sample ID: 21405011111
Date Received: 05/01/14
Time: 1000
Date Collected: 04/30/14
Time: 0000

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 0406
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 0406

FORM I - IN

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011102	JM04-55MW05-043014	Water	04/30/2014 10:35	05/01/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/02/2014 13:28	DJH	531554

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	507	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011102	JM04-55MW05-043014	Water	04/30/2014 10:35	05/01/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	05/03/2014 21:26	AEL	531585

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	10.5	2.0	0.60	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011102	JM04-55MW05-043014	Water	04/30/2014 10:35	05/01/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/01/2014 18:33	MDW	531474

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

214050111 416

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011102	JM04-55MW05-043014	Water	04/30/2014 10:35	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/01/2014 16:50	DMT	531461

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011102	JM04-55MW05-043014	Water	04/30/2014 10:35	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	05/05/2014 18:32	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	61.1	2.00	0.500	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011102	JM04-55MW05-043014	Water	04/30/2014 10:35	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	05/05/2014 18:50	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	895	100	25.0	mg/L

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GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011103	JM04-55MW14-043014	Water	04/30/2014 10:56	05/01/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/02/2014 13:28	DJH	531554

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	342	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011103	JM04-55MW14-043014	Water	04/30/2014 10:56	05/01/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/03/2014 10:20	AEL	531585

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	3.3	1.0	0.30	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011103	JM04-55MW14-043014	Water	04/30/2014 10:58	05/01/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/01/2014 18:36	MDW	531474

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011103	JM04-55MW14-043014	Water	04/30/2014 10:56	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	05/01/2014 17:07	DMT	531461

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	1.54J	2.00	0.500	mg/L U-EB
14797-65-0	Nitrite	1.00U	2.00	0.500	mg/L

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214050111 123

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011103	JM04-55MW14-043014	Water	04/30/2014 10:56	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	05/05/2014 19:07	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	153	4.00	1.00	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011103	JM04-55MW14-043014	Water	04/30/2014 10:56	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	05/05/2014 19:25	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1380	100	25.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011104	JM04-55MW01-043014	Water	04/30/2014 11:50	05/01/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/02/2014 13:28	DJH	531554

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	526	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011104	JM04-55MW01-043014	Water	04/30/2014 11:50	05/01/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	05/03/2014 21:44	AEL	531585

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	6.4	2.0	0.60	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011104	JM04-55MW01-043014	Water	04/30/2014 11:50	05/01/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/01/2014 18:36	MDW	531474

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011104	JM04-55MW01-043014	Water	04/30/2014 11:50	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/01/2014 17:25	DMT	531461

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	~~0.729J~~	1.00	0.250	mg/L U-B
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011104	JM04-55MW01-043014	Water	04/30/2014 11:50	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	05/05/2014 19:43	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	53.2	2.00	0.500	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011104	JM04-55MW01-043014	Water	04/30/2014 11:50	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1000	05/05/2014 20:00	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	373	200	50.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011105	JM04-7MW10-043014	Water	04/30/2014 14:41	05/01/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/02/2014 13:28	DJH	531554

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	298	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011105	JM04-7MW10-043014	Water	04/30/2014 14:41	05/01/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/03/2014 11:02	AEL	531585

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	6.9	1.0	0.30	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011105	JM04-7MW10-043014	Water	04/30/2014 14:41	05/01/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/01/2014 18:37	MDW	531474

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.028	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011105	JM04-7MW10-043014	Water	04/30/2014 14:41	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/01/2014 17:43	DMT	531461

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011105	JM04-7MW10-043014	Water	04/30/2014 14:41	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			200	05/05/2014 20:18	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	402	40.0	10.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011105	JM04-7MW10-043014	Water	04/30/2014 14:41	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	05/05/2014 21:11	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	65.0	2.00	0.500	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011106	JM04-55MW06-043014	Water	04/30/2014 14:30	05/01/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/02/2014 13:28	DJH	531554

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	432	1.0	0.26	mg/L CaCO3

214050111 438

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011106	JM04-55MW06-043014	Water	04/30/2014 14:30	05/01/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/03/2014 11:37	AEL	531585

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	7.2	5.0	1.5	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011106	JM04-55MW06-043014	Water	04/30/2014 14:30	05/01/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/01/2014 18:37	MDW	531474

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011106	JM04-55MW06-043014	Water	04/30/2014 14:30	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/01/2014 18:00	DMT	531461

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011106	JM04-55MW06-043014	Water	04/30/2014 14:30	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	05/05/2014 21:28	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	44.9	2.00	0.500	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011106	JM04-55MW06-043014	Water	04/30/2014 14:30	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	05/05/2014 21:46	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	740	100	25.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011109	JM04-55MW25-043014	Water	04/30/2014 15:40	05/01/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/02/2014 13:28	DJH	531554

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	991	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011109	JM04-55MW25-043014	Water	04/30/2014 15:40	05/01/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/03/2014 22:02	AEL	531585

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	91.3	5.0	1.5	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011109	JM04-55MW25-043014	Water	04/30/2014 15:40	05/01/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/01/2014 18:41	MDW	531474

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011109	JM04-55MW25-043014	Water	04/30/2014 15:40	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/01/2014 18:53	DMT	531461

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L
14808-79-8	Sulfate	0.500U	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011109	JM04-55MW25-043014	Water	04/30/2014 15:40	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			200	05/05/2014 23:14	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	536	40.0	10.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011110	JM04-55MW26-043014	Water	04/30/2014 15:10	05/01/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/02/2014 13:28	DJH	531554

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	147	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011110	JM04-55MW26-043014	Water	04/30/2014 15:10	05/01/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/03/2014 14:12	AEL	531585

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	6.0	1.0	0.30	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011110	JM04-55MW26-043014	Water	04/30/2014 15:10	05/01/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/05/2014 11:52	MDW	531672

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.009J	0.020	0.005	mg/L J-L1

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011110	JM04-55MW26-043014	Water	04/30/2014 15:10	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	05/01/2014 19:11	DMT	531461

CAS#	Parameter	Result	RDL	MDL	Units	
14797-55-8	Nitrate	2.00U	4.00	1.00	mg/L	
14797-65-0	Nitrite	2.00U	4.00	1.00	mg/L	
14808-79-8	Sulfate	47.5	4.00	1.00	mg/L	JD 6/15

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011110	JM04-55MW26-043014	Water	04/30/2014 15:10	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			200	05/05/2014 23:32	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	223	40.0	10.0	mg/L

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GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011111	JM04-FD02-043014	Water	04/30/2014 00:00	05/01/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/02/2014 13:28	DJH	531554

CAS#	Parameter	Result	RDL	MDL	Units	
000000-00-5	Total Alkalinity	402	1.0	0.26	mg/L CaCO3	JB LB

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011111	JM04-FD02-043014	Water	04/30/2014 00:00	05/01/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/03/2014 14:31	AEL	531585

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	6.1	1.0	0.30	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011111	JM04-FD02-043014	Water	04/30/2014 00:00	05/01/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/01/2014 18:33	MDW	531474

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011111	JM04-FD02-043014	Water	04/30/2014 00:00	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	05/02/2014 07:40	DMT	531461

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	1.44J	2.00	0.500	mg/L
14797-65-0	Nitrite	1.00U	2.00	0.500	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011111	JM04-FD02-043014	Water	04/30/2014 00:00	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	05/05/2014 23:49	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1320	100	25.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405011111	JM04-FD02-043014	Water	04/30/2014 00:00	05/01/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	05/06/2014 00:42	DMT	531683

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	143	4.00	1.00	mg/L

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-TB04-050114

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050209

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405020901

Level: (low/med) Lab File ID: 2140503/o6248

% Moisture: not dec. Date Collected: 05/01/14 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/02/14

Instrument ID: MSV5 Date Analyzed: 05/03/14 Time: 2138

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: ALC

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531608

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW12-050114

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050209

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405020902

Level: (low/med) Lab File ID: 2140503/o6249

% Moisture: not dec. Date Collected: 05/01/14 Time: 1025

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/02/14

Instrument ID: MSV5 Date Analyzed: 05/03/14 Time: 2201

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: ALC

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531608

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	2.64		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.905	J	0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55IW04-050114

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050209

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21405020903

Level: (low/med)

Lab File ID: 2140503/o6250

% Moisture: not dec.

Date Collected: 05/01/14 Time: 1100

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 05/02/14

Instrument ID: MSV5

Date Analyzed: 05/03/14 Time: 2224

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: ALC

Soil Aliquot Volume: (µL)

Prep Batch:

Analytical Batch: 531608

CONCENTRATION UNITS: ug/L

Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	100		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	5.46		0.103	0.200	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-FD03-050114

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050209

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405020904

Level: (low/med) Lab File ID: 2140506/g0085

% Moisture: not dec. Date Collected: 05/01/14 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/02/14

Instrument ID: MSV7 Date Analyzed: 05/06/14 Time: 2007

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531830

CONCENTRATION UNITS: *ug/L* Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW11-050114

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050209

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405020905

Level: (low/med) Lab File ID: 2140503/o6244

% Moisture: not dec. Date Collected: 05/01/14 Time: 1041

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/02/14

Instrument ID: MSV5 Date Analyzed: 05/03/14 Time: 2005

Soil Extract Volume: (µL) Dilution Factor: 2 Analyst: JCK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531608

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	359		0.323	0.400	2.00
75-01-4	Vinyl chloride	0.400	U	0.254	0.400	2.00
156-59-2	cis-1,2-Dichloroethene	8.02		0.207	0.400	2.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-7MW22-050114

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050209

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405020906

Level: (low/med) Lab File ID: 2140506/g0086

% Moisture: not dec. Date Collected: 05/01/14 Time: 1030

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/02/14

Instrument ID: MSV7 Date Analyzed: 05/06/14 Time: 2028

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531830

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	1.87		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.732	J	0.103	0.200	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55BRW01-050114

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050209

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405020907

Level: (low/med) Lab File ID: 2140506/g0087

% Moisture: not dec. Date Collected: 05/01/14 Time: 1435

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/02/14

Instrument ID: MSV7 Date Analyzed: 05/06/14 Time: 2049

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531830

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	4.20		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW09-050114

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050209

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405020908

Level: (low/med) Lab File ID: 2140503/o6243

% Moisture: not dec. Date Collected: 05/01/14 Time: 1445

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/02/14

Instrument ID: MSV5 Date Analyzed: 05/03/14 Time: 1940

Soil Extract Volume: (µL) Dilution Factor: 10 Analyst: JCK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531608

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	1010		1.61	2.00	10.0
75-01-4	Vinyl chloride	2.00	U	1.27	2.00	10.0
156-59-2	cis-1,2-Dichloroethene	2.00	U	1.03	2.00	10.0

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-7MW24-050114

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050209

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405020909

Level: (low/med) Lab File ID: 2140506/g0088

% Moisture: not dec. Date Collected: 05/01/14 Time: 1405

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/02/14

Instrument ID: MSV7 Date Analyzed: 05/06/14 Time: 2111

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531830

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.463	J	0.103	0.200	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55IW02-050114

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050209

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21405020910

Level: (low/med)

Lab File ID: 2140506/g0089

% Moisture: not dec.

Date Collected: 05/01/14 Time: 1500

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 05/02/14

Instrument ID: MSV7

Date Analyzed: 05/06/14 Time: 2132

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL)

Prep Batch:

Analytical Batch: 531830

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	86.5		0.161	0.200	1.00
75-01-4	Vinyl chloride	1.80		0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	24.8		0.103	0.200	1.00

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ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 532345

Sample ID: JM04-55MW12-050114

Contract:

SAS No.: SDG No.: 214050209

Lab Sample ID: 21405020902

Date Collected: 05/01/14 Time: 1025

Date Received: 05/02/14

Date Extracted:

Date Analyzed: 05/13/14 Time: 1021

Dilution Factor: 1 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2140513/v8020

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ	
74-82-8	Methane	2340	E	0.435	1.09	2.00	R-DL
74-84-0	Ethane	0.220	U	0.087	0.220	1.00	
74-85-1	Ethene	0.290	U	0.071	0.290	1.00	

FORM I ORG-1

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1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 532345

Sample ID: JM04-55MW12-050114DL
Contract:
SAS No.: SDG No.: 214050209
Lab Sample ID: 21405020902DL
Date Collected: 05/01/14 Time: 1025
Date Received: 05/02/14
Date Extracted:
Date Analyzed: 05/13/14 Time: 1032
Dilution Factor: 200 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2140513V8021

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOO
74-82-8	Methane	4670		87.0	218	400

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 532345

CONCENTRATION UNITS: ug/L

Sample ID: JM04-55IW04-050114

Contract:

SAS No.: SDG No.: 214050209

Lab Sample ID: 21405020903

Date Collected: 05/01/14 Time: 1100

Date Received: 05/02/14

Date Extracted:

Date Analyzed: 05/13/14 Time: 1040

Dilution Factor: 1 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2140513/v8022

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	271	E	0.435	1.09	2.00
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

R-DL

ok

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 532345

Sample ID: JM04-55IW04-050114DL

Contract:

SAS No.: SDG No.: 214050209

Lab Sample ID: 21405020903DL

Date Collected: 05/01/14 Time: 1100

Date Received: 05/02/14

Date Extracted:

Date Analyzed: 05/13/14 Time: 1047

Dilution Factor: 30 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2140513/v8023

CONCENTRATION UNITS: *ug/L*

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	720		13.1	32.7	60.0

FORM I ORG-1

214050209 280

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 532345

Sample ID: JM04-FD03-050114
Contract:
SAS No.: SDG No.: 214050209
Lab Sample ID: 21405020904
Date Collected: 05/01/14 Time: 0000
Date Received: 05/02/14
Date Extracted:
Date Analyzed: 05/13/14 Time: 1054
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

CONCENTRATION UNITS: *ug/L*
Lab File ID: 2140513/v8024

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	2000	~~E~~	0.435	1.09	2.00
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

R-DL

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 532345

CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-FD03-050114DL

Contract:

SAS No.: SDG No.: 214050209

Lab Sample ID: 21405020904DL

Date Collected: 05/01/14 Time: 0000

Date Received: 05/02/14

Date Extracted:

Date Analyzed: 05/13/14 Time: 1101

Dilution Factor: 200 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2140513/v8025

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	4370		87.0	218	400

FORM I ORG-1

214050209 28B

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 532345

Sample ID: JM04-55MW11-050114
Contract:
SAS No.: SDG No.: 214050209
Lab Sample ID: 21405020905
Date Collected: 05/01/14 Time: 1041
Date Received: 05/02/14
Date Extracted:
Date Analyzed: 05/13/14 Time: 1113
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2140513/v8027

CONCENTRATION UNITS: *ug/L*

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.127	J	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.77	J	0.435	1.09	2.00

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 532345

CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-7MW22-050114

Contract:

SAS No.: SDG No.: 214050209

Lab Sample ID: 21405020906

Date Collected: 05/01/14 Time: 1030

Date Received: 05/02/14

Date Extracted:

Date Analyzed: 05/13/14 Time: 1119

Dilution Factor: 1 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2140513/v8028

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	2.00

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 532345

Sample ID: JM04-55BRW01-050114RE
Contract:
SAS No.: SDG No.: 214050209
Lab Sample ID: 21405020907RE
Date Collected: 05/01/14 Time: 1435
Date Received: 05/02/14
Date Extracted:
Date Analyzed: 05/13/14 Time: 1133
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2140513/v8029

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	3520	E	0.435	1.09	2.00
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

R-DL

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch Analytical Batch: 532345

Sample ID JM04-55BRW01-050114DL

Contract:

SAS No.: SDG No.: 214050209

Lab Sample ID: 21405020907DL

Date Collected 05/01/14 Time: 1435

Date Received: 05/02/14

Date Extracted:

Date Analyzed: 05/13/14 Time: 1139

Dilution Factor: 300 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2140513/v8030

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	5790		131	327	600

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 532345

CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-55MW09-050114

Contract:

SAS No.: SDG No.: 214050209

Lab Sample ID: 21405020908

Date Collected: 05/01/14 Time: 1445

Date Received: 05/02/14

Date Extracted:

Date Analyzed: 05/13/14 Time: 1144

Dilution Factor: 1 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2140513/v8031

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.43	J	0.435	1.09	2.00

FORM I ORG-1

214050209 312

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 532345

CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-7MW24-050114

Contract:

SAS No.: SDG No.: 214050209

Lab Sample ID: 21405020909

Date Collected: 05/01/14 Time: 1405

Date Received: 05/02/14

Date Extracted:

Date Analyzed: 05/13/14 Time: 1150

Dilution Factor: 1 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2140513/v8032

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	668	E	0.435	1.09	2.00
74-84-0	Ethane	0.179	J	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

R-OL

FORM I ORG-1

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1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 532345

CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-7MW24-050114DL

Contract:

SAS No.: SDG No.: 214050209

Lab Sample ID: 21405020909DL

Date Collected: 05/01/14 Time: 1405

Date Received: 05/02/14

Date Extracted:

Date Analyzed: 05/13/14 Time: 1155

Dilution Factor: 50 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2140513/v8033

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	1720		21.8	54.5	100

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 532345

CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-55IW02-050114

Contract:

SAS No.: SDG No.: 214050209

Lab Sample ID: 21405020910

Date Collected: 05/01/14 Time: 1500

Date Received: 05/02/14

Date Extracted:

Date Analyzed: 05/13/14 Time: 1201

Dilution Factor: 1 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2140513/v8034

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	1270	E	0.435	1.09	2.00
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

R-DL

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 532345

Sample ID: JM04-55IW02-050114DL

Contract:

SAS No.: SDG No.: 214050209

Lab Sample ID: 21405020910DL

Date Collected: 05/01/14 Time: 1500

Date Received: 05/02/14

Date Extracted:

Date Analyzed: 05/13/14 Time: 1207

Dilution Factor: 100 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2140513/v8035

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	3260		43.5	109	200

FORM I ORG-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID: JM04-55MW12-050114

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214050209

Level: (low / med) % Solids:

Lab Sample ID: 21405020902

Date Received: 05/02/14 Time: 1000

Date Collected: 05/01/14 Time: 1025

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.18	mg/L	J	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 0446
Ferric Iron (Di	0.18	mg/L	J	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 0446

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID: JM04-55IW04-050114

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214050209

Level: (low / med) % Solids:

Lab Sample ID: 21405020903

Date Received: 05/02/14 Time: 1000

Date Collected: 05/01/14 Time: 1100

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.15	mg/L	J	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 0454
Ferric Iron (Di	0.11	mg/L	J	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 0454

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID: JM04-FD03-050114

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214050209

Level: (low / med) % Solids:

Lab Sample ID: 21405020904

Date Received: 05/02/14 Time: 1000

Date Collected: 05/01/14 Time: 0000

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.17	mg/L	J	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 0501
Ferric iron (Di	0.17	mg/L	J	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/08/14 0501

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW11-050114
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214050209
Level: (low / med)
% Solids:
Lab Sample ID: 21405020905
Date Received: 05/02/14
Time: 1000
Date Collected: 05/01/14
Time: 1041

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.069	mg/L	J	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 1931
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 1931

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-7MW22-050114
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214050209
Level: (low / med)
% Solids:
Lab Sample ID: 21405020906
Date Received: 05/02/14
Time: 1000
Date Collected: 05/01/14
Time: 1030

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.061	mg/L	J	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 1938
Ferric Iron (Di	0.061	mg/L	J	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 1938

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55BRW01-050114
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214050209
Level: (low / med)
% Solids:
Lab Sample ID: 21405020907
Date Received: 05/02/14
Time: 1000
Date Collected: 05/01/14
Time: 1435

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	1.27	mg/L		0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 1958
Ferric Iron (Di	1.25	mg/L		0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 1958

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW09-050114
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214050209
Level: (low / med)
% Solids:
Lab Sample ID: 21405020908
Date Received: 05/02/14
Time: 1000
Date Collected: 05/01/14
Time: 1445

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 2004
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 2004

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID: JM04-7MW24-050114

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214050209

Level: (low / med) % Solids:

Lab Sample ID: 21405020909

Date Received: 05/02/14 Time: 1000

Date Collected: 05/01/14 Time: 1405

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.067	mg/L	J	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 0111
Ferric Iron (Di	0.067	mg/L	J	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 0111

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55IW02-050114
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214050209
Level: (low / med)
% Solids:
Lab Sample ID: 21405020910
Date Received: 05/02/14
Time: 1000
Date Collected: 05/01/14
Time: 1500

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.62	mg/L		0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 0120
Ferric Iron (Di	0.51	mg/L		0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 0120

FORM I - IN

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020902	JM04-55MW12-050114	Water	05/01/2014 10:25	05/02/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/08/2014 16:03	DJH	532075

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	657	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020902	JM04-55MW12-050114	Water	05/01/2014 10:25	05/02/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/04/2014 02:44	AEL	531614

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	26.5	5.0	1.5	mg/L

214050209 508

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020902	JM04-55MW12-050114	Water	05/01/2014 10:25	05/02/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/05/2014 11:58	MDW	531672

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020902	JM04-55MW12-050114	Water	05/01/2014 10:25	05/02/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/02/2014 14:09	AEL	531538

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L
14808-79-8	Sulfate	3.56	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020902	JM04-55MW12-050114	Water	05/01/2014 10:25	05/02/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	05/02/2014 15:02	AEL	531538

CAS#	Parameter	Result	RDL	MDL	Units	
16887-00-6	Chloride	270	100	25.0	mg/L	LD

214050209 511

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020903	JM04-55IW04-050114	Water	05/01/2014 11:00	05/02/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/08/2014 16:03	DJH	532075

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	782	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020903	JM04-55IW04-050114	Water	05/01/2014 11:00	05/02/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/04/2014 11:14	AEL	531614

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	26.1	5.0	1.5	mg/L

214050209 513

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020903	JM04-55IW04-050114	Water	05/01/2014 11:00	05/02/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/05/2014 12:00	MDW	531672

CAS#	Perameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020903	JM04-55IW04-050114	Water	05/01/2014 11:00	05/02/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/02/2014 17:40	AEL	531538

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020903	JM04-55IW04-050114	Water	05/01/2014 11:00	05/02/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	05/02/2014 17:58	AEL	531538

CAS#	Parameter	Result	RDL	MDL	Units	
16887-00-6	Chloride	1210	100	25.0	mg/L	5, U.D

214050209 S16

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020903	JM04-55IW04-050114	Water	05/01/2014 11:00	05/02/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	05/03/2014 09:35	AEL	531586

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	71.1	4.00	1.00	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020904	JM04-FD03-050114	Water	05/01/2014 00:00	05/02/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/08/2014 16:03	DJH	532075

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	637	1.0	0.26	mg/L CaCO3

214050209 519

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020904	JM04-FD03-050114	Water	05/01/2014 00:00	05/02/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/04/2014 11:32	AEL	531614

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	30.8	5.0	1.5	mg/L

214050209 S19

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020904	JM04-FD03-050114	Water	05/01/2014 00:00	05/02/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/05/2014 11:57	MDW	531672

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020904	JM04-FD03-050114	Water	05/01/2014 00:00	05/02/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	05/02/2014 13:34	AEL	531538

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.200U	0.400	0.100	mg/L
14797-65-0	Nitrite	0.200U	0.400	0.100	mg/L
14808-79-8	Sulfate	3.40	0.400	0.100	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020904	JM04-FD03-050114	Water	05/01/2014 00:00	05/02/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			200	05/02/2014 13:51	AEL	531538

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	263	40.0	10.0	mg/L

214050209 522

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020905	JM04-55MW11-050114	Water	05/01/2014 10:41	05/02/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/08/2014 16:03	DJH	532075

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	620	1.0	0.26	mg/L CaCO3

214050209 523

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020905	JM04-55MW11-050114	Water	05/01/2014 10:41	05/02/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/04/2014 11:53	AEL	531614

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	5.0J	5.0	1.5	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020905	JM04-55MW11-050114	Water	05/01/2014 10:41	05/02/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/05/2014 11:59	MDW	531672

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020905	JM04-55MW11-050114	Water	05/01/2014 10:41	05/02/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	05/02/2014 17:05	AEL	531538

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	2.00U	4.00	1.00	mg/L
14797-65-0	Nitrite	2.00U	4.00	1.00	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020905	JM04-55MW11-050114	Water	05/01/2014 10:41	05/02/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2000	05/02/2014 17:23	AEL	531538

CAS#	Parameter	Result	RDL	MDL	Units	
16887-00-6	Chloride	4400	400	100	mg/L	.53 L13
14808-79-8	Sulfate	846	400	100	mg/L	L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020906	JM04-7MW22-050114	Water	05/01/2014 10:30	05/02/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/08/2014 16:03	DJH	532075

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	436	1.0	0.26	mg/L CaCO3

214050209 528

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020906	JM04-7MW22-050114	Water	05/01/2014 10:30	05/02/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/04/2014 12:10	AEL	531614

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	3.9J	5.0	1.5	mg/L

214050209 S29

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020906	JM04-7MW22-050114	Water	05/01/2014 10:30	05/02/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/05/2014 11:58	MDW	531672

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020906	JM04-7MW22-050114	Water	05/01/2014 10:30	05/02/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	05/02/2014 15:55	AEL	531538

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	1.41J	2.00	0.500	mg/L u LB
14797-65-0	Nitrite	1.00U	2.00	0.500	mg/L

214050209 531

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020906	JM04-7MW22-050114	Water	05/01/2014 10:30	05/02/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1000	05/02/2014 16:12	AEL	531538

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1130	200	50.0	mg/L
14808-79-8	Sulfate	275	200	50.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020907	JM04-55BRW01-050114	Water	05/01/2014 14:35	05/02/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/08/2014 16:03	DJH	532075

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	947	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020907	JM04-55BRW01-050114	Water	05/01/2014 14:35	05/02/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/04/2014 06:34	AEL	531614

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	67.5	5.0	1.5	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020907	JM04-55BRW01-050114	Water	05/01/2014 14:35	05/02/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/05/2014 12:03	MDW	531672

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020907	JM04-55BRW01-050114	Water	05/01/2014 14:35	05/02/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/02/2014 18:51	AEL	531538

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L
14808-79-8	Sulfate	5.84	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020907	JM04-55BRW01-050114	Water	05/01/2014 14:35	05/02/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	05/02/2014 19:09	AEL	531538

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	721	100	25.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020908	JM04-55MW09-050114	Water	05/01/2014 14:45	05/02/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/08/2014 16:03	DJH	532075

CAS#	Parameter	Result	RDL	MDL	Units	
000000-00-5	Total Alkalinity	373	1.0	0.26	mg/L CaCO3	[illegible]

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020908	JM04-55MW09-050114	Water	05/01/2014 14:45	05/02/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/04/2014 06:52	AEL	531614

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	27J	5.0	1.5	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020908	JM04-55MW09-050114	Water	05/01/2014 14:45	05/02/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/05/2014 12:04	MDW	531672

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020908	JM04-55MW09-050114	Water	05/01/2014 14:45	05/02/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	05/02/2014 19:26	AEL	531538

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	2.00U	4.00	1.00	mg/L
14797-65-0	Nitrite	2.00U	4.00	1.00	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020908	JM04-55MW09-050114	Water	05/01/2014 14:45	05/02/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2000	05/02/2014 19:44	AEL	531538

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	6590	400	100	mg/L
14808-79-8	Sulfate	1110	400	100	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020909	JM04-7MW24-050114	Water	05/01/2014 14:05	05/02/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/08/2014 16:03	DJH	532075

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	479	1.0	0.26	mg/L CaCO3

214050209 549

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020909	JM04-7MW24-050114	Water	05/01/2014 14:05	05/02/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/04/2014 07:10	AEL	531614

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	15.6	5.0	1.5	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020909	JM04-7MW24-050114	Water	05/01/2014 14:05	05/02/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/05/2014 12:00	MDW	531672

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020909	JM04-7MW24-050114	Water	05/01/2014 14:05	05/02/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/02/2014 18:16	AEL	531538

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L
14808-79-8	Sulfate	38.8	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020909	JM04-7MW24-050114	Water	05/01/2014 14:05	05/02/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	05/02/2014 18:33	AEL	531538

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	712	100	25.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020910	JM04-55IW02-050114	Water	05/01/2014 15:00	05/02/2014 10:00

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/08/2014 16:03	DJH	532075

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	953	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020910	JM04-55IW02-050114	Water	05/01/2014 15:00	05/02/2014 10:00

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/04/2014 07:28	AEL	531614

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	48.9	5.0	1.5	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020910	JM04-55IW02-050114	Water	05/01/2014 15:00	05/02/2014 10:00

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/05/2014 12:05	MDW	531672

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020910	JM04-55IW02-050114	Water	05/01/2014 15:00	05/02/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/02/2014 20:37	AEL	531538

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.500U	1.00	0.250	mg/L
14797-65-0	Nitrite	0.500U	1.00	0.250	mg/L
14808-79-8	Sulfate	37.5	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405020910	JM04-55IW02-050114	Water	05/01/2014 15:00	05/02/2014 10:00

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			500	05/02/2014 20:54	AEL	531538

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	844	100	25.0	mg/L

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-EB03-050214

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050304

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405030401

Level: (low/med) Lab File ID: 2140506p/l0767

% Moisture: not dec. Date Collected: 05/02/14 Time: 0830

GC Column: RTX-VMS-30 ID: 25 (mm) Date Received: 05/03/14

Instrument ID: MSV12 Date Analyzed: 05/07/14 Time: 0232

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531878

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

CL

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-EB02-050214

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050304

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405030402

Level: (low/med) Lab File ID: 2140506p/l0768

% Moisture: not dec. Date Collected: 05/02/14 Time: 0750

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/03/14

Instrument ID: MSV12 Date Analyzed: 05/07/14 Time: 0255

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531878

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-EB04-050214

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050304

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405030403

Level: (low/med) Lab File ID: 2140506p/I0769

% Moisture: not dec. Date Collected: 05/02/14 Time: 1300

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/03/14

Instrument ID: MSV12 Date Analyzed: 05/07/14 Time: 0318

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531878

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-TB05-050214

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050304

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405030404

Level: (low/med) Lab File ID: 2140506p/l0770

% Moisture: not dec. Date Collected: 05/02/14 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/03/14

Instrument ID: MSV12 Date Analyzed: 05/07/14 Time: 0340

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531878

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW10-050214

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050304

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405030405

Level: (low/med) Lab File ID: 2140506p/l0771

% Moisture: not dec. Date Collected: 05/02/14 Time: 1101

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/03/14

Instrument ID: MSV12 Date Analyzed: 05/07/14 Time: 0406

Soil Extract Volume: (µL) Dilution Factor: 2 Analyst: CLH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531878

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	314		0.323	0.400	2.00
75-01-4	Vinyl chloride	0.400	U	0.254	0.400	2.00
156-59-2	cis-1,2-Dichloroethene	19.5		0.207	0.400	2.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-7MW07-050214

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214050304

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21405030406

Level: (low/med) Lab File ID: 2140506/I0752

% Moisture: not dec. Date Collected: 05/02/14 Time: 1100

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 05/03/14

Instrument ID: MSV12 Date Analyzed: 05/06/14 Time: 2016

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CEK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 531852

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	7.94		0.161	0.200	1.00
75-01-4	Vinyl chloride	18.4		0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	3.42		0.103	0.200	1.00

FORM I VOA

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 532426

Sample ID: JM04-EB03-050214
Contract:
SAS No.: SDG No.: 214050304
Lab Sample ID: 21405030401
Date Collected: 05/02/14 Time: 0830
Date Received: 05/03/14
Date Extracted:
Date Analyzed: 05/14/14 Time: 1025
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2140514A8027

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	0.812	J	0.435	1.09	2.00

FORM 1 ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 532426

Sample ID: JM04-EB02-050214
Contract:
SAS No.: SDG No.: 214050304
Lab Sample ID: 21405030402
Date Collected: 05/02/14 Time: 0750
Date Received: 05/03/14
Date Extracted:
Date Analyzed: 05/14/14 Time: 1033
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2140514/v6028

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	2.00

FORM I ORG-1

CA

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 532426

CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-EB04-050214

Contract:

SAS No.: SDG No.: 214050304

Lab Sample ID: 21405030403

Date Collected: 05/02/14 Time: 1300

Date Received: 05/03/14

Date Extracted:

Date Analyzed: 05/14/14 Time: 1039

Dilution Factor: 1 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2140514/v8029

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	0.811	J	0.435	1.09	2.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 532426

Sample ID: JM04-55MW10-050214
Contract:
SAS No.: SDG No.: 214050304
Lab Sample ID: 21405030405
Date Collected: 05/02/14 Time: 1101
Date Received: 05/03/14
Date Extracted:
Date Analyzed: 05/14/14 Time: 1045
Dilution Factor: 1 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2140514/v8030

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	207	E	0.435	1.09	2.00
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

R-DL

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 532426

Sample ID: JM04-55MW10-050214DL

Contract:

SAS No.: SDG No.: 214050304

Lab Sample ID: 21405030405DL

Date Collected: 05/02/14 Time: 1101

Date Received: 05/03/14

Date Extracted:

Date Analyzed: 05/14/14 Time: 1050

Dilution Factor: 20 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2140514/v8031

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	492		8.70	21.8	40.0

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 532426

Sample ID: JM04-7MW07-050214

Contract:

SAS No.: SDG No.: 214050304

Lab Sample ID: 21405030406

Date Collected: 05/02/14 Time: 1100

Date Received: 05/03/14

Date Extracted:

Date Analyzed: 05/14/14 Time: 1102

Dilution Factor: 1 Analyst: BMR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

CONCENTRATION UNITS: *ug/L*

Lab File ID: 2140514/v8032

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	1320	E	0.435	1.09	2.00
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

R-OL

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 532426

Sample ID: JM04-7MW07-050214DL
Contract:
SAS No.: SDG No.: 214050304
Lab Sample ID: 21405030406DL
Date Collected: 05/02/14 Time: 1100
Date Received: 05/03/14
Date Extracted:
Date Analyzed: 05/14/14 Time: 1145
Dilution Factor: 100 Analyst: BMR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

CONCENTRATION UNITS: *ug/L*

Lab File ID: 2140514V8036

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	3420		43.5	109	200

ck

FORM I ORG-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID: JM04-EB03-050214

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214050304

Level: (low / med) % Solids:

Lab Sample ID: 21405030401

Date Received: 05/03/14 Time: 0935

Date Collected: 05/02/14 Time: 0830

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 0126
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 0126

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID: JM04-EB02-050214

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214050304

Level: (low / med) % Solids:

Lab Sample ID: 21405030402

Date Received: 05/03/14 Time: 0935

Date Collected: 05/02/14 Time: 0750

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 0134
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 0134

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID: JM04-EB04-050214

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214050304

Level: (low / med) % Solids:

Lab Sample ID: 21405030403

Date Received: 05/03/14 Time: 0935

Date Collected: 05/02/14 Time: 1300

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 0141
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 0141

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW10-050214
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214050304
Level: (low / med)
% Solids:
Lab Sample ID: 21405030405
Date Received: 05/03/14
Time: 0935
Date Collected: 05/02/14
Time: 1101

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	0.086	mg/L	J	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 0149
Ferric Iron (Di	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 0149

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-7MW07-050214
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214050304
Level: (low / med)
% Solids:
Lab Sample ID: 21405030406
Date Received: 05/03/14
Time: 0935
Date Collected: 05/02/14
Time: 1100

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Iron (Dissolve	2.22	mg/L		0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 1906
Ferric Iron (Di	0.82	mg/L		0.050	0.10	0.20	SW-846 6010C Dissolved	P	05/09/14 1906

FORM I - IN

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030401	JM04-EB03-050214	Water	05/02/2014 08:30	05/03/2014 09:35

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/08/2014 10:33	DJH	532045

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	143	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030401	JM04-EB03-050214	Water	05/02/2014 08:30	05/03/2014 09:35

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/04/2014 23:36	AEL	531645

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	2.4	1.0	0.30	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030401	JM04-EB03-050214	Water	05/02/2014 08:30	05/03/2014 09:35

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/05/2014 12:07	MDW	531672

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030401	JM04-EB03-050214	Water	05/02/2014 08:30	05/03/2014 09:35

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/03/2014 21:19	AEL	531596

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.329	0.200	0.050	mg/L
14797-65-0	Nitrite	0.100U	0.200	0.050	mg/L
14808-79-8	Sulfate	9.73	0.200	0.050	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030401	JM04-EB03-050214	Water	05/02/2014 08:30	05/03/2014 09:35

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/04/2014 07:44	AEL	531596

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	14.0	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030402	JM04-EB02-050214	Water	05/02/2014 07:50	05/03/2014 09:35

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/08/2014 10:33	DJH	532045

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	140	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030402	JM04-EB02-050214	Water	05/02/2014 07:50	05/03/2014 09:35

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/04/2014 23:54	AEL	531645

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	2.4	1.0	0.30	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030402	JM04-EB02-050214	Water	05/02/2014 07:50	05/03/2014 09:35

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/05/2014 12:05	MDW	531672

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030402	JM04-EB02-050214	Water	05/02/2014 07:50	05/03/2014 09:35

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/03/2014 21:37	AEL	531596

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.336	0.200	0.050	mg/L
14797-65-0	Nitrite	0.100U	0.200	0.050	mg/L
14808-79-8	Sulfate	9.48	0.200	0.050	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030402	JM04-EB02-050214	Water	05/02/2014 07:50	05/03/2014 09:35

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/04/2014 08:02	AEL	531596

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	14.1	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030403	JM04-EB04-050214	Water	05/02/2014 13:00	05/03/2014 09:35

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/08/2014 10:33	DJH	532045

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	141	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030403	JM04-EB04-050214	Water	05/02/2014 13:00	05/03/2014 09:35

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/05/2014 00:12	AEL	531645

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	2.3	1.0	0.30	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030403	JM04-EB04-050214	Water	05/02/2014 13:00	05/03/2014 09:35

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/05/2014 12:13	MDW	531672

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030403	JM04-EB04-050214	Water	05/02/2014 13:00	05/03/2014 09:35

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/03/2014 21:55	AEL	531596

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	0.338	0.200	0.050	mg/L
14797-65-0	Nitrite	0.100U	0.200	0.050	mg/L
14808-79-8	Sulfate	9.82	0.200	0.050	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030403	JM04-EB04-050214	Water	05/02/2014 13:00	05/03/2014 09:35

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/04/2014 08:19	AEL	531596

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	14.1	1.00	0.250	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030405	JM04-55MW10-050214	Water	05/02/2014 11:01	05/03/2014 09:35

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/08/2014 10:33	DJH	532045

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	835	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030405	JM04-55MW10-050214	Water	05/02/2014 11:01	05/03/2014 09:35

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/05/2014 07:24	KLC2	531645

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	8.2	5.0	1.5	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030405	JM04-55MW10-050214	Water	05/02/2014 11:01	05/03/2014 09:35

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/05/2014 12:12	MDW	531672

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.053	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030405	JM04-55MW10-050214	Water	05/02/2014 11:01	05/03/2014 09:35

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	05/03/2014 22:12	AEL	531596

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	2.00U	4.00	1.00	mg/L
14797-65-0	Nitrite	2.00U	4.00	1.00	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030405	JM04-55MW10-050214	Water	05/02/2014 11:01	05/03/2014 09:35

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2000	05/03/2014 22:30	AEL	531596

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	3330	400	100	mg/L
14808-79-8	Sulfate	581	400	100	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030406	JM04-7MW07-050214	Water	05/02/2014 11:00	05/03/2014 09:35

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/08/2014 10:33	DJH	532045

CAS#	Parameter	Result	RDL	MDL	Units
000000-00-5	Total Alkalinity	902	1.0	0.26	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030406	JM04-7MW07-050214	Water	05/02/2014 11:00	05/03/2014 09:35

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/05/2014 07:42	KLC2	531645

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	48.4	5.0	1.5	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030406	JM04-7MW07-050214	Water	05/02/2014 11:00	05/03/2014 09:35

SM 4500-S2 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/05/2014 12:08	MDW	531672

CAS#	Parameter	Result	RDL	MDL	Units
18496-25-8	Sulfide	0.010U	0.020	0.005	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030406	JM04-7MW07-050214	Water	05/02/2014 11:00	05/03/2014 09:35

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	05/03/2014 23:23	AEL	531596

CAS#	Parameter	Result	RDL	MDL	Units
14797-55-8	Nitrate	1.00U	2.00	0.500	mg/L
14797-65-0	Nitrite	1.00U	2.00	0.500	mg/L
14808-79-8	Sulfate	28.8	2.00	0.500	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21405030406	JM04-7MW07-050214	Water	05/02/2014 11:00	05/03/2014 09:35

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1000	05/04/2014 00:16	AEL	531596

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	735	200	50.0	mg/L

GCAL ANALYTICAL LABORATORIES, LLC

CHAIN OF CUSTODY RECORD

GCAL USE ONLY

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COC# JM04-042814-1

Report to:
Client: Bethany Garvey / CH2M
Address: 405 Lindbergh Dr. NE Atlanta GA 30305
Contact: Bethany Garvey
Phone: 770-604-9182
E-mail: Bethany.Garvey@ch2m.com

Bill to:
Client: CH2M HILL
Address: PBB CONTRACT
Contact:
Phone:
E-mail:

P.O. Number:
Project Name/Number: 378718.30.23.90.40

Sampled By: J Frank / RAL

Analytical Requests & Method: VOCs (Cols 1,2 DCE, TCE, VC) 8260B; TPH GRO 8015B; MBE RSK-175; NO2, NO3, Cl, SO4, Alk; SULFIDE Sm4500-S2-F; METALS (Diss Input) 6010B

GCAL use only:
Custody Seal used ☑ yes ☐ no
intact ☑ yes ☐ no
Temperature °C 3.6 EZZ

☐ Dissolved Analysis Requested
☐ Field filtered
☐ Lab filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	VOCs	TPH GRO	MBE	NO2,NO3,Cl,SO4,Alk	SULFIDE	METALS						Preservative
W	4/28/14	1500		✓	JM04-SSMW15-042814	10	3	2	2	1	1	1						2
W	4/28/14	1630		✓	JM04-SSMW16-042814	10	3	2	2	1	1	1						2
W	4/28/14	—			JM04-TB01-042814	3	3											3

Client ID: 4380 - CH2M Hill Constructors
SDG: 214042912
Due Date: 05/08/14

Air Bill No: 8004 5110 4664

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☒ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
James E Frank	4/28/14	1900			
Ted Ex	4/29/14	1030	[illegible]	4/29/14	1030

Note:

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

Matrix[1]: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

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GCAL ANALYTICAL LABORATORIES, LLC

CHAIN OF CUSTODY R

Client ID: 4380 - CH2M Hill Constructors
SDG: 214043008
Due Date: 05/09/14

ONLY

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Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

Report to:
Client: Bethany Garvey/CH2MHILL
Address: 4005 LINDBERGH DR NE
ATLANTA GA 30305
Contact: Bethany Garvey
Phone: 770-604-9182
E-mail: Bethany.Garvey@ch2m.com

Bill to:
Client: CH2MHILL
Address: PER CONTRACT
Contact:
Phone:
E-mail:

P.O. Number
Project Name/Number
Sampled By:

GCAL use only:
Custody Seal used ☑ yes ☐ no
intact ☑ yes ☐ no
Temperature °C 1.5, 0.7E4

☐ Dissolved Analysis Requested
☐ Field filtered
☐ Lab filtered

Analytical Requests & Method

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	VOCs (CH2 DCE, TCE, VC) 8260B	TOC SM5310B	MBE RSK175	NO_2 NO_3 Cl SO4 AK	SULFIDE SM4500-S2F	METAL (DISSOLVED) 6010B						Preservative
							HCl	HCl	—	—	NaOH	HNO3						←
W	4/29/14	0940		✓	JM04-55MW18-042914	10	3	2	2	1	1	1						1
W	4/29/14	1345		✓	JM04-55MW17-042914	10	3	2	2	1	1	1						2
W	4/29/14	NA			JM04-TB02-042914	3	3											3
W	4/29/14	—		✓	JM04-FD01-042914	10	3	2	2	1	1	1						4
W	4/29/14	1430		✓	JM04-55MW02-042914	10	3	2	2	1	1	1						5
W	4/29/14	1356		✓	JM04-7MW23-042914	10	3	2	2	1	1	1						6
W	4/29/14	1515		✓	JM04-EB01-042914	10	3	2	2	1	1	1						7

Air Bill No: 8004 5110 4653

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☑ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
James Zaruk	4/29/14	1830			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
FedEx	4/30/14	1000	[illegible]	4/30/14	1000
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Note:

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

Matrix[1]: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

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WHITE: CLIENT FINAL REPORT - CANARY: CLIENT

GCAL ANALYTICAL LABORATORIES, LLC

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COC# JM04-043014-1

Report to:
Client: Bethany Garvey/CH2MHILL
Address: 405 LINDBERGH DR NE
ATLANTA GA 30305
Contact: Bethany Garvey
Phone: 770-604-9182
E-mail: Bethany.Garvey@ch2m.com

Bill to:
Client: CH2MHILL
Address: PER CONTRACT
Contact:
Phone:
E-mail:

P.O. Number

Project Name/Number: SWMU 55 378718.30.23.90.40

Sampled By: J FRANK, M. ANDERSON, A. O'CONOR, S. KLINE

Analytical Requests & Method

GCAL use only:
Custody Seal used ☑ yes ☐ no
intact ☑ yes ☐ no
Temperature °C 1.6, 0.3, 0.5 EZR

☐ Dissolved Analysis Requested
☐ Field filtered
☐ Lab filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	VOCs (C1-1,2 DCE, TCE, VC) 8260B	TOC SM 5310B	MEE RSK-175	NO_2, NO_3 & SO_4 ALK	SVOC, OC SM4500-SO4-F	METALS (Diss Hzd) 6010B	Preservative
							HCl	HCl	—	—	H_2SO_4 NaOH	HNO_3	
W	4/30/14	—			JM04-TB03-043014	3	3	~~3~~					1
W	4/30/14	1035		✓	JM04-55MW05-043014	10	3	2	2	1	1	1	2
W	4/30/14	1056		✓	JM04-55MW14-043014	10	3	2	2	1	1	1	3
W	4/30/14	1150		✓	JM04-55MW01-043014	10	3	2	2	1	1	1	4
W	4/30/14	1441		✓	JM04-7MW10-043014	10	3	2	2	1	1	1	5
W	4/30/14	1430		✓	JM04-55MW06-043014	10	3	2	2	1	1	1	6
W	4/30/14	1430		✓	JM04-55MW06-043014 MS	10	3	2	2	1	1	1	7
W	4/30/14	1430		✓	JM04-55MW06-043014 SD	10	3	2	2	1	1	1	8
W	4/30/14	1540		✓	JM04-55MW25-043014	10	3	2	2	1	1	1	9
W	4/30/14	1510		✓	JM04-55MW26-043014	10	3	2	2	1	1	1	10
W	4/30/14	—		✓	JM04-FD02-043014	10	3	2	2	1	1	1	11

Client ID: 4380 - CH2M Hill Constructors
SDG: 214050111
Due Date: 05/13/14

Air Bill No: 8004 5110 4642

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☑ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Jenny E Frank	4/30/14	1800	FEDEX		
Relinquished by: (Signature) FEDEX	5-1-14	10:00	Received by: (Signature)	5-1-14	10:00
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date	Time:

Note:

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

Matrix[1]: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

We cannot accept verbal changes. Please email written changes to your PM.

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GCAL

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CHAIN OF CUSTODY

Lab use only

Client Name

Client ID: 4380 - CH2M Hill Constructors

SDG: 214050209

Due Date: 05/14/14

Due Date

Report to:

Client: Bethany Garvey / CH2MHILL
Address: ~~425 LND~~ 1000 Peachtree Industrial Blvd ~~4000 EMBASSY Row Ste 600~~
Atlanta GA 30328
Contact:
Phone: 770-604-9182
email: Bethany.Garvey@ch2m.com
Fax:

Bill to:

Client: CH2MHILL
Address: PER CONTRACT
Contact:
Phone:
Fax:

P.O. Number

Project Name/Number: SWMU 55 378718.30.23.90.40

Sampled By: J. Frank, M. Anderson, A. O'Conor, S. Kline

Custody Seal used ☑ yes ☐ no
intact ☑ yes ☐ no
Temperature °C 16, 2.3 E22

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	Preservatives	No Containers	VOCs (Cis 1,2 DCE, TCE, VC) 8260B	TOC SM5310B	MBE 8015	NO_2 NO_3 Cl SO_4 Alk	Sulfide SM4500-S2-F	Metals (as Fe, Mn) 6010	Remarks:	Lab ID
W	5/1/14	—			JM04-TB04-050114	HCl	3	3						1	
W	5/1/14	1025		X	JM04-55MW12-050114	HCl HNO_3 ZnAc NaOH	10	3	2	2	1	1	1	2	
W	5/1/14	1100		X	JM04-55IW04-050114	"	10	3	2	2	1	1	1	3	
W	5/1/14	—		X	JM04-FD03-050114	"	10	3	2	2	1	1	1	4	
W	5/1/14	1041		X	JM04-55MW11-050114	"	10	3	2	2	1	1	1	5	
W	5/1/14	1030		X	JM04-7MW22-050114	"	10	3	2	2	1	1	1	6	
W	5/1/14	1435		X	JM04-55BRW01-050114	"	10	3	2	2	1	1	1	7	
W	5/1/14	1445		X	JM04-55MW09-050114	"	10	3	2	2	1	1	1	8	
W	5/1/14	1405		X	JM04-7MW24-050114	"	10	3	2	2	1	1	1	9	
W	5/1/14	1500		X	JM04-55IW02-050114	"	10	3	2	2	1	1	1	10	

Turn Around Time: ☐ 24-48 hrs. ☐ 3 days ☐ 1 week ☑ Standard ☐ Other 8004 5110 4848

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Jamey E Frank	FEDEX	5/1/14	1800
Relinquished by: (Signature) FEDEX	Received by: (Signature) Josh	Date: 5-2-14	Time: 10:00
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Note:

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

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GCAL-06 11/98

GCAL

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CHAIN OF CUSTODY RECORD

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Client Name

Date

Client ID: 4380 - CH2M Hill Constructors

SDG: 214050304

Due Date: 05/14/14

Report to:

Client: Bethany Garvey / CH2MHill
Address: 4500 Peachtree Industrial Blvd NE
4000 Embassy Row Ste 600
Atlanta GA 30328
Contact:
Phone: 770-604-9182
Email: Bethany.Garvey@ch2m.com

Bill to:

Client: CH2MHILL
Address: Per Contract
Contact:
Phone:
Fax:

P.O. Number

Project Name/Number: SWMU 55 378718-30.23.90.40

Sampled By: J. Frank, A. O'Connor, S. Kline, M. Anderson

Analytic

Custody Seal used ☑ yes ☐ no
intact ☑ yes ☐ no
Temperature °C 0.8, 1.7 E24

COC # JM04-050214-1

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	Preservatives	No Containers	VOCs (Ethanol, TCE, VC) 8260B	TOC SM 5310B	MEE RSK-175	NO_2 NO_3 Cl SO_4 Alk	Sulfide SM4500-S2-F	Metal (Diss Iron) 6010B						Remarks:	Lab ID
W	5/2/14	0830		✓	JM04-EB03-050214	HCl, ZnAc NaOH, HNO_3	10	3	2	2	1	1	1						1	
W	5/2/14	0750		✓	JM04-EB02-050214	"	"	3	2	2	1	1	1						2	
W	5/2/14	1300		✓	JM04-EB01-050214	"	"	3	2	2	1	1	1						3	
W	5/2/14	—			JM04-TB05-050214	HCl	3	3											4	
W	5/2/14	1101		✓	JM04-55MW10-050214	HCl, ZnAc NaOH, HNO_3	10	3	2	2	1	1	1						5	
W	5/2/14	1100		✓	JM04-~~56~~ 55 7MW07-050214	"	10	3	2	2	1	1	1						6	
W	5/2/14	1100		✓	JM04-7MW07-050214MS	"	10	3	2	2	1	1	1						7	
W	5/2/14	1100		✓	JM04-7MW07-050214SD	"	10	3	2	2	1	1	1						8	

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

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
5/2/14	FEDEX JG	~~5-3-14~~	~~9:35~~
Relinquished by: (Signature) FEDEX	Received by: (Signature)	Date: 5-3-14	Time: 9:35
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Note: 8004 5110 4859 7949 4813 9781

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

NA Puerto Rico

PREPARED FOR:	NA Puerto Rico / SWMU 55 Groundwater Sampling 2nd Semi-Annual Event
FINAL REVIEWER/ INITIAL REVIEWER	Camden Robinson/ Project Chemist/CH2M Hill
COPIES:	Tom Beisel /Project Manager/AGVIQ-CH2M HILL
DATE:	October 9, 2014
SUBJECT:	Quality Assessment for Samples collected August 26th, 2014 thru August 27th, 2014

This quality assurance memorandum is based upon a review of analytical data generated for the groundwater samples and the associated field quality control samples collected August 26th, 2014 thru August 27th, 2014 at the Naval Activity Puerto Rico in Ceiba, Puerto Rico. The samples were collected as a part of the SWMU 55 Groundwater Sampling 2nd Semi-Annual Event conducted at the site. The specific samples and analytical fractions reviewed are summarized below in Table 1.

The Quality Control areas that were reviewed and the resulting findings are documented within each subsection that follows. Data validation was conducted using the validation criteria outlined in the uniform federal policy- quality assurance project plan (UFP-QAPP CH2M HILL, June 2012), Standard Operating Procedure (SOP) HW-24 Revision 2 Validating Volatile Organic Compounds by Gas Chromatograph/Mass Spectrometry SW-846 Method 8260B, guidance procedures described in the Environmental Protection Agency (EPA *National Functional Guidelines for Organic Data Review (EPA 2008)*, and/or the general guidance provided in the Department of Defense (DOD) Quality Systems Manual - Version 4.2 Final October 2010 (based on NELAC Voted Version – 5 June 2003). Analytical methods and laboratory standard operating procedures (SOPs) presented in the UFP-QAPP were used to evaluate compliance against quality assurance (QA)/QC criteria. If QA/QC criteria were not met, data was considered for qualification.

Samples were submitted to Gulf Coast Analytical Laboratories, Inc. of Baton Rouge, Louisiana for the following analyses: SW-846 8260B Volatile Organic Compounds Trichloroethene, Cis-1,2-Dichloroethene, and Vinyl Chloride and Standard Method 5310B.

Sample results that were not within the acceptance limits were appended with a qualifying flag, which consisted of a single- or double-letter code that indicated a possible problem with the data. The qualifying flags originated during the data review and validation processes. These also include the secondary, or the two/three-digit "sub-qualifier" flags. The secondary qualifiers provide the reasoning behind the assignment of a qualifier flag to the data. The secondary qualifiers are presented and defined below.

Attachment 1 lists the changes in data qualifiers, due to the validation process.

The following primary flags were used to qualify the data:

[=] Detected. The analyte was analyzed for and detected at the concentration shown.

[J] Estimated. The analyte was present but the reported value may not be accurate or precise.

[U] Undetected. The analyte was analyzed for but not detected above the method detection limit. The data validator may also apply this qualifier to indicate that a concentration was not detected at significantly greater than that in an associated blank.

[UJ] Detection limit estimated. The analyte was analyzed for but qualified as not detected; the result is estimated.

[UR] Rejected. The data is not useable. The absence of the analyte cannot be verified.

[R] Rejected. The data is not useable.

Secondary Qualifier Codes

Code	Definition
2SH	Second Source Accuracy High
2SL	Second Source Accuracy Low
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BL	Blank
BSH	Blank Spike/LCS Recovery High
BSL	Blank Spike/LCS Recovery Low
CCH	Continuing Calibration Verification Accuracy High
CCL	Continuing Calibration Verification Accuracy Low
DL	Dilution
EB	Equipment Blank Contamination
FD	Field Duplicate
LD	Laboratory Duplicate
HT	Holding Time
ICH	Initial Calibration High
ICL	Initial Calibration Low
ISH	Internal Standard Area Response High
ISL	Internal Standard Area Response Low
LR	Linear Range (Exceeded calibration range)
MD	Matrix Spike/Matrix Spike Duplicate Precision
MSH	Matrix Spike and/or Matrix Spike Duplicate Recovery High
MSL	Matrix Spike and/or Matrix Spike Duplicate Recovery Low
OT	Other
RE	Re-extraction
RF	Response Factor
SSH	Spiked Surrogate Recovery High
SSL	Spiked Surrogate Recovery Low
TN	Tune
EMPC	Estimated Maximum Possible Concentration

Table 1 - Chemical Analytical Methods – Field and Quality Control Samples

SDG	Sample ID	Lab Sample ID	Matrix	Sample Type	Date Collected	Analyses Performed
214082834	JM04-7MW07-082614	21408283401	GW	N	08/26/2014	[1], [2]
214082833	JM04-BRW01-082714	21408283301	GW	N	08/27/2014	[1], [2]
214082833	JM04-FD01-082714	21408283302	GW	FD	08/27/2014	[1], [2]
214082833	JM04-55IW04-082714	21408283303	GW	N	08/27/2014	[1], [2]
214082833	JM04-EB01-082714	21408283304	WQ	EB	08/27/2014	[1], [2]
214082833	JM04-55IW02-082714	21408283305	GW	N	08/27/2014	[1], [2]
214082833	JM04-55IW02-082714MS	21408283306	WQ	MS	08/27/2014	[1], [2]
214082833	JM04-55IW02-082714SD	21408283307	WQ	SD	08/27/2014	[1], [2]

MATRIX CODE

GW – Groundwater
WQ – Water Quality Control Sample

SAMPLE TYPE CODE

N – Native Sample
EB – Equipment Blank
FD – Field Duplicate
MS – Matrix Spike
SD – Matrix Spike Duplicate

ANALYSIS CODE

[1] – VOC –Trichloroethene, Cis-1,2-Dichloroethene, and Vinyl Chloride by SW-846 method 8260B
[2] – TOC – Total Organic Carbon by Standard Method 5310B

Organic Parameters

Quality Control Review

The following list represents the QA/QC measures that were reviewed during the data quality evaluation procedure for organic data.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Method blanks and equipment blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Surrogate Recoveries** – Surrogate Compounds are added to each sample and the recoveries are used to monitor lab performance and possible matrix interference.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", either laboratory reagent water or Ottawa sand, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and it's duplicate. This information can only be determined when target compounds are detected.
- **GC/MS Tuning** – The mass spectrum of the tuning compound is evaluated for method compliance. The criteria are established to verify the proper mass assignment and mass resolution.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.
- **Internal Standards** – The internal standards (retention time and response) are evaluated for method compliance. The internal standards are used in quantitation of the target parameters and monitor the instrument sensitivity and response for stability during each analysis.

Inorganic Parameters

Quality Control Review

The following list represents the QA/QC measures that were reviewed during the data quality evaluation procedure for organic data.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Method blanks, initial calibration blanks, continuing calibration blanks, and equipment blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", either laboratory reagent water or Ottawa sand, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and it's duplicate. This information can only be determined when target compounds are detected.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.
- **ICP Serial Dilution** – The serial dilution of samples quantitated by ICP determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is snfficiently high, the serial dilution analysis must agree within a 10% difference of the original determination after correction for dilution.
- **Post Digest Spike Sample** – The post digest spike sample indicates the possible presence of matrix interferences in the sample.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Volatile Organic Compounds (VOCs) Analyses

Holding Time

All samples analyses were performed within hold time.

GC/MS Instrument Performance

All GC/MS Instrument Performance criteria were met.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

There were no detections in the trip, equipment, and method blank samples.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field sample JM04-55IW02-082714. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Surrogate Recoveries

All surrogate recoveries were within acceptable quality control limits.

Internal Standard Recoveries

All internal standard recoveries were within acceptable quality control limits.

Field Duplicates

Field sample JM04-BRW01-082714 was collected and analyzed in duplicate. Field Duplicate precision objectives were met.

Rejected Data

No data were rejected based upon the validation process for this sampling event.

GROUNDWATER PROJECT ACTION LIMITS

All samples collected and analyzed for the month of August 2014 for the volatile organic compound – trichloroethene were less than the groundwater project action limits.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for TOC

Holding Time

All samples analyses were performed within hold time.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

There were no detections in the initial calibration, continuing calibration, equipment, and method blank samples.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field sample JM04-55IW02-082714. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Field Duplicates

Field sample JM04-BRW01-082714 was collected and analyzed in duplicate. Field duplicate precision objectives were met.

Dilutions

The samples presented below in table 2 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds

reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 2
Dilutions: TOC
NA Puerto Rico SWMU 55 Groundwater Sampling 2nd Semi-Annual 2014

Sample ID	Analysis	Dilution Factor
JM04-BRW01-082714	TOC	2X
JM04-FD01-082714	TOC	5X
JM04-55IW04-082714	TOC	2X
JM04-55IW02-082714	TOC	5X

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Data Usability

A review of the analytical data submitted regarding the NA Puerto Rico SWMU 55 Groundwater Sampling 2nd Semi-Annual, by CH2M HILL has been completed. An overall evaluation of the data indicates that the sample handling, shipment, and analytical procedures have been adequately completed, and that the analytical results should be considered usable as qualified. The validation review demonstrated that the analytical systems were generally in control and the data results can be used in the decision making process.

Data reviewed in this report meet the data quality goals stated in the project quality assurance project plan (QAPP).

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-BRW01-082714

Lab Name: CCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214082833

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21408283301

Level: (low/med) Lab File ID: 2140903/p0864

% Moisture: not dec Date Collected: 08/27/14 Time: 1016

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 08/28/14

Instrument ID: MSV5 Date Analyzed: 09/03/14 Time: 1521

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CEK

Soil Aliquot Volume: (µL) Prep Batch Analytical Batch: 540271

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/l

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

C.1

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-FD01-082714-A

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214082833

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21408283302

Level: (low/med) Lab File ID: 2140903/p0865

% Moisture: not dec. Date Collected: 08/27/14 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm Date Received: 08/28/14

Instrument ID: MSV5 Date Analyzed: 09/03/14 Time: 1544

Soil Extract Volume: (µL Dilution Factor: 1 Analyst: CEK

Soil Aliquot Volume: (µL Prep Batch: Analytical Batch: 540271

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

214082833 19

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55IW04-082714

Lab Name: GCAL Contract:

Lab Code. LA024 Case No.: SAS No.: SDG No.: 214082833

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 214082833 03

Level: (low/med) Lab File ID. 2140903/p0866

% Moisture: not dec. Date Collected: 08/27/14 Time: 1306

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 08/28/14

Instrument ID: MSV5 Date Analyzed: 09/03/14 Time: 1607

Soil Extract Volume. (µL) Dilution Factor. 1 Analyst: CEK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 540271

Analytical Method: SW-846 8260B

CONCENTRATION UNITS ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	22.3		0.161	0.200	1.00
75-01-4	Vinyl chloride	4.30		0.127	0.200	1.00
156-59-2	cis 1,2-Dichloroethene	3.05		0.103	0.200	1.00

C.L

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-EB01-082714

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214082833

Matrix (soil/water) Water

Sample wt/vol 5 (g/ml) mL Lab Sample ID. 21408283304

Level: (low/med) Lab File ID: 2140903/p0867

% Moisture: not dec Date Collected: 08/27/14 Time 1340

GC Column. RTX VMS-30 ID: 25 (mm) Date Received: 08/28/14

Instrument ID. MSV5 Date Analyzed: 09/03/14 Time: 1630

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CEK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 540271

Analytical Method: SW 846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

C.K

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO
JM04-55IW02-082714

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214082833

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) ml Lab Sample ID: 21408283305

Level: (low/med) Lab File ID: 2140903/p0868

% Moisture: not dec. Date Collected: 08/27/14 Time: 1446

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 08/28/14

Instrument ID: MSV5 Date Analyzed: 09/03/14 Time: 1654

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CEK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 540271

Analytical Method: SW 846 8260B

CONCENTRATION UNITS: ug/l

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	17.0		0.161	0.200	1.00
75-01-4	Vinyl chloride	11.5		0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	3.93		0.103	0.200	1.00

C.1

Sample Results

JM04-BRW01-082714

Collect Date 08/27/2014 10:16 | GCAL ID 21408283301
Receive Date 08/28/2014 10:10 | Matrix Water

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	2	08/31/2014 11:48	KLC2	540056

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	48.1	0.60	2.0	2.0	mg/L

JM04-FD01-082714-A

Collect Date 08/27/2014 00:00 | GCAL ID 21408283302
Receive Date 08/28/2014 10:10 | Matrix Water

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	08/31/2014 15:40	KLC2	540056

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	44.7	1.5	5.0	5.0	mg/L

JM04-55IW04-082714

Collect Date 08/27/2014 13:06 | GCAL ID 21408283303
Receive Date 08/28/2014 10:10 | Matrix Water

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	2	08/31/2014 12:32	KLC2	540056

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	9.8	0.60	2.0	2.0	mg/L

JM04-EB01-082714

Collect Date 08/27/2014 13:40 | GCAL ID 21408283304
Receive Date 08/28/2014 10:10 | Matrix Water

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	08/31/2014 10:44	KLC2	540085

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	1.0U	0.30	1.0	1.0	mg/L

ok

Sample Results

JM04-55IW02-082714 | Collect Date 08/27/2014 14:46 | Receive Date 08/28/2014 10:10 | GCAL ID 21408283305 | Matrix Water

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	08/31/2014 12:51	KLC2	540056

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	29.4	1.5	5.0	5.0	mg/L

JM04-55IW02-082714MS | Collect Date 08/27/2014 14:46 | Receive Date 08/28/2014 10:10 | GCAL ID 21408283306 | Matrix Water

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	08/31/2014 13:12	KLC2	540056

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	286	1.5	5.0	5.0	mg/L

JM04-55IW02-082714SD | Collect Date 08/27/2014 14:46 | Receive Date 08/28/2014 10:10 | GCAL ID 21408283307 | Matrix Water

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	08/31/2014 13:29	KLC2	540056

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	285	1.5	5.0	5.0	mg/L

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04 7MW07-082614

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No: 214082834

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21408283401

Level: (low/med)

Lab File ID: 2140907I6056

% Moisture: not dec.

Date Collected: 08/26/14 Time: 1356

GC Column: RTX-VMS 30 ID: 25 (mm)

Date Received: 08/28/14

Instrument ID: MSV12

Date Analyzed 09/07/14 Time: 1600

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: JCK

Soil Aliquot Volume (µL)

Prep Batch:

Analytical Batch 540529

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/l

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	5.19		0.161	0.200	1.00
75-01-4	Vinyl chloride	15.4		0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	1.67		0.103	0.200	1.00

Sample Results

JM04-7MW07-082614	Collect Date	08/26/2014 13:56	GCAL ID	21408283401
	Receive Date	08/28/2014 10:10	Matrix	Water

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	08/31/2014 13:48	KLC2	540056

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	37.5	1.5	5.0	5.0	mg/L

CHAIN OF CUSTODY RECORD

GCAL USE ONLY

GCAL ANALYTICAL LABORATORIES, LLC
7979 Innovation Park Dr., Baton Rouge, LA 70820-7402
Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

COC# JM04-082714-3

Report to:
Client: See COC-1
Address:
Contact:
Phone:
E-mail:

Bill to:
Client:
Address:
Contact:
Phone:
E-mail:

GCAL use only: 2 4433, 3
Custody Seal
used ☑ yes ☐ no
intact ☑ yes ☐ no
Temperature °C 3 / 3.6 / 3.2
KM

P.O. Number
Project Name/Number: SWMO 55 / 378718.30.23.90.10
Sampled By: A. OCONOR

☐ Dissolved Analysis Requested
☐ Field filtered
☐ Lab filtered

Analytical Requests & Method: VOC (SHORT LIST), TOC

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	HCl	HCl									Preservative
GW	8/27	1016		x	JM04-BRW01-082714	5	3	2									1
GW	8/27	—	—	x	JM04-FD01-082714	5	3	2									2
GW	8/27	1320			JM04-SSIW04-082714	5	3	2									3
WT	8/27	1340			JM04-EB01-082714	5	3	2									4
GW	8/27	1446			JM04-SSIW02-082714	5	3	2									5
GW	8/27	1446			JM04-SSIW02-082714 MS	5	3	2									6
GW	8/27	1446			JM04-SSIW02-082714 SD	5	3	2									7

Client ID: 4380 - CH2M Hill Constructors
SDG: 214082833
Due Date: 09/09/14

Air Bill No: 8050 5788 0064

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☑ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]	8/27/14	1545	[signature]		
[signature]	8/28/14	1010	[signature]	8/28/14	1010

Note:

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

Matrix: W – water, S – solid, L – liquid, T – tissue

*Requires prior approval, rush charges may apply

We cannot accept verbal changes. Please email written changes to your PM

WHITE: CLIENT FINAL REPORT CANARY: CLIENT

CHAIN OF CUSTODY RECORD

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COC# JM04-082614-2

Report to:
Client: Jacobs Carver / Lizwitzel
Address: 6600 Peachtree Dunwoody Building B, 400
Contact: Atl GA 30328
Phone: 678-530-4124
E-mail: bethany.carver@jacobs.com

Bill to:
Client:
Address:
Contact:
Phone:
E-mail:

P.O. Number
Project Name/Number: 378715 30 23.90.10
Sampled By: A. Oliver / ATL / C. Brown / Reviq

Analytical Requests & Method: VOCs (Sister List), TOC

GCAL use only: 230433, 3
Custody Seal used ☑ yes ☐ no
intact ☑ yes ☐ no
Temperature °C: ~~3.1~~ ~~3.6~~ ~~3.2~~ 5.0 E24

☐ Dissolved Analysis Requested
☐ Field filtered
☐ Lab filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	VOCs (Sister List)	TOC	Preservative
AQ	8/26	1356		✓	JM04-TMW07-082614	5	3	2	
~~AQ~~	~~Lab Supplied~~				~~JM04-TBR-082614~~	~~3~~	~~NO~~		

Client ID: 4380 - CH2M Hill Constructors
SDG: 214082834
Due Date: 09/10/14

Air Bill No: 8050 5788 0653

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☐ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]	8/26/14	1600			
FedEx	8/28/14	1010	[signature]	8/28/14	1010
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Note: Sunny 55°

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

Matrix[1]: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply

We cannot accept verbal changes. Please email written changes to your PM

NA Puerto Rico

PREPARED FOR:	NA Puerto Rico / SWMU 55 Groundwater Sampling 5th Event 2014
FINAL REVIEWER/ INITIAL REVIEWER	Camden Robinson/ Project Chemist/CH2M Hill
COPIES:	Tom Beisel /Project Manager/AGVIQ-CH2M HILL
DATE:	January 29th, 2015
SUBJECT:	Quality Assessment for Samples collected November 12th, 2014 thru November 20th, 2014

This quality assurance memorandum is based upon a review of analytical data generated for the groundwater samples and the associated field quality control samples collected November 12th, 2014 thru November 20th, 2014 at the Naval Activity Puerto Rico in Ceiba, Puerto Rico. The samples were collected as a part of the SWMU 55 Groundwater Sampling 5th Event 2014 conducted at the site. The specific samples and analytical fractions reviewed are summarized below in Table 1.

The Quality Control areas that were reviewed and the resulting findings are documented within each subsection that follows. Data validation was conducted using the validation criteria outlined in the uniform federal policy- quality assurance project plan (UFP-QAPP CH2M HILL, June 2012), Standard Operating Procedure (SOP) HW-24 Revision 2 Validating Volatile Organic Compounds by Gas Chromatograph/Mass Spectrometry SW-846 Method 8260B, guidance procedures described in the Environmental Protection Agency (EPA *National Functional Guidelines for Organic Data Review (EPA 2008)*, and/or the general guidance provided in the Department of Defense (DOD) Quality Systems Manual - Version 4.2 Final October 2010 (based on NELAC Voted Version – 5 June 2003). Analytical methods and laboratory standard operating procedures (SOPs) presented in the UFP-QAPP were used to evaluate compliance against quality assurance (QA)/QC criteria. If QA/QC criteria were not met, data was considered for qualification.

Samples were submitted to Gulf Coast Analytical Laboratories, Inc. of Baton Rouge, Louisiana for the following analyses: SW-846 8260B Volatile Organic Compounds Trichloroethene, Cis-1,2-Dichloroethene, and Vinyl Chloride, RSK-175 Methane, Ethane, and Ethene, SW-846 6020A Dissolved Iron, Calculation Ferric Iron, Standard Method 2320B Alkalinity, Standard Method 5310B Total Organic Carbon (TOC), Standard Method 4500S2-D Sulfide, and SW-846 9056A Chloride, Nitrate, Nitrite, and Sulfate.

Sample results that were not within the acceptance limits were appended with a qualifying flag, which consisted of a single- or double-letter code that indicated a possible problem with the data. The qualifying flags originated during the data review and validation processes. These also include the secondary, or the two/three-digit "sub-qualifier" flags.

The secondary qualifiers provide the reasoning behind the assignment of a qualifier flag to the data. The secondary qualifiers are presented and defined below.

Attachment 1 lists the changes in data qualifiers, due to the validation process.

The following primary flags were used to qualify the data:

[=] Detected. The analyte was analyzed for and detected at the concentration shown.

[J] Estimated. The analyte was present but the reported value may not be accurate or precise.

[U] Undetected. The analyte was analyzed for but not detected above the method detection limit. The data validator may also apply this qualifier to indicate that a concentration was not detected at significantly greater than that in an associated blank.

[UJ] Detection limit estimated. The analyte was analyzed for but qualified as not detected; the result is estimated.

[UR] Rejected. The data is not useable. The absence of the analyte cannot be verified.

[R] Rejected. The data is not useable.

Secondary Qualifier Codes

Code	Definition
2SH	Second Source Accuracy High
2SL	Second Source Accuracy Low
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BL	Blank
BSH	Blank Spike/LCS Recovery High
BSL	Blank Spike/LCS Recovery Low
CCB	Continuing Calibration Blank
CCH	Continuing Calibration Verification Accuracy High
CCL	Continuing Calibration Verification Accuracy Low
DL	Dilution
EB	Equipment Blank Contamination
FD	Field Duplicate
LD	Laboratory Duplicate
HT	Holding Time
ICH	Initial Calibration High
ICL	Initial Calibration Low
ISH	Internal Standard Area Response High
ISL	Internal Standard Area Response Low
LR	Linear Range (Exceeded calibration range)
MD	Matrix Spike/Matrix Spike Duplicate Precision
MSH	Matrix Spike and/or Matrix Spike Duplicate Recovery High
MSL	Matrix Spike and/or Matrix Spike Duplicate Recovery Low
OT	Other
RE	Re-extraction
RF	Response Factor
SSH	Spiked Surrogate Recovery High
SSL	Spiked Surrogate Recovery Low
TN	Tune
EMPC	Estimated Maximum Possible Concentration

Table 1 - Chemical Analytical Methods – Field and Quality Control Samples

SDG	Sample ID	Lab Sample ID	Matrix	Sample Type	Date Collected	Analyses Performed
214111307	JM04-55MW15-111214	21411130701	GW	N	11/12/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111307	JM04-TB01-111214	21411130702	WQ	TB	11/12/2014	[1]
214111307	JM04-55MW05-111214	21411130703	GW	N	11/12/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111307	JM04-55MW16-111214	21411130704	GW	N	11/12/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111307	JM04-55MW06-111214	21411130705	GW	N	11/12/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111307	JM04-55MW06-111214-MS	21411130706	WQ	MS	11/12/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111307	JM04-55MW06-111214-SD	21411130707	WQ	SD	11/12/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111307	JM04-55MW17-111214	21411130708	GW	N	11/12/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111307	JM04-55MW18-111214	21411130709	GW	N	11/12/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111307	JM04-FD01-111214	21411130710	GW	FD	11/12/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111511	JM04-7MW24-111414	21411151101	GW	N	11/14/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111511	JM04-EB01-111414	21411151102	WQ	EB	11/14/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111511	JM04-TB03-111414	21411151103	WQ	TB	11/14/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111511	JM04-7MW10-111414	21411151104	GW	N	11/14/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111511	JM04-EB02-111414	21411151105	WQ	EB	11/14/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111511	JM04-55MW11-111414	21411151106	GW	N	11/14/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111511	JM04-55IW02-111414	21411151107	GW	N	11/14/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111511	JM04-55IW44-111414	21411151108	GW	N	11/14/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111511	JM04-55BRW01-111414	21411151109	GW	N	11/14/2014	[1], [2], [3], [4], [5], [6], [7], [8]

SDG	Sample ID	Lab Sample ID	Matrix	Sample Type	Date Collected	Analyses Performed
214111511	JM04-FD03-111414	21411151110	GW	FD	11/14/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111904	JM04-7MW07-111714	21411190401	GW	N	11/17/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111904	JM04-7MW07-111714MS	21411190402	WQ	MS	11/17/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111904	JM04-7MW07-111714SD	21411190403	WQ	SD	11/17/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111904	JM04-TB04-111714	21411190404	WQ	TB	11/17/2014	[1]
214111904	JM04-55MW09-111714	21411190405	GW	N	11/17/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111904	JM04-55MW10-111714	21411190406	GW	N	11/17/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214111904	JM04-EB03-111714	21411190407	WQ	EB	11/17/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214112116	JM04-TB02-112014	21411211601	WQ	TB	11/20/2014	[1]
214112116	JM04-55MW02-112014	21411211602	GW	N	11/20/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214112116	JM04-55MW01-112014	21411211603	GW	N	11/20/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214112116	JM04-55MW14-112014	21411211604	GW	N	11/20/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214112116	JM04-7MW23-112014	21411211605	GW	N	11/20/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214112116	JM04-EB04-112014	21411211606	WQ	EB	11/20/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214112116	JM04-55MW25-112014	21411211607	GW	N	11/20/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214112116	JM04-55MW26-112014	21411211608	GW	N	11/20/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214112116	JM04-55MW12-112014	21411211609	GW	N	11/20/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214112116	JM04-FD02-112014	21411211610	GW	FD	11/20/2014	[1], [2], [3], [4], [5], [6], [7], [8]
214112116	JM04-7MW22-112014	21411211611	GW	N	11/20/2014	[1], [2], [3], [4], [5], [6], [7], [8]

SDG	Sample ID	Lab Sample ID	Matrix	Sample Type	Date Collected	Analyses Performed

MATRIX CODE

GW – Groundwater
WQ – Water Quality Control Sample

SAMPLE TYPE CODE

N – Native Sample
EB – Equipment Blank
TB – Trip Blank
FD – Field Duplicate
MS – Matrix Spike
SD – Matrix Spike Duplicate

ANALYSIS CODE

[1] – VOC –Trichloroethene, Cis-1,2-Dichloroethene, and Vinyl Chloride by SW-846 method 8260B
[2] – Methane, Ethane, and Ethene by RSK-175
[3] – Dissolved Iron by SW-846 method 6020A
[4] – Ferric Iron by Calculation
[5] – Alkalinity by Standard Method 2320B
[6] – TOC – Total Organic Carbon by Standard Method 5310B
[7] – Sulfide by Standard Method 4500S2-D
[8] – Anions - Chloride, Nitrate, Nitrite, and Sulfate by SW-846 9056A

Organic Parameters

Quality Control Review

The following list represents the QA/QC measures that were reviewed during the data quality evaluation procedure for organic data.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Method blanks, equipment blanks, and trip blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Surrogate Recoveries** – Surrogate Compounds are added to each sample and the recoveries are used to monitor lab performance and possible matrix interference.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", either laboratory reagent water or Ottawa sand, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and it's duplicate. This information can only be determined when target compounds are detected.
- **GC/MS Tuning** – The mass spectrum of the tuning compound is evaluated for method compliance. The criteria are established to verify the proper mass assignment and mass resolution.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.
- **Internal Standards** – The internal standards (retention time and response) are evaluated for method compliance. The internal standards are used in quantitation of the target parameters and monitor the instrument sensitivity and response for stability during each analysis.

Inorganic Parameters

Quality Control Review

The following list represents the QA/QC measures that were reviewed during the data quality evaluation procedure for organic data.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Method blanks, initial calibration blanks, continuing calibration blanks, and equipment blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", either laboratory reagent water or Ottawa sand, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and it's duplicate. This information can only be determined when target compounds are detected.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.
- **ICP Serial Dilution** – The serial dilution of samples quantitated by ICP determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is sufficiently high, the serial dilution analysis must agree within a 10% difference of the original determination after correction for dilution.
- **Post Digest Spike Sample** – The post digest spike sample indicates the possible presence of matrix interferences in the sample.
- **Internal Standards** – The internal standards (retention time and response) are evaluated for method compliance. The internal standards are used in quantitation of the target parameters and monitor the instrument sensitivity and response for stability during each analysis.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Volatile Organic Compounds (VOCs) Analyses

Holding Time

All samples analyses were performed within hold time.

GC/MS Instrument Performance

All GC/MS Instrument Performance criteria were met.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

There were no detections noted in the trip blank and method blank samples. The VOC detected in the equipment blank sample is listed in Table 2.

TABLE 2
Blank Contamination: Trichloroethene
NA Puerto Rico SWMU 55 Groundwater Sampling 5th Event 2014

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
214112116	JM04-EB04-112014	EB	Trichloroethane	0.713	ug/L	JM04-55MW02-112014

Flags were applied to the analyte in the associated samples in the following manner:

When the analyte was detected in the equipment blank, the detected compounds, that were less than 5 times the concentration detected for the analyte listed and above the limit of quantitation (LOQ), were flagged "JB" due to possible field contamination with a validation note of "EB".

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-55MW06-111214 and JM04-7MW07-111714. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Surrogate Recoveries

All surrogate recoveries were within acceptable quality control limits.

Internal Standard Recoveries

All internal standard recoveries were within acceptable quality control limits.

Field Duplicates

Field samples JM04-55MW17-111214, JM04-55BRW01-111414, and JM04-55MW12-112014 were collected and analyzed in duplicate. Field duplicate precision objectives were met for all samples.

Dilutions

The samples presented below in table 3 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 3
Dilutions: VOC
NA Puerto Rico SWMU 55 Groundwater Sampling 5th Event 2014

Sample ID	Analysis	Dilution Factor
JM04-55MW09-111714	VOC	5X
JM04-55MW01-112014	VOC	5X
JM04-55MW14-112014	VOC	5X

Rejected Data

No data were rejected based upon the validation process for this sampling event.

GROUNDWATER PROJECT ACTION LIMITS

All samples collected and analyzed for the month of November 2014 for the volatile organic compound – trichloroethene were less than the groundwater project action limits with the exception of the samples listed below:

Analyte (Volatile List)	Affected Sample	Sample Results (ug/l)	Groundwater Cleanup Target Levels (ug/l)
Trichloroethene	JM04-55MW01-112014	349	193
Trichloroethene	JM04-55MW09-111714	865	193
Trichloroethene	JM04-55MW14-112014	522	193

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Methane, Ethane, and Ethene Analyses

Holding Time

All samples analyses were performed within hold time.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

There were no detections noted in the method and equipment blank samples.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-55MW06-111214 and JM04-7MW07-111714. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met for all samples except as noted in table 4 below:

TABLE 4
Matrix Spike and Matrix Spike Duplicate Recovery Out of QC Limits: Methane
NA Puerto Rico SWMU 55 Groundwater Sampling 5th event 2014

QC Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Qualifiers Applied
Matrix Spike Matrix Spike Duplicate	Methane	400% -171%	39-120	JM04-7MW07-111714	Due to high methane concentration, the spike recoveries were diluted out; therefore no qualifiers were applied to the parent sample.

Field Duplicates

Field samples JM04-55MW17-042914, JM04-55BRW01-111414, and JM04-55MW12-112014 were collected and analyzed in duplicate. Field duplicate precision could not be calculated for the samples listed in table 5 below:

TABLE 5
Field Duplicate RPD Out of QC Limits: Methane, Ethane, and Ethene
NA Puerto Rico SWMU 55 Groundwater Sampling 5th event 2014

Compound	Affected Samples	Results (ug/kg)
Methane	JM04-55MW17-111214 / JM04-FD01-111214	16.4 / U
Ethane	JM04-55MW17-111214 / JM04-FD01-111214	3.30 / U
Ethene	JM04-55MW17-111214 / JM04-FD01-111214	3.14 / U

Dilutions

The samples presented below in table 6 were analyzed at dilutions for the analysis indicated. These dilutions resulted in surrogate compounds being diluted below the instrument detection limit; therefore surrogate recoveries may not be reported for all diluted analysis. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 6
Dilutions: Methane
NA Puerto Rico SWMU 55 Groundwater Sampling 5th Event 2014

Sample ID	Analysis	Dilution Factor
JM04-7MW24-111414	Methane	200X
JM04-7MW10-111414	Methane	100X
JM04-55MW11-111414	Methane	50X
JM04-55IW02-111414	Methane	50X
JM04-55IW04-111414	Methane	20X
JM04-55BRW01-111414	Methane	300X
JM04-FD03-111414	Methane	300X
JM04-55MW05-111214	Methane	10X
JM04-7MW07-111714	Methane	100X
JM04-55MW10-111714	Methane	50X
JM04-55MW01-112014	Methane	20X
JM04-7MW23-112014	Methane	100X
JM04-55MW25-112014	Methane	100X
JM04-55MW26-112014	Methane	20X
JM04-55MW12-112014	Methane	10X
JM04-FD02-112014	Methane	10X

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Dissolved Iron and Ferric Iron Analyses

Holding Time

All samples analyses were performed within hold time.

Instrument Calibration

All Initial and Continuing Calibration criteria were met.

Low Level Spike Calibration Verification

All low level spike calibration verification criteria were met.

Interference Check Sample

The interference check standard criteria were met.

Serial Dilution

All serial dilution criteria were met.

Post Digest Spike

All post digest spike criteria were met.

Blanks

There were no detects in the initial calibration, continuing calibration, method blank, and equipment blank samples.

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-55MW06-111214 and JM04-7MW07-111714. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Internal Standard Recoveries

All internal standard recoveries were within acceptable quality control limits.

Field Duplicates

Field samples JM04-55MW17-111214, JM04-55BRW01-111414, and JM04-55MW12-112014 were collected and analyzed in duplicate. Field duplicate precision objectives were met.

Dilutions

The samples presented below in table 7 was analyzed at a dilution for the analysis indicated. This dilutions were required due to a chemical or physical interference. The positive results for the compound reported above the calibration range in the initial analysis has been reported from the diluted analyses.

TABLE 7
Dilutions: Dissolved Iron/Ferric Iron
NA Puerto Rico SWMU 55 Groundwater Sampling 5th Event 2014

Sample ID	Analysis	Dilution Factor
JM04-55MW15-111214	Dissolved Iron/Ferric Iron	10X
JM04-55MW05-111214	Dissolved Iron/Ferric Iron	5X
JM04-55MW16-111214	Dissolved Iron/Ferric Iron	2X
JM04-55MW06-111214	Dissolved Iron/Ferric Iron	5X
JM04-55MW17-111214	Dissolved Iron/Ferric Iron	10X
JM04-55MW18-111214	Dissolved Iron/Ferric Iron	5X
JM04-FD01-111214	Dissolved Iron/Ferric Iron	10X

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Alkalinity

Holding Time

All samples analyses were performed within hold time.

Blanks

There were no detections in the method blank. Alkalinity detected in the equipment blank samples is listed in Table 8.

TABLE 8
Blank Contamination: Alkalinity
NA Puerto Rico SWMU 55 Groundwater Sampling 5th Event 2014

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
214112116	JM04-EB04-112014	EB	Alkalinity	148	mg/L	JM04-55MW02-112014
						JM04-55MW01-112014
						JM04-55MW14-112014

TABLE 8
Blank Contamination: Alkalinity
NA Puerto Rico SWMU 55 Groundwater Sampling 5th Event 2014

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
						JM04-7MW23-112014

Flags were applied to the analyte in the associated samples in the following manner:

When the analyte was detected in the equipment blank, the detected compounds, that were less than 5 times the concentration detected for the analyte listed and above the limit of quantitation (LOQ), were flagged "JB" due to possible field contamination with a validation note of "EB".

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-55MW06-043014 and JM04-7MW07-111714. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Laboratory Duplicates

Laboratory duplicate precision objectives were met.

Field Duplicates

Field samples JM04-55MW17-111214, JM04-55BRW01-111414, and JM04-55MW12-112014 were collected and analyzed in duplicate. Field duplicate precision objectives were met.

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for TOC

Holding Time

All samples analyses were performed within hold time.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

There were no detections noted in the equipment blank samples. TOC detected in the blank samples is listed in Table 9.

TABLE 9
Blank Contamination: TOC
NA Puerto Rico SWMU 55 Groundwater Sampling 5th Event 2014

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
214111307	Continuing Calibration Blank	CCB	TOC	0.3385	mg/L	Associated sample result was non-detect; therefore no qualifiers are needed.
214112116	Continuing Calibration Blank	CCB	TOC	0.483	mg/L	Associated sample result was greater than 5 times the CCB detect; therefore no qualifiers are needed.
214112116	Method Blank	MB	TOC	0.39	mg/L	Associated sample results were greater than 5 times the MB detect; therefore no qualifiers are needed

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-55MW06-111214 and JM04-7MW07-111714. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Field Duplicates

Field samples JM04-55MW17-111214, JM04-55BRW01-111414 and JM04-55MW12-112014 were collected and analyzed in duplicate. Field duplicate precision objectives were not met for the samples listed in table 10 below; therefore, results were qualified as estimated "J":

TABLE 10
Field Duplicate RPD Out of QC Limits: TOC
NA Puerto Rico SWMU 55 Groundwater Sampling 5th Event 2014

Compound	Affected Samples	%RPD
TOC	JM04-55MW14-043014 / JM04-FD02-043014	59.6%
TOC	JM04-55BRW01-111414 / JM04-FD03-111414	35.3%
TOC	JM04-55MW12-112014 / JM04-FD02-112014	66.7%

Dilutions

The samples presented below in table 11 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 11
Dilutions: TOC
NA Puerto Rico SWMU 55 Groundwater Sampling 5th Event 2014

Sample ID	Analysis	Dilution Factor
JM04-55MW15-111214	TOC	2X
JM04-55MW05-111214	TOC	2X
JM04-55MW06-111214	TOC	5X
JM04-7MW24-111414	TOC	2X
JM04-55MW11-111414	TOC	2X
JM04-55IW02-111414	TOC	5X
JM04-55IW04-111414	TOC	2X
JM04-BRW01-111414	TOC	5X
JM04-FD03-111414	TOC	5X
JM04-7MW07-111714	TOC	10X
JM04-55MW09-111714	TOC	2X

TABLE 11
Dilutions: TOC
NA Puerto Rico SWMU 55 Groundwater Sampling 5th Event 2014

Sample ID	Analysis	Dilution Factor
JM04-7MW23-112014	TOC	2X
JM04-55MW25-112014	TOC	2X
JM04-55MW26-112014	TOC	2X
JM04-55MW12-112014	TOC	2X
JM04-FD02-112014	TOC	2X

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Sulfide

Holding Time

All samples analyses were performed within hold time.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

Sulfide detected in the blank samples is listed in Table 12.

TABLE 12
Blank Contamination: Sulfide
NA Puerto Rico SWMU 55 Groundwater Sampling 5th Event 2014

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
214111307	Method Blank	MB	Sulfide	0.007	mg/L	JM04-55MW15-111214 JM04-55MW06-111214

TABLE 12
Blank Contamination: Sulfide
NA Puerto Rico SWMU 55 Groundwater Sampling 5th Event 2014

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
						JM04-55MW18-111214
214111307 214111511	JM04-EB01-111414	EB	Sulfide	0.042	mg/L	JM04-55MW06-111214 JM04-55IW02-1114114 JM04-55IW04-111414 JM04-55BRW01-111414 JM04-FD03-111414
214111307 214111511	JM04-EB02-111414	EB	Sulfide	0.046	mg/L	JM04-55MW15-111214 JM04-55MW18-111214 JM04-7MW24-111414 JM04-7MW10-111414 JM04-55MW11-111414
214111904	Continuing Calibration Blank	CCB	Sulfide	0.007	mg/L	JM04-7MW07-111714 JM04-55MW10-111714
214112116	Method Blank	MB	Sulfide	0.008	mg/L	JM04-55MW02-112014 JM04-55MW26-112014
214112116	Method Blank	MB	Sulfide	0.005	mg/L	JM04-55MW01-112014 JM04-55MW14-112014 JM04-7MW23-112014 JM04-EB04-112014 JM04-55MW12-112014 JM04-7MW22-112014

Flags were applied to the analyte in the associated samples in the following manner:

When the analyte was detected in the continuing calibration blank, equipment blank, and/or method blank, the detected compounds, that were less than 5 times the concentration detected for the analyte listed and below the limit of quantitation (LOQ), were flagged "U" due to possible laboratory and/or field contamination with a validation note of "CCB" for continuing calibration blank, "MB" for method blank and/or an "EB" for equipment blank. The detects that were above the limit of quantitation (LOQ) were qualified as estimated "JB" for equipment blanks due to possible field contamination with a validation note of "EB".

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-55MW06-111214 and JM04-7MW07-050214. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Field Duplicates

Field samples JM04-55MW17-111214, JM04-55MW14-043014, and JM04-55MW12-050114 were collected and analyzed in duplicate. Field duplicate precision objectives were met.

Laboratory Duplicates

The laboratory duplicate precision objective was not met for the sample noted in table 13 below:

TABLE 13
Laboratory Duplicate Recovery Out of QC Limits: Sulfide
NA Puerto Rico SWMU 55 Groundwater Sampling 5th Event 2014

QC Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Qualifiers Applied
Laboratory Duplicate	Sulfide	60%	20%	JM04-55MW01-112014	Non-Detect - UJ

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Chloride, Nitrate, Nitrite, and Sulfate

Holding Time

All samples analyses were performed within hold time.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blanks

There were no detections noted in the method blank and continuing calibration blank. Chloride, Nitrate, and Sulfate detected in the equipment blank samples is listed in Table 14.

TABLE 14
Blank Contamination: Chloride, Nitrate, and Sulfate
NA Puerto Rico SWMU 55 Groundwater Sampling 5th Event 2014

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected
214111307	JM04-EB01-111414	EB	Chloride	0.064	mg/L	Associated sample results were non-detect; therefore no qualifiers are needed.
214111904 214112116	JM04-EB03-111714	EB	Chloride	0.240	mg/L	JM04-55MW12-112014
214112116	JM04-EB04-112014	EB	Chloride	16.8	mg/L	JM04-55MW02-112014 JM04-55MW01-112014 JM04-55MW14-112014 JM04-7MW23-112014
214112116	JM04-EB04-112014	EB	Sulfate	9.24	mg/L	JM04-55MW02-112014 JM04-55MW01-112014 JM04-55MW14-112014 JM04-7MW23-112014
214112116	JM04-EB04-112014	EB	Nitrate	0.397	mg/L	JM04-55MW01-112014 JM04-55MW14-112014

Flags were applied to the analyte in the associated samples in the following manner:

When the analyte was detected in the equipment blanks, the detected compounds, that were less than 5 times the concentration detected for the analyte listed and below the limit of quantitation (LOQ), were flagged "U" due to possible field contamination with a validation note of "EB". The detects that were above the limit of quantitation (LOQ) were qualified as estimated "JB" for equipment blanks due to possible field contamination with a validation note of "EB".

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS/LCSD samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field samples JM04-55MW06-111214 and JM04-7MW07-111714. The laboratory chose sample JM04-55MW02-112014 as the batch quality control sample for the matrix spike and matrix spike duplicate analyses. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met for all samples except as noted in table 15 below:

TABLE 15
Matrix Spike and Matrix Spike Duplicate Recovery Out of QC Limits: Nitrite
NA Puerto Rico SWMU 55 Groundwater Sampling 5th Event 2014

QC Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Qualifiers Applied
Matrix Spike Matrix Spike Duplicate	Nitrite	66% 67%	80-120	JM04-55MW06-111214	Non-Detect - UJ
Matrix Spike Matrix Spike Duplicate	Nitrite	69% 68%	80-120	JM04-7MW07-111714	Non-Detect - UJ
Matrix Spike Matrix Spike Duplicate	Nitrite	77% 76%	80-120	JM04-55MW02-112014	Non-Detect - UJ

Field Duplicates

Field samples JM04-55MW17-111214, JM04-55MW14-043014, and JM04-55MW12-112014 were collected and analyzed in duplicate. Field duplicate precision objectives were not met for the samples listed in table 16 below; therefore, results were qualified as estimated "J":

TABLE 16
Field Duplicate RPD Out of QC Limits: Chloride
NA Puerto Rico SWMU 55 Groundwater Sampling 5th Event 2014

Compound	Affected Samples	%RPD
Chloride	JM04-55MW17-112114 / JM04-FD01-111214	45.9%

Dilutions

The samples presented below in table 17 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 17
Dilutions: Anions – Chloride, Nitrate, Nitrite, and Sulfate
NA Puerto Rico SWMU 55 Groundwater Sampling 5th Event 2014

Sample ID	Analysis	Dilution Factor
JM04-55MW15-111214	Nitrate, Nitrite, Sulfate	30X
	Chloride	2000X
JM04-55MW05-111214	Nitrate, Nitrite, Sulfate	20X
	Chloride	1000X
JM04-55MW16-111214	Nitrate, Nitrite, and Sulfate	5X
	Chloride	200X
JM04-55MW06-111214	Nitrate, Nitrite, Sulfate	10X
	Chloride	1000X
JM04-55MW17-111214	Nitrate and Nitrite	30X
	Sulfate	50X
	Chloride	2000X
JM04-55MW18-111214	Nitrate and Nitrite	100X
	Sulfate	500X
	Chloride	10000X

TABLE 17
Dilutions: Anions – Chloride, Nitrate, Nitrite, and Sulfate
NA Puerto Rico SWMU 55 Groundwater Sampling 5th Event 2014

Sample ID	Analysis	Dilution Factor
JM04-FD01-111214	Nitrate and Nitrite	30X
	Sulfate	50X
	Chloride	2000X
JM04-7MW07-111714	Nitrate, Nitrite, Sulfate	5X
	Chloride	200X
JM04-55MW09-111714	Nitrate and Nitrite	50X
	Sulfate and Chloride	2000X
JM04-55MW10-111714	Nitrate and Nitrite	20X
	Sulfate	100X
	Chloride	1000X
JM04-55MW02-112014	Sulfate	20X
	Chloride	100X
JM04-55MW01-112014	Nitrate, Nitrite, and Sulfate	4X
	Chloride	100X
JM04-55MW14-112014	Nitrate and Nitrite	10X
	Sulfate	100X
	Chloride	1000X
JM04-7MW23-112014	Nitrate and Nitrite	10X
	Sulfate and Chloride	500X
JM04-55MW25-112014	Nitrate, Nitrite, and Sulfate	2X
	Chloride	100X
JM04-55MW26-112014	Nitrate, Nitrite, and Sulfate	4X
	Chloride	100X
JM04-55MW12-112014	Nitrate, Nitrite, and Sulfate	2X
	Chloride	200X
JM04-FD02-112014	Nitrate, Nitrite, and Sulfate	2X
	Chloride	200X
JM04-7MW22-112014	Nitrate and Nitrite	10X
	Sulfate and Chloride	500X

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Data Usability

A review of the analytical data submitted regarding the NA Puerto Rico SWMU 55 Groundwater Sampling 5th Event 2014, by CH2M HILL has been completed. An overall evaluation of the data indicates that the sample handling, shipment, and analytical procedures have been adequately completed, and that the analytical results should be considered usable as qualified. The validation review demonstrated that the analytical systems were generally in control and the data results can be used in the decision making process.

Data reviewed in this report meet the data quality goals stated in the project quality assurance project plan (QAPP). The data user can use the data recognizing the potential data biases indicated by the data qualifiers assigned to some results. Data was qualified for a subset of results based on equipment blank, method blank and/or continuing calibration blank contamination, low matrix spike and matrix spike duplicate recovery bias, laboratory duplicate and/or field duplicate imprecision biases.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-55MW15-111214

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214111307

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21411130701

Level: (low/med)

Lab File ID: 2141117/j6005

% Moisture: not dec.

Date Collected: 11/12/14 Time: 1210

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 11/13/14

Instrument ID: MSV9

Date Analyzed: 11/17/14 Time: 1547

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: CEK

Soil Aliquot Volume: (µL)

Prep Batch: Analytical Batch: 545266

Analytical Method: SW-846 8260B

CONCENTRATION UNITS ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	14.7		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.380	J	0.103	0.200	1.00

FORM I VOA

C-1

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-TB01 111214

Lab Name: GCAI Contract.

Lab Code: LA024 Case No.. SAS No.. SDG No 214111307

Matrix. (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21411130702

Level: (low/med) Lab File ID. 2141117/j6006

% Moisture not dec. Date Collected: 11/12/14 Time 0000

GC Column RTX-VMS 30 ID: 25 (mm) Date Received: 11/13/14

Instrument ID MSV9 Date Analyzed: 11/17/14 Time: 1607

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CEK

Soil Aliquot Volume (µL) Prep Batch. Analytical Batch: 545266

Analytical Method: SW-846 8260B

CONCENTRATION UNITS ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-55MW05-111214

Lab Name: GCAL Contract:

Lab Code: LA024 Case No. SAS No. SDG No.: 214111307

Matrix: (soil/water) Water

Sample wt/vol 5 (g/ml) mL Lab Sample ID: 21411130703

Level: (low/med) Lab File ID: 2141117j6007

% Moisture: not dec Date Collected 11/12/14 Time: 1140

GC Column RTX-VMS 30 ID .25 (mm) Date Received: 11/13/14

Instrument ID: MSV9 Date Analyzed: 11/17/14 Time: 1627

Soil Extract Volume: (µL) Dilution Factor 1 Analyst: CFK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 545266

Analytical Method: SW-846 8260B

CONCENTRATION UNITS ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-55MW16-111214

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No 214111307

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21411130704

Level: (low/med) Lab File ID: 2141117/j6008

% Moisture: not dec Date Collected: 11/12/14 Time 1430

GC Column: RTX-VMS-30 ID: 25 (mm) Date Received: 11/13/14

Instrument ID: MSV9 Date Analyzed 11/17/14 Time 1647

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CEK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 545266

Analytical Method: SW-846 8260B

CONCENTRATION UNITS ug/l

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	1.40		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis 1 2 Dichloroethene	0.200	U	0.103	0.200	1.00

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04 55MW06-111214

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214111307

Matrix: (soil/water) Water

Sample wt/vol. 5 (g/ml) mL Lab Sample ID: 21411130705

Level: (low/med) Lab File ID. 2141117j6016

% Moisture: not dec Date Collected: 11/12/14 Time: 1400

GC Column: RTX-VMS-30 ID. .25 (mm) Date Received: 11/13/14

Instrument ID MSV9 Date Analyzed: 11/17/14 Time: 1928

Soil Extract Volume: (µL) Dilution Factor 1 Analyst: CEK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch 545266

CONCENTRATION UNITS ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-55MW17 111214

Lab Name: GCAL Contract.

Lab Code: LA024 Case No. SAS No. SDG No.: 214111307

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21411130708

Level: (low/med) Lab File ID: 2141117/j6009

% Moisture: not dec Date Collected: 11/12/14 Time: 1605

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/13/14

Instrument ID: MSV9 Date Analyzed: 11/17/14 Time: 1708

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CEK

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 545266

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	54.4		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.510	J	0.103	0.200	1.00

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-55MW18-111214

Lab Name: GCAL Contract:

Lab Code: LA024 Case No. SAS No SDG No. 214111307

Matrix: (soil/water) Water

Sample wt/vol 5 (g/ml) mL Lab Sample ID. 21411130709

Level: (low/med) Lab File ID: 2141117/j6010

% Moisture: not dec Date Collected 11/12/14 Time: 1610

GC Column: RTX-VMS-30 ID 25 (mm) Date Received 11/13/14

Instrument ID MSV9 Date Analyzed: 11/17/14 Time: 1728

Soil Extract Volume (µL) Dilution Factor: 1 Analyst. CEK

Soil Aliquot Volume (µL) Prep Batch: Analytical Batch. 545266

Analytical Method: SW-846 8260B

CONCENTRATION UNITS ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis 1,2 Dichloroethene	0.200	U	0.103	0.200	1.00

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04 FD01-111214

Lab Name: GCAL Contract:

Lab Code: LA024 Case No SAS No.: SDG No.: 214111307

Matrix: (soil/water) Water

Sample wt/vol 5 (g/ml) mL Lab Sample ID: 21411130710

Level (low/med) Lab File ID: 2141117j6011

% Moisture not dec Date Collected: 11/12/14 Time 0000

GC Column: RTX-VMS-30 ID .25 (mm) Date Received 11/13/14

Instrument ID MSV9 Date Analyzed: 11/17/14 Time: 1748

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: CEK

Soil Aliquot Volume (µL) Prep Batch: Analytical Batch: 545266

CONCENTRATION UNITS ug/L Analytical Method SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	54.8		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.498	J	0.103	0.200	1.00

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 545631

CONCENTRATION UNITS: ug/L

Sample ID: JM04-55MW15-111214

Contract:

SAS No.: SDG No.: 214111307

Lab Sample ID: 21411130701

Date Collected: 11/12/14 Time: 1210

Date Received: 11/13/14

Date Extracted:

Date Analyzed: 11/24/14 Time: 1459

Dilution Factor: 1 Analyst: JAR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2141124/v8010

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	2.00

C-4

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 545631

CONCENTRATION UNITS: ug/L

Sample ID: JM04-55MW05-111214

Contract:

SAS No.: SDG No.: 214111307

Lab Sample ID: 21411130703

Date Collected: 11/12/14 Time: 1140

Date Received: 11/13/14

Date Extracted:

Date Analyzed: 11/24/14 Time: 1508

Dilution Factor: 1 Analyst: JAR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2141124/v8011

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

ok

214111307

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 545631

Sample ID: JM04-55MW05-111214DL
Contract:
SAS No.: SDG No.: 214111307
Lab Sample ID: 21411130703DL
Date Collected: 11/12/14 Time: 1140
Date Received: 11/13/14
Date Extracted:
Date Analyzed: 11/24/14 Time: 1513
Dilution Factor: 10 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141124/v8012

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	173		4.35	10.9	20.0

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 545631
CONCENTRATION UNITS: ug/L

Sample ID: JM04-55MW16-111214
Contract:
SAS No.: SDG No.: 214111307
Lab Sample ID: 21411130704
Date Collected: 11/12/14 Time: 1430
Date Received: 11/13/14
Date Extracted:
Date Analyzed: 11/24/14 Time: 1522
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141124/v8013

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	2.00

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 545631

Sample ID: JM04-55MW06-111214

Contract:

SAS No.: SDG No.: 214111307

Lab Sample ID: 21411130705

Date Collected: 11/12/14 Time: 1400

Date Received: 11/13/14

Date Extracted:

Date Analyzed: 11/24/14 Time: 1530

Dilution Factor: 1 Analyst: JAR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2141124/v8014

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	39.5		0.435	1.09	2.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 545631

Sample ID: JM04-55MW17-111214
Contract:
SAS No.: SDG No.: 214111307
Lab Sample ID: 21411130708
Date Collected: 11/12/14 Time: 1605
Date Received: 11/13/14
Date Extracted:
Date Analyzed: 11/24/14 Time: 1627
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141124/v8020

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	3.30		0.087	0.220	1.00
74-85-1	Ethene	3.14		0.071	0.290	1.00
74-82-8	Methane	16.4		0.435	1.09	2.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW18-111214
Lab Code: LA024 Case No.:
Contract:
Matrix: Water
SAS No.: SDG No.: 214111307
Sample wt/vol: 5 Units: mL
Lab Sample ID: 21411130709
Level: (low/med)
Date Collected: 11/12/14 Time: 1610
% Moisture: decanted: (Y/N)
Date Received: 11/13/14
GC Column: GS-Q 30 ID: 53 (mm)
Date Extracted:
Concentrated Extract Volume: 5000 (µL)
Date Analyzed: 11/24/14 Time: 1635
Soil Aliquot Volume: (µL)
Dilution Factor: 1 Analyst: JAR
Injection Volume: 1 (µL)
Prep Method:
GPC Cleanup: (Y/N) N pH:
Analytical Method: RSK-175
Prep Batch: Analytical Batch: 545631
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
CONCENTRATION UNITS: ug/L
Lab File ID: 2141124/v8021

CAS NO.	*COMPOUND*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	2.00

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 545631

CONCENTRATION UNITS: ug/L

Sample ID: JM04-FD01-111214

Contract:

SAS No.: SDG No.: 214111307

Lab Sample ID: 21411130710

Date Collected: 11/12/14 Time: 0000

Date Received: 11/13/14

Date Extracted:

Date Analyzed: 11/24/14 Time: 1647

Dilution Factor: 1 Analyst: JAR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2141124/v8023

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	2.00

FORM I ORG-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-55MW15-111214

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No..

SDG No.: 214111307

Level: (low / med)

% Solids:

Lab Sample ID: 21411130701

Date Received: 11/13/14 Time: 0930

Date Collected 11/12/14 Time: 1210

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.50	mg/L	U	0.25	0.50	1.00	SW-846 6020A Dissolved	MS	11/17/14 2328

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-55MW05-111214

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No..

SDG No.: 214111307

Level: (low / med)

% Solids:

Lab Sample ID: 21411130703

Date Received: 11/13/14 Time. 0930

Date Collected. 11/12/14 Time: 1140

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.25	mg/L	U	0.13	0.25	0.50	SW-846 6020A Dissolved	MS	11/17/14 2330

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-55MW16-111214

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No..

SDG No : 214111307

Level: (low / med)

% Solids:

Lab Sample ID: 21411130704

Date Received: 11/13/14 Time: 0930

Date Collected 11/12/14 Time: 1430

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6020A Dissolved	MS	11/17/14 2333

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-55MW06-111214

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No..

SDG No.: 214111307

Level: (low / med)

% Solids:

Lab Sample ID: 21411130705

Date Received: 11/13/14 Time: 0930

Date Collected: 11/12/14 Time: 1400

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.25	mg/L	U	0.13	0.25	0.50	SW-846 6020A Dissolved	MS	11/17/14 2335

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-55MW17-111214

Lab Code. LA024 Case No..

Contract:

Matrix: (soil / water) Water

SAS No..

SDG No 214111307

Level: (low / med)

% Solids:

Lab Sample ID: 21411130708

Date Received: 11/13/14 Time: 0930

Date Collected. 11/12/14 Time: 1605

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.50	mg/L	U	0.25	0.50	1.00	SW-846 6020A Dissolved	MS	11/17/14 2345

FORM - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-55MW18-111214

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214111307

Level: (low / med)

% Solids:

Lab Sample ID: 21411130709

Date Received 11/13/14 Time: 0930

Date Collected: 11/12/14 Time: 1610

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.25	mg/L	U	0.13	0.25	0.50	SW-846 6020A Dissolved	MS	11/17/14 2348

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-FD01-111214

Lab Code: LA024 Case No.:

Contract:

Matrix (soil / water) Water

SAS No.: SDG No.: 214111307

Level: (low / med)

% Solids:

Lab Sample ID: 21411130710

Date Received: 11/13/14 Time: 0930

Date Collected: 11/12/14 Time: 0000

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.50	mg/L	U	0.25	0.50	1.00	SW-846 6020A Dissolved	MS	11/17/14 2358

Sample Results

JM04-55MW15-111214	Collect Date	11/12/2014 12:10	GCAL ID	21411130701
	Receive Date	11/13/2014 09:30	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	30	11/13/2014 13:35	RXJ	545042

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	3.00U	1.50	3.00	6.00	mg/L
14797-65-0	Nitrite	3.00U	1.50	3.00	6.00	mg/L
14808-79-8	Sulfate	211	1.50	3.00	6.00	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	2000	11/24/2014 16:04	DMT	545728

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	3600	100	200	400	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/20/2014 08:45	DJH	545488

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	440	0.26	0.50	1.0	mg/L CaCO3

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/16/2014 15:06	KGL2	545093

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.008J	0.005	0.010	0.020	mg/L U-- MB, EB

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	2	11/14/2014 23:40	KGL2	545094

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	2.0U	0.60	2.0	2.0	mg/L

ok

Sample Results

JM04-55MW05-111214	Collect Date	11/12/2014 11:40	GCAL ID	21411130703
	Receive Date	11/13/2014 09:30	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	20	11/13/2014 13:52	RXJ	545042

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	2.00U	1.00	2.00	4.00	mg/L
14797-65-0	Nitrite	2.00U	1.00	2.00	4.00	mg/L
14808-79-8	Sulfate	124	1.00	2.00	4.00	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/25/2014 17:09	RXJ	545801

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	2010	50.0	100	200	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/20/2014 08:45	DJH	545488

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	507	0.26	0.50	1.0	mg/L CaCO3

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/16/2014 15:05	KGL2	545093

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.010U	0.005	0.010	0.020	mg/L

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	2	11/15/2014 08:50	KGL2	545094

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	1.3J	0.60	2.0	2.0	mg/L

ok

Sample Results

JM04-55MW16-111214	Collect Date	11/12/2014 14:30	GCAL ID	21411130704
	Receive Date	11/13/2014 09:30	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	11/13/2014 15:02	RXJ	545042

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	0.387J	0.250	0.500	1.00	mg/L
14797-65-0	Nitrite	0.500U	0.250	0.500	1.00	mg/L
14808-79-8	Sulfate	35.0	0.250	0.500	1.00	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	200	11/23/2014 23:01	DMT	545740

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	326	10.0	20.0	40.0	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/20/2014 08:45	DJH	545488

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	317	0.26	0.50	1.0	mg/L CaCO3

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/16/2014 15:10	KGL2	545093

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.010U	0.005	0.010	0.020	mg/L

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/14/2014 19:20	KGL2	545094

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	1.0U	0.30	1.0	1.0	mg/L

ch

Sample Results

JM04-55MW06-111214	Collect Date	11/12/2014 14:00	GCAL ID	21411130705
	Receive Date	11/13/2014 09:30	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/23/2014 23:19	DMT	545740

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	1100	50.0	100	200	mg/L J-MSH

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	10	11/13/2014 14:10	RXJ	545042

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	1.00U	0.500	1.00	2.00	mg/L
14797-65-0	Nitrite	1.00U	0.500	1.00	2.00	mg/L ijJ-MSL
14808-79-8	Sulfate	62.6	0.500	1.00	2.00	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/20/2014 08:45	DJH	545488

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	492	0.26	0.50	1.0	mg/L CaCO3

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/16/2014 15:07	KGL2	545093

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.020	0.005	0.010	0.020	mg/L U-MBG

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	11/15/2014 09:07	KGL2	545094

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	5.0U	1.5	5.0	5.0	mg/L

CP

Sample Results

JM04-55MW06-111214 MS	Collect Date	11/12/2014 14:00	GCAL ID	21411130706
	Receive Date	11/13/2014 09:30	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	10	11/13/2014 14:27	RXJ	545042

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	24.6	0.500	1.00	2.00	mg/L
14797-65-0	Nitrite	16.6	0.500	1.00	2.00	mg/L
14808-79-8	Sulfate	87.8	0.500	1.00	2.00	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/23/2014 23:36	DMT	545740

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	4220	50.0	100	200	mg/L

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/16/2014 15:08	KGL2	545093

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.558	0.005	0.010	0.020	mg/L

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	11/15/2014 09:25	KGL2	545094

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	250	1.5	5.0	5.0	mg/L

JM04-55MW06-111214 SD	Collect Date	11/12/2014 14:00	GCAL ID	21411130707
	Receive Date	11/13/2014 09:30	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/23/2014 23:54	DMT	545740

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	4190	50.0	100	200	mg/L

Sample Results

JM04-55MW06-111214 SD

Collect Date	11/12/2014 14:00	**GCAL ID**	21411130707
Receive Date	11/13/2014 09:30	**Matrix**	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	10	11/13/2014 14:45	RXJ	545042

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	25.1	0.500	1.00	2.00	mg/L
14797-65-0	Nitrite	16.8	0.500	1.00	2.00	mg/L
14808-79-8	Sulfate	87 7	0.500	1.00	2.00	mg/L

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/16/2014 15:09	KGL2	545093

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.553	0.005	0.010	0.020	mg/L

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	11/15/2014 09:41	KGL2	545094

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	250	1.5	5.0	5.0	mg/L

JM04-55MW17-111214

Collect Date	11/12/2014 16:05	**GCAL ID**	21411130708
Receive Date	11/13/2014 09:30	**Matrix**	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	50	11/24/2014 00:46	DMT	545740

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14808-79-8	Sulfate	332	2.50	5.00	10.0	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	2000	11/25/2014 15:59	RXJ	545801

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	4740	100	200	400	mg/L J-FD

CL

Sample Results

JM04-55MW17-111214

Collect Date	11/12/2014 16:05	**GCAL ID**	21411130708
Receive Date	11/13/2014 09:30	**Matrix**	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	30	11/13/2014 15:20	RXJ	545042

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	3.00U	1.50	3.00	6.00	mg/L
14797-65-0	Nitrite	3.00U	1.50	3.00	6.00	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/20/2014 08:45	DJH	545488

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	411	0.26	0.50	1.0	mg/L CaCO3

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/16/2014 15:11	KGL2	545093

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.010U	0.005	0.010	0.020	mg/L

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/17/2014 18:04	KLC2	545221

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	1.0U	0.30	1.0	1.0	mg/L

JM04-55MW18-111214

Collect Date	11/12/2014 16:10	**GCAL ID**	21411130709
Receive Date	11/13/2014 09:30	**Matrix**	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	500	11/24/2014 01:21	DMT	545740

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14808-79-8	Sulfate	2210	25.0	50.0	100	mg/L

CA

Sample Results

JM04-55MW18-111214	Collect Date	11/12/2014 16:10	GCAL ID	21411130709
	Receive Date	11/13/2014 09:30	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	100	11/13/2014 15:37	RXJ	545042

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	10.0U	5.00	10.0	20.0	mg/L
14797-65-0	Nitrite	10.0U	5.00	10.0	20.0	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	10000	11/24/2014 01:38	DMT	545740

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	20200	500	1000	2000	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/20/2014 08:45	DJH	545488

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	238	0.26	0.50	1.0	mg/L CaCO3

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/16/2014 15:12	KGL2	545093

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	~~0.005J~~	0.005	0.010	0.020	mg/L U-MB,EB

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/17/2014 18:24	KLC2	545221

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	0.37J	0.30	1.0	1.0	mg/L

c.f

Sample Results

JM04-FD01-111214	Collect Date	11/12/2014 00:00	GCAL ID	21411130710
	Receive Date	11/13/2014 09:30	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	30	11/13/2014 15:54	RXJ	545042

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	3.00U	1.50	3.00	6.00	mg/L
14797-65-0	Nitrite	3.00U	1.50	3.00	6.00	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	2000	11/24/2014 02:13	DMT	545740

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	7570	100	200	400	mg/L J-FD

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	50	11/24/2014 01:55	DMT	545740

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14808-79-8	Sulfate	347	2.50	5.00	10.0	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/20/2014 08:45	DJH	545488

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	392	0.26	0.50	1.0	mg/L CaCO3

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/16/2014 15:02	KGL2	545093

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.010U	0.005	0.010	0.020	mg/L

Sample Results

JM04-FD01-111214	Collect Date	11/12/2014 00:00	GCAL ID	21411130710
	Receive Date	11/13/2014 09:30	Matrix	Water

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/17/2014 19:42	KLC2	545221

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	1.0U	0.30	1.0	1.0	mg/L

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-7MW24-111414

Lab Name: GCAL Contract:

Lab Code: LA024 Case No SAS No SDG No : 214111511

Matrix (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21411151101

Level: (low/med) Lab File ID: 2141118/j6032

% Moisture: not dec Date Collected: 11/14/14 Time 1351

GC Column: RTX VMS-30 ID 25 (mm) Date Received 11/15/14

Instrument ID: MSV9 Date Analyzed: 11/18/14 Time: 1023

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 545317

Analytical Method: SW-846 8260B

CONCENTRATION UNITS ug/l

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	13.4		0.161	0.200	1.00
75 01 4	Vinyl chloride	22.4		0.127	0.200	1.00
156-59 2	cis-1,2-Dichloroethene	5.88		0 103	0 200	1.00

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-EB01 111414

Lab Name: GCAL Contract:

Lab Code LA024 Case No. SAS No: SDG No. 214111511

Matrix: (soil/water) Water

Sample wt/vol 5 (g/ml) mL Lab Sample ID 21411151102

Level: (low/med) Lab File ID 2141118/j6033

% Moisture: not dec Date Collected 11/14/14 Time 0800

GC Column: RTX-VMS 30 ID .25 (mm) Date Received: 11/15/14

Instrument ID MSV9 Date Analyzed: 11/18/14 Time 1043

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst LBH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 545317

Analytical Method: SW-846 8260B

CONCENTRATION UNITS ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75 01-4	Vinyl chloride	0 200	U	0.127	0.200	1.00
156 59-2	cis-1,2-Dichloroethene	0 200	U	0.103	0.200	1 00

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-TB03-111414

Lab Name GCAL Contract.

Lab Code: LA024 Case No. SAS No. SDG No.: 214111511

Matrix. (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21411151103

Level. (low/med) Lab File ID: 2141118/j6034

% Moisture: not dec Date Collected: 11/14/14 Time: 0000

GC Column: RTX-VMS-30 ID 25 (mm) Date Received: 11/15/14

Instrument ID. MSV9 Date Analyzed: 11/18/14 Time: 1103

Soil Extract Volume: (µL) Dilution Factor 1 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch. Analytical Batch 545317

Analytical Method. SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-7MW10 111414

Lab Name: GCAL Contract:

Lab Code: LA024 Case No. SAS No.: SDG No 214111511

Matrix. (soil/water) Water

Sample wt/vol: 5 (g/mL) mL Lab Sample ID 21411151104

Level: (low/med) Lab File ID 2141118/j6035

% Moisture: not dec. Date Collected 11/14/14 Time: 1100

GC Column: RTX-VMS 30 ID .25 (mm) Date Received 11/15/14

Instrument ID MSV9 Date Analyzed 11/18/14 Time: 1123

Soil Extract Volume (µL) Dilution Factor: 1 Analyst. LBH

Soil Aliquot Volume: (µL) Prep Batch Analytical Batch: 545317

Analytical Method: SW 846 8260B

CONCENTRATION UNITS ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	2.59		0.127	0.200	1.00
156 59-2	cis-1 2-Dichloroethene	10.5		0.103	0 200	1 00

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04 EB02-111414

Lab Name GCAL Contract:

Lab Code: LA024 Case No SAS No.. SDG No 214111511

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID 21411151105

Level: (low/med) Lab File ID: 2141118/j6036

% Moisture: not dec. Date Collected 11/14/14 Time 0815

GC Column RTX-VMS-30 ID 25 (mm) Date Received: 11/15/14

Instrument ID MSV9 Date Analyzed: 11/18/14 Time 1143

Soil Extract Volume (µL) Dilution Factor: 1 Analyst LBH

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 545317

Analytical Method: SW-846 8260B

CONCENTRATION UNITS ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-55MW11-111414

Lab Name: GCAL Contract

Lab Code: LA024 Case No SAS No.: SDG No 214111511

Matrix (soil/water) Water

Sample wt/vol 5 (g/ml) mL Lab Sample ID: 21411151106

Level: (low/med) Lab File ID 2141118j6037

% Moisture: not dec. Date Collected. 11/14/14 Time 0940

GC Column: RTX-VMS-30 ID: 25 (mm) Date Received 11/15/14

Instrument ID MSV9 Date Analyzed 11/18/14 Time: 1203

Soil Extract Volume: (µL) Dilution Factor 1 Analyst LBH

Soil Aliquot Volume (µL) Prep Batch: Analytical Batch: 545317

CONCENTRATION UNITS ug/L Analytical Method SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	113		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis 1 2-Dichloroethene	5.70		0.103	0.200	1.00

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04 55IW02-111414

Lab Name GCAL Contract:

Lab Code: LA024 Case No: SAS No.: SDG No 214111511

Matrix: (soil/water) Water

Sample wt/vol. 5 (g/ml) mL Lab Sample ID: 21411151107

Level (low/med) Lab File ID: 2141118/j6038

% Moisture: not dec Date Collected: 11/14/14 Time: 1005

GC Column: RTX VMS-30 ID 25 (mm) Date Received 11/15/14

Instrument ID: MSV9 Date Analyzed 11/18/14 Time 1223

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch Analytical Batch: 545317

Analytical Method: SW-846 8260B

CONCENTRATION UNITS ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79 01-6	Trichloroethene	14 6		0.161	0.200	1 00
75-01 4	Vinyl chloride	6 51		0 127	0.200	1.00
156-59-2	cis-1.2 Dichloroethene	2 73		0 103	0 200	1.00

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-55IW04-111414

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No: 214111511

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21411151108

Level: (low/med)

Lab File ID: 2141118/j6039

% Moisture: not dec.

Date Collected: 11/14/14 Time: 1355

GC Column: RTX-VMS 30 ID: .25 (mm)

Date Received: 11/15/14

Instrument ID: MSV9

Date Analyzed: 11/18/14 Time: 1243

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL)

Prep Batch: Analytical Batch: 545317

Analytical Method: SW-846 8260B

CONCENTRATION UNITS ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	46.6		0.161	0.200	1.00
75-01-4	Vinyl chloride	4.44		0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	2.50		0.103	0.200	1.00

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55BRW01-111414

Lab Name: GCAL Contract:

Lab Code: LA024 Case No SAS No.. SDG No: 214111511

Matrix: (soil/water) Water

Sample wt/vol 5 (g/ml) mL Lab Sample ID. 21411151109

Level (low/med) Lab File ID 2141118/j6040

% Moisture: not dec. Date Collected 11/14/14 Time: 1113

GC Column RTX-VMS-30 ID 25 (mm) Date Received: 11/15/14

Instrument ID MSV9 Date Analyzed: 11/18/14 Time 1303

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL) Prep Batch. Analytical Batch. 545317

CONCENTRATION UNITS ug/L Analytical Method. SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-FD03-111414

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214111511

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21411151110

Level: (low/med) Lab File ID: 2141118/j6041

% Moisture: not dec. Date Collected: 11/14/14 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm Date Received: 11/15/14

Instrument ID: MSV9 Date Analyzed: 11/18/14 Time: 1323

Soil Extract Volume: (µL Dilution Factor: 1 Analyst: LBH

Soil Aliquot Volume: (µL Prep Batch: Analytical Batch: 545317

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

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FORM I VOA

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 545827

CONCENTRATION UNITS: ug/L

Sample ID: JM04-7MW24-111414

Contract:

SAS No.: SDG No.: 214111511

Lab Sample ID: 21411151101

Date Collected: 11/14/14 Time: 1351

Date Received: 11/15/14

Date Extracted:

Date Analyzed: 11/25/14 Time: 1712

Dilution Factor: 1 Analyst: JAR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2141125/v8029

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 545827

Sample ID: JM04-7MW24-111414DL
Contract:
SAS No.: SDG No.: 214111511
Lab Sample ID: 21411151101DL
Date Collected: 11/14/14 Time: 1351
Date Received: 11/15/14
Date Extracted:
Date Analyzed: 11/25/14 Time: 1718
Dilution Factor: 200 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141125/v8030

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	4740		87.0	218	400

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-EB01-111414
Lab Code: LA024 Case No.:
Contract:
Matrix: Water
SAS No.: SDG No.: 214111511
Sample wt/vol: 5 Units: mL
Lab Sample ID: 21411151102
Level: (low/med)
Date Collected: 11/14/14 Time: 0800
% Moisture: decanted: (Y/N)
Date Received: 11/15/14
GC Column: GS-Q 30 ID: .53 (mm)
Date Extracted:
Concentrated Extract Volume: 5000 (µL)
Date Analyzed: 11/25/14 Time: 1724
Soil Aliquot Volume: (µL)
Dilution Factor: 1 Analyst: JAR
Injection Volume: 1 (µL)
Prep Method:
GPC Cleanup: (Y/N) N pH:
Analytical Method: RSK-175
Prep Batch: Analytical Batch: 545827
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
CONCENTRATION UNITS: ug/L
Lab File ID: 2141125/v8031

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	2.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 545827

Sample ID: JM04-7MW10-111414
Contract:
SAS No.: SDG No.: 214111511
Lab Sample ID: 21411151104
Date Collected: 11/14/14 Time: 1100
Date Received: 11/15/14
Date Extracted:
Date Analyzed: 11/25/14 Time: 1729
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141125/v8032

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

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FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 545827

CONCENTRATION UNITS: ug/L

Sample ID: JM04-7MW10-111414DL

Contract:

SAS No.: SDG No.: 214111511

Lab Sample ID: 21411151104DL

Date Collected: 11/14/14 Time: 1100

Date Received: 11/15/14

Date Extracted:

Date Analyzed: 11/25/14 Time: 1736

Dilution Factor: 100 Analyst: JAR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2141125/v8033

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	2550		43.5	109	200

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-EB02-111414
Lab Code: LA024 Case No.:
Contract:
Matrix: Water
SAS No.: SDG No.: 214111511
Sample wt/vol: 5 Units: mL
Lab Sample ID: 21411151105
Level: (low/med)
Date Collected: 11/14/14 Time: 0815
% Moisture: decanted: (Y/N)
Date Received: 11/15/14
GC Column: GS-Q 30 ID: .53 (mm)
Date Extracted:
Concentrated Extract Volume: 5000 (µL)
Date Analyzed: 11/25/14 Time: 1741
Soil Aliquot Volume: (µL)
Dilution Factor: 1 Analyst: JAR
Injection Volume: 1 (µL)
Prep Method:
GPC Cleanup: (Y/N) N pH:
Analytical Method: RSK-175
Prep Batch: Analytical Batch: 545827
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
CONCENTRATION UNITS: ug/L
Lab File ID: 2141125/v8034

CAS NO.	*COMPOUND*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	2.00

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 545827

Sample ID: JM04-55MW11-111414

Contract:

SAS No.: SDG No.: 214111511

Lab Sample ID: 21411151106

Date Collected: 11/14/14 Time: 0940

Date Received: 11/15/14

Date Extracted:

Date Analyzed: 11/25/14 Time: 1754

Dilution Factor: 1 Analyst: JAR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2141125/v8036

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.150	J	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 545827

CONCENTRATION UNITS: ug/L

Sample ID: JM04-55MW11-111414DL

Contract:

SAS No.: SDG No.: 214111511

Lab Sample ID: 21411151106DL

Date Collected: 11/14/14 Time: 0940

Date Received: 11/15/14

Date Extracted:

Date Analyzed: 11/25/14 Time: 1800

Dilution Factor: 50 Analyst: JAR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2141125/v8037

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	436		21.8	54.5	100

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 545827

CONCENTRATION UNITS: ug/L

Sample ID: JM04-55IW02-111414

Contract:

SAS No.: SDG No.: 214111511

Lab Sample ID: 21411151107

Date Collected: 11/14/14 Time: 1005

Date Received: 11/15/14

Date Extracted:

Date Analyzed: 11/25/14 Time: 1808

Dilution Factor: 1 Analyst: JAR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2141125/v8038

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55IW02-111414DL
Lab Code: LA024 Case No.:
Contract:
Matrix: Water
SAS No.: SDG No.: 214111511
Sample wt/vol: 5 Units: mL
Lab Sample ID: 21411151107DL
Level: (low/med)
Date Collected: 11/14/14 Time: 1005
% Moisture: decanted: (Y/N)
Date Received: 11/15/14
GC Column: GS-Q 30 ID: .53 (mm)
Date Extracted:
Concentrated Extract Volume: 5000 (µL)
Date Analyzed: 11/25/14 Time: 1814
Soil Aliquot Volume: (µL)
Dilution Factor: 50 Analyst: JAR
Injection Volume: 1 (µL)
Prep Method:
GPC Cleanup: (Y/N) N pH:
Analytical Method: RSK-175
Prep Batch: Analytical Batch: 545827
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
CONCENTRATION UNITS: ug/L
Lab File ID: 2141125/v8039

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	680		21.8	54.5	100

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 545827

Sample ID: JM04-55IW04-111414
Contract:
SAS No.: SDG No.: 214111511
Lab Sample ID: 21411151108
Date Collected: 11/14/14 Time: 1355
Date Received: 11/15/14
Date Extracted:
Date Analyzed: 11/25/14 Time: 1826
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141125/v8040

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 545827

CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-55IW04-111414DL

Contract:

SAS No.: SDG No.: 214111511

Lab Sample ID: 21411151108DL

Date Collected: 11/14/14 Time: 1355

Date Received: 11/15/14

Date Extracted:

Date Analyzed: 11/25/14 Time: 1832

Dilution Factor: 20 Analyst: JAR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2141125/v8041

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	296		8.70	21.8	40.0

C1

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: 53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 545827

Sample ID: JM04-55BRW01-111414
Contract:
SAS No.: SDG No.: 214111511
Lab Sample ID: 21411151109
Date Collected: 11/14/14 Time: 1113
Date Received: 11/15/14
Date Extracted:
Date Analyzed: 11/25/14 Time: 1837
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141125/v8042

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 545827

Sample ID: JM04-55BRW01-111414DL
Contract:
SAS No.: SDG No.: 214111511
Lab Sample ID: 21411151109DL
Date Collected: 11/14/14 Time: 1113
Date Received: 11/15/14
Date Extracted:
Date Analyzed: 11/25/14 Time: 1843
Dilution Factor: 300 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141125/v8043

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	4510		131	327	600

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: 53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 545827

CONCENTRATION UNITS: ug/L

Sample ID: JM04-FD03-111414

Contract:

SAS No.: SDG No.: 214111511

Lab Sample ID: 21411151110

Date Collected: 11/14/14 Time: 0000

Date Received: 11/15/14

Date Extracted:

Date Analyzed: 11/25/14 Time: 1848

Dilution Factor: 1 Analyst: JAR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2141125/v8044

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

FORM I ORG-1

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL

Lab Code: LA024 Case No.:

Matrix: Water

Sample wt/vol: 5 Units: mL

Level: (low/med)

% Moisture: decanted: (Y/N)

GC Column: GS-Q 30 ID: .53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch: Analytical Batch: 545827

CONCENTRATION UNITS: ug/L

Sample ID: JM04-FD03-111414DL

Contract:

SAS No.: SDG No.: 214111511

Lab Sample ID: 21411151110DL

Date Collected: 11/14/14 Time: 0000

Date Received: 11/15/14

Date Extracted:

Date Analyzed: 11/25/14 Time: 1856

Dilution Factor: 300 Analyst: JAR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2141125/v8045

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	4710		131	327	600

FORM 1 ORG-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-7MW24-111414

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214111511

Level: (low / med) % Solids:

Lab Sample ID: 21411151101

Date Received: 11/15/14 Time: 0955

Date Collected: 11/14/14 Time: 1351

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.25	mg/L	U	0.13	0.25	0.50	SW-846 6020A Dissolved	MS	11/20/14 1425

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-EB01-111414

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214111511

Level: (low / med) % Solids:

Lab Sample ID: 21411151102

Date Received: 11/15/14 Time: 0955

Date Collected: 11/14/14 Time: 0800

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.050	mg/L	U	0.025	0.050	0.10	SW-846 6020A Dissolved	MS	11/20/14 1427

ok

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-7MW10-111414

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214111511

Level: (low / med) % Solids:

Lab Sample ID: 21411151104

Date Received: 11/15/14 Time: 0955

Date Collected: 11/14/14 Time: 1100

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.17	mg/L	J	0.050	0.10	0.20	SW-846 6020A Dissolved	MS	11/20/14 1430

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-EB02-111414

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214111511

Level: (low / med) % Solids:

Lab Sample ID: 21411151105

Date Received: 11/15/14 Time: 0955

Date Collected: 11/14/14 Time: 0815

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.050	mg/L	U	0.025	0.050	0.10	SW-846 6020A Dissolved	MS	11/20/14 1435

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID JM04-55MW11-111414
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214111511
Level: (low / med)
% Solids:
Lab Sample ID: 21411151106
Date Received: 11/15/14
Time: 0955
Date Collected: 11/14/14
Time: 0940

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.50	mg/L	U	0.25	0.50	1.00	SW-846 6020A Dissolved	MS	11/24/14 1748

p.2

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-55IW02-111414

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214111511

Level: (low / med) % Solids:

Lab Sample ID: 21411151107

Date Received: 11/15/14 Time: 0955

Date Collected: 11/14/14 Time: 1005

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.15	mg/L	J	0.050	0.10	0.20	SW-846 6020A Dissolved	MS	11/24/14 1758

c.L

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-55IW04-111414

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214111511

Level: (low / med) % Solids:

Lab Sample ID: 21411151108

Date Received: 11/15/14 Time: 0955

Date Collected: 11/14/14 Time: 1355

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.085	mg/L	J	0.050	0.10	0.20	SW-846 6020A Dissolved	MS	11/24/14 1800

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-55BRW01-111414

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214111511

Level: (low / med) % Solids:

Lab Sample ID: 21411151109

Date Received: 11/15/14 Time: 0955

Date Collected: 11/14/14 Time: 1113

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.30	mg/L		0.050	0.10	0.20	SW-846 6020A Dissolved	MS	11/24/14 1803

C.L

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID JM04-FD03-111414
Lab Code: LA024 Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.: SDG No.: 214111511
Level: (low / med) % Solids:
Lab Sample ID: 21411151110
Date Received: 11/15/14 Time: 0955
Date Collected: 11/14/14 Time: 0000

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.31	mg/L		0.025	0.050	0.10	SW-846 6020A Dissolved	MS	11/24/14 1805

FORM I - IN

Sample Results

JM04-7MW24-111414	Collect Date	11/14/2014 13:51	GCAL ID	21411151101
	Receive Date	11/15/2014 09:55	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	11/15/2014 11:53	RJO	545171

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	0.500U	0.250	0.500	1.00	mg/L
14797-65-0	Nitrite	0.500U	0.250	0.500	1.00	mg/L
14808-79-8	Sulfate	45.2	0.250	0.500	1.00	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/24/2014 20:40	RXJ	545765

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	1190	50.0	100	200	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/20/2014 12:34	DJH	545524

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	675	0.26	0.50	1.0	mg/L CaCO3

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/19/2014 17:09	KGL2	545399

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.054	0.005	0.010	0.020	mg/L

JB 11/5

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	2	11/18/2014 10:37	KLC2	545221

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	10.8	0.60	2.0	2.0	mg/L

Sample Results

JM04-EB01-111414	Collect Date	11/14/2014 08:00	GCAL ID	21411151102
	Receive Date	11/15/2014 09:55	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/15/2014 12:10	RJO	545171

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	0.100U	0.050	0.100	0.200	mg/L
14797-65-0	Nitrite	0.100U	0.050	0.100	0.200	mg/L
14808-79-8	Sulfate	0.100U	0.050	0.100	0.200	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/24/2014 21:33	RXJ	545765

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	0.064J	0.050	0.100	0.200	mg/l

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/20/2014 15:18	DJH	545534

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	0.50U	0.26	0.50	1.0	mg/L CaCO3

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/19/2014 17:04	KGL2	545399

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.042	0.005	0.010	0.020	mg/L

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/18/2014 10:58	KLC2	545221

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	1.0U	0.30	1.0	1.0	mg/L

Sample Results

JM04-7MW10-111414	Collect Date	11/14/2014 11:00	GCAL ID	21411151104
	Receive Date	11/15/2014 09:55	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	11/15/2014 12:28	RJO	545171

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	0.500U	0.250	0.500	1.00	mg/L
14797-65-0	Nitrite	0.500U	0.250	0.500	1.00	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	20	11/24/2014 21:50	RXJ	545765

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14808-79-8	Sulfate	67 8	1.00	2 00	4.00	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/24/2014 22:42	RXJ	545765

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	840	50.0	100	200	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/20/2014 12:34	DJH	545524

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	350	0.26	0.50	1.0	mg/L CaCO3

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/19/2014 17:07	KGL2	545399

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.055	0.005	0.010	0.020	mg/L

Sample Results

JM04-7MW10-111414	Collect Date	11/14/2014 11:00	GCAL ID	21411151104
	Receive Date	11/15/2014 09:55	Matrix	Water

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/17/2014 21:59	KLC2	545221

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	2.9	0.30	1.0	1.0	mg/L

JM04-EB02-111414	Collect Date	11/14/2014 08:15	GCAL ID	21411151105
	Receive Date	11/15/2014 09:55	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/15/2014 12:45	RJO	545171

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	0.100U	0.050	0.100	0.200	mg/L
14797-65-0	Nitrite	0.100U	0.050	0.100	0.200	mg/L
14808-79-8	Sulfate	0.100U	0.050	0.100	0.200	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/24/2014 23:00	RXJ	545765

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	0.100U	0.050	0.100	0.200	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/20/2014 15:18	DJH	545534

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	0.50U	0.26	0.50	1.0	mg/L CaCO3

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/19/2014 17:05	KGL2	545399

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.046	0.005	0.010	0.020	mg/L

Sample Results

JM04-EB02-111414

Collect Date	11/14/2014 08:15	GCAL ID	21411151105
Receive Date	11/15/2014 09:55	Matrix	Water

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/18/2014 11:19	KLC2	545221

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	1.0U	0.30	1.0	1.0	mg/L

JM04-55MW11-111414

Collect Date	11/14/2014 09:40	GCAL ID	21411151106
Receive Date	11/15/2014 09:55	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	20	11/15/2014 13:03	RJO	545171

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	2.00U	1.00	2.00	4.00	mg/L
14797-65-0	Nitrite	2.00U	1.00	2.00	4.00	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	10000	11/24/2014 23:35	RXJ	545765

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	6910	500	1000	2000	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	200	11/24/2014 23:17	RXJ	545765

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14808-79-8	Sulfate	726	10.0	20.0	40.0	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/20/2014 12:34	DJH	545524

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	497	0.26	0.50	1.0	mg/L CaCO3

Sample Results

JM04-55MW11-111414

Collect Date	11/14/2014 09:40	**GCAL ID**	21411151106
Receive Date	11/15/2014 09:55	**Matrix**	Water

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/19/2014 17:06	KGL2	545399

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.042	0.005	0.010	0.020	mg/L JB-EB

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	2	11/21/2014 16:52	KGL2	545479

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	1.4J	0.60	2.0	2.0	mg/L

JM04-55IW02-111414

Collect Date	11/14/2014 10:05	**GCAL ID**	21411151107
Receive Date	11/15/2014 09:55	**Matrix**	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	11/15/2014 13:20	RJO	545171

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	0.500U	0.250	0.500	1.00	mg/L
14797-65-0	Nitrite	0.500U	0.250	0.500	1.00	mg/L
14808-79-8	Sulfate	17.6	0.250	0.500	1.00	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	400	11/24/2014 23:52	RXJ	545765

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	578	20.0	40.0	80.0	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/20/2014 12:34	DJH	545524

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	848	0.26	0.50	1.0	mg/L CaCO3

Sample Results

JM04-55IW02-111414	Collect Date	11/14/2014 10:05	GCAL ID	21411151107
	Receive Date	11/15/2014 09:55	Matrix	Water

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/19/2014 17:07	KGL2	545399

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.028	0.005	0.010	0.020	mg/L JB-EB

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	11/21/2014 17:12	KGL2	545479

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	32.5	1.5	5.0	5.0	mg/L

JM04-55IW04-111414	Collect Date	11/14/2014 13:55	GCAL ID	21411151108
	Receive Date	11/15/2014 09:55	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/25/2014 00:27	RXJ	545765

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	1220	50.0	100	200	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	11/15/2014 13:38	RJO	545171

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	0.500U	0.250	0.500	1.00	mg/L
14797-65-0	Nitrite	0.500U	0.250	0.500	1.00	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	50	11/25/2014 00:09	RXJ	545765

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14808-79-8	Sulfate	50.5	2.50	5.00	10.0	mg/L

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Sample Results

JM04-55IW04-111414	Collect Date	11/14/2014 13:55	GCAL ID	21411151108
	Receive Date	11/15/2014 09:55	Matrix	Water

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/20/2014 12:34	DJH	545524

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	715	0.26	0.50	1.0	mg/L CaCO3

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/19/2014 17:12	KGL2	545399

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.057	0.005	0.010	0.020	mg/L JB-EB

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	2	11/23/2014 10:48	KLC2	545708

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	13.3	0.60	2.0	2.0	mg/L

JM04-55BRW01-111414	Collect Date	11/14/2014 11:13	GCAL ID	21411151109
	Receive Date	11/15/2014 09:55	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	20	11/15/2014 13:55	RJO	545171

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	2.00U	1.00	2.00	4.00	mg/L
14797-65-0	Nitrite	2.00U	1.00	2.00	4.00	mg/L
14808-79-8	Sulfate	2.00U	1.00	2.00	4.00	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	400	11/25/2014 00:44	RXJ	545765

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	207	20.0	40.0	80.0	mg/L

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Sample Results

JM04-55BRW01-111414

Collect Date	11/14/2014 11:13	**GCAL ID**	21411151109
Receive Date	11/15/2014 09:55	**Matrix**	Water

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/20/2014 12:34	DJH	545524

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	700	0.26	0.50	1.0	mg/L CaCO3

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/19/2014 17:08	KGL2	545399

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.069	0.005	0.010	0.020	mg/L JB-EB

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	11/21/2014 17:58	KGL2	545479

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	81.4	1.5	5.0	5.0	mg/L J-FD

JM04-FD03-111414

Collect Date	11/14/2014 00:00	**GCAL ID**	21411151110
Receive Date	11/15/2014 09:55	**Matrix**	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	20	11/15/2014 14:12	RJO	545171

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	2.00U	1.00	2.00	4.00	mg/L
14797-65-0	Nitrite	2.00U	1.00	2.00	4.00	mg/L
14808-79-8	Sulfate	2.00U	1.00	2.00	4.00	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	400	11/25/2014 01:02	RXJ	545765

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	193	20.0	40.0	80.0	mg/L

Sample Results

JM04-FD03-111414	Collect Date	11/14/2014 00:00	GCAL ID	21411151110
	Receive Date	11/15/2014 09:55	Matrix	Water

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/20/2014 12:34	DJH	545524

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	729	0.26	0.50	1.0	mg/L CaCO3

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/19/2014 17:03	KGL2	545399

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496 25-8	Sulfide	0.084	0.005	0.010	0.020	mg/L

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	11/20/2014 12:21	KGL2	545479

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	57.0	1.5	5.0	5.0	mg/L

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-7MW07-111714

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214111904

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21411190401

Level: (low/med)

Lab File ID: 2141120/j6089

% Moisture: not dec.

Date Collected: 11/17/14 Time: 1100

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 11/18/14

Instrument ID: MSV9

Date Analyzed: 11/20/14 Time: 1241

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: ALC2

Soil Aliquot Volume: (µL)

Prep Batch:

Analytical Batch: 545492

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	3.09		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	1.10		0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-TB04 111714

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.. SDG No.. 214111904

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID 21411190404

Level: (low/med) Lab File ID: 2141120j6093

% Moisture not dec. Date Collected: 11/17/14 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/18/14

Instrument ID: MSV9 Date Analyzed: 11/20/14 Time: 1401

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: ALC2

Soil Aliquot Volume. (µL) Prep Batch: Analytical Batch: 545492

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0 200	U	0 127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0 103	0.200	1.00

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-55MW09-111714

Lab Name: GCAL Contract.

Lab Code: LA024 Case No.: SAS No.. SDG No.: 214111904

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID 21411190405

Level: (low/med) Lab File ID: 2141120/j6094

% Moisture: not dec. Date Collected: 11/17/14 Time: 1035

GC Column RTX-VMS-30 ID: .25 (mm) Date Received 11/18/14

Instrument ID: MSV9 Date Analyzed 11/20/14 Time: 1424

Soil Extract Volume (µL) Dilution Factor: 5 Analyst: ALC2

Soil Aliquot Volume (µL) Prep Batch. Analytical Batch: 545492

Analytical Method. SW-846 8260B

CONCENTRATION UNITS ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	865		0.807	1.00	5.00
75-01-4	Vinyl chloride	1.00	U	0.636	1.00	5.00
156-59-2	cis-1,2-Dichloroethene	2.97	J	0.517	1.00	5.00

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW10 111714

Lab Name: GCAL Contract:

Lab Code: LA024 Case No. SAS No.: SDG No.: 214111904

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21411190406

Level: (low/med)

Lab File ID: 2141120/j6095

% Moisture: not dec.

Date Collected: 11/17/14 Time: 1255

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 11/18/14

Instrument ID: MSV9

Date Analyzed: 11/20/14 Time: 1444

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: ALC2

Soil Aliquot Volume: (µL)

Prep Batch: Analytical Batch: 545492

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	2.30		0.161	0.200	1.00
75-01-4	Vinyl chloride	107		0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	3.19		0.103	0.200	1.00

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO

JM04-EB03-111714

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No. 214111904

Matrix: (soil/water) Water

Sample wt/vol 5 (g/ml) mL Lab Sample ID: 21411190407

Level: (low/med) Lab File ID: 2141120/j6096

% Moisture: not dec. Date Collected. 11/17/14 Time: 0930

GC Column: RTX-VMS 30 ID 25 (mm) Date Received 11/18/14

Instrument ID: MSV9 Date Analyzed. 11/20/14 Time: 1504

Soil Extract Volume. (µL) Dilution Factor: 1 Analyst: ALC2

Soil Aliquot Volume. (µL) Prep Batch: Analytical Batch: 545492

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 545924
CONCENTRATION UNITS: ug/L

Sample ID: JM04-7MW07-111714
Contract:
SAS No.: SDG No.: 214111904
Lab Sample ID: 21411190401
Date Collected: 11/17/14 Time: 1100
Date Received: 11/18/14
Date Extracted:
Date Analyzed: 11/26/14 Time: 1626
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141126p/v8015

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 545924
CONCENTRATION UNITS: *ug/L*

Sample ID: JM04-7MW07-111714DL
Contract:
SAS No.: SDG No.: 214111904
Lab Sample ID: 21411190401DL
Date Collected: 11/17/14 Time: 1100
Date Received: 11/18/14
Date Extracted:
Date Analyzed: 11/26/14 Time: 1656
Dilution Factor: 100 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141126p/v8019

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	1950		43.5	109	200

FORM I ORG-1

CK

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW09-111714
Lab Code: LA024 Case No.:
Contract:
Matrix: Water
SAS No.: SDG No.: 214111904
Sample wt/vol: 5 Units: mL
Lab Sample ID: 21411190405
Level: (low/med)
Date Collected: 11/17/14 Time: 1035
% Moisture: decanted: (Y/N)
Date Received: 11/18/14
GC Column: GS-Q 30 ID: .53 (mm)
Date Extracted:
Concentrated Extract Volume: 5000 (µL)
Date Analyzed: 11/26/14 Time: 1714
Soil Aliquot Volume: (µL)
Dilution Factor: 1 Analyst: JAR
Injection Volume: 1 (µL)
Prep Method:
GPC Cleanup: (Y/N) N pH:
Analytical Method: RSK-175
Prep Batch: Analytical Batch: 545924
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
CONCENTRATION UNITS ug/L
Lab File ID: 2141126p/v8022

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	2.02		0.435	1.09	2.00

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 545924

Sample ID: JM04-55MW10-111714
Contract:
SAS No.: SDG No.: 214111904
Lab Sample ID: 21411190406
Date Collected: 11/17/14 Time: 1255
Date Received: 11/18/14
Date Extracted:
Date Analyzed: 11/26/14 Time: 1721
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID GCV8A
Lab File ID: 2141126p/v8023

CONCENTRATION UNITS ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.134	J	0.087	0.220	1.00
74-85-1	Ethene	0.409	J	0.071	0.290	1.00

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL		Sample ID: JM04-55MW10-111714DL	
Lab Code: LA024	Case No.:	Contract:	
Matrix: Water		SAS No.:	SDG No.: 214111904
Sample wt/vol: 5	Units: mL	Lab Sample ID: 21411190406DL	
Level: (low/med)		Date Collected: 11/17/14	Time: 1255
% Moisture:	decanted: (Y/N)	Date Received: 11/18/14	
GC Column GS-Q 30	ID .53 (mm)	Date Extracted:	
Concentrated Extract Volume: 5000	(µL)	Date Analyzed: 11/26/14	Time: 1726
Soil Aliquot Volume:	(µL)	Dilution Factor: 50	Analyst: JAR
Injection Volume: 1	(µL)	Prep Method:	
GPC Cleanup: (Y/N) N	pH:	Analytical Method: RSK-175	
Prep Batch:	Analytical Batch: 545924	Sulfur Cleanup: (Y/N) N	Instrument ID: GCV8A
CONCENTRATION UNITS ug/L		Lab File ID: 2141126p/v8024	

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	844		21.8	54.5	100

1D

ORGANICS ANALYSIS DATA SHEET

Lab Name GCAL

Lab Code: LA024 Case No.

Matrix: Water

Sample wt/vol: 5 Units: mL

Level. (low/med)

% Moisture. decanted: (Y/N)

GC Column: GS O 30 ID 53 (mm)

Concentrated Extract Volume: 5000 (µL)

Soil Aliquot Volume: (µL)

Injection Volume: 1 (µL)

GPC Cleanup: (Y/N) N pH:

Prep Batch. Analytical Batch: 545924

CONCENTRATION UNITS: ug/L

Sample ID: JM04-EB03-111714

Contract:

SAS No.. SDG No.: 214111904

Lab Sample ID: 21411190407

Date Collected. 11/17/14 Time: 0930

Date Received: 11/18/14

Date Extracted:

Date Analyzed: 11/26/14 Time: 1733

Dilution Factor: 1 Analyst: JAR

Prep Method:

Analytical Method: RSK-175

Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A

Lab File ID: 2141126p/v8025

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	2.00

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-7MW07-111714

Lab Code: LA024 Case No.

Contract:

Matrix: (soil / water) Water

SAS No..

SDG No.: 214111904

Level: (low / med)

% Solids:

Lab Sample ID: 21411190401

Date Received: 11/18/14 Time: 0945

Date Collected: 11/17/14 Time: 1100

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.41	mg/L	J	0.13	0.25	0.50	SW-846 6020A Dissolved	MS	11/24/14 2152

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-55MW09-111714

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214111904

Level: (low / med) % Solids:

Lab Sample ID: 21411190405

Date Received: 11/18/14 Time: 0945

Date Collected: 11/17/14 Time: 1035

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	1.00	mg/L	U	0.50	1.00	2.00	SW-846 6020A Dissolved	MS	11/24/14 2202

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-55MW10-111714

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.

SDG No.: 214111904

Level: (low / med)

% Solids:

Lab Sample ID: 21411190406

Date Received: 11/18/14 Time. 0945

Date Collected. 11/17/14 Time: 1255

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.50	mg/L	U	0.25	0.50	1.00	SW-846 6020A Dissolved	MS	11/24/14 2205

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-EB03-111714

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No :

SDG No : 214111904

Level: (low / med)

% Solids:

Lab Sample ID: 21411190407

Date Received: 11/18/14 Time: 0945

Date Collected: 11/17/14 Time: 0930

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.050	mg/L	U	0.025	0.050	0.10	SW-846 6020A Dissolved	MS	11/24/14 2207

Sample Results

JM04-7MW07-111714	Collect Date	11/17/2014 11:00	GCAL ID	21411190401
	Receive Date	11/18/2014 09:45	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	11/18/2014 14:19	RXJ	545375

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	0.500U	0.250	0.500	1.00	mg/L
14797-65-0	Nitrite	0.500U	0.250	0.500	1.00	mg/L UJ MDL
14808-79-8	Sulfate	5.96	0.250	0.500	1.00	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	200	11/21/2014 00:02	RXJ	545508

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	301	10.0	20.0	40.0	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/20/2014 12:34	DJH	545524

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	803	0.26	0.50	1.0	mg/L CaCO3

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/19/2014 17:14	KGL2	545399

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.017J	0.005	0.010	0.020	mg/L J BLS

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	10	11/21/2014 18:16	KGL2	545479

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	47.7	3.0	10.0	10.0	mg/L

Sample Results

JM04-7MW07-111714MS	Collect Date	11/17/2014 11:00	GCAL ID	21411190402
	Receive Date	11/18/2014 09:45	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	11/18/2014 14:36	RXJ	545375

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	12.0	0.250	0.500	1.00	mg/L
14797-65-0	Nitrite	8.56	0.250	0.500	1.00	mg/L
14808-79-8	Sulfate	17.7	0.250	0.500	1.00	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	200	11/21/2014 00:20	RXJ	545508

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	780	10.0	20.0	40.0	mg/L

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/19/2014 17:16	KGL2	545399

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.544	0.005	0.010	0.020	mg/L

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	10	11/21/2014 18:34	KGL2	545479

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	545	3.0	10.0	10.0	mg/L

JM04-7MW07-111714SD	Collect Date	11/17/2014 11:00	GCAL ID	21411190403
	Receive Date	11/18/2014 09:45	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	200	11/21/2014 00:37	RXJ	545508

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	764	10.0	20.0	40.0	mg/L

Sample Results

JM04-7MW07-111714SD	Collect Date	11/17/2014 11:00	GCAL ID	21411190403
	Receive Date	11/18/2014 09:45	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	11/18/2014 14:54	RXJ	545375

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	12.1	0.250	0.500	1.00	mg/L
14797-65-0	Nitrite	8.44	0.250	0.500	1.00	mg/L
14808-79-8	Sulfate	17.7	0.250	0.500	1.00	mg/L

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/19/2014 17:17	KGL2	545399

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.558	0.005	0.010	0.020	mg/L

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	10	11/21/2014 18:55	KGL2	545479

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	542	3.0	10.0	10.0	mg/L

JM04-55MW09-111714	Collect Date	11/17/2014 10:35	GCAL ID	21411190405
	Receive Date	11/18/2014 09:45	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	2000	11/21/2014 00:55	RXJ	545508

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	5330	100	200	400	mg/L
14808-79-8	Sulfate	840	100	200	400	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	50	11/18/2014 15:29	RXJ	545375

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	5.00U	2.50	5.00	10.0	mg/L

Sample Results

JM04-55MW09-111714	Collect Date	11/17/2014 10:35	GCAL ID	21411190405
	Receive Date	11/18/2014 09:45	Matrix	Water

EPA 9056A (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	50	11/18/2014 15:29	RXJ	545375

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-65-0	Nitrite	5.00U	2.50	5.00	10.0	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/20/2014 12:34	DJH	545524

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	417	0.26	0.50	1.0	mg/L CaCO3

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/19/2014 17:18	KGL2	545399

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.010U	0.005	0.010	0.020	mg/L

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	2	11/22/2014 18:06	KLC2	545708

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	2.0U	0.60	2.0	2.0	mg/L

JM04-55MW10-111714	Collect Date	11/17/2014 12:55	GCAL ID	21411190406
	Receive Date	11/18/2014 09:45	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	20	11/18/2014 15:46	RXJ	545375

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	2.00U	1.00	2.00	4.00	mg/L
14797-65-0	Nitrite	2.00U	1.00	2.00	4.00	mg/L

Sample Results

JM04-55MW10-111714	Collect Date	11/17/2014 12:55	GCAL ID	21411190406
	Receive Date	11/18/2014 09:45	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/21/2014 01:30	RXJ	545508

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	2000	60.0	100	200	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	100	11/21/2014 01:13	RXJ	545508

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14808-79-8	Sulfate	256	0.050	0.100	0.200	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/20/2014 12:34	DJH	545524

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	654	0.26	0.50	1.0	mg/L CaCO3

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/19/2014 17:19	KGL2	545399

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.014J	0.005	0.010	0.020	mg/L

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/21/2014 10:48	KGL2	545479

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	1.0U	0.30	1.0	1.0	mg/L

Sample Results

JM04-EB03-111714	Collect Date	11/17/2014 09:30	GCAL ID	21411190407
	Receive Date	11/18/2014 09:45	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/18/2014 15:11	RXJ	545375

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	0.240	0.050	0.100	0.200	mg/L
14797-55-8	Nitrate	0.100U	0.050	0.100	0.200	mg/L
14797-65-0	Nitrite	0.100U	0.050	0.100	0.200	mg/L
14808-79-8	Sulfate	0.100U	0.050	0.100	0.200	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/20/2014 15:18	DJH	545534

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	0.50U	0.26	0.50	1.0	mg/L CaCO3

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/19/2014 17:20	KGL2	545399

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.010U	0.005	0.010	0.020	mg/L

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/23/2014 11:43	KLC2	545708

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	1.0U	0.30	1.0	1.0	mg/L

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-TB02-112014

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214112116

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21411211601

Level: (low/med) Lab File ID: 2141124/j6288

% Moisture: not dec. Date Collected: 11/20/14 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/21/14

Instrument ID: MSV9 Date Analyzed: 11/24/14 Time: 1326

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: ALC2

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 545752

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW02-112014

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214112116

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21411211602

Level: (low/med) Lab File ID: 2141124/j6289

% Moisture: not dec. Date Collected: 11/20/14 Time: 0930

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/21/14

Instrument ID: MSV9 Date Analyzed: 11/24/14 Time: 1347

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: ALC2

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 545752

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	1.21		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

TB - EB

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW01-112014

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214112116

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21411211603

Level: (low/med) Lab File ID: 2141124/j6290

% Moisture: not dec. Date Collected: 11/20/14 Time: 1100

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/21/14

Instrument ID: MSV9 Date Analyzed: 11/24/14 Time: 1409

Soil Extract Volume: (µL) Dilution Factor: 5 Analyst: ALC2

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 545752

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	349		0.807	1.00	5.00
75-01-4	Vinyl chloride	1.00	U	0.636	1.00	5.00
156-59-2	cis-1,2-Dichloroethene	1.00	U	0.517	1.00	5.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW14-112014

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214112116

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21411211604

Level: (low/med) Lab File ID: 2141124/j6291

% Moisture: not dec. Date Collected: 11/20/14 Time: 1330

GC Column: RTX-VMS-30 ID: 25 (mm) Date Received: 11/21/14

Instrument ID: MSV9 Date Analyzed: 11/24/14 Time: 1432

Soil Extract Volume: (µL) Dilution Factor: 5 Analyst: ALC2

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 545752

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	522		0.807	1.00	5.00
75-01-4	Vinyl chloride	1.00	U	0.636	1.00	5.00
156-59-2	cis-1,2-Dichloroethene	1.00	U	0.517	1.00	5.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-7MW23-112014

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214112116

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21411211605

Level: (low/med) Lab File ID: 2141124/j6292

% Moisture: not dec. Date Collected: 11/20/14 Time: 1505

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/21/14

Instrument ID: MSV9 Date Analyzed: 11/24/14 Time: 1452

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: ALC2

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 545752

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LQD	LOQ
79-01-6	Trichloroethene	109		0.161	0.200	1.00
75-01-4	Vinyl chloride	70.9		0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	14.2		0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-EB04-112014

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214112116

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21411211606

Level: (low/med) Lab File ID: 2141124/j6293

% Moisture: not dec. Date Collected: 11/20/14 Time: 1400

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/21/14

Instrument ID: MSV9 Date Analyzed: 11/24/14 Time: 1513

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: ALC2

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 545752

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.713	J	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW25-112014

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214112116

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21411211607

Level: (low/med) Lab File ID: 2141124/j6294

% Moisture: not dec. Date Collected: 11/20/14 Time: 1100

GC Column: RTX-VMS-30 ID: 25 (mm) Date Received: 11/21/14

Instrument ID: MSV9 Date Analyzed: 11/24/14 Time: 1533

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: ALC2

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 545752

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	0.200	U	0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-55MW26-112014

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214112116

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL

Lab Sample ID: 21411211608

Level: (low/med)

Lab File ID: 2141124/j6295

% Moisture: not dec.

Date Collected: 11/20/14 Time: 0955

GC Column: RTX-VMS-30 ID: .25 (mm)

Date Received: 11/21/14

Instrument ID: MSV9

Date Analyzed: 11/24/14 Time: 1553

Soil Extract Volume: (µL)

Dilution Factor: 1 Analyst: ALC2

Soil Aliquot Volume: (µL)

Prep Batch: Analytical Batch: 545752

CONCENTRATION UNITS: *ug/L*

Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	16.0		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.828	J	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	3.45		0.103	0.200	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
JM04-55MW12-112014

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214112116

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21411211609

Level: (low/med) Lab File ID: 2141124/j6296

% Moisture: not dec. Date Collected: 11/20/14 Time: 1330

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/21/14

Instrument ID: MSV9 Date Analyzed: 11/24/14 Time: 1613

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: ALC2

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 545752

CONCENTRATION UNITS: ug/L Analytical Method: SW-846 8260B

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	1.36		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.736	J	0.103	0.200	1.00

FORM I VOA

a.t

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
JM04-FD02-112014

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214112116

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21411211610

Level: (low/med) Lab File ID: 2141124/j6297

% Moisture: not dec. Date Collected: 11/20/14 Time: 0000

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/21/14

Instrument ID: MSV9 Date Analyzed: 11/24/14 Time: 1633

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: ALC2

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 545752

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	1.25		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.637	J	0.103	0.200	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

JM04-7MW22-112014

Lab Name: GCAL Contract:

Lab Code: LA024 Case No.: SAS No.: SDG No.: 214112116

Matrix: (soil/water) Water

Sample wt/vol: 5 (g/ml) mL Lab Sample ID: 21411211611

Level: (low/med) Lab File ID: 2141124/j6298

% Moisture: not dec. Date Collected: 11/20/14 Time: 1535

GC Column: RTX-VMS-30 ID: .25 (mm) Date Received: 11/21/14

Instrument ID: MSV9 Date Analyzed: 11/24/14 Time: 1653

Soil Extract Volume: (µL) Dilution Factor: 1 Analyst: ALC2

Soil Aliquot Volume: (µL) Prep Batch: Analytical Batch: 545752

Analytical Method: SW-846 8260B

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
79-01-6	Trichloroethene	2.52		0.161	0.200	1.00
75-01-4	Vinyl chloride	0.200	U	0.127	0.200	1.00
156-59-2	cis-1,2-Dichloroethene	0.200	U	0.103	0.200	1.00

FORM I VOA

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 546362

Sample ID: JM04-55MW02-112014
Contract:
SAS No.: SDG No.: 214112116
Lab Sample ID: 21411211602
Date Collected: 11/20/14 Time: 0930
Date Received: 11/21/14
Date Extracted:
Date Analyzed: 12/04/14 Time: 1232
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141204/v8005

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	2.00

AL

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 546362

Sample ID JM04-55MW01-112014
Contract:
SAS No.: SDG No.: 214112116
Lab Sample ID: 21411211603
Date Collected 11/20/14 Time: 1100
Date Received: 11/21/14
Date Extracted:
Date Analyzed: 12/04/14 Time: 1243
Dilution Factor: 20 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141204/v8007

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	38.9		1.74	4.40	20.0
74-85-1	Ethene	37.7		1.43	5.80	20.0
74-82-8	Methane	196		8.70	21.8	40.0

10

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID: JM04-55MW14-112014
Lab Code: LA024 Case No.:
Contract:
Matrix: Water
SAS No.: SDG No.: 214112116
Sample wt/vol: 5 Units: mL
Lab Sample ID: 21411211604
Level: (low/med)
Date Collected: 11/20/14 Time: 1330
% Moisture: decanted: (Y/N)
Date Received: 11/21/14
GC Column: GS-Q 30 ID: .53 (mm)
Date Extracted:
Concentrated Extract Volume: 5000 (µL)
Date Analyzed: 12/04/14 Time: 1248
Soil Aliquot Volume: (µL)
Dilution Factor: 1 Analyst: JAR
Injection Volume: 1 (µL)
Prep Method:
GPC Cleanup: (Y/N) N pH:
Analytical Method: RSK-175
Prep Batch: Analytical Batch: 546362
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
CONCENTRATION UNITS: ug/L
Lab File ID: 2141204/v8008

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	2.00

ok

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 546362

Sample ID: JM04-7MW23-112014
Contract:
SAS No.: SDG No.: 214112116
Lab Sample ID: 21411211605
Date Collected: 11/20/14 Time: 1505
Date Received: 11/21/14
Date Extracted:
Date Analyzed: 12/04/14 Time: 1254
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141204/v8009

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	1.01		0.071	0.290	1.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 546362

Sample ID: JM04-7MW23-112014DL
Contract:
SAS No.: SDG No.: 214112116
Lab Sample ID: 21411211605DL
Date Collected: 11/20/14 Time: 1505
Date Received: 11/21/14
Date Extracted:
Date Analyzed: 12/04/14 Time: 1301
Dilution Factor: 100 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141204/v8010

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	1830		43.5	109	200

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 546362

Sample ID: JM04-EB04-112014
Contract:
SAS No.: SDG No.: 214112116
Lab Sample ID: 21411211606
Date Collected: 11/20/14 Time: 1400
Date Received: 11/21/14
Date Extracted:
Date Analyzed: 12/04/14 Time: 1308
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141204/v8011

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	2.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 546362
CONCENTRATION UNITS: ug/L

Sample ID: JM04-55MW25-112014DL
Contract:
SAS No.: SDG No.: 214112116
Lab Sample ID: 21411211607DL
Date Collected: 11/20/14 Time: 1100
Date Received: 11/21/14
Date Extracted:
Date Analyzed: 12/04/14 Time: 1345
Dilution Factor: 100 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141204/v8013

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	3640		43.5	109	200

ok

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 546362

Sample ID: JM04-55MW25-112014
Contract:
SAS No.: SDG No.: 214112116
Lab Sample ID: 21411211607
Date Collected: 11/20/14 Time: 1100
Date Received: 11/21/14
Date Extracted:
Date Analyzed: 12/04/14 Time: 1334
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141204/v8012

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 546362

Sample ID: JM04-55MW26-112014DL
Contract:
SAS No.: SDG No.: 214112116
Lab Sample ID: 21411211608DL
Date Collected: 11/20/14 Time: 0955
Date Received: 11/21/14
Date Extracted:
Date Analyzed: 12/04/14 Time: 1357
Dilution Factor: 20 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141204/v8015

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	250		8.70	21.8	40.0

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 546362

Sample ID: JM04-55MW26-112014
Contract:
SAS No.: SDG No.: 214112116
Lab Sample ID: 21411211608
Date Collected: 11/20/14 Time: 0955
Date Received: 11/21/14
Date Extracted:
Date Analyzed: 12/04/14 Time: 1350
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141204/v8014

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

FORM 1 ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 546362

Sample ID: JM04-55MW12-112014DL
Contract:
SAS No.: SDG No.: 214112116
Lab Sample ID: 21411211609DL
Date Collected: 11/20/14 Time: 1330
Date Received: 11/21/14
Date Extracted:
Date Analyzed: 12/04/14 Time: 1431
Dilution Factor: 10 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141204/v8018

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	206		4.35	10.9	20.0

ck

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 546362

Sample ID: JM04-55MW12-112014
Contract:
SAS No.: SDG No.: 214112116
Lab Sample ID: 21411211609
Date Collected: 11/20/14 Time: 1330
Date Received: 11/21/14
Date Extracted:
Date Analyzed: 12/04/14 Time: 1413
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141204/v8017

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 546362

Sample ID: JM04-FD02-112014DL
Contract:
SAS No.: SDG No.: 214112116
Lab Sample ID: 21411211610DL
Date Collected: 11/20/14 Time: 0000
Date Received: 11/21/14
Date Extracted:
Date Analyzed: 12/04/14 Time: 1446
Dilution Factor: 10 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141204/v8020

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-82-8	Methane	205		4.35	10.9	20.0

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 546362

Sample ID: JM04-FD02-112014
Contract:
SAS No.: SDG No.: 214112116
Lab Sample ID: 21411211610
Date Collected: 11/20/14 Time: 0000
Date Received: 11/21/14
Date Extracted:
Date Analyzed: 12/04/14 Time: 1440
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141204/v8019

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00

FORM I ORG-1

1D
ORGANICS ANALYSIS DATA SHEET

Lab Name: GCAL
Lab Code: LA024 Case No.:
Matrix: Water
Sample wt/vol: 5 Units: mL
Level: (low/med)
% Moisture: decanted: (Y/N)
GC Column: GS-Q 30 ID: .53 (mm)
Concentrated Extract Volume: 5000 (µL)
Soil Aliquot Volume: (µL)
Injection Volume: 1 (µL)
GPC Cleanup: (Y/N) N pH:
Prep Batch: Analytical Batch: 546362

Sample ID: JM04-7MW22-112014
Contract:
SAS No.: SDG No.: 214112116
Lab Sample ID: 21411211611
Date Collected: 11/20/14 Time: 1535
Date Received: 11/21/14
Date Extracted:
Date Analyzed: 12/04/14 Time: 1455
Dilution Factor: 1 Analyst: JAR
Prep Method:
Analytical Method: RSK-175
Sulfur Cleanup: (Y/N) N Instrument ID: GCV8A
Lab File ID: 2141204/v8021

CONCENTRATION UNITS: ug/L

CAS NO.	COMPOUND	RESULT	Q	MDL	LOD	LOQ
74-84-0	Ethane	0.220	U	0.087	0.220	1.00
74-85-1	Ethene	0.290	U	0.071	0.290	1.00
74-82-8	Methane	1.09	U	0.435	1.09	2.00

FORM I ORG-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID JM04-55MW02-112014
Lab Code: LA024 Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.: SDG No.: 214112116
Level: (low / med) % Solids:
Lab Sample ID: 21411211602
Date Received: 11/21/14 Time: 0930
Date Collected: 11/20/14 Time: 0930

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.050	mg/L	U	0.025	0.050	0.10	SW-846 6020A Dissolved	MS	11/25/14 0148

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FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-55MW01-112014

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214112116

Level: (low / med) % Solids:

Lab Sample ID: 21411211603

Date Received: 11/21/14 Time: 0930

Date Collected: 11/20/14 Time: 1100

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6020A Dissolved	MS	11/25/14 0155

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FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-55MW14-112014

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214112116

Level: (low / med) % Solids:

Lab Sample ID: 21411211604

Date Received: 11/21/14 Time: 0930

Date Collected: 11/20/14 Time: 1330

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.25	mg/L	U	0.13	0.25	0.50	SW-846 6020A Dissolved	MS	11/25/14 0202

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FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID JM04-7MW23-112014
Lab Code: LA024 Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.: SDG No.: 214112116
Level: (low / med) % Solids:
Lab Sample ID: 21411211605
Date Received: 11/21/14 Time: 0930
Date Collected: 11/20/14 Time: 1505

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.25	mg/L	U	0.13	0.25	0.50	SW-846 6020A Dissolved	MS	11/25/14 0232

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID JM04-EB04-112014
Lab Code: LA024 Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.: SDG No.: 214112116
Level: (low / med) % Solids:
Lab Sample ID: 21411211606
Date Received: 11/21/14 Time: 0930
Date Collected: 11/20/14 Time: 1400

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.050	mg/L	U	0.025	0.050	0.10	SW-846 6020A Dissolved	MS	11/25/14 0239

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-55MW25-112014

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214112116

Level: (low / med) % Solids:

Lab Sample ID: 21411211607

Date Received: 11/21/14 Time: 0930

Date Collected: 11/20/14 Time: 1100

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.75	mg/L		0.050	0.10	0.20	SW-846 6020A Dissolved	MS	11/25/14 0247

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID JM04-55MW26-112014
Lab Code: LA024 Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.: SDG No.: 214112116
Level: (low / med) % Solids:
Lab Sample ID: 21411211608
Date Received: 11/21/14 Time: 0930
Date Collected: 11/20/14 Time: 0955

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.10	mg/L	U	0.050	0.10	0.20	SW-846 6020A Dissolved	MS	11/25/14 0316

nk

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID JM04-55MW12-112014
Lab Code: LA024 Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.: SDG No.: 214112116
Level: (low / med) % Solids:
Lab Sample ID: 21411211609
Date Received: 11/21/14 Time: 0930
Date Collected: 11/20/14 Time: 1330

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.071	mg/L	J	0.050	0.10	0.20	SW-846 6020A Dissolved	MS	11/25/14 0324

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL
Sample ID JM04-FD02-112014
Lab Code: LA024
Case No.:
Contract:
Matrix: (soil / water) Water
SAS No.:
SDG No.: 214112116
Level: (low / med)
% Solids:
Lab Sample ID: 21411211610
Date Received: 11/21/14
Time: 0930
Date Collected: 11/20/14
Time: 0000

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.076	mg/L	J	0.050	0.10	0.20	SW-846 6020A Dissolved	MS	11/25/14 0331

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: GCAL

Sample ID JM04-7MW22-112014

Lab Code: LA024 Case No.:

Contract:

Matrix: (soil / water) Water

SAS No.: SDG No.: 214112116

Level: (low / med) % Solids:

Lab Sample ID: 21411211611

Date Received: 11/21/14 Time: 0930

Date Collected: 11/20/14 Time: 1535

Analyte	Conc.	Units	C	MDL	LOD	LOQ	Method	Type	Analyzed
Ferric Iron (D	0.25	mg/L	U	0.13	0.25	0.50	SW-846 6020A Dissolved	MS	11/25/14 0338

AL

FORM I - IN

Sample Results

JM04-55MW02-112014	Collect Date	11/20/2014 09:30	GCAL ID	21411211602
	Receive Date	11/21/2014 09:30	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/21/2014 14:36	RXJ	545618

CAS#	Parameter	Result	MDL	LOD	LOQ	Units	
14797-55-8	Nitrate	0.100U	0.050	0.100	0.200	mg/L	
14797-65-0	Nitrite	0.100U	0.050	0.100	0.200	mg/L	[illegible]

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	20	11/22/2014 05:59	RXJ	545618

CAS#	Parameter	Result	MDL	LOD	LOQ	Units	
14808-79-8	Sulfate	9.77	1.00	2.00	4.00	mg/L	[illegible]

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	100	11/21/2014 21:17	RXJ	545618

CAS#	Parameter	Result	MDL	LOD	LOQ	Units	
16887-00-6	Chloride	27.1	5.00	10.0	20.0	mg/L	[illegible]

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/25/2014 08:15	DJH	545824

CAS#	Parameter	Result	MDL	LOD	LOQ	Units	
000000-00-5	Total Alkalinity	319	0.26	0.50	1.0	mg/L CaCO3	[illegible]

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/24/2014 16:39	KGL2	545781

CAS#	Parameter	Result	MDL	LOD	LOQ	Units	
18496-25-8	Sulfide	0.008J	0.005	0.010	0.020	mg/L	[illegible]

Sample Results

JM04-55MW02-112014	Collect Date	11/20/2014 09:30	GCAL ID	21411211602
	Receive Date	11/21/2014 09:30	Matrix	Water

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/29/2014 11:55	KGL2	545979

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	1.0U	0.30	1.0	1.0	mg/L

JM04-55MW01-112014	Collect Date	11/20/2014 11:00	GCAL ID	21411211603
	Receive Date	11/21/2014 09:30	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	4	11/21/2014 14:54	RXJ	545618

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	**Nitrate**	**0.300J**	**0.200**	**0.400**	**0.800**	**mg/L** UJ-LB
14797-65-0	Nitrite	0.400U	0.200	0.400	0.800	mg/L
14808-79-8	**Sulfate**	**35.2**	**0.200**	**0.400**	**0.800**	**mg/L** 35.3 LB

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	100	11/21/2014 23:19	RXJ	545618

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	**Chloride**	**388**	**5.00**	**10.0**	**20.0**	**mg/L** 388 LB

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/25/2014 08:15	DJH	545824

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	**Total Alkalinity**	**452**	**0.26**	**0.50**	**1.0**	**mg/L CaCO3** 452 LB

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/25/2014 17:44	KGL2	545859

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	**Sulfide**	**0.007J**	**0.005**	**0.010**	**0.020**	**mg/L** UJ-MB,LD

Sample Results

JM04-55MW01-112014	Collect Date	11/20/2014 11:00	GCAL ID	21411211603
	Receive Date	11/21/2014 09:30	Matrix	Water

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/29/2014 12:46	KGL2	545979

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	1.8	0.30	1.0	1.0	mg/L

JM04-55MW14-112014	Collect Date	11/20/2014 13:30	GCAL ID	21411211604
	Receive Date	11/21/2014 09:30	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	100	12/07/2014 15:03	DMT	546577

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14808-79-8	Sulfate	123	5.00	10.0	20.0	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/21/2014 23:36	RXJ	545618

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	1570	50.0	100	200	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	10	11/21/2014 15:11	RXJ	545618

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	0.885J	0.500	1.00	2.00	mg/L
14797-65-0	Nitrite	1.00U	0.500	1.00	2.00	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/25/2014 08:15	DJH	545824

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	346	0.26	0.50	1.0	mg/L CaCO3

Sample Results

JM04-55MW14-112014	Collect Date	11/20/2014 13:30	GCAL ID	21411211604
	Receive Date	11/21/2014 09:30	Matrix	Water

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/25/2014 17:48	KGL2	545859

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.011J	0.005	0.010	0.020	mg/L

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/29/2014 13:07	KGL2	545979

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	1.4	0.30	1.0	1.0	mg/L

JM04-7MW23-112014	Collect Date	11/20/2014 15:05	GCAL ID	21411211605
	Receive Date	11/21/2014 09:30	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	10	11/21/2014 15:29	RXJ	545618

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	1.00U	0.500	1.00	2.00	mg/L
14797-65-0	Nitrite	1.00U	0.500	1.00	2.00	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	500	11/21/2014 23:53	RXJ	545618

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	1140	25.0	50.0	100	mg/L
14808-79-8	Sulfate	124	25.0	50.0	100	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/25/2014 08:15	DJH	545824

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	612	0.26	0.50	1.0	mg/L CaCO3

Sample Results

JM04-7MW23-112014

Collect Date	11/20/2014 15:05	**GCAL ID**	21411211605
Receive Date	11/21/2014 09:30	**Matrix**	Water

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/25/2014 17:57	KGL2	545859

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	**Sulfide**	**0.020**	**0.005**	**0.010**	**0.020**	**mg/L**

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	2	11/30/2014 11:36	KGL2	545979

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	2.0U	0.60	2.0	2.0	mg/L

JM04-EB04-112014

Collect Date	11/20/2014 14:00	**GCAL ID**	21411211606
Receive Date	11/21/2014 09:30	**Matrix**	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/21/2014 15:46	RXJ	545618

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	**Nitrate**	**0.397**	**0.050**	**0.100**	**0.200**	**mg/L**
14797-65-0	Nitrite	0.100U	0.050	0.100	0.200	mg/L
14808-79-8	**Sulfate**	**9.24**	**0.050**	**0.100**	**0.200**	**mg/L**

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	40	11/22/2014 00:11	RXJ	545618

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	**Chloride**	**16.8**	**2.00**	**4.00**	**8.00**	**mg/L**

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/25/2014 08:15	DJH	545824

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	**Total Alkalinity**	**148**	**0.26**	**0.50**	**1.0**	**mg/L CaCO3**

Sample Results

JM04-EB04-112014	Collect Date	11/20/2014 14:00	GCAL ID	21411211606
	Receive Date	11/21/2014 09:30	Matrix	Water

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/25/2014 17:56	KGL2	545859

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.012J	0.005	0.010	0.020	mg/L

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/29/2014 13:46	KGL2	545979

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	1.0U	0.30	1.0	1.0	mg/L

JM04-55MW25-112014	Collect Date	11/20/2014 11:00	GCAL ID	21411211607
	Receive Date	11/21/2014 09:30	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	100	11/22/2014 00:28	RXJ	545618

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	215	5.00	10.0	20.0	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	2	11/22/2014 07:09	RXJ	545618

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	0.200U	0.100	0.200	0.400	mg/L
14797-65-0	Nitrite	0.200U	0.100	0.200	0.400	mg/L
14808-79-8	Sulfate	0.200U	0.100	0.200	0.400	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/25/2014 08:15	DJH	545824

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	733	0.26	0.50	1.0	mg/L CaCO3

Sample Results

JM04-55MW25-112014	Collect Date	11/20/2014 11:00	GCAL ID	21411211607
	Receive Date	11/21/2014 09:30	Matrix	Water

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/25/2014 17:47	KGL2	545859

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.010U	0.005	0.010	0.020	mg/L

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	2	12/01/2014 09:24	KGL2	546075

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	58.3	0.60	2.0	2.0	mg/L

JM04-55MW26-112014	Collect Date	11/20/2014 09:55	GCAL ID	21411211608
	Receive Date	11/21/2014 09:30	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	4	11/21/2014 16:56	RXJ	545618

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	0.400U	0.200	0.400	0.800	mg/L
14797-65-0	Nitrite	0.400U	0.200	0.400	0.800	mg/L
14808-79-8	Sulfate	15.4	0.200	0.400	0.800	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	100	11/22/2014 00:46	RXJ	545618

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	343	5.00	10.0	20.0	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/25/2014 09:44	DJH	545822

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	607	0.26	0.50	1.0	mg/L CaCO3

Sample Results

JM04-55MW26-112014	Collect Date	11/20/2014 09:55	GCAL ID	21411211608
	Receive Date	11/21/2014 09:30	Matrix	Water

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/24/2014 16:38	KGL2	545781

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.007J	0.005	0.010	0.020	mg/L

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	2	12/03/2014 11:21	KGL2	546266

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	7.4	0.60	2.0	2.0	mg/L

JM04-55MW12-112014	Collect Date	11/20/2014 13:30	GCAL ID	21411211609
	Receive Date	11/21/2014 09:30	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	200	11/22/2014 01:38	RXJ	545618

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	237	10.0	20.0	40.0	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	2	11/22/2014 07:26	RXJ	545618

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	0.200U	0.100	0.200	0.400	mg/L
14797-65-0	Nitrite	0.200U	0.100	0.200	0.400	mg/L
14808-79-8	Sulfate	2.65	0.100	0.200	0.400	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/25/2014 08:15	DJH	545824

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	697	0.26	0.50	1.0	mg/L CaCO3

Sample Results

JM04-55MW12-112014	Collect Date	11/20/2014 13:30	GCAL ID	21411211609
	Receive Date	11/21/2014 09:30	Matrix	Water

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/25/2014 17:55	KGL2	545859

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.007J	0.005	0.010	0.020	mg/L

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	2	12/09/2014 10:47	JEM	546488

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	5.7	0.60	2.0	2.0	mg/L

JM04-FD02-112014	Collect Date	11/20/2014 00:00	GCAL ID	21411211610
	Receive Date	11/21/2014 09:30	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	2	11/22/2014 07:43	RXJ	545618

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	0.200U	0.100	0.200	0.400	mg/L
14797-65-0	Nitrite	0.200U	0.100	0.200	0.400	mg/L
14808-79-8	Sulfate	2.75	0.100	0.200	0.400	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	200	11/22/2014 01:55	RXJ	545618

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	242	10.0	20.0	40.0	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/25/2014 08:15	DJH	545824

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	681	0.26	0.50	1.0	mg/L CaCO3

Sample Results

JM04-FD02-112014

Collect Date	11/20/2014 00:00	**GCAL ID**	21411211610
Receive Date	11/21/2014 09:30	**Matrix**	Water

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/24/2014 16:35	KGL2	545781

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.010U	0.005	0.010	0.020	mg/L

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	2	12/03/2014 11:41	KGL2	546266

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	11.4	0.60	2.0	2.0	mg/L

JM04-7MW22-112014

Collect Date	11/20/2014 15:35	**GCAL ID**	21411211611
Receive Date	11/21/2014 09:30	**Matrix**	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	10	11/21/2014 17:48	RXJ	545618

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
14797-55-8	Nitrate	0.816J	0.500	1.00	2.00	mg/L
14797-65-0	Nitrite	1.00U	0.500	1.00	2.00	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	500	11/22/2014 02:13	RXJ	545618

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
16887-00-6	Chloride	1270	25.0	50.0	100	mg/L
14808-79-8	Sulfate	240	25.0	50.0	100	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/25/2014 08:15	DJH	545824

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
000000-00-5	Total Alkalinity	467	0.26	0.50	1.0	mg/L CaCO3

Sample Results

JM04-7MW22-112014	Collect Date	11/20/2014 15:35	GCAL ID	21411211611
	Receive Date	11/21/2014 09:30	Matrix	Water

SM 4500-S2 D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/25/2014 17:59	KGL2	545859

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
18496-25-8	Sulfide	0.010J	0.005	0.010	0.020	mg/L

SM 5310 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	11/29/2014 16:35	KGL2	545979

CAS#	Parameter	Result	MDL	LOD	LOQ	Units
C-012	Total Organic Carbon	1.0U	0.30	1.0	1.0	mg/L

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COC # Jmd4-111214-1

Report to:
Client: Bethany Carney/CH2MHill
Address: [illegible] Parkway Dunwoody Rd
Suite 400 [illegible]
Contact: Atlanta GA 30328
Phone: 678-530-4124
E-mail: Bethany.Carney@ch2m.com

Bill to:
Client: BSC Contractors
Address:
Contact:
Phone:
E-mail:

P.O. Number

Project Name/Number: Sumass Sem Annual / 378718

Sampled By: M. Karasa/Atl & R. Brinkley/Atl
J. Acaron/GNV & J. Frank/Atl

Analytical Requests & Method

GCAL use only:
Custody Seal 234433.3
used ☐ yes ☐ no
intact ☐ yes ☐ no
Temperature °C 0.8, 0.4 ccf

☑ Dissolved Analysis Requested
☑ Field filtered
☐ Lab filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No. Containers	VOC 8260B TCE, RCE, VC	METALS (Field Filtered, Dissolved)	SULFIDE	AIR, NO_3, NO_2, SO_4, CL	TOC	MBE 8015						Preservative
GW	11/12/14	1210		x	Jmd4-55mw15-111214	14	3	1	1	1	2	2					1	Fe2+ unfilt = 0.34 mg/L | Filt = 0.22 mg/L
WT	11/12/14	—			Jmd4-TB01-111214	3	3										2	N/A
GW	11/12/14	1140		x	Jmd4-55mw16-111214	14	3	1	1	1	2	2					3	unfilt = 0.21 mg/L | Filt = 0.23 mg/L
GW	11/12/14	1430		x	Jmd4-55mw16-111214	14	3	1	1	1	2	2					4	unfilt = 0.21 mg/L | Filt = 0.18 mg/L
GW	11/12/14	1440		x	Jmd4-55mw16-111214	14	3	1	1	1	2	2					5	unfilt = 0.11 mg/L | Filt = 0.08 mg/L
GW	11/12/14	1400		x	Jmd4-55mw16-111214 MS	14	3	1	1	1	2	2					6	N/A
GW	11/12/14	1400		x	Jmd4-55mw16-111214 SD	14	3	1	1	1	2	2					7	N/A
GW	11/12/14	1105		x	Jmd4-55mw17-111214	14	3	1	1	1	2	2					8	unfilt = 0.[illegible] mg/L | Filt = 0.[illegible] mg/L
GW	11/12/14	1010		x	Jmd4-55mw18-111214	14	3	1	1	1	2	2					9	unfilt = 0.39 mg/L | Filt = 0.45 mg/L
GW	11/12/14	—		x	Jmd4-FD01-111214	14	3	1	1	1	2	2					10	N/A

Client ID: 4380 - CH2M Hill Constructors
SDG: 214111307
Due Date: 11/25/14

Air Bill No: Fed Ex # 8067 5580 8145

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☑ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Jamie Frank	11/12/14	1800			
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
SCAEX	11/13/14	1930	[illegible]	11/13/14	930
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

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Matrix[1]: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

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COC # Jm04-111414-1

Report to:
Client: Bethany Garvey / CH2MHill
Address: 1600 Peachtree Dunwoody Rd Building 400 Ste 400
Contact: Atlanta GA 30328
Phone: 678-530-4124
E-mail: Bethany.Garvey@ch2m.com

Bill to:
Client: Per Contract
Address:
Contact:
Phone:
E-mail:

GCAL use only: 236433
Custody Seal used ☑ yes ☐ no
intact ☑ yes ☐ no
Temperature °C 2.1 E24
1.3 E24

P.O. Number
Project Name/Number: Sumas 55 Sem. Analysis 378718

Sampled By: M. Karnea / ATL, R. Brown / ATL, J Frank / RAL, A Ucciar / ATL

☑ Dissolved Analysis Requested
☑ Field filtered
☐ Lab filtered

Analytical Requests & Method

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	VOC BTEX TCE DCE VC	Metals Cu Pb Field Filtered Iron	Sulfide	Alk NO_2 NO_3 SO_4 Cl	TOC	MEE	Preservative: Fe 2+
GW	11/14/14	1357		✓	Jm04-7mw24-111414	10	3	1	1	1	2	2	unfilt=0.03mg/L / filt=0.0mg/L
WT	11/14/14	0930		✓	Jm04-EB01-111414	10	3	1	1	1	2	2	—
WT	11/14/14	—			Jm04-TB03-111414	3	3						—
GW	11/14/14	1100		✓	Jm04-7mw10-111414	10	3	1	1	1	2	2	unfilt=0.03 mg/L / filt=0.02 mg/L
WT	11/14/14	0815		✓	Jm04-EB02-111414	10	3	1	1	1	2	2	—
GW	11/14/14	0944		✓	Jm04-55mw11-111414	10	3	1	1	1	2	2	unfilt=0.03mg/L / filt=0.03mg/L
GW	11/14/14	1005		✓	Jm04-55IW02-111414	10	3	1	1	1	2	2	unfilt=0.27mg/L / filt=0.12 mg/L
GW	11/14/14	1355		✓	Jm04-55IW04-111414	10	3	1	1	1	2	2	unfilt=0.0 mg/L / filt=0.01 mg/L
GW	11/14/14	1113		✓	Jm04-55BRW01-111414	10	3	1	1	1	2	2	unfilt=.93 mg/L / filt=.73 mg/L
GW	11/14/14	—		✓	Jm04-FD03-111414	10	3	1	1	1	2	2	unfilt=.93 mg/L / filt=.73mg/L

Air Bill No: FedEx 8267 5528 8178

Client ID: 4380 - CH2M Hill Constructors
SDG: 214111511
Due Date: 11/26/14

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☑ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
James Frank	11/14/14	1600			
FedEx	11/15/14	0955	Allison May	11/15/14	0955

Not

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Matrix[1]: W = water, S = solid, L = liquid, T = tissue

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ANALYTICAL LABORATORIES

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COC# JM04-111714-1

Report to:
Client: Bethany Graves / CH2MHILL
Address: 6600 Peachtree Dunwoody Rd
Building 400 Ste 600
Contact: Atlanta GA 30328
Phone: (678) 530 4124
E-mail: Bethany.Graves@ch2m.com

Bill to:
Client: Per Contract
Address:
Contact:
Phone:
E-mail:

P.O. Number

Project Name/Number: SWMU 55 Semi Annual 378718

Sampled By: M. Karafa, A. Glover, R. Brown

Analytical Requests & Method

GCAL use only:
Custody Seal used ☐ yes ☐ no
intact ☐ yes ☐ no
Temperature °C 21 E 27

☑ Dissolved Analysis Requested
☑ Field filtered
☐ Lab filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	8260B VOC	Metals (6010A Field Filtered)	Sulfide	Alk NO3 NO2 SO4 Cl	TOC	MEE	Preservative Fe+2 Readings
GW	11/17/14	1100		✓	JM04-7MW07-111714	10	3	1	1	1	2	2	UNFILTERED = 1.98 / FILTERED = 1.33
GW	11/17/14	1100		✓	JM04-7MW07-111714MS	10	3	1	1	1	2	2	"
GW	11/17/14	1100		✓	JM04-7MW07-111714SD	10	3	1	1	1	2	2	"
WT	—	—	—	—	JM04-TB04-111714	3	3						TRIP BLANK
GW	11/17	1035		✓	JM04-55MW09-111714	10	3	1	1	1	2	2	UN = 0.17 / FILTER = .07
GW	11/17	1255		✓	JM04 55MW10-111714	10	3	1	1	1	2	2	UN = 0.0 / FILTER = .17
	11/17	0930			JM04-EB03-111714 *		X	X	X	X	X	X	

Client ID: 4380 - CH2M Hill Constructors
SDG: 214111904
Due Date: 12/02/14

Air Bill No: FedEx # 8067 5580 8189

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☑ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]	11/17/14	1500			
Fed Ex	11-19-14	9:30	Dodie McCune	11-19-14	9:30
FedEx	11-18-14	945	Dodie McCune	11-18-14	945

Note: * Sample received in coolers bgm

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Matrix[1]: W = water, S = solid, L = liquid, T = tissue

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214111904

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COC# JM04-112014-1

Report to:
Client: Bethany Garvey / CH2MHILL
Address: 6000 Peachtree Dunwoody Rd
Bldg A400 Suite 600
~~Contact:~~ Atlanta GA 30328
Phone: 678-530-4124
E-mail: Bethany.Garvey@ch2m.com

Bill to:
Client: Per Contract
Address:
Contact:
Phone:
E-mail:

P.O. Number:
Project Name/Number: Sumn 55 Sam Annual / 378718
Sampled By: M. Carafa/ATL, R. Brown/ATL, J. Acker/KNV & J Frank/RAL

GCAL use only:
Custody Seal used ☑ yes ☐ no
intact ☑ yes ☐ no
Temperature °C 3.1 1.9 EZ4

☑ Dissolved Analysis Requested
☑ Field filtered
☐ Lab filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	VOC, 8260B TCE DCE & VC	METAL 6010 FIELD FILTERED	SULFIDE	Alk, Acidity, Sol Cl	TOC	MBE						Preservative: Fe 2+
							HCl	HNO3	NaOH ZnAc	—	HCl	—						
WT	11/20/14	—			JM04-TB02-112014	3	3										1	—
GW	11/20/14	0930		X	JM04-55MW02-112014	10	3	1	1	1	2	2					2	unfiltered 0.22 mg/L | Filt = 0.20 mg/L
GW	11/20/14	1100		X	JM04-55MW01-112014	10	3	1	1	1	2	2					3	unf = 0.35 mg/L | Filt = 0.32 mg/L
GW	11/20/14	1330		X	JM04-55MW14-112014	10	3	1	1	1	2	2					4	unf = 0.25 mg/L | Filt = 0.22 mg/L
GW	11/20/14	1505		X	JM04-7MW23-112014	10	3	1	1	1	2	2					5	unf = 0.67 mg/L | Filt = 0.57 mg/L
WT	11/20/14	1400		X	JM04-EB04-112014	10	3	1	1	1	2	2					6	—
GW	11/20/14	1100		X	JM04-55MW25-112014	10	3	1	1	1	2	2					7	unf = 1.97 mg/L | Filt = 1.13 mg/L
GW	11/20/14	0955		X	JM04-55MW26-112014	10	3	1	1	1	2	2					8	unf = 0.32 mg/L | Filt = 0.07 mg/L
GW	11/20/14	1330		X	JM04-55MW12-112014	10	3	1	1	1	2	2					9	unf = 0.23 mg/L | Filt = 0.0 mg/L
GW	11/20/14	—		X	JM04-FD02-112014	10	3	1	1	1	2	2					10	—
GW	11/20/14	1535		X	JM04-7MW22-112014	10	3	1	1	1	2	2					11	unf = 0.21 mg/L | Filt = 0.08 mg/L

Air Bill No: 8867 5580 8097

Client ID: 4380 - CH2M Hill Constructors
SDG: 214112116
Due Date: 12/04/14

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☑ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date:	Time	Received by: (Signature)	Date:	Time	No
[signature]	11/20/14	1700				
[signature]	11/21/14	930	[signature]	11/21/14	930	
Relinquished by: (Signature)	Date:	Time	Received by: (Signature)	Date:	Time:	

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Matrix[1]: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

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