DRAFT
FACILITY-WIDE GROUNDWATER MONITORING PROGRAM
RVAAP-66 FACILITY-WIDE GROUNDWATER
REPORT ON THE JULY 2015 SAMPLING EVENT

FORMER RAVENNA ARMY AMMUNITION PLANT
PORTAGE AND TRUMBULL COUNTIES, OHIO

October 22, 2015

GSA Contract Number GS-10F-0293K
Delivery Order W912QR-11-F-0266

Prepared for

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This document presents a summary of the facility-wide groundwater monitoring conducted in July 2015. Included in the report are:

- Summary of the groundwater elevations and water level measurements taken for each of the wells sampled.
- Analytical summary tables presenting the analytes detected above the method detection limit for this monitoring event.
- QA/QC and data verification reports for the event.

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CONTRACTOR'S STATEMENT OF INDEPENDENT TECHNICAL REVIEW

Environmental Quality Management, Inc. (EQM) has completed the *Draft Facility-Wide Groundwater Monitoring Program Report on the July 2015 Sampling Event.* Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in this project. During the independent technical review, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of data quality objectives; technical assumptions, methods, procedures, and materials used; the appropriateness of data used and level of data obtained; and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing United States Corps of Engineers policy.

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Quality Review

10/19/2015
Date

DRAFT

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RVAAP-66 FACILITY-WIDE GROUNDWATER
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ARNG – Army National Guard
OHARNG – CRJMTC-ENV – Ohio Army National Guard Camp Ravenna Joint Military Training Center – Environmental
Ohio EPA – NEDO - Ohio Environmental Protection Agency – Northeast District Office
Ohio EPA – CO-DERR – Ohio Environmental Protection Agency – Columbus – Division of Environmental Response &Revitalization
RVAAP – Ravenna Army Ammunition Plant
USACE – U.S. Army Corps of Engineers
EQM – Environmental Quality Management, Inc.

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LIST OF GENERAL ACRONYMS

ADR	Automated Data Review
amsl	above mean sea level
AOC	Area of Concern
ARNG	Army National Guard
º C	degree Celsius
CCV	continuing calibration verification
CRJMTC	Camp Ravenna Joint Military Training Center
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLP	Contract Laboratory Program
DDE	dichlorodiphenyldichloroethylene
DFFOs	Director's Final Findings and Orders
DoD	Department of Defense
EQM	Environmental Quality Management, Inc.
EPA	Environmental Protection Agency
ft	feet
FWGWMP	Facility-Wide Groundwater Monitoring Program
FWGWMPP	Facility-Wide Groundwater Monitoring Program Plan
FWSAP	Facility-Wide Sampling and Analysis Plan
GC	gas chromatograph
GOCO	government-owned, contractor-operated
GSA	Government Services Administration
>	greater than
GW	groundwater
HNO_3	nitric acid
HMX	octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
HPLC	high-performance liquid chromatography
H_2SO_4	sulfuric acid
IDW	Investigation-Derived Waste
IRP	Installation Restoration Program
LCS	laboratory control sample
<	less than
LS	Louisville District Quality Systems Manual Supplement
MCL	Maximum Contaminant Level
MDL	method detection limit
mg/L	milligram per liter
µg/L	microgram per liter
µm	micron
MMRP	Military Munitions Response Program
MRL	method reporting limit
MS	mass spectrometer
MS/MSD	matrix spike/matrix spike duplicate
mw	monitoring well
NaOH	sodium hydroxide
NEDO	Northeast District Office

LIST OF GENERAL ACRONYMS
(continued)

NA	not analyzed
NM	not measured
NO2/NO3	nitrite/nitrate
NS	no standard
NTU	nephelometric turbidity unit
OHARNG	Ohio Army National Guard
%	percent
PBA	Performance Based Acquisition
PCB	polychlorinated biphenyl
PETN	pentaerythritol tetranitrate
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
QSM	Quality Services Manual
RCRA	Resource Conservation and Recovery Act
RBC	Risk-Based Cleanup
RDX	hexahydro-1,3,5-trinitro-1,3,5-triazine
RI	Remedial Investigation
RL	reporting limit
RSL	Regional Screening Level
RVAAP	Ravenna Army Ammunition Plant
SDG	sample delivery group
SRC	Site-Related Contaminant
SSHP	Site Safety and Health Plan
SVOC	semivolatile organic compound
s.u.	standard units
TAL	target analyte list
TOC	top of casing
U.S.	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USP&FO	United States Property and Fiscal Officer
UV	ultraviolet
VOC	volatile organic compound

LIST OF AREA OF CONCERN ACRONYMS

ASY	Atlas Scrap Yard
B12	Building 1200
BKG	Background
CBL	C-Block
CBP	Central Burn Pits
CP	Cobbs Pond
DA2	Demolition Area #2
EBG	Erie Burning Grounds
FBQ	Fuze and Booster Quarry
FWG	Facility-Wide Groundwater
LNW	Landfill North of Winklepeck
LL	Load Line
MBS	Mustard Burial Site
NACA	National Advisory Committee for Aeronautics
NTA	NACA Test Area
RQL	Ramsdell Quarry Landfill
SCF	Sharon Conglomerate Formation
WBG	Winklepeck Burning Grounds

EXECUTIVE SUMMARY

Past Department of Defense (DoD) activities at the former Ravenna Army Ammunition Plant (RVAAP) in Ravenna, Ohio, date to 1940 and include the manufacturing, loading, handling, and storage of military explosives and ammunition. Residual contamination from these early activities at the former RVAAP has been identified in groundwater beneath the facility. Currently, the approximately 21,683-acre facility is primarily used for military training.

The United States (U.S.) Army Corps of Engineers (USACE) is performing Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) closure at the former RVAAP under the Installation Restoration Program (IRP) and the Military Munitions Response Program (MMRP). The overall goal is to remediate the former RVAAP installation as all of the property has been transferred to the Army National Guard (ARNG) and is being used by the Ohio Army National Guard (OHARNG) as a military training site. One of the activities conducted under the IRP includes monitoring of an extensive network (now 284 wells) of groundwater monitoring wells at the former RVAAP facility. To date, the 284 wells at the facility have been sampled and analyzed a minimum of four quarters.

In 2004, the U.S. Army and the Ohio Environmental Protection Agency (EPA) finalized the FWGWMP Plan, which detailed the requirements of the program for the 243 existing wells. The FWGWMP was initiated in 2005 with three consecutive quarters of FWGWMP well sampling. In addition, five Resource Conservation and Recovery Act (RCRA) wells located at Ramsdell Quarry Landfill (RQLmw-007, RQLmw-008, and RQLmw-009) and Demolition Area 2 (DETmw-003 and DETmw-004) are sampled on a semiannual basis.

The current wells to be sampled and the analytes to be analyzed from each well were approved in the FWGWMPP Addendum dated February 20, 2015. The current Monitoring Well Schedule is presented in Appendix A. This appendix presents the list of the semiannual wells sampled during the July 2015 event.

The following activities were conducted by Environmental Quality Management, Inc. (EQM) during the reporting period:

- Performed groundwater sampling at the 42 wells identified in Appendix A.
- Performed groundwater pH field monitoring at 4 wells.
- Gauged water levels/total depth and performed well inspections for 284 groundwater monitoring wells at the facility.
- Performed laboratory analysis of all the collected samples.
- Verified, validated, and reduced the laboratory analytical data produced for the event (exclusive of the quality assurance samples analyzed by RTI Laboratories).
- Prepared the Investigation-Derived Waste (IDW) Characterization and Disposal Plan for the IDW collected during monitoring activities.
- Prepared and submitted the monitoring report for the sampling event.

During the July 2015 sampling event, several analytes were detected at levels at/or above their respective Maximum Contaminant Levels (MCLs) and/or United States Environmental Protection Agency (USEPA) Regional Screening Levels [RSLs (June 2015)]. The summary of exceedances is as follows.

Note: J = The identification of the analyte is acceptable, but the quality assurance criteria indicate that the quantitative values may be outside the normal expected range of precision (i.e., the quantitative value is estimated).

Explosive and Propellant Compounds

As shown in Table 3-2, the following explosives or propellants were detected at levels above their corresponding MCLs and/or RSLs (June 2015) during the July 2015 sampling event:

- 2,4,6-Trinitrotoluene – FBQmw-174 (21 µg/L), LL1mw-083 (3.4 µg/L J), LL1mw-084 (5.8 µg/L J), LL3mw-238 (55 µg/L J), and LL3mw-241 (6.0 µg/L). There is no MCL for 2,4,6-trinitrotoluene. The RSL (June 2015) is 2.5 µg/L.

- 2,4-Dinitrotoluene – FBQmw-174 (0.60 µg/L J), LL1mw-083 (2.7 µg/L J), and LL1mw-084 (1.1 µg/L J). There is no MCL for 2,4-dinitrotoluene. The RSL (June 2015) is 0.24 µg/L.

- 2,6-Dinitrotoluene – LL1mw-083 (1.6 µg/L J), LL1mw-084 (0.62 µg/L J), LL3mw-238 (0.38 µg/L J) and LL3mw-241 (0.14 µg/L). There is no MCL for 2,6-dinitrotoluene. The RSL (June 2015) is 0.048 µg/L.

- Nitrate-Nitrite –LL12mw-185 (120 mg/L), and LL12mw-187 (1300 mg/L). The MCL for nitrate-nitrite is 10 mg/L. There is no RSL (June 2015).

- RDX – DETmw-004 (2.5 µg/L), LL1mw-084 (1.3 µg/L J), LL2mw-267 (1.3 µg/L), LL3mw-238 (6.8 µg/L J), LL3mw-241 (1.3 µg/L), WBGmw-006 (10 µg/L), and WBGmw-009 (2.8 µg/L). There is no MCL for RDX. The RSL (June 2015) is 0.7 µg/L.

Inorganic Elements

Several inorganic compounds were detected at levels exceeding the MCLs and/or RSLs (June 2015). These include aluminum, arsenic, cyanide, iron, and manganese. Table 4-1 in Section 4 presents a summary of all inorganic compounds and the associated wells that had detections exceeding MCLs and/or the RSLs (June 2015).

Volatile Organic Compounds

As shown in Table 3-4, the only VOCs detected at levels exceeding their corresponding MCLs and/or RSLs (June 2015) during the March 2015 sampling event were:

- Carbon tetrachloride – LL10mw-003 (1.3 µg/L). The MCL for carbon tetrachloride is 5.0 µg/L. The RSL (June 2015) is 0.45 µg/L.

Semivolatile Organic Compounds

As shown in Table 3-5, no SVOCs were detected at levels exceeding their corresponding MCLs and/or RSLs (June 2015) during the July 2015 sampling event.

Pesticides and Polychlorinated Biphenyls (PCBs)

The analytical results for pesticides and PCBs are summarized in Table 3-6.
As shown in Table 3-6, no pesticides and PCBs were detected at levels exceeding the MDL for this sampling event.

Hexavalent Chromium

The analytical results for hexavalent chromium are summarized in Table 3-7. Well LL3mw-244 had a detected concentration for hexavalent chromium of 0.195 µg/L, which is elevated above the RSL (June 2015) of 0.035 µg/L (there is no MCL for hexavalent chromium).

Perchlorate

As shown in Table 3-8, perchlorates were not detected at levels exceeding either their corresponding MCLs or RSLs (June 2015).

SECTION 1
INTRODUCTION

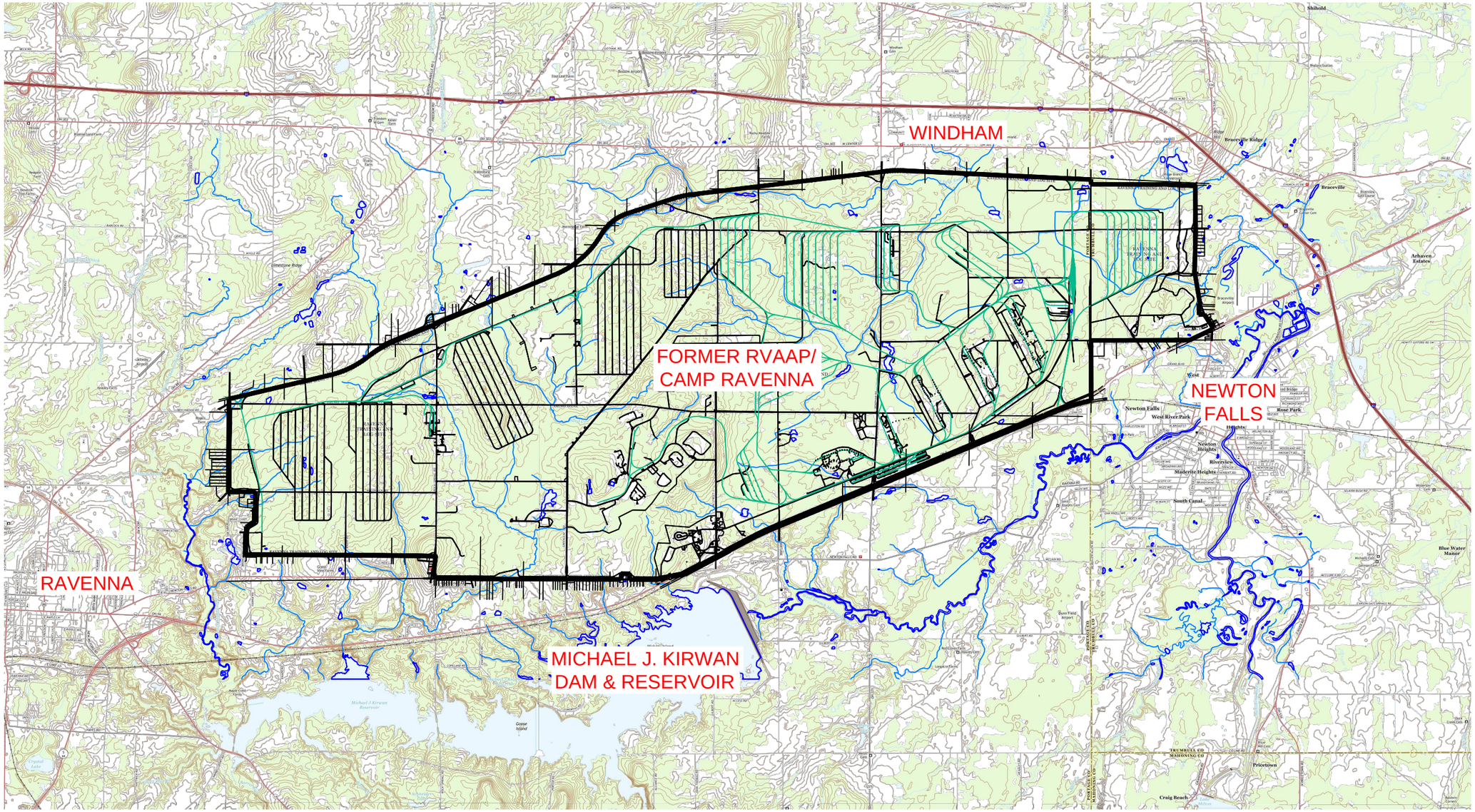
1.1 Facility Description

Past Department of Defense (DoD) activities at the former Ravenna Army Ammunition Plant (RVAAP) date to 1940 and include the manufacturing, loading, handling, and storage of military explosives and ammunition. Until 1999, the former RVAAP was identified as a 21,419-acre installation. The property boundary was resurveyed by the Ohio Army National Guard (OHARNG) over a 2-year period from 2002 and 2003, and the actual total acreage of the property was found to be 21,683.289 acres. All of the former 21,683 acre RVAAP has been transferred to the United States Property and Fiscal Officer (USP&FO) for Ohio for use by the OHARNG. Administrative accountability for all property has been transferred to the Army National Guard (ARNG) with licensure to OHARNG for use as a military training site, Camp Ravenna Joint Military Training Center (CRJMTC). The CRJMTC is in northeastern Ohio within Portage and Trumbull Counties, approximately 4.8 kilometers (3 miles) east-northeast of the city of Ravenna and approximately 1.6 kilometers (1 mile) northwest of the city of Newton Falls (Figure 1-1). The former RVAAP portions of the property are solely located within Portage County. The CRJMTC (inclusive of the former RVAAP) is a parcel of property approximately 17.7 kilometers (11 miles) long and 5.6 kilometers (3.5 miles) wide bounded by State Route 5, the Michael J. Kirwan Reservoir, and the CSX System Railroad on the south; Garret, McCormick, and Berry roads on the west; the Norfolk Southern Railroad on the north; and State Route 534 on the east. Figure 1-1 presents the Former RVAAP/Camp Ravenna Installation Location Map. The CRJMTC is surrounded by several communities: Windham on the north; Garrettsville 9.6 kilometers (6 miles) to the northwest; Newton Falls 1.6 kilometers (1 mile) to the southeast; Charlestown to the southwest; and Wayland 4.8 kilometers (3 miles) to the south. When the former RVAAP was operational CRJMTC did not exist and the entire 21,683-acre parcel was a government-owned, contractor-operated (GOCO) industrial facility. The RVAAP Installation Restoration Program (IRP) encompasses investigation and cleanup of past activities over the entire 21,683 acres of the former RVAAP, and, therefore, references to the former RVAAP in this document are considered to be inclusive of the historical extent of the former RVAAP, which is inclusive of the combined acreages of the current CRJMTC and former RVAAP, unless otherwise specifically stated.

1.2 Project Description

1.2.1 Historical Monitoring

In 2004, the United States (U.S.) Army and the Ohio Environmental Protection Agency (EPA) finalized the Facility-Wide Groundwater Monitoring Program (FWGWMP) Plan, which details the requirements of the program. The FWGWMP was initiated in 2005 with three consecutive quarters of FWGWMP well sampling. Quarterly sampling has continued through the current monitoring event. The initial FWGWMP wells identified for monitoring were sampled once every quarter, with the exception of the five Resource Conservation and Recovery Act (RCRA)



OHIO

QUADRANGLE LOCATION

Mantua	Garrettsville	Southington
Ravenna	Windham	Newton Falls
Atwater	Deerfield	Lake Milton

UTM GRID AND 2013 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

8° 40'
154 MILS
MN
GN
0° 2'
1 MILS

REV	DESCRIPTION	DATE	APPROVED

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SCALE:	NOT TO SCALE	

FORMER RVAAP / CAMP RAVENNA
PORTAGE AND TRUMBULL COUNTIES, OHIO
INSTALLATION LOCATION MAP

SIZE	PROJECT NO.	DWG NO.	REV
B	030174.0016	FIGURE 1-1	0

wells that include three Ramsdell Quarry Landfill (RQL) wells (RQLmw-007, -008, and -009) and two Demolition Area 2 (DA2) wells (DETmw-003 and DETmw-004). The RQL and DA2 wells are sampled semiannually.

As detailed in the original FWGWMP Plan (FWGWMPP; September 2004), the initial monitoring program consisted of the sampling of 36 wells specified in Table 4-1 of the FWGWMPP. Fourteen of these wells are "Background Wells," and the remaining wells are situated at various Areas of Concern (AOCs) at the former RVAAP. The first sampling event for this project was conducted in April 2005. The final assessment monitoring event for the initial well sampling and analysis was completed in October 2007.

On October 22, 2007, the U.S. Army Corps of Engineers (USACE) submitted to the Ohio EPA the *Preliminary Draft Proposal to Update the Facility-Wide Ground Water Monitoring Program* (USACE, October 2007) at the former Ravenna Army Ammunition Plant. This proposal presented recommendations for modifications to the FWGWMP, the Director's Final Findings and Orders (DFFOs), and the Conceptual Plan in Appendix E of the Findings and Orders as presented below.

Section 3.1.2.2 of the original FWGWMPP (September 2004) establishes a protocol for adding and removing wells from the FWGWMP: "*Future wells installed as part of individual AOC investigations conducted under the ongoing Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process at RVAAP will be evaluated for incorporation into the FWGWMP upon completion of at least four quarterly groundwater sampling events to be conducted as part of the Remedial Investigation (RI) phase at each AOC. The frequency of the initial sampling events may be other than quarterly if agreed upon by the Army and Ohio EPA.*" Based on this protocol the USACE notified the Ohio EPA on December 12, 2007 that the wells to be sampled would be changed effective with the January 2008 monitoring event. The Ohio EPA provided concurrence with this change in an email dated January 8, 2008. The Ohio EPA was notified of an additional change on February 27, 2008, increasing the number of wells to be sampled for the April 2008 event. The Ohio EPA was notified on March 21, 2008 that the number of FWGWMP wells to be sampled in April 2008 (and the July 2008, October 2008, and January 2009 events) would be increased to 132 plus the five RCRA wells sampled semiannually (in order to complete four quarters of sampling for each of the 132 wells).

Beginning with the April 2009 sampling event the remaining wells on the list contained in the *Draft Proposal to Update the Facility-Wide Ground Water Monitoring Program* (USACE, October 2007) were sampled.

A revised list of wells to be sampled during 2010-2011 was submitted to the Ohio EPA in early 2010. The list of wells to be sampled, as well as scheduling issues, were discussed with the Ohio EPA in a telephone conference and verified in a subsequent email on May 26, 2010.

Revisions to the list of wells to be sampled and the analytes to be analyzed from each well were discussed with the Ohio EPA in email correspondences in July 2011. For the groundwater monitoring event it was agreed to monitor the wells and analytes presented in the Draft 2010

Addendum to the Facility-Wide Groundwater Monitoring Program Plan RVAAP-66 Facility-Wide Groundwater (USACE, 2010). (Note that this document was withdrawn as a submittal to the Ohio EPA; however, the information presented in that document is still relevant and useful.)

1.2.2 July 2015 Monitoring Event

One of the activities conducted under the IRP includes monitoring of an extensive network (now 284 wells) of groundwater monitoring wells at the former RVAAP facility. To date, 284 current FWGWMP wells at the facility have been sampled and analyzed a minimum of four quarters.

Details of the current program design and requirements are contained in the *Final Facility-Wide Groundwater Monitoring Program Plan RVAAP-66 Facility-Wide Groundwater Semiannual Monitoring Addendum* dated August 1, 2013. Additionally, this document supplements the *Final Facility-Wide Groundwater Monitoring Program Plan RVAAP-66 Facility-Wide Groundwater Addendum* (FWGWMPP Addendum; EQM, January 2012), which includes three parts that pertain to the proposed work: Part I- Environmental Investigation Services Addendum, Part II- Quality Assurance Project Plan (QAPP) Addendum, and Part III- Site Safety and Health Plan (SSHP) Addendum. Additional details pertaining to performance of field and laboratory activities are contained in the *Final Facility-Wide Sampling and Analysis Plan for Environmental Investigations at the Ravenna Army Ammunition Plant, Ravenna, Ohio* (FWSAP; SAIC, 2011).

The current wells to be sampled and the analytes to be analyzed from each well were approved in the FWGWMPP Addendum dated February 20, 2015. The current Monitoring Well Schedule is presented in Appendix A. This appendix presents the list of the semiannual wells sampled during the July 2015 event.

1.3 Scope of Work for the July 2015 Sampling Event

The USACE, under a Government Services Administration (GSA) Performance Based Acquisition (PBA) contract, retained Environmental Quality Management, Inc. (EQM) (Contract No. GS-10F-0293K – Delivery Order W912QR-11-F-0266) to obtain a signed Record of Decision (ROD) for the facility-wide groundwater (RVAAP-66) at the former RVAAP. One objective of this project is to continue monitoring under the RVAAP Facility-Wide Groundwater Monitoring Program. The following tasks were performed during the July 2015 sampling event in accordance with specifications contained in the Semiannual Addendum, FWGWMPP Addendum, the FWSAP, and the Scope of Work written by the USACE:

- Performed groundwater sampling at the 42 wells identified in Appendix A.
- Performed groundwater pH field monitoring only at 4 wells.
- Gauged water levels/total depth and performed well inspections for 284 groundwater monitoring wells at the facility
- Performed laboratory analysis of all the collected samples, excluding pH field monitoring.

- Verified, validated, and reduced the laboratory analytical data produced for the event (exclusive of the quality assurance samples analyzed by RTI Laboratories).
- Prepared the Investigation-Derived Waste (IDW) Characterization and Disposal Plan for the IDW collected during monitoring activities.
- Prepared and submitted the monitoring report for the sampling event.

1.4 Report Presentation

This report presents the results of the July 2015 sampling event. The report is structured in the following way:

- Section 1.0 – Introduction.
- Section 2.0 – Description of Project Activities. This section describes project-specific details not contained in the FWSAP, FWGWMPP Addendum, and Semiannual Addendum. Additionally, details are provided on how the tasks described above were performed.
- Section 3.0 – Results of Investigation. The results of the sampling event are summarized, including groundwater elevation measurements, analytical results, and data verification/validation information.
- Section 4.0 – Summary of Results.
- Section 5.0 – References.

- Appendix A – Monitoring Wells Sampled During the July 2015 Groundwater Monitoring Event
- Appendix B – Water-Level Measurements/Field Log Book/Calibration Records/Sample and Purge Records/Daily Quality Control Reports
- Appendix C – Data Verification Reports/Laboratory Data Sheets
- Appendix D – Investigation-Derived Waste Characterization and Disposal Plan
- Appendix E – Reporting Limits that Currently Do Not Meet the RVAAP QAPP Project Action Requirements, MCLs, and/or USEPA RSLs (June 2015)
- Plates

SECTION 2
PROJECT ACTIVITIES

2.1 Groundwater Level Monitoring

Depth to water from the top of the inner casing was measured in 284 FWGWMP wells during July 14-20, 2015. Water-level measurements were taken with a Herron Dipper-T or Enviro Inspector electronic water-level indicator. The depth to the bottom of the well from the top of the inner casing was also measured with the electronic water-level indicator. The annual inspection of all the wells was also conducted at that time (the results of the inspections and potentiometric maps resulting from the water level measurements will be discussed in the 2015 Annual Report).

Results of the groundwater level monitoring for all the RVAAP wells sampled during this monitoring event are presented in Section 3.1 and Appendix B. The monitoring well location map, identified as Plate 1, is included with this report. Potentiometric maps created from groundwater measurements from the former RVAAP monitoring wells in May 2014 are presented on Plates 2, 3, 4, and 5. The potentiometric maps were generated from the May 2014 water-level measurements taken from 284 new and existing facility wells including the six deep Sharon Conglomerate wells. These maps are updated on a yearly basis. The water levels from the individual events are not included in these plates. Additionally, the groundwater elevations from the Sharon Conglomerate wells were evaluated and determined not to be representative of either the Homewood aquifer or the upper portion of the Sharon aquifer. These wells were installed with their screened intervals positioned at the basal portion of the Sharon Conglomerate. Therefore, the groundwater elevations collected from the basal Sharon Conglomerate wells were used to determine the potentiometric contours for these deep wells as presented in Plate 5.

To determine if groundwater elevations of basal Sharon Conglomerate wells (as determined in May 2014) are representative of the Sharon or Homewood Aquifers, the groundwater elevation data were compared. The groundwater elevation of water in the Homewood Aquifer (well LL10mw-003) is more than 80 feet (ft.) higher than the nearest basal Sharon Conglomerate well (well SCFmw-001). This demonstrates that the Homewood aquifer and Sharon Conglomerate are not representative of the same hydraulic unit. If they were in the same hydraulic unit, the water levels would be expected to be much the same.

The groundwater elevations of the five wells from the upper portion of the Sharon Aquifer are 1.52 to 18.78 ft. higher than the five basal Sharon Conglomerate groundwater elevations at the same locations. The average elevation difference is nearly 10 ft. Again, this groundwater elevation difference indicates that the basal Sharon Conglomerate and the upper portion of the Sharon are separate hydraulic units.

Additionally, hydraulic gradients and velocity data were calculated for the various aquifers using the May 2014 groundwater flow data along three flow pathways across the former RVAAP as

shown on the Plates. These maps are updated on a yearly basis and are discussed in detail during the annual reporting.

2.2 Groundwater Sampling

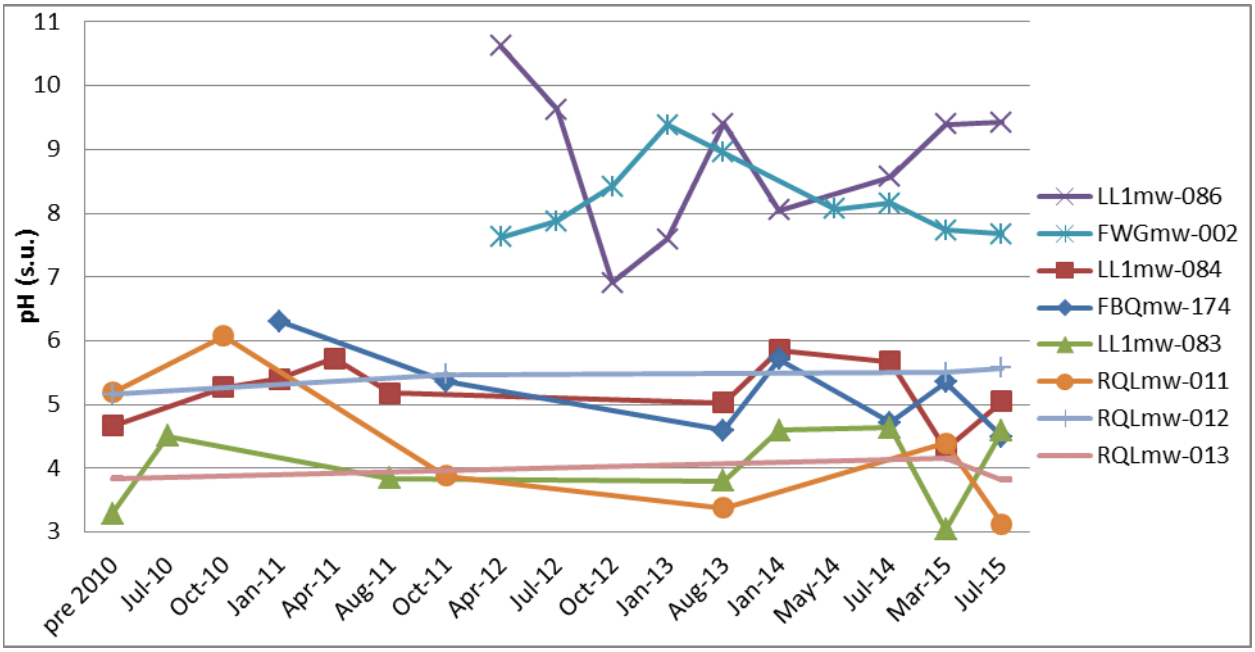
All identified monitoring wells were sampled from July 20-24, 2015. Wells were sampled using micropurge techniques or a bailer in accordance with the specifications contained in the approved addendum. The wells were micropurged until certain groundwater parameters (i.e., temperature, specific conductivity, pH, and dissolved oxygen) had stabilized and turbidity readings were less than (<) or equal to 10 nephelometric turbidity units (NTUs). If after two hours the turbidity did not reach < or equal to 10 NTUs and the other groundwater parameters were stabilized, sample collection was initiated. The wells that did not meet this condition after two hours were FWGmw-011, LL3mw-238, LL7mw-001, LL12mw-242, LL12mw-247*, NTAmw-119, and RQLmw-008. (*Note that LL12mw-247 did reach < or equal to 10 NTUs within two hours during the first purging and sampling at the well on 9-21-15, however did not during the re-purging on 9-22-15).

The groundwater parameters were measured using a Horiba U-22/U-52 with flow cell or equivalent**.** Groundwater parameter measurements obtained during micropurging are presented in Appendix B. EQM continued purging after the normal stabilization parameters had stabilized (turbidity is not a stabilization parameter) in an attempt to reach turbidity values that < or equal to 10 NTUs. Additionally, the groundwater samples for metals analysis were filtered as part of the FWGWMP sampling, thereby reducing the effect of suspended particles in the groundwater. Filtered metals samples were collected through the bladder pump using an inline 0.45-micron filter emptying directly into pre-preserved sample bottles containing nitric acid. All sampling procedures for the filtered metals were conducted in accordance with the FWSAP.

During the July 2015 event, eight groundwater monitoring wells were monitored for pH measurements outside the typical pH range for natural ground water (i.e., <5 to >9). Some of these wells were on the sampling list others were just for pH field monitoring only. A graph of the pH details is presented in Figure 2-1. The pH monitoring will be reassessed after the July 2015 event. As the pH chart indicates several wells (FBQmw-174, FWGmw-002, LL1mw-084, LL1mw-086, and RQLmw-012) average within the typical pH range for natural ground water. Additionally, this chart indicates that three of these wells (LL1mw-083, RQLmw-011 and RQLmw-013) average outside the typical pH range for natural ground water.

Groundwater samples were collected using bladder pump micropurge sampling techniques with the exception of well DETmw-004. This well historically exhibits poor yield. Therefore, EQM used the bailer method for purging and sampling per the Semiannual Addendum. Equipment and sampling details are contained in Appendix B. Groundwater samples were collected in laboratory-supplied containers and stored in iced coolers for shipment in accordance with the specifications presented in the FWSAP, Semiannual Addendum, and FWGWMPP. During the March 2015 sampling, all coolers were received by the laboratory at temperatures within the prescribed tolerance limits.

Figure 2-1. pH Chart



2.3 Laboratory Analysis

Laboratory analyses on all primary samples and associated quality control (QC) samples were performed by Test America Laboratories, with the exception of hexavalent chromium, which was conducted by ALS Environmental. Table 2-1 presents the analytical methods used to analyze the groundwater samples.

Note that for this event, wells were sampled for specific analytes as identified in the FWGWMPP Addendum. The July 2015 groundwater samples were analyzed for the following parameters depending upon the well as presented in Appendix A: explosives, propellants (nitrocellulose and nitroguanidine), cyanide, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), target analyte list (TAL) metals (filtered), pesticides, and polychlorinated biphenyls (PCBs). Additionally, Nitrate/Nitrites were collected at Load Line 12 wells. Three locations (LL3mw-244, LL12mw-247, and SCFmw-002) were analyzed for hexavalent chromium. Two locations (LL3mw-244, and LL12mw-247) were analyzed for perchlorate.

Quality control samples, including duplicates and matrix spike/matrix spike duplicates (MS/MSD) were collected from the following wells:

LL12mw-245– Duplicate Sample (no explosives/propellants)
DA2mw-115 – Duplicate Sample
LL2mw-271 – Duplicate Sample
LL3mw-244 – Duplicate Sample
RQLmw-007 – Duplicate Sample
RQLmw-008 – MS/MSD
SCFmw-002 – MS/MSD (no pesticides)
LL3mw-246 – MS/MSD (no explosives/propellants)
LL12mw-185 – MS/MSD (nitrate nitrite only)

Table 2-1. Analytical Suite of Concerns

Constituents	Method[1]	Preservation
Polychlorinated biphenyls (PCBs)	Gas Chromatograph (GC) – (8082)	Cool, 4º C[3]
Pesticides	GC – (8081A)	Cool, 4º C
Base/Neutrals and Acids (SVOCs)	GC/Mass Spectrograph (MS) SVOCs (8270C)	Cool, 4º C
Volatile Organic Compounds (VOCs)	GC/MS VOCs (8260B)	HCl, Cool, 4º C, pH < 2
Nitroguanidine (Propellant)	Organic compounds by UV/HPLC (8330 modified)	Cool, 4º C
Nitroaromatics & Nitramines (Explosives)	GC SVOCs Explosives (8330)	Cool, 4º C
Nitrocellulose as N(Propellant)	General Chemistry (WS-WC-0050)	Cool, 4º C
Nitrate/Nitrites	General Chemistry (353.2)[2]	H_2SO_4, Cool, 4º C, pH < 2
Perchlorate	Method 6860	0.2 µm filter, Cool, 4º C
Cyanide (Total)	General Chemistry (9012A)	NaOH to pH > 12, Cool, 4º C
Metals (Magnesium, Manganese, Barium, Nickel, Potassium, Silver, Sodium, Vanadium, Chromium, Calcium, Cobalt, Copper, Arsenic, Lead, Selenium)	Inductively Coupled Plasma (6010B)	0.45µm filter, HNO_3, to pH < 2, Cool, 4º C
Metals (Antimony, Iron, Beryllium, Thallium, Zinc, Cadmium, Aluminum)	Inductively Coupled Plasma Mass Spectrometry (6020)	0.45µm filter, HNO_3, to pH < 2, Cool, 4º C
Mercury	Liquid Waste Cold Vapor Technique (7470A)	0.45µm filter, HNO_3, to pH < 2, Cool, 4º C
Hexavalent Chromium	Method 218.6[2]	0.45µm filter, Buffer solution, Cool, 4º C

1 = USEPA SW846
2 = EPA Methods for Chemical Analysis of Water and Waste
3 = degree Celsius
µm = micron

All samples were picked up from the facility and delivered to the laboratory in a cooler (with wet ice) by a Test America courier under proper chain-of-custody procedures (FWSAP). Hexavalent chromium samples were shipped for analysis to ALS Environmental in Rochester, New York. Laboratory analyses on all quality assurance (QA) samples (i.e., split samples) were performed by RTI Laboratories in Livonia, Michigan. Five QA samples were collected from the same wells where the duplicate samples were collected. All QA samples were shipped in coolers (with wet ice) via overnight delivery service under proper chain-of-custody procedures. Table 2-2 presents, in tabular form, all analyses and associated QA/QC for the July 2015 monitoring event. The Daily Quality Control Reports are presented in Appendix B.

Laboratory results are summarized in Section 3.2. Laboratory data sheets, including chain-of-custodies and QA/QC information, are contained in Appendix C.

2.4 Data Verification/Validation

Data from Test America and ALS were verified in accordance with project specifications by EQM chemists Ms. Angye Dragotta and Mr. Eric Corbin using the Automated Data Review (ADR) software. Data validation/verification is summarized in Section 3.3. The Data Verification/Validation Summary Reports are presented in Appendix C.

2.5 Investigation-Derived Waste

An IDW Report was prepared for the sampling and water-level measurement activities discussed in Section 3. Purge water was collected at each well location in 5-gallon buckets and transferred to 55-gallon drums located inside Building 1036. No more than 7-gallons were purged from any well. Instruments and equipment were decontaminated after purging and sampling each monitoring well. Decontamination fluids were collected and also transferred to 55-gallon drums located inside Building 1036. Per discussions in the field on July 22, 2015, with the Army National Guard (ARNG) and the Ohio EPA, the decontamination liquid was stored in the same drums as the purge water. Pending analysis of the monitoring well samples, IDW fluids are stored in the 55-gallon drums until disposal. The IDW Report is presented in Appendix D.

Table 2-2. QA Table for July 2015 Sampling Event

	Contractor Laboratory							Government Laboratory		Requested Laboratory Analysis											
Sample Locations	Primary Lab Sample ID	Date	Sample Type	Assoc. QC Dup Number	Assoc. QC Rinsate Number	Assoc. QC Trip Blank Number	MS/ MSD	QA Lab Sample ID	Assoc. QC Trip Blank Number	VOCs	SVOCs 1	SVOCs 1&3	SVOCs 4	Pesticides	PCBs	Explosives & Propellants	Cyanide	Nitrite/Nirate	Filtered Metals	Filtered Cr^{+6}	Filtered ClO_4^-
DA2mw-115	FWGDA2mw-115-0571-GW/GF	7/23/2015	GW	DUP1-0617	EQUIPRinse4-0625	--	--	FWGDA2mw-115-0613s-GW/GF	--		1[A]					1[A]			1[A]		
DETmw-003	FWGDETmw-003C-0572-GW/GF	7/23/2015	GW	--	EQUIPRinse4-0625	FWGTeamDemo-Trip	--	--	--	1			1	1	1	1	1		1		
DETmw-004	FWGDETmw-004C-0573-GW/GF	7/22-23/15	GW	--	EQUIPRinse4-0625	FWGTeamDemo-Trip	--	--	--	1			1	1	1	1	1		1		
FBQmw-174	FWGFBQmw-174C-0574-GW/GF	7/20/2015	GW	--	EQUIPRinse1-0622	--	--	--	--		1			1		1			1		
FWGmw-002	--	7/23/2015	GW	--	EQUIPRinse4-0625	--	--	--	--	field pH monitoring only											
FWGmw-004	FWGFWGmw-004-0575-GW/GF	7/23/2015	GW	--	EQUIPRinse4-0625	--	--	--	--		1					1			1		
FWGmw-007	FWGFWGmw-007-0576-GW/GF	7/23/2015	GW	--	EQUIPRinse4-0625	--	--	--	--		1					1			1		
FWGmw-011	FWGFWGmw-011-0577-GW/GF	7/22/2015	GW	--	EQUIPRinse3-0624	--	--	--	--		1					1			1		
FWGmw-012	FWGFWGmw-012-0578-GW/GF	7/22/2015	GW	--	EQUIPRinse3-0624	--	--	--	--		1					1			1		
FWGmw-015	FWGFWGmw-015-0579-GW/GF	7/23/2015	GW	--	EQUIPRinse4-0625	--	--	--	--		1					1			1		
FWGmw-016	FWGFWGmw-016-0580-GW/GF	7/23/2015	GW	--	EQUIPRinse4-0625	--	--	--	--		1					1			1		
LL10mw-003	FWGLL10mw-003C-0597-GW/GF	7/23/2015	GW	--	EQUIPRinse4-0625	FWGTeamDemo-Trip	--	--	--	1	1								1		
LL12mw-185	FWGLL12mw-185C-0598-GW/GF	7/21/2015	GW	--	EQUIPRinse2-0623	--	Y	--	--									1[A]	As		
LL12mw-187	FWGLL12mw-187C-0599-GW/GF	7/22/2015	GW	--	EQUIPRinse3-0624	--	--	--	--		1					1		1	1		
LL12mw-242	FWGLL12mw-242C-0600-GW/GF	7/21/2015	GW	--	EQUIPRinse2-0623	--	--	--	--		1					1		1	1		
LL12mw-245	FWGLL12mw-245C-0601-GW/GF	7/22/2015	GW	DUP4-0620	EQUIPRinse3-0624	--	--	FWGLL12mw-245-0615s-GW/GF	--		1[A]					1		1[A]	1[A]		
LL12mw-247	FWGLL12mw-247-0602-GW/GF	7/21/2015	GW	--	EQUIPRinse2-0623	--	--	--	--		1					1		1[A]	1	1	
LL1mw-064	FWGLL1mw-064C-0581-GW/GF	7/20/2015	GW	--	EQUIPRinse1-0622	--	--	--	--		1					1			1		
LL1mw-065	FWGLL1mw-065C-0582-GW/GF	7/23/2015	GW	--	EQUIPRinse4-0625	--	--	--	--		1					1			1		
LL1mw-083	FWGLL1mw-083C-0583-GW/GF	7/20/2015	GW	--	EQUIPRinse1-0622	--	--	--	--		1			1		1			1		
LL1mw-084	FWGLL1mw-084C-0584-GW/GF	7/20/2015	GW	--	EQUIPRinse1-0622	--	--	--	--		1			1		1			1		
LL1mw-086	FWGLL1mw-086-0585-GW/GF	7/21/2015	GW	--	EQUIPRinse2-0623	--	--	--	--		1			1		1			1		
LL1mw-087	FWGLL1mw-087-0586-GW/GF	7/21/2015	GW	--	EQUIPRinse2-0623	--	--	--	--		1					1			1		
LL1mw-088	FWGLL1mw-088-0587-GW/GF	7/21/2015	GW	--	EQUIPRinse2-0623	--	--	--	--		1			1		1			1		
LL2mw-059	FWGLL2mw-059C-0588-GW/GF	7/20/2015	GW	--	EQUIPRinse1-0622	--	--	--	--		1					1			1		
LL2mw-060	FWGLL2mw-060C-0589-GW/GF	7/20/2015	GW	--	EQUIPRinse1-0622	--	--	--	--		1					1			1		
LL2mw-267	FWGLL2mw-267C-0590-GW/GF	7/23/2015	GW	--	EQUIPRinse4-0625	--	--	--	--		1					1			1		
LL2mw-271	FWGLL2mw-271-0591-GW/GF	7/21/2015	GW	DUP2-0618	EQUIPRinse2-0623	--	--	FWGLL2mw-271-0618s-GW/GF	--		1[A]					1[A]			1[A]		1[A]
LL3mw-238	FWGLL3mw-238C-0592-GW/GF	7/20/2015	GW	--	EQUIPRinse1-0622	--	--	--	--		1			1		1			1		
LL3mw-241	FWGLL3mw-241C-0593-GW/GF	7/20/2015	GW	--	EQUIPRinse1-0622	--	--	--	--		1			1		1			1		
LL3mw-244	FWGLL3mw-244-0594-GW/GF	7/21/2015	GW	DUP3-0619	EQUIPRinse2-0623	--	--	FWGLL3mw-244-0619s-GW/GF	--		1[A]			1[A]		1[A]			1[A]	1[A]	
LL3mw-246	FWGLL3mw-246-0595-GW/GF	7/21/2015	GW	--	EQUIPRinse2-0623	--	Y	--	--		1[A]					1			1[A]		1[A]
LL7mw-001	FWGLL7mw-001-0596-GW/GF	7/23/2015	GW	--	EQUIPRinse4-0625	FWGTeam4-Trip	--	--	--	1	1					1			1		
NTAmw-119	FWGNTAmw-119-0603-GW/GF	7/20/2015	GW	--	EQUIPRinse1-0622	FWGTeam2-Trip	--	--	--	1		1				1			1		
RQLmw-007	FWGRQLmw-007C-0604-GW/GF	7/22/2015	GW	DUP5-0621	EQUIPRinse3-0624	FWGTeamRQL-Trip	--	FWGRQLmw-007C-0616s-GW/GF	Tripblank	1[A]			1[A]	1[A]	1[A]	1[A]	1[A]		1[A]		
RQLmw-008	FWGRQLmw-008C-0605-GW/GF	7/22/2015	GW	--	EQUIPRinse3-0624	FWGTeamRQL-Trip	Y	--	--	1[A]			1[A]	1[A]	1[A]	1[A]	1[A]		1[A]		
RQLmw-009	FWGRQLmw-009C-0606-GW/GF	7/22/2015	GW	--	EQUIPRinse3-0624	FWGTeamRQL-Trip	--	--	--	1			1	1	1	1	1		1		
RQLmw-011	--	7/23/2015	GW	--	EQUIPRinse4-0625	--	--	--	--	field pH monitoring only											
RQLmw-012	--	7/23/2015	GW	--	EQUIPRinse4-0625	--	--	--	--	field pH monitoring only											
RQLmw-013	--	7/23/2015	GW	--	EQUIPRinse4-0625	--	--	--	--	field pH monitoring only											
SCFmw-002	FWGSCFmw-002-0607-GW/GF	7/21/2015	GW	--	EQUIPRinse2-0623	--	Y	--	--		1[A]			1		1[A]			1[A]	1[A]	
SCFmw-004	FWGSCFmw-004-0608-GW/GF	7/21/2015	GW	--	EQUIPRinse2-0623	--	--	--	--		1			1		1			1		
WBGmw-006	FWGWBGmw-006C-0609-GW/GF	7/22/2015	GW	--	EQUIPRinse3-0624	--	--	--	--		1					1			1		
WBGmw-009	FWGWBGmw-009C-0610-GW/GF	7/22/2015	GW	--	EQUIPRinse3-0624	--	--	--	--		1					1			1		
WBGmw-020	FWGWBGmw-020-0611-GW/GF	7/22/2015	GW	--	EQUIPRinse3-0624	--	--	--	--		1					1			1		
WBGmw-021	FWGWBGmw-021-0612-GW/GF	7/22/2015	GW	--	EQUIPRinse3-0624	--	--	--	--		1					1			1		

SVOCs (1=Nitroaromatics and Phthalates, 2=Phenols, 3=PAHs, and 4=Full RVAAP RCRA suite)

Cr^{+6} = Hexavalent chromium

ClO_4- = Perchlorate

1^A = QA/QC analysis for MS/MSD, or Split and Duplicate collected in addition to parent alliquot.

SECTION 3
RESULTS

3.1 Groundwater Elevations

Groundwater elevations were measured in the 46 monitoring wells sampled during July 20-23, 2015. The locations of monitoring wells at the former RVAAP are shown on Plate 1. The water-level measurement field sheets are presented in Appendix B. Additionally, groundwater elevation measurements are also obtained each time a groundwater sample is collected as part of the FWGWMP, although the measurements from the quarterly sampling events are not used to produce the potentiometric maps. Note that this sampling event also coincided with the annual groundwater elevation measurements for all 284 wells which will be discussed in the 2015 Annual Report.

Water-level measurements were measured in accordance with procedures in Section 5.4.3.1 of the *Facility-Wide Sampling and Analysis Plan for Environmental Investigations at the Ravenna Army Ammunition Plant, Ravenna, Ohio* (SAIC, February 2011). Water-level measurements were made from the top of the inner casing to the top of the groundwater surface using an electronic measuring tape. The depth to the bottom of the well from the top of the inner casing also was measured with the electronic measuring tape. Depth-to-water and groundwater elevations for the former RVAAP wells sampled this quarter are presented in Table 3-1.

The monitoring well location map, identified as Plate 1, is included with this report. Facility-wide groundwater potentiometric maps (Plates 2, 3, 4, and 5) were created based on all the former RVAAP groundwater measurements taken during the May 2014 event and are also included in this report (Plates are located at the end of this report).

Plate 2 shows the potentiometric surface of the unconsolidated aquifer at the facility from May 2014. Groundwater in the unconsolidated aquifer predominantly flows in an eastward direction; however, the unconsolidated zone shows numerous local flow variations influenced by topography and drainage patterns. The local variations in flow direction suggest: (1) groundwater in the unconsolidated deposits is generally in direct hydraulic communication with surface water; and (2) surface water drainage ways may also act as groundwater discharge locations. In addition, topographic ridges between surface water drainage features act as groundwater divides in the unconsolidated deposits. A groundwater mound is evident in the south-central portion of the former RVAAP facility, thereby creating localized radial flow. This feature is the result of a bedrock high associated with the underlying Homewood.

Plate 3 shows the potentiometric surface of the Homewood formation at the facility from May 2014. The Homewood is only found in the western portion of the former RVAAP facility and generally occurs as cap rock. It appears from the limited number of wells that have penetrated this formation that the general flow is to the east-southeast. However, a groundwater mound is present in the vicinity of the Fuze and Booster wells, which produces a localized radial flow pattern in this area of the former RVAAP facility that is at least partially influenced by a buried valley to the north and west. A second groundwater mound is located in the vicinity of the C Block (CBL) wells.

Table 3-1. July 2015 FWGWMP Monitoring Well Measurements

Well	Monitoring Zone	Top of Casing (TOC) Elevation[a] (ft)	Semi- Annual Groundwater Elevation (ft) Jan/2014	Semi- Annual Groundwater Elevation (ft) July/2014	Semi- Annual Groundwater Elevation (ft) Mar/2015	Semi- Annual Groundwater Elevation (ft) July/2015	Depth to Water below TOC (ft) July/2015	Reported Construction Depth from TOC[a] (ft)	Measured Depth from TOC (ft) July/2015	Differential - Reported Construction / Measured Depth (ft) July/2015	Description of Bottom March
DA2mw-115	Sharon	1038.08	1032.33	1032.28	1032.56	1032.97	5.11	46.80	47.30	-0.50	medium
DET-003	Unconsolidated	1036.81	1027.47	1027.31	1027.87	1028.45	8.36	13.00	16.11	-3.11	hard
DET-004	Unconsolidated	1038.68	1028.19	1028.63	1028.66	1029.73	8.95	12.00	13.89	-1.89	hard
FBQmw-174	Homewood	1139.97	1123.94	1124.10	1123.95	1126.52	13.45	26.20	23.08	3.12	medium
FWGmw-002	Unconsolidated	973.10	NM	949.44	950.01	950.35	22.75	70.05	69.61	0.44	soft
FWGmw-004	Unconsolidated	1037.15	1024.71	1022.41	1025.79	1026.02	11.13	22.60	22.54	0.06	soft
FWGmw-007	Unconsolidated	1075.41	1051.97	1052.56	1052.69	1053.19	22.22	32.35	32.18	0.17	hard
FWGmw-011	Unconsolidated	941.61	939.86	937.98	939.98	940.03	1.58	17.80	17.58	0.22	hard
FWGmw-012	Sharon Shale	941.39	940.81	939.66	941.39	941.24	0.15	42.45	42.41	0.04	hard
FWGmw-015	Unconsolidated	1014.51	1008.62	1008.72	1010.23	1010.53	3.98	26.35	26.26	0.09	medium
FWGmw-016	Sharon	1014.39	998.38	997.65	997.85	998.90	15.49	67.50	67.50	0.00	hard
LL1mw-064	Unconsolidated	935.10	NM	933.12	933.68	934.60	0.50	21.10	21.21	-0.11	soft
LL1mw-065	Unconsolidated	944.41	933.77	932.02	933.01	934.50	9.91	23.40	23.21	0.19	hard
LL1mw-083	Sharon	995.20	963.05	964.30	961.30	966.09	29.11	41.70	41.41	0.29	hard
LL1mw-084	Sharon	998.73	971.28	969.43	968.21	974.04	24.69	39.30	39.55	-0.25	hard
LL1mw-086	Unconsolidated	940.63	934.69	932.18	932.81	934.39	6.24	77.38	77.80	-0.42	hard
LL1mw-087	Unconsolidated	944.32	939.16	935.62	940.07	939.22	5.10	18.55	18.09	0.46	medium
LL1mw-088	Unconsolidated	938.63	932.71	932.54	934.24	934.39	4.24	27.54	27.46	0.08	soft
LL2mw-059	Sharon	966.67	953.58	953.82	953.52	954.70	11.97	21.80	21.85	-0.05	hard
LL2mw-060	Sharon	961.57	NM	NM	952.09	953.22	8.35	21.90	20.90	1.00	hard
LL2mw-267	Sharon	1014.81	1005.91	1004.10	1006.17	1006.27	8.54	22.00	22.08	-0.08	soft
LL2mw-271	Sharon	961.19	950.86	950.94	950.91	951.84	9.35	27.80	27.74	0.06	hard
LL3mw-238	Sharon	1006.91	992.06	989.07	992.07	992.05	14.86	22.90	23.39	-0.49	hard
LL3mw-241	Sharon	994.65	985.80	981.26	984.75	987.15	7.50	25.10	25.59	-0.49	hard
LL3mw-244	Sharon	988.78	979.16	975.74	981.49	980.18	8.60	47.25	46.88	0.37	hard
LL3mw-246	Sharon	988.84	968.30	967.46	970.45	970.86	17.98	45.66	45.69	-0.03	hard
LL7mw-001	Homewood	1129.64	NM	NM	1109.46	1111.79	17.85	32.20	33.51	-1.31	hard
LL10mw-003	Homewood	1130.28	1111.21	1108.97	1109.22	1113.03	17.25	28.90	28.52	0.38	hard
LL12mw-185	Unconsolidated	981.31	973.96	975.07	973.98	975.81	5.50	23.20	23.23	-0.03	hard
LL12mw-187	Unconsolidated	979.94	971.90	970.90	970.98	972.65	7.29	29.40	29.89	-0.49	hard
LL12mw-242	Unconsolidated	981.20	973.60	972.32	973.31	974.26	6.94	28.30	28.54	-0.24	hard
LL12mw-245	Unconsolidated	980.04	972.39	970.84	972.71	973.97	6.07	30.50	29.75	0.75	hard
LL12mw-247	Unconsolidated	984.25	979.68	978.50	979.81	980.17	4.08	22.60	22.58	0.02	medium
NTAmw-119	Unconsolidated	1080.07	1068.24	1068.07	1068.59	1068.83	11.24	104.60	104.49	0.11	hard
RQLmw-007	Sharon	965.91	960.13	960.28	959.61	961.68	4.23	18.20	18.63	-0.43	hard
RQLmw-008	Sharon	966.08	959.98	960.27	959.53	961.68	4.40	18.50	18.65	-0.15	hard
RQLmw-009	Sharon	964.58	959.66	959.77	959.14	961.42	3.16	18.40	18.78	-0.38	hard
RQLmw-011	Sharon	974.60	NM	NM	952.42	955.02	19.58	34.60	35.35	-0.75	hard
RQLmw-012	Sharon	975.12	NM	NM	952.57	955.76	19.36	32.50	32.68	-0.18	hard
RQLmw-013	Sharon	978.04	NM	NM	952.38	955.11	22.93	36.60	36.44	0.16	soft
SCFmw-002	Sharon Cong.	984.56	966.20	966.18	965.72	967.10	17.46	149.65	150.05	-0.40	medium
SCFmw-004	Sharon Cong.	944.17	NM	944.37	944.37	944.37	-0.20	112.47	112.50	-0.03	medium
WBGmw-006	Unconsolidated	1014.66	1008.06	1006.14	1008.97	1009.02	5.64	20.40	20.24	0.16	hard
WBGmw-009	Unconsolidated	1047.53	1034.73	1033.99	1036.02	1036.73	10.80	24.00	24.55	-0.55	medium
WBGmw-020	Sharon	1044.31	1032.96	1031.35	1033.06	1033.37	10.94	43.80	44.27	-0.47	medium
WBGmw-021	Sharon	1010.92	1002.13	1000.79	1002.64	1003.01	7.91	43.10	43.66	-0.56	hard

a = Elevations are in feet above mean sea level (amsl)
NM = New wells added to the sampling schedule, not measured in all quarters
ft = feet
TOC= top of casing
Sharon Cong. = Sharon Conglomerate monitoring zone

Plate 4 shows the potentiometric surface of the upper Sharon formation at the facility from May 2014. The bedrock potentiometric map shows a regional eastward flow direction. However, a groundwater mound is evident in the vicinity of Load Line 2 on Plate 4, thereby creating localized radial flow. In addition, the upper portion of the Sharon is in direct communication with surface water at Sand Creek in the vicinity of Demolition Area #2.

Plate 5 shows the potentiometric surface of the basal Sharon formation from May 2014. Groundwater flow in the conglomeratic sandstone facies is to the east beneath the former RVAAP facility. The groundwater elevations from the deep Sharon Conglomerate wells were evaluated and determined not to be representative of the water table aquifer. These wells were installed with their screened intervals positioned at the basal portion of the Sharon Conglomerate sandstone.

3.2 Summary of Analytical Results

Summaries of laboratory analytical results are presented in Tables 3-2, 3-3, 3-4, 3-5, 3-6, 3-7 and 3-8. Appendix C presents the Laboratory Data Sheets. A brief summary of the detected compounds and elements are presented in the following sub-sections. The data presented in the tables are the validated and verified data. Data verification and validation is discussed in Section 3.3 and Appendix C.

As part of the future RI for the facility-wide groundwater, detected and validated analytes from the monitoring wells will be subjected to a risk screening process that will be detailed in the *FWGWMP Remedial Investigation/Feasibility Study Work Plan*. As a result reference to the background criteria and the risk evaluation process have been removed from this document.

Additionally, please note the following:

- As discussed in Section 3.3 under the data validation process, data are qualified by EQM's validator following the guidelines and qualifier requirements set forth by the FWSAP, QAPP, and U.S. DoD Quality Services Manual (QSM) for Environmental Laboratories, Version 4.1, and the USACE, Louisville District, Quality Systems Manual Supplement (LS). As a result, the flags designated by EQM sometimes differ from those in the laboratory data sheets. The flags designated by the validator override any flagging of the data by the laboratory. For a complete explanation of the data qualifiers used for each constituent refer to Section 3.3 and the Data Verification Summary Reports found in Appendix C.

- Several analytical methods used to analyze a number of explosives, VOCs, SVOCs, metals, PCBs, and pesticides have reporting limits that currently do not meet the RVAAP QAPP project action requirements, Maximum Contaminant Levels (MCLs) or USEPA Regional Screening Levels (RSLs). The laboratory did not meet the requirements due to the following: 1) the detection limit is a statistically derived number that varies based on analytical method and instrumentation; 2) the RSL is independent from analytical method detection limits and is calculated from EPA toxicity values and exposure

information. Tables listing the reporting limits that currently do not meet the RVAAP QAPP Project Action Requirements, MCLs, and/or RSLs (June 2015) are presented in Appendix E.

- Note that the RSLs used in this report are the most recent available (June 2015). The RSL values reported in the data tables represent the tap water values using TR=1E-6, HQ=1.

3.2.1 Explosives and Propellants

Explosive and propellant compound analytical results are summarized in Table 3-2. The following compounds were detected at concentrations above the MDLs:

- 1,3,5-Trinitrobenzene – LL1mw-083 (5.8 micrograms per liter [µg/L] J), LL1mw-084 (1.80 µg/L J), LL3mw-238 (24 µg/L J), and LL3mw-241 (14 µg/L). There is no MCL for 1,3,5-trinitrobenzene. The RSL (June 2015) is 590 µg/L.

- 1,3-Dinitrobenzene – LL1mw-083 (0.24 µg/L J), LL1mw-084 (0.26 µg/L J) and RQLmw-008 (0.16 µg/L J). There is no MCL for 1, 3-dinitrobenzene. The RSL (June 2015) is 2 µg/L.

- 2,4,6-Trinitrotoluene – FBQmw-174 (21 µg/L), LL1mw-083 (3.4 µg/L J), LL1mw-084 (5.8 µg/L J), LL2mw-267 (0.35 µg/L), LL3mw-238 (55 µg/L J) and LL3mw-241 (6.0 µg/L). There is no MCL for 2,4,6-trinitrotoluene. The RSL (June 2015) is 2.5 µg/L.

- 2,4-Dinitrotoluene – FBQmw-174 (0.60 µg/L J), LL1mw-083 (2.7 µg/L J), LL1mw-084 (1.1 µg/L J) and LL2mw-267 (0.20 µg/L B). There is no MCL for 2,4-dinitrotoluene. The RSL (June 2015) is 0.24 µg/L.

- 2,6-Dinitrotoluene – LL1mw-083 (1.6 µg/L J), LL1mw-084 (0.62 µg/L J), LL3mw-238 (0.38 µg/L J) and LL3mw-241 (0.14 µg/L). There is no MCL for 2,6-dinitrotoluene. The RSL (June 2015) is 0.048 µg/L.

- 2-Amino-4,6-dinitrotoluene – FBQmw-174 (20 µg/L), LL1mw-083 (11 µg/L J), LL1mw-084 (7.5 µg/L J), LL2mw-059 (0.10 µg/L J), LL2mw-060 (0.32 µg/L), LL2mw-267(1.3 µg/L), LL3mw-238 (9.0 µg/L J), LL3mw-241 (2.6 µg/L), LL3mw-244 (0.58 µg/L) and LL3mw-246 (0.48 µg/L). There is no MCL for 2-amino-4,6-dinitrotoluene. The RSL (June 2015) is 39 µg/L.

- 4-Amino-2,6-dinitrotoluene – FBQmw-174 (28 µg/L), LL1mw-083 (24 µg/L J), LL1mw-084 (24 µg/L J), LL2mw-059 (0.13 µg/L J), LL2mw-060 (0.40 µg/L), LL2mw-267 (1.2 µg/L), LL3mw-238 (25 µg/L J), LL3mw-241 (2.7 µg/L), LL3mw-244 (0.57 µg/L) and LL3mw-246 (0.47 µg/L). There is no MCL for 4-amino-2,6-dinitrotoluene. The RSL (June 2015) is 39 µg/L.

- Nitrate-Nitrite – LL12mw-185 (120 milligrams per liter [mg/L]), LL12mw-187 (1300 mg/L), LL12mw-245 (0.0060 mg/L J), and LL12mw-247 (0.013 mg/L). The MCL for nitrate-nitrite is 10 mg/L. There is no RSL (June 2015).

- HMX – DETmw-004 (2.8 µg/L), LL1mw-083 (1.5 µg/L J), LL1mw-084 (0.73 µg/L J), LL2mw-267 (0.92 µg/L), LL3mw-238 (1.1 µg/L J), LL3mw-241 (0.32 µg/L J), LL3mw-244 (0.064 µg/L J), LL3mw-246 (0.045 µg/L J), WBGmw-006 (4.3 µg/L) and WBGmw-009 (1.2 µg/L). There is no MCL for HMX. The RSL (June 2015) is 1000 µg/L.

- Nitrocellulose – LL12mw-187 (0.77 mg/L J) and RQLmw-007 (1.0 mg/L J). There is no MCL for nitrocellulose. The RSL (June 2015) is 6.0E+07 mg/L.

- PETN – LL2mw-059 (1.4 µg/L), LL3mw-238 (2.3 µg/L J) and RQLmw-007 (0.48 µg/L J). There is no MCL for PETN. The RSL (June 2015) is 19 µg/L.

- RDX – DETmw-004 (2.5 µg/L), FBQmw-174 (0.68 µg/L J), LL1mw-084 (1.3 µg/L J), LL2mw-267 (1.3 µg/L), LL3mw-238 (6.8 µg/L J), LL3mw-241 (1.3 µg/L), LL3mw-244 (0.30 µg/L), LL3mw-246 (0.25 µg/L), WBGmw-006 (10 µg/L) and WBGmw-009 (2.8 µg/L). There is no MCL for RDX. The RSL (June 2015) is 0.7 µg/L.

As shown in Table 3-2, the following explosives or propellants were detected at levels above their corresponding MCLs and/or RSLs (June 2015) during the July 2015 sampling event:

- 2,4,6-Trinitrotoluene – FBQmw-174 (21 µg/L), LL1mw-083 (3.4 µg/L J), LL1mw-084 (5.8 µg/L J), LL3mw-238 (55 µg/L J) and LL3mw-241 (6.0 µg/L). There is no MCL for 2,4,6-trinitrotoluene. The RSL (June 2015) is 2.5 µg/L.

- 2,4-Dinitrotoluene – FBQmw-174 (0.60 µg/L J), LL1mw-083 (2.7 µg/L J) and LL1mw-084 (1.1 µg/L J). There is no MCL for 2,4-dinitrotoluene. The RSL (June 2015) is 0.24 µg/L.

- 2,6-Dinitrotoluene – LL1mw-083 (1.6 µg/L J), LL1mw-084 (0.62 µg/L J), LL3mw-238 (0.38 µg/L J) and LL3mw-241 (0.14 µg/L). There is no MCL for 2,6-dinitrotoluene. The RSL (June 2015) is 0.048 µg/L.

- Nitrate-Nitrite –LL12mw-185 (120 mg/L) and LL12mw-187 (1300 mg/L). The MCL for nitrate-nitrite is 10 mg/L. There is no RSL (June 2015).

- RDX – DETmw-004 (2.5 µg/L), LL1mw-084 (1.3 µg/L J), LL2mw-267 (1.3 µg/L), LL3mw-238 (6.8 µg/L J), LL3mw-241 (1.3 µg/L), WBGmw-006 (10 µg/L) and WBGmw-009 (2.8 µg/L). There is no MCL for RDX. The RSL (June 2015) is 0.7 µg/L.

Table 3-2. FWGWMP July 2015 Explosive and Propellant Analytical Results

Station ID				DA2mw-115	DETmw-003	DETmw-004	FBQmw-174	FWGmw-004	FWGmw-007	FWGmw-011
Sample ID		MCL	USEPA RSL	FWGDA2mw-115-0571-GW	FWGDETmw-003C-0572-GW	FWGDETmw-004C-0573-GW	FWGFBQmw-174C-0574-GW	FWGFWGmw-004-0575-GW	FWGFWGmw-007-0576-GW	FWGFWGmw-011-0577-GW
Date Collected				7/23/2015	7/23/2015	7/22-23/2015	7/20/2015	7/23/2015	7/23/2015	7/22/2015
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
1,3,5-Trinitrobenzene	µg/L	NS	590	0.051 U	0.051 U	0.051 U	0.051 U	0.051 U	0.051 U	0.051 U
1,3-Dinitrobenzene	µg/L	NS	2	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
2,4,6-Trinitrotoluene	µg/L	NS	2.5	0.10 U	0.10 U	0.10 U	**21**	0.10 U	0.10 U	0.10 U
2,4-Dinitrotoluene	µg/L	NS	0.24	0.10 U	0.10 U	0.10 U	**0.60 J**	0.10 U	0.10 U	0.10 U
2,6-Dinitrotoluene	µg/L	NS	0.048	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
2-Amino-4,6-dinitrotoluene	µg/L	NS	39	0.10 U	0.10 U	0.10 U	**20**	0.10 U	0.10 U	0.10 U
2-Nitrotoluene	µg/L	NS	0.31	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
3-Nitrotoluene	µg/L	NS	1.7	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4-Amino-2,6-Dinitrotoluene	µg/L	NS	39	0.10 U	0.10 U	0.10 U	**28**	0.10 U	0.10 U	0.10 U
4-Nitrotoluene	µg/L	NS	4.2	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
HMX	µg/L	NS	1000	0.051 U	0.051 U	**2.8**	0.051 U	0.051 U	0.051 U	0.051 U
Nitrate-Nitrite as N	mg/L	10	NS	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	µg/L	NS	0.14	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Nitrocellulose	mg/L	NS	6.0E+07	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Nitroglycerin	µg/L	NS	2	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U
Nitroguanidine	µg/L	NS	2000	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
PETN	µg/L	NS	19	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U
RDX	µg/L	NS	0.7	0.051 U	0.051 U	**2.5**	**0.68 J**	0.051 U	0.051 U	0.051 U
Tetryl	µg/L	NS	39	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U

Notes:
µg/L = microgram per liter
mg/L = milligram per liter
NS = no standard
Bold = detected compound above the MDL
RSL = USEPA Regional Screening Level (6/15)
MCL = Maximum Contaminant Level
NA = Not Analyzed

Table 3-2. FWGWMP July 2015 Explosive and Propellant Analytical Results

Station ID				FWGmw-012	FWGmw-015	FWGmw-016	LL1mw-064	LL1mw-065	LL1mw-083	LL1mw-084
Sample ID		MCL	USEPA RSL	FWGFWGmw-012-0578-GW	FWGFWGmw-015-0579-GW	FWGFWGmw-016-0580-GW	FWGLL1mw-064C-0581-GW	FWGLL1mw-065C-0582-GW	FWGLL1mw-083C-0583-GW	FWGLL1mw-084C-0584-GW
Date Collected				7/22/2015	7/23/2015	7/23/2015	7/20/2015	7/23/2015	7/20/2015	7/20/2015
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
1,3,5-Trinitrobenzene	µg/L	NS	590	0.052 U	0.050 U	0.050 U	0.051 U	0.050 U	**5.8 J**	**1.8 J**
1,3-Dinitrobenzene	µg/L	NS	2	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	**0.24 J**	**0.26 J**
2,4,6-Trinitrotoluene	µg/L	NS	2.5	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	**3.4 J**	**5.8 J**
2,4-Dinitrotoluene	µg/L	NS	0.24	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	**2.7 J**	**1.1 J**
2,6-Dinitrotoluene	µg/L	NS	0.048	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	**1.6 J**	**0.62 J**
2-Amino-4,6-dinitrotoluene	µg/L	NS	39	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	**11 J**	**7.5 J**
2-Nitrotoluene	µg/L	NS	0.31	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
3-Nitrotoluene	µg/L	NS	1.7	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4-Amino-2,6-Dinitrotoluene	µg/L	NS	39	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	**24 J**	**24 J**
4-Nitrotoluene	µg/L	NS	4.2	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
HMX	µg/L	NS	1000	0.052 U	0.050 U	0.050 U	0.051 U	0.050 U	**1.5 J**	**0.73 J**
Nitrate-Nitrite as N	mg/L	10	NS	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	µg/L	NS	0.14	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Nitrocellulose	mg/L	NS	6.0E+07	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Nitroglycerin	µg/L	NS	2	0.52 U	0.50 U	0.50 U	0.51 U	0.50 U	0.51 U	0.51 U
Nitroguanidine	µg/L	NS	2000	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
PETN	µg/L	NS	19	0.52 U	0.50 U	0.50 U	0.51 U	0.50 U	0.51 U	0.51 U
RDX	µg/L	NS	0.7	0.052 U	0.050 U	0.050 U	0.051 U	0.050 U	0.051 U	**1.3 J**
Tetryl	µg/L	NS	39	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U

Notes:
µg/L = microgram per liter
mg/L = milligram per liter
NS = no standard
Bold = detected compound above the MDL
RSL = USEPA Regional Screening Level (6/15)
MCL = Maximum Contaminant Level
NA = Not Analyzed

Table 3-2. FWGWMP July 2015 Explosive and Propellant Analytical Results

Station ID				LL1mw-086	LL1mw-087	LL1mw-088	LL2mw-059	LL2mw-060	LL2mw-267	LL2mw-271
Sample ID		MCL	USEPA RSL	FWGLL1mw-086-0585-GW	FWGLL1mw-087C-0586-GW	FWGLL1mw-088-0587-GW	FWGLL2mw-059C-0588-GW	FWGLL2mw-060C-0589-GW	FWGLL2mw-267C-0590-GW	FWGLL2mw-271-0591-GW
Date Collected				7/21/2015	7/21/2015	7/21/2015	7/20/2015	7/20/2015	7/23/2015	7/21/2015
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
1,3,5-Trinitrobenzene	µg/L	NS	590	0.051 U	0.051 U	0.051 U	0.052 U	0.051 U	0.051 U	0.051 U
1,3-Dinitrobenzene	µg/L	NS	2	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
2,4,6-Trinitrotoluene	µg/L	NS	2.5	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	**0.35**	0.10 U
2,4-Dinitrotoluene	µg/L	NS	0.24	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	**0.20 B**	0.10 U
2,6-Dinitrotoluene	µg/L	NS	0.048	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
2-Amino-4,6-dinitrotoluene	µg/L	NS	39	0.10 U	0.10 U	0.10 U	**0.10**	**0.32**	**1.3**	0.10 U
2-Nitrotoluene	µg/L	NS	0.31	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
3-Nitrotoluene	µg/L	NS	1.7	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4-Amino-2,6-Dinitrotoluene	µg/L	NS	39	0.10 U	0.10 U	0.10 U	**0.13**	**0.40**	**1.2**	0.10 U
4-Nitrotoluene	µg/L	NS	4.2	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
HMX	µg/L	NS	1000	0.051 U	0.051 U	0.051 U	0.052 U	0.051 U	**0.92**	0.051 U
Nitrate-Nitrite as N	mg/L	10	NS	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	µg/L	NS	0.14	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Nitrocellulose	mg/L	NS	6.0E+07	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Nitroglycerin	µg/L	NS	2	0.51 U	0.51 U	0.51 U	0.52 U	0.51 U	0.51 U	0.51 U
Nitroguanidine	µg/L	NS	2000	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
PETN	µg/L	NS	19	0.51 U	0.51 U	0.51 U	**1.4**	0.51 U	0.51 U	0.51 U
RDX	µg/L	NS	0.7	0.051 U	0.051 U	0.051 U	0.052 U	0.051 U	**1.3**	0.051 U
Tetryl	µg/L	NS	39	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U

Notes:
µg/L = microgram per liter
mg/L = milligram per liter
NS = no standard
Bold = detected compound above the MDL
RSL = USEPA Regional Screening Level (6/15)
MCL = Maximum Contaminant Level
NA = Not Analyzed

Table 3-2. FWGWMP July 2015 Explosive and Propellant Analytical Results

Station ID				LL3mw-238	LL3mw-241	LL3mw-244	LL3mw-246	LL7mw-001	LL10mw-003	LL12mw-185
Sample ID		MCL	USEPA RSL	FWGLL3mw-238C-0592-GW	FWGLL3mw-241C-0593-GW	FWGLL3mw-244-0594-GW	FWGLL3mw-246-0595-GW	FWGLL7mw-001-0596-GW	FWGLL10mw-003C-0597-GW	FWGLL12mw-185C-0598-GW
Date Collected				7/20/2015	7/20/2015	7/21/2015	7/21/2015	7/23/2015	7/23/2015	7/21/2015
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
1,3,5-Trinitrobenzene	µg/L	NS	590	**24 J**	**14**	0.051 U	0.051 U	0.052 U	NA	NA
1,3-Dinitrobenzene	µg/L	NS	2	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	NA
2,4,6-Trinitrotoluene	µg/L	NS	2.5	**55 J**	**6.0**	0.10 U	0.10 U	0.10 U	NA	NA
2,4-Dinitrotoluene	µg/L	NS	0.24	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.48 U	NA
2,6-Dinitrotoluene	µg/L	NS	0.048	**0.38 J**	**0.14**	0.10 U	0.10 U	0.10 U	4.8 U	NA
2-Amino-4,6-dinitrotoluene	µg/L	NS	39	**9.0 J**	**2.6**	**0.58**	**0.48**	0.10 U	NA	NA
2-Nitrotoluene	µg/L	NS	0.31	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	NA
3-Nitrotoluene	µg/L	NS	1.7	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	NA
4-Amino-2,6-Dinitrotoluene	µg/L	NS	39	**25 J**	**2.7**	**0.57**	**0.47**	0.10 U	NA	NA
4-Nitrotoluene	µg/L	NS	4.2	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	NA
HMX	µg/L	NS	1000	**1.1 J**	**0.32**	**0.064**	**0.045 J**	0.052 U	NA	NA
Nitrate-Nitrite as N	mg/L	10	NS	N/A	N/A	N/A	N/A	N/A	N/A	**120**
Nitrobenzene	µg/L	NS	0.14	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.096 U	NA
Nitrocellulose	mg/L	NS	6.0E+07	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA
Nitroglycerin	µg/L	NS	2	0.52 U	0.51 U	0.51 U	0.51 U	0.52 U	NA	NA
Nitroguanidine	µg/L	NS	2000	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	NA	NA
PETN	µg/L	NS	19	**2.3 J**	0.51 U	0.51 U	0.51 U	0.52 U	NA	NA
RDX	µg/L	NS	0.7	**6.8 J**	**1.3**	**0.30**	**0.25**	0.052 U	NA	NA
Tetryl	µg/L	NS	39	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	NA

Notes:
µg/L = microgram per liter
mg/L = milligram per liter
NS = no standard
Bold = detected compound above the MDL
RSL = USEPA Regional Screening Level (6/15)
MCL = Maximum Contaminant Level
NA = Not Analyzed

Table 3-2. FWGWMP July 2015 Explosive and Propellant Analytical Results

Station ID				LL12mw-187	LL12mw-242	LL12mw-245	LL12mw-247	NTAmw-119	RQLmw-007	RQLmw-008
Sample ID		MCL	USEPA RSL	FWGLL12mw-0187C-0599-GW	FWGLL12mw-242C-0600-GW	FWGLL12mw-245C-0601-GW	FWGLL12mw-247-0602-GW	FWGNTAmw-119-0603-GW	FWGRQLmw-007C-0604-GW	FWGRQLmw-008C-0605-GW
Date Collected				7/22/2015	7/21/2015	7/22/2015	7/21/2015	7/20/2015	7/22/2015	7/22/2015
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
1,3,5-Trinitrobenzene	µg/L	NS	590	0.050 U	0.052 U	0.052 U	0.053 U	0.052 U	0.051 U	0.052 U
1,3-Dinitrobenzene	µg/L	NS	2	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	**0.16 J**
2,4,6-Trinitrotoluene	µg/L	NS	2.5	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U
2,4-Dinitrotoluene	µg/L	NS	0.24	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U
2,6-Dinitrotoluene	µg/L	NS	0.048	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U
2-Amino-4,6-dinitrotoluene	µg/L	NS	39	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U
2-Nitrotoluene	µg/L	NS	0.31	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U
3-Nitrotoluene	µg/L	NS	1.7	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U
4-Amino-2,6-Dinitrotoluene	µg/L	NS	39	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U
4-Nitrotoluene	µg/L	NS	4.2	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U
HMX	µg/L	NS	1000	0.050 U	0.052 U	0.052 U	0.053 U	0.052 U	0.051 U	0.052 U
Nitrate-Nitrite as N	mg/L	10	NS	**1300**	0.028 U	**0.0060 J**	**0.013**	N/A	N/A	N/A
Nitrobenzene	µg/L	NS	0.14	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U
Nitrocellulose	mg/L	NS	6.0E+07	**0.77 J**	1.0 U	1.0 U	1.0 U	1.0 U	**1.0**	1.0 U
Nitroglycerin	µg/L	NS	2	0.50 U	0.52 U	0.52 U	0.53 U	0.52 U	0.51 U	0.52 U
Nitroguanidine	µg/L	NS	2000	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
PETN	µg/L	NS	19	0.50 U	0.52 U	0.52 U	0.53 U	0.52 U	**0.48 J**	0.52 U
RDX	µg/L	NS	0.7	0.050 U	0.052 U	0.052 U	0.053 U	0.052 U	0.051 U	0.052 U
Tetryl	µg/L	NS	39	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	**0.34 J**

Notes:
µg/L = microgram per liter
mg/L = milligram per liter
NS = no standard
Bold = detected compound above the MDL
RSL = USEPA Regional Screening Level (6/15)
MCL = Maximum Contaminant Level
NA = Not Analyzed

Table 3-2. FWGWMP July 2015 Explosive and Propellant Analytical Results

Station ID				RQLmw-009	SCFmw-002	SCFmw-004	WBGmw-006	WBGmw-009	WBGmw-020	WBGmw-021
Sample ID		MCL	USEPA RSL	FWGRQLmw-009C-0606-GW	FWGSCFmw-002-0607-GW	FWGSCFmw-004-0608-GW	FWGWBGmw-006C-0609-GW	FWGWBGmw-009C-0610-GW	FWGWBGmw-020-0611-GW	FWGWBGmw-021-0612-GW
Date Collected				7/22/2015	7/21/2015	7/21/2015	7/22/2015	7/22/2015	7/22/2015	7/22/2015
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
1,3,5-Trinitrobenzene	µg/L	NS	590	0.051 U	0.051 U	0.052 U	0.052 U	0.050 U	0.052 U	0.051 U
1,3-Dinitrobenzene	µg/L	NS	2	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
2,4,6-Trinitrotoluene	µg/L	NS	2.5	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
2,4-Dinitrotoluene	µg/L	NS	0.24	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
2,6-Dinitrotoluene	µg/L	NS	0.048	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
2-Amino-4,6-dinitrotoluene	µg/L	NS	39	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
2-Nitrotoluene	µg/L	NS	0.31	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
3-Nitrotoluene	µg/L	NS	1.7	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4-Amino-2,6-Dinitrotoluene	µg/L	NS	39	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4-Nitrotoluene	µg/L	NS	4.2	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
HMX	µg/L	NS	1000	0.051 U	0.051 U	0.052 U	**4.3**	**1.2**	0.052 U	0.051 U
Nitrate-Nitrite as N	mg/L	10	NS	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	µg/L	NS	0.14	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Nitrocellulose	mg/L	NS	6.0E+07	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Nitroglycerin	µg/L	NS	2	0.51 U	0.51 U	0.52 U	0.52 U	0.50 U	0.52 U	0.51 U
Nitroguanidine	µg/L	NS	2000	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
PETN	µg/L	NS	19	0.51 U	0.51 U	0.52 U	0.52 U	0.50 U	0.52 U	0.51 U
RDX	µg/L	NS	0.7	0.051 U	0.051 U	0.052 U	**10**	**2.8**	0.052 U	0.051 U
Tetryl	µg/L	NS	39	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U

Notes:
µg/L = microgram per liter
mg/L = milligram per liter
NS = no standard
Bold = detected compound above the MDL
RSL = USEPA Regional Screening Level (6/15)
MCL = Maximum Contaminant Level
NA = Not Analyzed

Table 3-2. FWGWMP July 2015 Explosive and Propellant Analytical Results

Data Qualifiers

Data qualifier flags are used in an effort to describe the quality of each piece of data for each constituent. These flags are letter codes appended to the numerical data. The following data qualifiers are specified in the USACE Louisville Chemistry Guidelines. For a complete explanation of qualifiers used for each constituent please refer to the Data Verification Summaries in Appendix C.

U The analyte was analyzed for but not detected. The numerical value preceding the U is the associated reporting limit.

J The identification of the analyte is acceptable, but the quality assurance criteria indicate that the quantitative values may be outside the normal expected range of precision (i.e., the quantitative value is estimated). Examples include:

- Results detected above the laboratory MDL but less than the laboratory reporting limit.
- MS/MSD percent recoveries outside the acceptance criteria.
- Laboratory control sample (LCS) percent recoveries outside acceptance criteria.

R Data are considered to be rejected and shall not be used. This flag denotes the failure of quality control criteria such that it cannot be determined if the analyte is present or absent from the sample [e.g., the method reporting limit (MRL) verification standard was below quality control guidelines; associated sample results that were non-detect are unusable].

UJ This flag is a combination of the U and J qualifiers, which indicate that the analyte is not present. The reported value is considered to be an estimated reporting limit (RL).

B The B flag is used for when the analyte is found in the method blank or any of the field blanks. This designation overrides the Contract Laboratory Program (CLP) “B” designation when used by the laboratory as an estimated value for inorganics.

3.2.2 Inorganic Elements

The analytical results for inorganic elements are presented in Table 3-3. The inorganics detected in the samples included: aluminum, antimony, arsenic, barium, cadmium, calcium, chromium, cobalt, copper, cyanide, iron, magnesium, manganese, nickel, potassium, selenium, sodium, and zinc. The inorganic elements that were detected were compared against elements that are considered as essential nutrients to determine if they are to be considered as Site-Related Contaminants (SRCs). Calcium, magnesium, iron, potassium, and sodium were eliminated as potential SRCs because they are considered essential nutrients.

Several inorganic compounds were detected at levels exceeding the MCLs and/or RSLs (June 2015). Table 4-1 in Section 4 presents a summary of all inorganic compounds and the associated wells that had detections exceeding MCLs and/or the RSLs (June 2015).

Aluminum

- LL1mw-083 (710 µg/L), LL1mw-084 (440 µg/L), LL1mw-087 (340 µg/L), and LL12mw-242 (340 µg/L). The MCL for aluminum is 200 µg/L. The RSL (June 2015) is 20,000 µg/L.

Arsenic

- DETmw-003 (10 µg/L), FWGmw-016 (4.7 µg/L J), LL1mw-064 (3.9 µg/L J), , LL1mw-088 (28 µg/L), LL2mw-059 (5.2 µg/L J), LL2mw-271 (5.4 µg/L J), Ll12mw-187 (3.5 µg/L J), LL12mw-242 (21 µg/L), LL12mw-247 (7.1 µg/L J), NTAmw-119 (7.1 µg/L J), RQLmw-007 (68 µg/L), RQLmw-008 (26 (µg/L J), RQLmw-009 (21 µg/L), SCFmw-002 (15 µg/L), and WBGmw-021 (4.6 µg/L J). The MCL for arsenic is 10 µg /L. The RSL (June 2015) is 0.052 µg/L.

Cobalt

- LL1mw-083 (7.2 µg/L), LL1mw-084 (13 µg/L), LL2mw-059 (22 µg/L), LL2mw-271 (10 µg/L), and LL12mw-187 (11 µg/L),. There is no MCL for cobalt. The RSL (June 2015) is 6 µg/L.

Cyanide

- RQLmw-007 (0.010 mg/L). The MCL for cyanide is 0.20 mg/L. The RSL (June 2015) is 0.0015 mg/L.

Iron

- DA2mw-115 (690 µg/L), DETmw-003 (1800 µg/L), FWGmw-011 (5100 µg/L), FWGmw-012 (2000 µg/L), FWGmw-016 (670 µg/L), LL1mw-064 (780 µg/L), LL1mw-088 (1100 µg/L), LL2mw-059 (4700 µg/L J), LL2mw-271 (4500 µg/L), LL7mw-001 (8000 µg/L), LL12mw-242 (1200 µg/L), LL12mw-245 (770 µg/L), LL12mw-247 (650 µg/L), NTAmw-119 (1100 µg/L), RQLmw-007 (18000 µg/L), RQLmw-008 (79000 µg/L), RQLmw-009 (10000 µg/L), SCFmw-002 (440 µg/L), WBGmw-020 (4000 µg/L), and WBGmw-021 (610 µg/L). The MCL for iron is 300 µg/L. The RSL (June 2015) is 11,000 µg/L.

Manganese

- DA2mw-115 (86 µg/L), DETmw-003 (220 µg/L), FWGmw-011 (280 µg/L), FWGmw-012 (85 µg/L), FWGmw-015 (430 µg/L), FWGmw-016 (190 µg/L J), LL1mw-064 (100 µg/L J), LL1mw-065 (190 µg/L), LL1mw-083 (380 µg/L), LL1mw-084 (100 µg/L), LL1mw-086 (110 µg/L), LL1mw-087 (85 µg/L), LL1mw-088 (52 µg/L), LL2mw-059 (1300 µg/L), LL2mw-267 (460 µg/L),LL2mw-271 (540 µg/L), LL7mw-001 (420 µg/L), LL12mw-187 (1900 µg/L), LL12mw-242 (65 µg/L), LL12mw-245 (330 µg/L), LL12mw-247 (190 µg/L), NTAmw-119 (300 µg/L), RQLmw-007 (1700 µg/L), RQLmw-008 (540 µg/L), RQLmw-009 (1000 µg/L), SCFmw-002 (63 µg/L J), SCFmw-004 (690 µg/L), WBGmw-006 (53 µg/L), WBGmw-020 (280 µg/L), and WBGmw-021 (210 µg/L). The MCL for manganese is 50 µg/L. The RSL (June 2015) is 430 µg/L.

The facility-wide groundwater conditions will be evaluated under the remedial investigation/feasibility study. This will include an evaluation of aluminum, manganese, arsenic, cyanide, cobalt, iron, and thallium related to exceedances of MCLs/RSLs. To date there have been no elevated concentrations of the inorganic analytes found in the groundwater that would pose an immediate threat to human health or the environment.

3.2.3 Volatile Organic Compounds

The analytical results for VOCs are summarized in Table 3-4. The following VOCs were detected above the MDL for this sampling event.

- 1,1,1-trichlorethane – LL7mw-001 (4.6 µg/L). The MCL for 1,1,1-trichlorethane is 200 µg/L. The RSL (June 2015) is 8,000 µg/L.

- 1,1-dichloroethane – LL7mw-001 (1.6 µg/L). There is no MCL for 1,1-dichloroethane. The RSL (June 2015) is 2.7 µg/L.

- 1,1-dichloroethene – LL7mw-001 (4.3 µg/L). The MCL for 1,1-dichloroethene is 7.0 µg/L. The RSL (June 2015) is 280 µg/L.

- Acetone – DETmw-004 (2.5 µg/L B) and RQLmw-008 (1.5 µg/L JB). There is no MCL for acetone. The RSL (June 2015) is 14000 µg/L.

- Carbon disulfide – NTAmw-119 (0.39 µg/L J). There is no MCL for carbon disulfide. The RSL (June 2015) is 810 µg/L.

- Carbon tetrachloride – LL10mw-003 (1.3 µg/L). The MCL for carbon tetrachloride is 5.0 µg/L. The RSL (June 2015) is 0.45 µg/L.

As shown in Table 3-4, the only VOC detected at levels exceeding their corresponding MCLs and/or RSLs (June 2015) during the July 2015 sampling event was:

- Carbon tetrachloride – LL10mw-003 (1.3 µg/L). The MCL for carbon tetrachloride is 5.0 µg/L. The RSL (June 2015) is 0.45 µg/L.

3.2.4 Semivolatile Organic Compounds

The analytical results for SVOCs are summarized in Table 3-5. The following SVOCs were detected above the MDL for this sampling event.

- Isophorone – RQLmw-007 (0.26 µg/L J), RQLmw-008 (0.37 µg/L J), RQLmw-009 (0.26 µg/L J). There is no MCL for isophorone. The RSL (June 2015) is 78 µg/L

As shown in Table 3-5, no SVOCs were detected at levels exceeding their corresponding MCLs and/or RSLs (June 2015) during the July 2015 sampling event.

3.2.5 Pesticides and Polychlorinated Biphenyls

The analytical results for pesticides and PCBs are summarized in Table 3-6.
As shown in Table 3-6, no pesticides and PCBs were detected at levels exceeding the MDL for this sampling event.

3.2.6 Hexavalent Chromium

The analytical results for hexavalent chromium are summarized in Table 3-7. Well LL3mw-244 had a detected concentration for hexavalent chromium of 0.195 µg/L, which is elevated above the RSL (June 2015) of 0.035 µg/L (there is no MCL for hexavalent chromium).

Table 3-7. FWGWMP July 2015 Hexavalent Chromium Analytical Results

Sample ID	Well	Date Collected	Concentration
FWGLL3mw-244-0532-GF	LL3mw-244	7/21/2015	**0.195 µg/L**
FWGLL12mw-247-0540-GF	LL12mw-247	7/21/2015	0.01 µg/L U
FWGSCFmw-002-0545-GF	SCFmw-002	7/21/2015	0.01 µg/L U

U The analyte was analyzed for but not detected. The numerical value preceding the U is the associated reporting limit.
Bold The concentration was detected above the MDL.

3.2.7 Perchlorate

During the July 2015 sampling event perchlorates were analyzed at two wells with previous detection of this analyte. Table 3-8 summarizes the results. As shown in Table 3-8 there were no detections elevated above the RSL (14 µg/L) or the MCL [EPA established an Interim Drinking Water Health Advisory of 15 µg/L in water (EPA 2009b)].

Table 3-8. FWGWMP July 2015 Perchlorate Analytical Results

Sample ID	Well	Date Collected	Concentration
FWGLL2mw-271-0529-GF	LL3mw-244	7/21/2015	0.050 µg/L U
FWGLL3mw-246-0533-GF	LL12mw-247	7/21/2015	**0.067 µg/L**

U The analyte was analyzed for but not detected. The numerical value preceding the U is the associated reporting limit.

Bold The concentration was detected above the MDL.

Table 3-3. FWGWMP July 2015 Inorganic Analytical Results

Station ID				DA2mw-115	DETmw-003	DETmw-004	FBQmw-174	FWGmw-004	FWGmw-007	FWGmw-011
Sample ID		MCL	USEPA RSL	FWGDA2mw-115-0571-GF	FWGDETmw-003C-0572-GF	FWGDETmw-004C-0573-GF	FWGFBQmw-174C-0574-GF	FWGFWGmw-004-0575-GF	FWGFWGmw-007-0576-GF	FWGFWGmw-011-0577-GF
Date Collected				7/23/2015	7/23/2015	7/22-23/2015	7/20/2015	7/23/2015	7/23/2015	7/22/2015
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
Aluminum	µg/L	200	20000	60 U	60 U	60 U	60 U	60 U	60 U	**31 J**
Antimony	µg/L	6.0	7.8	1.0 U	1.0 U	**0.37 J**	1.0 U	1.0 U	1.0 U	1.0 U
Arsenic	µg/L	10	0.052	10 U	**10**	10 U	10 U	10 U	10 U	10 U
Barium	µg/L	2000	3800	**18**	**44**	**63**	**13 U**	**20**	**14**	**30**
Beryllium	µg/L	4.0	25	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	µg/L	5.0	9.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	µg/L	NS	NS	**87000**	**86000**	**130000**	**4500**	**81000**	**87000**	**55000**
Chromium	µg/L	100	22000	**1.2 J**	**1.1 J**	**1.4 J**	4.0 U	0.96 UJ	1.0 UJ	1.3 U
Cobalt	µg/L	NS	6	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	**1.0 J**
Copper	µg/L	1300	800	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cyanide	mg/L	0.20	0.0015	NA	0.010 UJ	0.010 UJ	NA	NA	NA	NA
Iron	µg/L	300	11000	**690**	**1800**	100 U	100 U	100 U	100 U	**5100 J**
Lead	µg/L	15	15	2.7 U	5.0 U	5.0 U	2.5 U	5.0 U	5.0 U	5.0 U
Magnesium	µg/L	NS	NS	**24000**	**31000**	**25000**	**1600**	**43000**	**39000**	**12000**
Manganese	µg/L	50	430	**86**	**220**	**4.1 J**	**17**	15	**45**	**280**
Mercury	µg/L	2.0	0.63	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	µg/L	NS	390	5.0 U	5.0 U	5.0 U	**4.7 J**	5.0 U	**0.79 J**	5.0 U
Potassium	µg/L	NS	NS	**3000**	**1900**	**1900**	**1100**	**840 J**	**1600**	**4200**
Selenium	µg/L	50	100	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Silver	µg/L	100	94	5.0 UJ	5.0 UJ	5.0 UJ	5.0 U	5.0 UJ	5.0 UJ	5.0 U
Sodium	µg/L	NS	NS	**11000**	**12000**	**2400**	**910**	**4400**	**5700**	**6100**
Thallium	µg/L	2.0	0.20	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Vanadium	µg/L	NS	86	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Zinc	µg/L	5000	6000	50 U	50 U	50 U	**31 J**	50 U	50 U	50 U

Notes:

µg/L = microgram per liter

mg/L = milligram per liter

NS = no standard

NA = Not Analyzed

Bold = detected compound above the MDL

RSL = USEPA Regional Screening Level (6/15)

MCL = Maximum Contaminant Level

Table 3-3. FWGWMP July 2015 Inorganic Analytical Results

Station ID				FWGmw-012	FWGmw-015	FWGmw-016	LL1mw-064	LL1mw-065	LL1mw-083	LL1mw-084
Sample ID		MCL	USEPA RSL	FWGFWGmw-012-0578-GF	FWGFWGmw-015-0579-GF	FWGFWGmw-016-0580-GF	FWGLL1mw-064C-0581-GF	FWGLL1mw-065C-0582-GF	FWGLL1mw-083C-0583-GF	FWGLL1mw-084C-0584-GF
Date Collected				7/22/2015	7/23/2015	7/23/2015	7/20/2015	7/23/2015	7/20/2015	7/20/2015
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
Aluminum	µg/L	200	20000	60 U	60 U	60 U	**20 J**	60 U	**710**	**440**
Antimony	µg/L	6.0	7.8	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Arsenic	µg/L	10	0.052	10 U	10 U	**4.7 J**	**3.9 J**	10 U	10 U	10 U
Barium	µg/L	2000	3800	**19**	**8.3**	**50**	**42**	**46**	**15 B**	**15 B**
Beryllium	µg/L	4.0	25	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	µg/L	5.0	9.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.64 U	**2.3**
Calcium	µg/L	NS	NS	**22000**	**260000**	**100000**	**55000**	**76000**	**23000**	**53000**
Chromium	µg/L	100	22000	1.3 U	1.5 UJ	1.2 UJ	0.87 UJ	1.2 UJ	4.0 U	**0.88 B**
Cobalt	µg/L	NS	6	**1.3 J**	**0.69 J**	4.0 U	4.0 U	4.0 U	**7.2**	**13**
Copper	µg/L	1300	800	10 U	10 U	10 U	10 U	10 U	**3.3 J**	**8.7 J**
Cyanide	mg/L	0.20	0.0015	NA	NA	NA	NA	NA	NA	NA
Iron	µg/L	300	11000	**2000 J**	100 U	**670**	**780**	**82 J**	100 U	100 U
Lead	µg/L	15	15	5.0 U	2.3 U	5.0 U	5.0 U	2.8 U	2.0 U	2.5 U
Magnesium	µg/L	NS	NS	**5000**	**260000**	**27000**	**9100**	**21000**	**5200**	**2900**
Manganese	µg/L	50	430	**85**	**430**	**190**	**100**	**190**	**380**	**100**
Mercury	µg/L	2.0	0.63	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	µg/L	NS	390	**1.3 J**	**2.6 J**	5.0 U	5.0 U	5.0 U	**27**	**24**
Potassium	µg/L	NS	NS	**1000**	**3300**	**2100**	**770 J**	**1100**	**2600**	**3600**
Selenium	µg/L	50	100	10 U	10 U	10 U	10 U	10 U	10 U	**4.1 B**
Silver	µg/L	100	94	5.0 U	1.0 UJ	5.0 UJ	0.96 UJ	5.0 UJ	5.0 U	5.0 U
Sodium	µg/L	NS	NS	**5900**	**45000**	**11000**	**4800**	**13000**	**7500**	**4600**
Thallium	µg/L	2.0	0.20	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Vanadium	µg/L	NS	86	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Zinc	µg/L	5000	6000	50 U	50 U	50 U	50 U	50 U	**38 J**	**68**

Notes:

µg/L = microgram per liter

mg/L = milligram per liter

NS = no standard

NA = Not Analyzed

Bold = detected compound above the MDL

RSL = USEPA Regional Screening Level (6/15)

MCL = Maximum Contaminant Level

Table 3-3. FWGWMP July 2015 Inorganic Analytical Results

Station ID				LL1mw-086	LL1mw-087	LL1mw-088	LL2mw-059	LL2mw-060	LL2mw-267	LL2mw-271
Sample ID		MCL	USEPA RSL	FWGLL1mw-086-0585-GF	FWGLL1mw-087C-0586-GF	FWGLL1mw-088-0587-GF	FWGLL2mw-059C-0588-GF	FWGLL2mw-060C-0589-GF	FWGLL2mw-267C-0590-GF	FWGLL2mw-271-0591-GF
Date Collected				7/21/2015	7/21/2015	7/21/2015	7/20/2015	7/20/2015	7/23/2015	7/21/2015
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
Aluminum	µg/L	200	20000	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Antimony	µg/L	6.0	7.8	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	**0.43 J**	1.0 U	1.0 UJ
Arsenic	µg/L	10	0.052	10 U	10 U	**28**	**5.2 J**	10 U	10 U	**5.4 J**
Barium	µg/L	2000	3800	**52**	**24**	**41**	**47**	**32**	**7.9**	**3.2 J**
Beryllium	µg/L	4.0	25	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	µg/L	5.0	9.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	µg/L	NS	NS	**34000**	**100000**	**81000**	**89000**	**59000**	**27000**	**53000**
Chromium	µg/L	100	22000	**0.60 J**	0.69 UJ	**1.3 J**	**1.3 B**	**1.2 B**	0.70 UJ	1.1 UJ
Cobalt	µg/L	NS	6	4.0 U	**0.69 J**	**0.58 J**	**22**	4.0 U	**1.4 J**	**10**
Copper	µg/L	1300	800	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cyanide	mg/L	0.20	0.0015	NA	NA	NA	NA	NA	NA	NA
Iron	µg/L	300	11000	100 U	100 U	**1100**	**4700**	100 U	**340**	**4500**
Lead	µg/L	15	15	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Magnesium	µg/L	NS	NS	**22000**	**28000**	**38000**	**17000**	**8100**	**14000**	**19000**
Manganese	µg/L	50	430	**110**	**85**	**52**	**1300**	**26**	**460**	**540**
Mercury	µg/L	2.0	0.63	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	**0.20 U**	0.20 U
Nickel	µg/L	NS	390	**1.7 J**	**0.94 J**	5.0 U	**5.3**	5.0 U	**2.5 J**	**40**
Potassium	µg/L	NS	NS	**20000**	**570 J**	**2700**	**380 J**	**590 J**	**610 J**	**1200**
Selenium	µg/L	50	100	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Silver	µg/L	100	94	5.0 UJ	5.0 UJ	5.0 UJ	5.0 U	5.0 U	**0.94 UJ**	5.0 UJ
Sodium	µg/L	NS	NS	**12000**	**8400**	**24000**	**17000**	**2500**	17000	**4600**
Thallium	µg/L	2.0	0.20	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Vanadium	µg/L	NS	86	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Zinc	µg/L	5000	6000	50 U	50 U	50 U	50 U	50 U	50 U	50 U

Notes:

µg/L = microgram per liter

mg/L = milligram per liter

NS = no standard

NA = Not Analyzed

Bold = detected compound above the MDL

RSL = USEPA Regional Screening Level (6/15)

MCL = Maximum Contaminant Level

Table 3-3. FWGWMP July 2015 Inorganic Analytical Results

Station ID				LL3mw-238	LL3mw-241	LL3mw-244	LL3mw-246	LL7mw-001	LL10mw-003	LL12mw-185
Sample ID		MCL	USEPA RSL	FWGLL3mw-238C-0592-GF	FWGLL3mw-241C-0593-GF	FWGLL3mw-244-0594-GF	FWGLL3mw-246-0595-GF	FWGLL7mw-001-0596-GF	FWGLL10mw-003C-0597-GF	FWGLL12mw-185C-0598-GF
Date Collected				7/20/2015	7/20/2015	7/21/2015	7/21/2015	7/23/2015	7/23/2015	7/21/2015
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
Aluminum	µg/L	200	20000	**79**	60 U	60 U	60 U	60 U	60 U	NA
Antimony	µg/L	6.0	7.8	1.0 U	1.0 U	0.41 UJ	0.49 UJ	1.0 U	1.0 U	NA
Arsenic	µg/L	10	0.052	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Barium	µg/L	2000	3800	**7.6 B**	**1.0 B**	**15**	**15**	**22**	**5.4**	NA
Beryllium	µg/L	4.0	25	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA
Cadmium	µg/L	5.0	9.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA
Calcium	µg/L	NS	NS	51000	**16000**	**24000**	**23000**	**39000**	**61000**	NA
Chromium	µg/L	100	22000	1.5 B	4.0 U	0.91 UJ	1.4 UJ	0.69 UJ	0.79 UJ	NA
Cobalt	µg/L	NS	6	4.0 U	4.0 U	4.0 U	4.0 U	**5.6**	4.0 U	NA
Copper	µg/L	1300	800	10 U	10 U	10 U	10 U	10 U	10 U	NA
Cyanide	mg/L	0.20	0.0015	NA	NA	NA	NA	NA	NA	NA
Iron	µg/L	300	11000	**140**	100 U	100 U	100 U	**8000**	100 U	NA
Lead	µg/L	15	15	5.0 U	2.8 U	5.0 U	2.2 U	2.1 U	5.0 U	NA
Magnesium	µg/L	NS	NS	**5500**	**6500**	**7700**	**7400**	**13000**	**19000**	NA
Manganese	µg/L	50	430	**3.1 B**	5.0 U	**0.66 J**	**2.7 J**	**420**	5.0 U	NA
Mercury	µg/L	2.0	0.63	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA
Nickel	µg/L	NS	390	**1.3 J**	5.0 U	**0.76 J**	5.0 U	**7.3**	5.0 U	NA
Potassium	µg/L	NS	NS	**2700**	**650 J**	**1400**	**1400**	**1100**	**700 J**	NA
Selenium	µg/L	50	100	10 U	10 U	10 U	10 U	10 U	10 U	NA
Silver	µg/L	100	94	5.0 U	5.0 U	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	NA
Sodium	µg/L	NS	NS	**2600**	**2500**	**3500**	**3500**	**6800**	**9200**	NA
Thallium	µg/L	2.0	0.20	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	NA
Vanadium	µg/L	NS	86	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	NA
Zinc	µg/L	5000	6000	50 U	50 U	50 U	50 U	**50 J**	50 U	NA

Notes:

µg/L = microgram per liter

mg/L = milligram per liter

NS = no standard

NA = Not Analyzed

Bold = detected compound above the MDL

RSL = USEPA Regional Screening Level (6/15)

MCL = Maximum Contaminant Level

Table 3-3. FWGWMP July 2015 Inorganic Analytical Results

Station ID				LL12mw-187	LL12mw-242	LL12mw-245	LL12mw-247	NTAmw-119	RQLmw-007	RQLmw-008
Sample ID		MCL	USEPA RSL	FWGLL12mw-0187C-0599-GF	FWGLL12mw-242C-0600-GF	FWGLL12mw-245C-0601-GF	FWGLL12mw-247-0602-GF	FWGNTAmw-119-0603-GF	FWGRQLmw-007C-0604-GF	FWGRQLmw-008C-0606-GF
Date Collected				7/22/2015	7/21/2015	7/22/2015	7/21/2015	7/20/2015	7/22/2015	7/22/2015
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
Aluminum	µg/L	200	20000	60 U	**340**	60 U	60 U	60 U	60 U	60 U
Antimony	µg/L	6.0	7.8	1.0 U	1.0 UJ	2.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Arsenic	µg/L	10	0.052	**3.5 J**	**21**	10 U	**7.1 J**	**7.1 J**	**68**	**26**
Barium	µg/L	2000	3800	**220**	**24**	**24 J**	**22**	**78**	**60**	**99**
Beryllium	µg/L	4.0	25	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	µg/L	5.0	9.2	0.56 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.62 U
Calcium	µg/L	NS	NS	**970000**	**67000**	**150000**	**94000**	**81000**	**130000**	**64000**
Chromium	µg/L	100	22000	1.4 U	1.9 UJ	1.8 U	1.1 UJ	**1.2 B**	2.0 U	1.6 U
Cobalt	µg/L	NS	6	**11**	**0.65 J**	**3.6 J**	**0.63 J**	4.0 U	**5.0**	**1.8 J**
Copper	µg/L	1300	800	20 U	10 U	25 U	10 U	10 U	10 U	10 U
Cyanide	mg/L	0.20	0.0015	NA	NA	NA	NA	NA	**0.010 J**	0.010 UJ
Iron	µg/L	300	11000	100 UJ	**1200**	**770**	**650**	**1100**	**18000 J**	**79000 J**
Lead	µg/L	15	15	5.0 U	5.0 U	2.3 U	5.0 U	5.0 U	2.5 U	2.6 U
Magnesium	µg/L	NS	NS	**280000**	**43000**	**67000**	**49000**	20000	**120000**	**61000**
Manganese	µg/L	50	430	**1900**	**65**	**330**	**190**	300	**1700**	**540**
Mercury	µg/L	2.0	0.63	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	µg/L	NS	390	**20**	**38**	**2.3 J**	5.0 U	5.0 U	**7.3**	**3.4 J**
Potassium	µg/L	NS	NS	**48000**	**2000**	**3200 J**	**2300**	**1400**	**7800**	**4000**
Selenium	µg/L	50	100	10 U	10 U	15 U	10 U	10 U	10 U	10 U
Silver	µg/L	100	94	5.0 U	5.0 UJ	7.0 U	5.0 UJ	5.0 U	5.0 U	5.0 U
Sodium	µg/L	NS	NS	**35000**	**33000**	**23000**	**23000**	**6500**	**5000**	**5700**
Thallium	µg/L	2.0	0.20	1.5 U	1.5 U	2.0 U	1.5 U	1.5 U	1.5 U	1.5 U
Vanadium	µg/L	NS	86	4.0 U	4.0 U	7.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Zinc	µg/L	5000	6000	50 U	50 U	50 U	50 U	50 U	50 U	50 U

Notes:

µg/L = microgram per liter

mg/L = milligram per liter

NS = no standard

NA = Not Analyzed

Bold = detected compound above the MDL

RSL = USEPA Regional Screening Level (6/15)

MCL = Maximum Contaminant Level

Table 3-3. FWGWMP July 2015 Inorganic Analytical Results

Station ID				RQLmw-009	SCFmw-002	SCFmw-004	WBGmw-006	WBGmw-009	WBGmw-020	WBGmw-021
Sample ID		MCL	USEPA RSL	FWGRQLmw-009C-0606-GF	FWGSCFmw-002-0607-GF	FWGSCFmw-004-0608-GF	FWGWBGmw-006C-0609-GF	FWGWBGmw-009C-0610-GF	FWGWBGmw-020-0611-GF	FWGWBGmw-021-0612-GF
Date Collected				7/22/2015	7/21/2015	7/21/2015	7/22/2015	7/22/2015	7/22/2015	7/22/2015
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
Aluminum	µg/L	200	20000	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Antimony	µg/L	6.0	7.8	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Arsenic	µg/L	10	0.052	**21**	**15**	10 U	10 U	10 U	10 U	**4.6 J**
Barium	µg/L	2000	3800	**33**	**36**	**69**	**20**	**8.3**	**15**	**55**
Beryllium	µg/L	4.0	25	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	µg/L	5.0	9.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	µg/L	NS	NS	**28000**	**80000**	**150000**	**72000**	**33000**	**30000**	**72000**
Chromium	µg/L	100	22000	4.0 U	1.3 UJ	1.5 UJ	1.3 U	0.68 U	0.78 U	0.84 J
Cobalt	µg/L	NS	6	**3.3 J**	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Copper	µg/L	1300	800	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cyanide	mg/L	0.20	0.0015	0.010 UJ	NA	NA	NA	NA	NA	NA
Iron	µg/L	300	11000	**10000 J**	**440**	100 U	100 UJ	100 UJ	**4000 J**	**610 J**
Lead	µg/L	15	15	5.0 U	2.5 U	2.7 U	5.0 U	2.1 U	2.1 U	3.2 U
Magnesium	µg/L	NS	NS	**17000**	**25000**	**59000**	**24000**	**9900**	**10000**	**18000**
Manganese	µg/L	50	430	**1000**	**63**	**690**	**53**	**43**	**280**	**210**
Mercury	µg/L	2.0	0.63	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	µg/L	NS	390	**3.6 J**	5.0 U	5.0 U	5.0 U	5.0 U	**2.3 J**	5.0 U
Potassium	µg/L	NS	NS	**3600**	**2300**	**2800**	**890 J**	**470 J**	**650 J**	**1300**
Selenium	µg/L	50	100	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Silver	µg/L	100	94	5.0 U	5.0 UJ	5.0 UJ	5.0 U	5.0 U	5.0 U	5.0 U
Sodium	µg/L	NS	NS	**1900**	**19000**	**10000**	**5800**	**3200**	**3600**	**4600**
Thallium	µg/L	2.0	0.20	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Vanadium	µg/L	NS	86	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Zinc	µg/L	5000	6000	50 U	50 U	50 U	50 U	50 U	50 U	50 U

Notes:

µg/L = microgram per liter

mg/L = milligram per liter

NS = no standard

NA = Not Analyzed

Bold = detected compound above the MDL

RSL = USEPA Regional Screening Level (6/15)

MCL = Maximum Contaminant Level

Table 3-3. FWGWMP July 2015 Inorganics Analytical Results

Data Qualifiers

Data qualifier flags are used in an effort to describe the quality of each piece of data for each constituent. These flags are letter codes appended to the numerical data. The following data qualifiers are specified in the USACE Louisville Chemistry Guidelines. For a complete explanation of qualifiers used for each constituent please refer to the Data Verification Summaries in Appendix C.

U The analyte was analyzed for but not detected. The numerical value preceding the U is the associated reporting limit.

J The identification of the analyte is acceptable, but the quality assurance criteria indicate that the quantitative values may be outside the normal expected range of precision (i.e., the quantitative value is estimated). Examples include:

- Results detected above the laboratory MDL but less than the laboratory reporting limit.
- MS/MSD percent recoveries outside the acceptance criteria.
- LCS percent recoveries outside acceptance criteria.

R Data are considered to be rejected and shall not be used. This flag denotes the failure of quality control criteria such that it cannot be determined if the analyte is present or absent from the sample [e.g., the MRL verification standard was below quality control guidelines; associated sample results that were non-detect are unusable].

UJ This flag is a combination of the U and J qualifiers, which indicate that the analyte is not present. The reported value is considered to be an estimated RL.

B The B flag is used for when the analyte is found in the method blank or any of the field blanks. This designation overrides the CLP "B" designation when used by the laboratory as an estimated value for inorganics.

Table 3-4. FWGWMP July 2015 VOC Analytical Results

Station ID				DETmw-003	DETmw-004	LL7mw-001	LL10mw-003
Sample ID		MCL	USEPA RSL	FWGDETmw-003C-0572-GW	FWGDETmw-004C-0573-GW	7/23/2015	FWGLL10mw-003C-0597-GW
Date Collected				7/23/2015	7/22-23/15	7/23/2015	7/23/2015
Sample Type				Grab	Grab	Grab	Grab
Analyte	Units						
1,1,1-Trichloroethane	µg/L	200	8000	1.0 U	1.0 U	**4.6**	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	NS	0.076	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	µg/L	5.0	0.28	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	µg/L	NS	2.7	1.0 U	1.0 U	**1.6**	1.0 U
1,1-Dichloroethene (total)	µg/L	7.0	280	1.0 U	1.0 U	**4.3**	1.0 U
1,2-Dibromoethane	µg/L	NS	0.0075	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	5.0	0.17	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	µg/L	NS	NS	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	5.0	0.44	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	µg/L	NS	5600	2.0 U	2.0 U	2.0 U	2.0 U
2-Hexanone	µg/L	NS	38	2.0 U	2.0 U	2.0 U	2.0 U
4-Methyl-2-pentanone	µg/L	NS	1200	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	µg/L	NS	14000	2.0 U	**2.5 B**	2.0 U	2.0 U
Benzene	µg/L	5.0	0.45	1.0 U	1.0 U	1.0 U	1.0 U
Bromochloromethane	µg/L	NS	83	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	80	0.13	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	80	3.3	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	µg/L	NS	7.5	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	µg/L	NS	810	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	µg/L	5.0	0.45	1.0 U	1.0 U	1.0 U	**1.3**
Chlorobenzene	µg/L	100	78	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	NS	21000	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	µg/L	80	0.22	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	µg/L	NS	190	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-dichloroethene	µg/L	70	36	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	µg/L	NS	0.47	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	NS	0.17	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	700	1.5	1.0 U	1.0 U	1.0 U	1.0 U
m&p-xylenes	µg/L	NS	190	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	5.0	11	1.0 U	1.0 U	1.0 U	1.0 U
o-xylene	µg/L	NS	190	0.50 U	0.50 U	0.50 U	0.50 U
Styrene	µg/L	100	1200	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	µg/L	5.0	11	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	µg/L	1000	1100	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-dichloroethene	µg/L	100	360	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	µg/L	NS	0.47	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	5.0	0.49	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	2.0	0.019	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	µg/L	10000	190	2.0 U	2.0 U	2.0 U	2.0 U

Notes:
µg/L = microgram per liter
NS = no standard
Bold = detected compound above the MDL
RSL = USEPA Regional Screening Level (6/15)
MCL = Maximum Contaminant Level

Table 3-4. FWGWMP July 2015 VOC Analytical Results

Station ID				NTAmw-119	RQLmw-007	RQLmw-008	RQLmw-009
Sample ID		MCL	USEPA RSL	FWGNTAmw-119-0603-GW	FWGRQLmw-007C-0604-GW	FWGRQLmw-008C-0605-GW	FWGRQLmw-009C-0606-GW
Date Collected				7/20/2015	7/22/2015	7/22/2015	7/22/2015
Sample Type				Grab	Grab	Grab	Grab
Analyte	Units						
1,1,1-Trichloroethane	µg/L	200	8000	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	NS	0.076	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	µg/L	5.0	0.28	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	µg/L	NS	2.7	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene (total)	µg/L	7.0	280	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	µg/L	NS	0.0075	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	5.0	0.17	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	µg/L	NS	NS	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	5.0	0.44	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	µg/L	NS	5600	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ
2-Hexanone	µg/L	NS	38	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ
4-Methyl-2-pentanone	µg/L	NS	1200	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ
Acetone	µg/L	NS	14000	2.0 UJ	2.0 UJ	**1.5 JB**	2.0 UJ
Benzene	µg/L	5.0	0.45	1.0 U	1.0 U	1.0 U	1.0 U
Bromochloromethane	µg/L	NS	83	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	80	0.13	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	80	3.3	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	µg/L	NS	7.5	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Carbon disulfide	µg/L	NS	810	**0.39 J**	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	µg/L	5.0	0.45	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	100	78	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	NS	21000	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	µg/L	80	0.22	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	µg/L	NS	190	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-dichloroethene	µg/L	70	36	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	µg/L	NS	0.47	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	NS	0.17	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	700	1.5	1.0 U	1.0 U	1.0 U	1.0 U
m&p-xylenes	µg/L	NS	190	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	5.0	11	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ
o-xylene	µg/L	NS	190	0.50 U	0.50 U	0.50 U	0.50 U
Styrene	µg/L	100	1200	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	µg/L	5.0	11	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	µg/L	1000	1100	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-dichloroethene	µg/L	100	360	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	µg/L	NS	0.47	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	5.0	0.49	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	2.0	0.019	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	µg/L	10000	190	2.0 U	2.0 U	2.0 U	2.0 U

Notes:
µg/L = microgram per liter
NS = no standard
Bold = detected compound above the MDL
RSL = USEPA Regional Screening Level (6/15)
MCL = Maximum Contaminant Level

Table 3-4. FWGWMP July 2015 VOC Analytical Results

Data Qualifiers

Data qualifier flags are used in an effort to describe the quality of each piece of data for each constituent. These flags are letter codes appended to the numerical data. The following data qualifiers are specified in the USACE Louisville Chemistry Guidelines. For a complete explanation of qualifiers used for each constituent please refer to the Data Verification Summaries in Appendix C.

U The analyte was analyzed for but not detected. The numerical value preceding the U is the associated reporting limit.

J The identification of the analyte is acceptable, but the quality assurance criteria indicate that the quantitative values may be outside the normal expected range of precision (i.e., the quantitative value is estimated). Examples include:

- Results detected above the laboratory MDL but less than the laboratory reporting limit.
- MS/MSD percent recoveries outside the acceptance criteria.
- LCS percent recoveries outside acceptance criteria.

R Data are considered to be rejected and shall not be used. This flag denotes the failure of quality control criteria such that it cannot be determined if the analyte is present or absent from the sample [e.g., the MRL verification standard was below quality control guidelines; associated sample results that were non-detect are unusable].

UJ This flag is a combination of the U and J qualifiers, which indicate that the analyte is not present. The reported value is considered to be an estimated RL.

B The B flag is used for when the analyte is found in the method blank or any of the field blanks. This designation overrides the CLP "B" designation when used by the laboratory as an estimated value for inorganics.

Table 3-5. FWGWMP July 2015 SVOC Analytical Results

Station ID				DA2mw-115	FBQmw-174	FWGmw-004	FWGmw-007	FWGmw-011	FWGmw-012	FWGmw-015
Sample ID		MCL	USEPA RSL	FWGDA2mw-115-0571-GW	FWGFBQmw-174C-0574-GW	FWGFWGmw-004-0575-GW	FWGFWGmw-007-0576-GW	FWGFWGmw-011-0577-GW	FWGFWGmw-012-0578-GW	FWGFWGmw-015-0579-GW
Date Collected				7/23/2015	7/20/2015	7/23/2015	7/23/2015	7/22/2015	7/22/2015	7/23/2015
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
bis(2-Ethylhexyl)phthalate	µg/L	6.0	5.6	5.3 U	5.0 U	4.9 U	5.0 U	4.8 U	5.0 U	4.8 U
Butyl benzyl phthalate	µg/L	NS	16	0.53 U	0.50 U	0.49 U	0.50 U	0.48 U	0.50 U	0.48 U
Diethyl phthalate	µg/L	NS	15000	1.1 U	0.99 U	0.97 U	1.0 U	0.96 U	1.0 U	0.95 U
Dimethyl phthalate	µg/L	NS	NS	0.53 U	0.50 U	0.49 U	0.50 U	0.48 U	0.50 U	0.48 U
Di-n-butyl phthalate	µg/L	NS	900	5.3 U	5.0 U	4.9 U	5.0 U	4.8 U	5.0 U	4.8 U
Di-n-octyl phthalate	µg/L	NS	200	0.53 U	0.50 U	0.49 U	0.50 U	0.48 U	0.50 U	0.48 U

Notes:

MCL = Maximum Contaminant Level

RSL = USEPA Regional Screening Level (6/15)

µg/L = microgram per liter

NS = no standard

N/A = Not Analyzed

Bold = detected compound above the MDL

Table 3-5. FWGWMP July 2015 SVOC Analytical Results

Station ID				FWGmw-016	LL1mw-064	LL1mw-065	LL1mw-083	LL1mw-084	LL1mw-086	LL1mw-087
Sample ID		MCL	USEPA RSL	FWGFWGmw-016-0580-GW	FWGLL1mw-064C-0581-GW	FWGLL1mw-065C-0582-GW	FWGLL1mw-083C-0583-GW	FWGLL1mw-084C-0584-GW	FWGLL1mw-086-0585-GW	FWGLL1mw-087C-0586-GW
Date Collected				7/23/2015	7/20/2015	7/23/2015	7/20/2015	7/20/2015	7/21/2015	7/21/2015
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
bis(2-Ethylhexyl)phthalate	µg/L	6.0	5.6	4.8 U	4.8 U	4.8 U	4.9 U	4.9 U	5.0 U	5.3 U
Butyl benzyl phthalate	µg/L	NS	16	0.48 U	0.48 U	4.8 U	0.49 U	4.9 U	0.50 U	0.53 U
Diethyl phthalate	µg/L	NS	15000	0.95 U	0.95 U	1.9 U	0.97 U	1.9 U	0.99 U	1.1 U
Dimethyl phthalate	µg/L	NS	NS	0.48 U	0.48 U	1.9 U	0.49 U	1.9 U	0.50 U	0.53 U
Di-n-butyl phthalate	µg/L	NS	900	4.8 U	4.8 U	4.8 U	4.9 U	4.9 U	5.0 U	5.3 U
Di-n-octyl phthalate	µg/L	NS	200	0.48 U	0.48 U	1.9 U	0.49 U	1.9 U	0.50 U	0.53 U

Notes:

MCL = Maximum Contaminant Level

RSL = USEPA Regional Screening Level (6/15)

µg/L = microgram per liter

NS = no standard

N/A = Not Analyzed

Bold = detected compound above the MDL

Table 3-5. FWGWMP July 2015 SVOC Analytical Results

Station ID				LL1mw-088	LL2mw-059	LL2mw-060	LL2mw-267	LL2mw-271	LL3mw-238	LL3mw-241
Sample ID		MCL	USEPA RSL	FWGLL1mw-088-0587-GW	FWGLL2mw-059C-0588-GW	FWGLL2mw-060C-0589-GW	FWGLL2mw-267C-0590-GW	FWGLL2mw-271-0591-GW	FWGLL3mw-238C-0592-GW	FWGLL3mw-241C-0593-GW
Date Collected				7/21/2015	7/20/2015	7/20/2015	7/23/2015	7/21/2015	7/20/2015	7/20/2015
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
bis(2-Ethylhexyl)phthalate	µg/L	6.0	5.6	5.0 U	5.0 U	4.8 U	4.9 U	4.8 U	4.9 U	5.0 U
Butyl benzyl phthalate	µg/L	NS	16	0.50 U	0.50 U	0.48 U	0.49 U	0.48 U	0.49 U	0.50 U
Diethyl phthalate	µg/L	NS	15000	1.0 U	1.0 U	0.95 U	0.97 U	0.95 U	0.97 U	1.0 U
Dimethyl phthalate	µg/L	NS	NS	0.50 U	0.50 U	0.48 U	0.49 U	0.48 U	0.49 U	0.50 U
Di-n-butyl phthalate	µg/L	NS	900	5.0 U	5.0 U	4.8 U	4.9 U	4.8 U	4.9 U	5.0 U
Di-n-octyl phthalate	µg/L	NS	200	0.50 U	0.50 U	0.48 U	0.49 U	0.48 U	0.49 U	0.50 U

Notes:

MCL = Maximum Contaminant Level

RSL = USEPA Regional Screening Level (6/15)

µg/L = microgram per liter

NS = no standard

N/A = Not Analyzed

Bold = detected compound above the MDL

Table 3-5. FWGWMP July 2015 SVOC Analytical Results

Station ID				LL3mw-244	LL3mw-246	LL7mw-001	LL10mw-003	LL12mw-187	LL12mw-242	LL12mw-245
Sample ID		MCL	USEPA RSL	FWGLL3mw-244-0594-GW	FWGLL3mw-246-0595-GW	FWGLL7mw-001-0596-GW	FWGLL10mw-003C-0597-GW	FWGLL12mw-0187C-0599-GW	FWGLL12mw-242C-0600-GW	FWGLL12mw-245C-0601-GW
Date Collected				7/21/2015	7/21/2015	7/23/2015	7/23/2015	7/22/2015	7/21/2015	7/22/2015
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
bis(2-Ethylhexyl)phthalate	µg/L	6.0	5.6	4.8 U	4.8 U	5.0 U	4.8 U	4.8 U	4.8 U	4.8 U
Butyl benzyl phthalate	µg/L	NS	16	0.48 U	0.48 U	0.50 U	0.48 U	0.48 U	0.48 U	0.48 U
Diethyl phthalate	µg/L	NS	15000	0.95 U	0.95 U	1.0 U	0.96 U	0.95 U	0.95 U	0.96 U
Dimethyl phthalate	µg/L	NS	NS	0.48 U	0.48 U	0.50 U	0.48 U	0.48 U	0.48 U	0.48 U
Di-n-butyl phthalate	µg/L	NS	900	4.8 U	4.8 U	5.0 U	4.8 U	4.8 U	4.8 U	4.8 U
Di-n-octyl phthalate	µg/L	NS	200	0.48 U	0.48 U	0.50 U	0.48 U	0.48 U	0.48 U	0.48 U

Notes:

MCL = Maximum Contaminant Level

RSL = USEPA Regional Screening Level (6/15)

µg/L = microgram per liter

NS = no standard

N/A = Not Analyzed

Bold = detected compound above the MDL

Table 3-5. FWGWMP July 2015 SVOC Analytical Results

Station ID				LL12mw-247	SCFmw-002	SCFmw-004	WBGmw-006	WBGmw-009	WBGmw-020	WBGmw-021
Sample ID		MCL	USEPA RSL	FWGLL12mw-247-0602-GW	FWGSCFmw-002-0607-GW	FWGSCFmw-004-0608-GW	FWGWBGmw-006C-0609-GW	FWGWBGmw-009C-0610-GW	FWGWBGmw-020-0611-GW	FWGWBGmw-021-0612-GW
Date Collected				7/21/2015	7/21/2015	7/21/2015	7/22/2015	7/22/2015	7/22/2015	7/22/2015
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
bis(2-Ethylhexyl)phthalate	µg/L	6.0	5.6	5.2 U	5.1 U	5.0 U	4.8 U	5.2 U	5.1 U	4.9 U
Butyl benzyl phthalate	µg/L	NS	16	0.52 U	0.51 U	0.50 U	0.48 U	0.52 U	0.51 U	0.49 U
Diethyl phthalate	µg/L	NS	15000	1.0 U	1.0 U	0.99 U	0.96 U	1.0 U	1.0 U	0.98 U
Dimethyl phthalate	µg/L	NS	NS	0.52 U	0.51 U	0.50 U	0.48 U	0.52 U	0.51 U	0.49 U
Di-n-butyl phthalate	µg/L	NS	900	5.2 U	5.1 U	5.0 U	4.8 U	5.2 U	5.1 U	4.9 U
Di-n-octyl phthalate	µg/L	NS	200	0.52 U	0.51 U	0.50 U	0.48 U	0.52 U	0.51 U	0.49 U

Notes:

MCL = Maximum Contaminant Level

RSL = USEPA Regional Screening Level (6/15)

µg/L = microgram per liter

NS = no standard

N/A = Not Analyzed

Bold = detected compound above the MDL

Table 3-5. FWGWMP July 2015 SVOCs Analytical Results

Station ID				NTAmw-119
Sample ID		MCL	USEPA RSL	FWGNTAmw-119-0603-GW
Date Collected				7/20/2015
Sample Type				Grab
Analyte	Units			
2,4-Dinitrotoluene	µg/L	NS	0.24	0.48 U
2,6-Dinitrotoluene	µg/L	NS	0.048	4.8 U
Acenaphthene	µg/L	NS	530	0.095 U
Acenaphthylene	µg/L	NS	NS	0.095 U
Anthracene	µg/L	NS	1800	0.095 U
Benzo(a)anthracene	µg/L	NS	0.033	0.095 U
Benzo(a)pyrene	µg/L	0.2	0.0034	0.095 U
Benzo(b)fluoranthene	µg/L	NS	0.034	0.095 U
Benzo(g,h,i)perylene	µg/L	NS	NS	0.095 U
Benzo(k)fluoranthene	µg/L	NS	0.34	0.095 U
bis(2-Ethylhexyl)phthalate	µg/L	6	5.6	4.8 U
Butyl benzyl phthalate	µg/L	NS	16	0.48 U
Chrysene	µg/L	NS	3.4	0.095 U
Dibenzo(a,h)anthracene	µg/L	NS	0.0065	0.095 U
Diethyl phthalate	µg/L	NS	15000	0.95 U
Dimethyl phthalate	µg/L	NS	NS	0.48 U
Di-n-butyl phthalate	µg/L	NS	900	4.8 U
Di-n-octyl phthalate	µg/L	NS	200	0.48 U
Fluoranthene	µg/L	NS	800	0.095 U
Fluorene	µg/L	NS	290	0.095 U
Indeno(1,2,3-cd)pyrene	µg/L	NS	0.034	0.095 U
Naphthalene	µg/L	NS	0.17	0.095 U
Nitrobenzene	µg/L	NS	0.14	0.095 U
Phenanthrene	µg/L	NS	NS	0.095 U
Pyrene	µg/L	NS	120	0.095 U

Notes:

MCL = Maximum Contaminant Level

RSL = USEPA Regional Screening Level (6/15)

µg/L = microgram per liter

NS = no standard

Bold = detected compound above the MDL

Table 3-5. FWGWMP July 2015 SVOC Analytical Results

Station ID				DETmw-003	DETmw-004	RQLmw-007	RQLmw-008	RQLmw-009
Sample ID		MCL	USEPA RSL	FWGDETmw-003C-0572-GW	FWGDETmw-004C-0573-GW	FWGRQLmw-007C-0604-GW	FWGRQLmw-008C-0605-GW	FWGRQLmw-009C-0606-GW
Date Collected				7/23/2015	7/22-23/15	7/22/2015	7/22/2015	7/22/2015
Sample Type				Grab	Grab	Grab	Grab	Grab
Analyte	Units							
1,2,4-Trichlorobenzene	µg/L	70	1.1	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
1,2-Dichlorobenzene	µg/L	600	300	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
1,3-Dichlorobenzene	µg/L	NS	NS	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
1,4-Dichlorobenzene	µg/L	75	0.48	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
2,2-oxybis (1-chloropropane)	µg/L	NS	0.36	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
2,4,5-Trichlorophenol	µg/L	NS	1200	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
2,4,6-Trichlorophenol	µg/L	NS	4	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
2,4-Dichlorophenol	µg/L	NS	46	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
2,4-Dimethylphenol	µg/L	NS	360	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
2,4-Dinitrophenol	µg/L	NS	39	0.97 U	1.1 U	0.98 U	1.1 U	0.95 U
2-Chloronaphthalene	µg/L	NS	750	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
2-Chlorophenol	µg/L	NS	91	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
2-Methylnaphthalene	µg/L	NS	36	0.097 U	0.11 U	0.098 U	0.11 U	0.095 U
2-Methylphenol	µg/L	NS	930	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
2-Nitroaniline	µg/L	NS	190	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
2-Nitrophenol	µg/L	NS	NS	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
3,3'-Dichlorobenzidine	µg/L	NS	0.12	0.97 U	1.1 U	0.98 U	1.1 UJ	0.95 U
3- and 4-Methylphenol	µg/L	NS	930	0.97 U	1.1 U	0.98 U	1.1 U	0.95 U
3-Nitroaniline	µg/L	NS	NS	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
4,6-Dinitro-2-methylphenol	µg/L	NS	1.5	3.9 U	4.3 U	3.9 U	4.2 U	3.8 U
4-Bromophenyl phenyl ether	µg/L	NS	NS	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
4-Chloro-3-methylphenol	µg/L	NS	1400	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
4-Chloroaniline	µg/L	NS	0.36	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
4-Chlorophenyl phenyl ether	µg/L	NS	NS	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
4-Nitroanaline	µg/L	NS	38	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
4-Nitrophenol	µg/L	NS	NS	3.9 U	4.3 U	3.9 U	4.2 U	3.8 U
Acenaphthene	µg/L	NS	530	0.097 U	0.11 U	0.098 U	0.11 U	0.095 U
Acenaphthylene	µg/L	NS	NS	0.097 U	0.11 U	0.098 U	0.11 U	0.095 U
Anthracene	µg/L	NS	1800	0.097 U	0.11 U	0.098 U	0.11 U	0.095 U
Benzo(a)anthracene	µg/L	NS	0.033	0.097 U	0.11 U	0.098 U	0.11 U	0.095 U
Benzo(a)pyrene	µg/L	0.2	0.0034	0.097 U	0.11 U	0.098 U	0.11 U	0.095 U
Benzo(b)fluoranthene	µg/L	NS	0.034	0.097 U	0.11 U	0.098 U	0.11 U	0.095 U
Benzo(g,h,i)perylene	µg/L	NS	NS	0.097 U	0.11 U	0.098 U	0.11 U	0.095 U
Benzo(k)fluoranthene	µg/L	NS	0.34	0.097 U	0.11 U	0.098 U	0.11 U	0.095 U
Benzoic acid	µg/L	NS	75000	19 U	22 U	20 U	21 U	19 U

Table 3-5. FWGWMP July 2015 SVOC Analytical Results

Station ID				DETmw-003	DETmw-004	RQLmw-007	RQLmw-008	RQLmw-009
Sample ID		MCL	USEPA RSL	FWGDETmw-003C-0572-GW	FWGDETmw-004C-0573-GW	FWGRQLmw-007C-0604-GW	FWGRQLmw-008C-0605-GW	FWGRQLmw-009C-0606-GW
Date Collected				7/23/2015	7/22-23/15	7/22/2015	7/22/2015	7/22/2015
Sample Type				Grab	Grab	Grab	Grab	Grab
Analyte	Units							
Benzyl alcohol	µg/L	NS	2000	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
bis(2-Chloroethoxy)methane	µg/L	NS	59	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
bis(2-Chloroethyl)ether	µg/L	NS	0.014	0.097 U	0.11 U	0.098 U	0.11 U	0.095 U
bis(2-Ethylhexyl)phthalate	µg/L	6.0	5.6	4.9 U	5.4 U	4.9 U	5.3 U	4.8 U
Butyl benzyl phthalate	µg/L	NS	16	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
Carbazole	µg/L	NS	NS	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
Chrysene	µg/L	NS	3.4	0.097 U	0.11 U	0.098 U	0.11 U	0.095 U
Dibenzo(a,h)anthracene	µg/L	NS	0.0065	0.097 U	0.11 U	0.098 U	0.11 U	0.095 U
Dibenzofuran	µg/L	NS	7.9	0.097 U	0.11 U	0.098 U	0.11 U	0.095 U
Diethyl phthalate	µg/L	NS	15000	0.97 U	1.1 U	0.98 U	1.1 U	0.95 U
Dimethyl phthalate	µg/L	NS	NS	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
Di-n-butyl phthalate	µg/L	NS	900	4.9 U	5.4 U	4.9 U	5.3 U	4.8 U
Di-n-octyl phthalate	µg/L	NS	200	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
Fluoranthene	µg/L	NS	800	0.097 U	0.11 U	0.098 U	0.11 U	0.095 U
Fluorene	µg/L	NS	290	0.097 U	0.11 U	0.098 U	0.11 U	0.095 U
Hexachlorobenzene	µg/L	1.0	0.0098	0.097 U	0.11 U	0.098 U	0.11 U	0.095 U
Hexachlorobutadiene	µg/L	NS	0.14	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
Hexachlorocyclopentadiene	µg/L	50	0.41	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
Hexachloroethane	µg/L	NS	0.33	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
Indeno(1,2,3-cd)pyrene	µg/L	NS	0.034	0.097 U	0.11 U	0.098 U	0.11 U	0.095 U
Isophorone	µg/L	NS	78	0.49 U	0.54 U	**0.26 J**	**0.37 J**	**0.26 J**
Naphthalene	µg/L	NS	0.17	0.097 U	0.11 U	0.098 U	0.11 U	0.095 U
N-Nitroso-di-n-propylamine	µg/L	NS	0.011	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
N-Nitrosodiphenylamine	µg/L	NS	12	0.49 U	0.54 U	0.49 U	0.53 U	0.48 U
Pentachlorophenol	µg/L	1.0	0.04	0.97 U	1.1 U	0.98 U	1.1 U	0.95 U
Phenanthrene	µg/L	NS	NS	0.097 U	0.11 U	0.098 U	0.11 U	0.095 U
Phenol	µg/L	NS	5800	0.97 U	1.1 U	0.98 U	1.1 U	0.95 U
Pyrene	µg/L	NS	120	0.097 U	0.11 U	0.098 U	0.11 U	0.095 U

Notes:
µg/L = microgram per liter
NS = no standard
Bold = detected compound above the MDL
RSL = USEPA Regional Screening Level (6/15)
MCL = Maximum Contaminant Level

Table 3-5. FWGWMP July 2015 SVOC Analytical Results

Data Qualifiers

Data qualifier flags are used in an effort to describe the quality of each piece of data for each constituent. These flags are letter codes appended to the numerical data. The following data qualifiers are specified in the USACE Louisville Chemistry Guidelines. For a complete explanation of qualifiers used for each constituent please refer to the Data Verification Summaries in Appendix C.

U The analyte was analyzed for but not detected. The numerical value preceding the U is the associated reporting limit.

J The identification of the analyte is acceptable, but the quality assurance criteria indicate that the quantitative values may be outside the normal expected range of precision (i.e., the quantitative value is estimated). Examples include:

- Results detected above the laboratory MDL but less than the laboratory reporting limit.
- MS/MSD percent recoveries outside the acceptance criteria.
- LCS percent recoveries outside acceptance criteria.

R Data are considered to be rejected and shall not be used. This flag denotes the failure of quality control criteria such that it cannot be determined if the analyte is present or absent from the sample [e.g., the MRL verification standard was below quality control guidelines; associated sample results that were non-detect are unusable].

UJ This flag is a combination of the U and J qualifiers, which indicate that the analyte is not present. The reported value is considered to be an estimated RL.

B The B flag is used for when the analyte is found in the method blank or any of the field blanks. This designation overrides the CLP "B" designation when used by the laboratory as an estimated value for inorganics.

Table 3-6. FWGWMP July 2015 Pesticides and PCBs Analytical Results

Station ID				DETmw-003	DETmw-004	FBQmw-174	LL1mw-083	LL1mw-084	LL1mw-086	LL1mw-088	LL3mw-238
Sample ID		MCL	USEPA RSL	FWGDETmw-003C-0572-GW	FWGDETmw-004C-0573-GW	FWGFBQmw-174C-0574-GW	FWGLL1mw-083C-0583-GW	FWGLL1mw-084C-0584-GW	FWGLL1mw-086-0585-GW	FWGLL1mw-088-0587-GW	FWGLL3mw-238C-0592-GW
Date Collected				7/23/2015	7/22-23/15	7/20/2015	7/20/2015	7/20/2015	7/21/2015	7/21/2015	7/20/2015
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units										
4,4'-DDD	µg/L	NS	0.031	0.048 U	0.051 U	0.048 U	0.048 U	0.048 U	0.051 U	0.051 U	0.052 U
4,4'-DDE	µg/L	NS	0.046	0.048 U	0.051 U	0.048 U	0.048 U	0.048 U	0.051 U	0.051 U	0.052 U
4,4'-DDT	µg/L	NS	0.23	0.048 U	0.051 U	0.048 U	0.048 U	0.048 U	0.051 U	0.051 U	0.052 U
Aldrin	µg/L	NS	0.0092	0.048 U	0.051 U	0.048 U	0.048 U	0.048 U	0.051 U	0.051 U	0.052 U
alpha-BHC	µg/L	NS	0.0071	0.048 U	0.051 U	0.048 U	0.048 U	0.048 U	0.051 U	0.051 U	0.052 U
alpha-Chordane	µg/L	NS	NS	0.048 U	0.051 U	0.048 U	0.048 U	0.048 U	0.051 U	0.051 U	0.052 U
beta-BHC	µg/L	NS	0.025	0.048 U	0.051 U	0.048 U	0.048 U	0.048 U	0.051 U	0.051 U	0.052 U
delta-BHC	µg/L	NS	NS	0.048 U	0.051 U	0.048 U	0.048 U	0.048 U	0.051 U	0.051 U	0.052 U
Dieldrin	µg/L	NS	0.0017	0.048 U	0.051 U	0.048 U	0.048 U	0.048 U	0.051 U	0.051 U	0.052 U
Endosulfan I	µg/L	NS	100	0.053 UJ	0.053 UJ	0.048 U	0.048 U	0.048 U	0.052 UJ	0.051 UJ	0.052 U
Endosulfan II	µg/L	NS	100	0.048 U	0.051 U	0.048 U	0.048 U	0.048 U	0.051 U	0.051 U	0.052 U
Endosulfan sulfate	µg/L	NS	NS	0.048 U	0.051 U	0.048 U	0.048 U	0.048 U	0.051 U	0.051 U	0.052 U
Endrin	µg/L	2.0	2.3	0.048 U	0.051 U	0.048 U	0.048 U	0.048 U	0.051 U	0.051 U	0.052 U
Endrin aldehyde	µg/L	NS	NS	0.048 U	0.051 U	0.048 U	0.048 U	0.048 U	0.051 U	0.051 U	0.052 U
Endrin ketone	µg/L	NS	NS	0.048 U	0.051 U	0.048 U	0.048 U	0.048 U	0.051 U	0.051 U	0.052 U
gamma-BHC	µg/L	0.20	0.041	0.048 U	0.051 U	0.048 U	0.048 U	0.048 U	0.051 U	0.051 U	0.052 U
gamma-Chlordane	µg/L	NS	NS	0.048 U	0.051 U	0.048 U	0.048 U	0.048 U	0.051 U	0.051 U	0.052 U
Heptachlor	µg/L	0.40	0.0014	0.048 U	0.051 U	0.048 U	0.048 U	0.048 U	0.051 U	0.051 U	0.052 U
Heptachlor epoxide	µg/L	0.20	0.0014	0.048 U	0.051 U	0.048 U	0.048 U	0.048 U	0.051 U	0.051 U	0.052 U
Methoxychlor	µg/L	40	37	0.095 U	0.10 U	0.095 U	0.095 U	0.095 U	0.10 U	0.10 U	0.10 U
Toxaphene	µg/L	3.0	0.015	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U	2.0 U	2.0 U	2.1 U
PCB- 1016	µg/L	0.50	0.22	0.19 U	0.20 U	NA	NA	NA	NA	NA	NA
PCB- 1221	µg/L	0.50	0.0046	0.19 U	0.20 U	NA	NA	NA	NA	NA	NA
PCB- 1232	µg/L	0.50	0.0046	0.19 U	0.20 U	NA	NA	NA	NA	NA	NA
PCB- 1242	µg/L	0.50	0.0078	0.38 U	0.41 U	NA	NA	NA	NA	NA	NA
PCB- 1248	µg/L	0.50	0.0078	0.19 U	0.20 U	NA	NA	NA	NA	NA	NA
PCB- 1254	µg/L	0.50	0.0078	0.19 U	0.20 U	NA	NA	NA	NA	NA	NA
PCB- 1260	µg/L	0.50	0.0078	0.19 U	0.20 U	NA	NA	NA	NA	NA	NA

Notes:
MCL = Maximum Contaminant Level
RSL = USEPA Regional Screening Level (6/15)
NA = not analyzed
NS = no standard
Bold = detected compound above the MDL
µg/L = microgram per liter

Table 3-6. FWGWMP July 2015 Pesticides and PCBs Analytical Results

Station ID				LL3mw-241	LL3mw-244	RQLmw-007	RQLmw-008	RQLmw-009	SCFmw-002	SCFmw-004
Sample ID		MCL	USEPA RSL	FWGLL3mw-241C-0593-GW	FWGLL3mw-244-0594-GW	FWGRQLmw-007C-0604-GW	FWGRQLmw-008C-0605-GW	FWGRQLmw-009C-0606-GW	FWGSCFmw-002-0607-GW	FWGSCFmw-004-0608-GW
Date Collected				7/20/2015	7/21/2015	7/22/2015	7/22/2015	7/22/2015	7/21/2015	7/21/2015
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
4,4'-DDD	µg/L	NS	0.031	0.048 U	0.048 U	0.049 U	0.051 UJ	0.048 UJ	0.051 U	0.049 U
4,4'-DDE	µg/L	NS	0.046	0.048 U	0.048 U	0.049 U	0.051 UJ	0.048 UJ	0.051 U	0.049 U
4,4'-DDT	µg/L	NS	0.23	0.048 U	0.048 U	0.049 U	0.051 UJ	0.048 UJ	0.051 U	0.049 U
Aldrin	µg/L	NS	0.0092	0.048 U	0.048 U	0.049 U	0.051 UJ	0.048 UJ	0.051 U	0.049 U
alpha-BHC	µg/L	NS	0.0071	0.048 U	0.048 U	0.049 U	0.051 UJ	0.048 UJ	0.051 U	0.049 U
alpha-Chordane	µg/L	NS	NS	0.048 U	0.048 U	0.049 U	0.051 UJ	0.048 UJ	0.051 U	0.049 U
beta-BHC	µg/L	NS	0.025	0.048 U	0.048 U	0.049 U	0.051 UJ	0.048 UJ	0.051 U	0.049 U
delta-BHC	µg/L	NS	NS	0.048 U	0.048 U	0.049 U	0.051 UJ	0.048 UJ	0.051 U	0.049 U
Dieldrin	µg/L	NS	0.0017	0.048 U	0.048 U	0.049 U	0.051 UJ	0.048 UJ	0.051 U	0.049 U
Endosulfan I	µg/L	NS	100	0.048 U	0.048 UJ	0.049 U	0.051 UJ	0.048 UJ	0.051 UJ	0.048 UJ
Endosulfan II	µg/L	NS	100	0.048 U	0.048 U	0.049 U	0.051 UJ	0.048 UJ	0.051 U	0.049 U
Endosulfan sulfate	µg/L	NS	NS	0.048 U	0.048 U	0.049 U	0.051 UJ	0.048 UJ	0.051 U	0.049 U
Endrin	µg/L	2.0	2.3	0.048 U	0.048 U	0.049 U	0.051 UJ	0.048 UJ	0.051 U	0.049 U
Endrin aldehyde	µg/L	NS	NS	0.048 U	0.048 U	0.049 U	0.051 UJ	0.048 UJ	0.051 U	0.049 U
Endrin ketone	µg/L	NS	NS	0.048 U	0.048 U	0.049 U	0.051 UJ	0.048 UJ	0.051 U	0.049 U
gamma-BHC	µg/L	0.20	0.041	0.048 U	0.048 U	0.049 U	0.051 UJ	0.048 UJ	0.051 U	0.049 U
gamma-Chlordane	µg/L	NS	NS	0.048 U	0.048 U	0.049 U	0.051 UJ	0.048 UJ	0.051 U	0.049 U
Heptachlor	µg/L	0.40	0.0014	0.048 U	0.048 U	0.049 U	0.051 UJ	0.048 UJ	0.051 U	0.049 U
Heptachlor epoxide	µg/L	0.20	0.0014	0.048 U	0.048 U	0.049 U	0.051 UJ	0.048 UJ	0.051 U	0.049 U
Methoxychlor	µg/L	40	37	0.095 U	0.095 U	0.098 U	0.10 UJ	0.095 UJ	0.10 U	0.097 U
Toxaphene	µg/L	3.0	0.015	1.9 U	1.9 U	2.0 U	2.0 UJ	1.9 UJ	2.0 U	1.9 U
PCB- 1016	µg/L	0.50	0.22	NA	NA	0.20 UJ	0.20 UJ	0.19 U	NA	NA
PCB- 1221	µg/L	0.50	0.0046	NA	NA	0.20 UJ	0.20 UJ	0.19 U	NA	NA
PCB- 1232	µg/L	0.50	0.0046	NA	NA	0.20 UJ	0.20 UJ	0.19 U	NA	NA
PCB- 1242	µg/L	0.50	0.0078	NA	NA	0.39 UJ	0.41 UJ	0.38 U	NA	NA
PCB- 1248	µg/L	0.50	0.0078	NA	NA	0.20 UJ	0.20 UJ	0.19 U	NA	NA
PCB- 1254	µg/L	0.50	0.0078	NA	NA	0.20 UJ	0.20 UJ	0.19 U	NA	NA
PCB- 1260	µg/L	0.50	0.0078	NA	NA	0.20 UJ	0.20 UJ	0.19 U	NA	NA

Notes:
MCL = Maximum Contaminant Level
RSL = USEPA Regional Screening Level (6/15)
NA = not analyzed
NS = no standard
Bold = detected compound above the MDL
µg/L = microgram per liter

Table 3-6. FWGWMP July 2015 Pesticides and PCBs Analytical Results

Data Qualifiers

Data qualifier flags are used in an effort to describe the quality of each piece of data for each constituent. These flags are letter codes appended to the numerical data. The following data qualifiers are specified in the USACE Louisville Chemistry Guidelines. For a complete explanation of qualifiers used for each constituent please refer to the Data Verification Summaries in Appendix C.

U The analyte was analyzed for but not detected. The numerical value preceding the U is the associated reporting limit.

J The identification of the analyte is acceptable, but the quality assurance criteria indicate that the quantitative values may be outside the normal expected range of precision (i.e., the quantitative value is estimated). Examples include:

- Results detected above the laboratory MDL but less than the laboratory reporting limit.
- MS/MSD percent recoveries outside the acceptance criteria.
- LCS percent recoveries outside acceptance criteria.

R Data are considered to be rejected and shall not be used. This flag denotes the failure of quality control criteria such that it cannot be determined if the analyte is present or absent from the sample [e.g., the MRL verification standard was below quality control guidelines; associated sample results that were non-detect are unusable].

UJ This flag is a combination of the U and J qualifiers, which indicate that the analyte is not present. The reported value is considered to be an estimated RL.

B The B flag is used for when the analyte is found in the method blank or any of the field blanks. This designation overrides the CLP "B" designation when used by the laboratory as an estimated value for inorganics.

3.3 Data Verification/Validation

As discussed in Sections 2.4, all primary chemical data were generated by Test America, with the exception of the analysis of hexavalent chromium, which was generated by ALS. RTI conducted the independent QA analysis; however, EQM is not required to verify RTI data. A multi-step process is conducted, which involves the lab, the ADR software, and a data validator performing the data verification and validation of the data. During the first step each lab analyzes the data and assigns a qualifier as necessary in full accordance with DoD QSM and LS guidelines.

Analytical data was then reviewed by qualified EQM personnel, and a report was generated according to Step 2 of the LS and the DoD QSM, with any deviations/outliers noted in the summary report. The USACE-supplied ADR software assigns qualifiers to the data, as necessary, consistent with the programmed criteria of the ADR software. Additionally, the data validator uses professional judgment to check the validity of the qualified data and either accepts, rejects, or re-qualifies the ADR results following strict DoD QSM and LS guidelines.

After this multi-step process has been completed, the resulting final ADR qualifiers may not match the original lab qualifiers that are presented on the laboratory data sheets. As a result of the data validation process, one or more of four possibilities may occur:

1. The lab assigns a B, J, or E qualifier to the data, and the ADR software and/or the data validator changes the qualifier to a J, UJ, U, B, or R.
2. The lab assigns no qualifier to the data, and the ADR software and/or the data validator assigns a J, UJ, U, B, or R qualifier to the data.
3. The lab assigns a B, J, or E qualifier to the data, and the ADR software and/or the data validator assigns no qualifier to the data.
4. The lab assigns a J qualifier or uses no qualifier, and the ADR software and/or the data validator accepts the lab designation.

For the July 2015 Sampling Event Report, the laboratory data, with laboratory-derived qualifiers that follow DoD QSM and LS criteria, are presented in Appendix C. The verification reports for the data are also presented in Appendix C, which includes the definitions of the ADR qualifiers. The data presented in Tables 3-2, 3-3, 3-4, 3-5, 3-6, 3-7, and 3-8 are the result of the data that has been subjected to the multi-step process of verification and validation. These tables display the final assigned data qualifier in accordance with DoD QSM and LS criteria, which may differ from the Appendix C values as indicated above.

Data qualifier flags are used in an effort to describe the quality of each piece of data for each constituent. These flags are letter codes appended to the numerical data. The following data qualifiers are specified in the guidelines. For a complete explanation of qualifiers used for each constituent please refer to the Data Verification Summaries in Appendix C.

- U = the analyte was analyzed for but not detected. The numerical value preceding the U is the associated reporting limit.
- J = the identification of the analyte is acceptable, but the quality assurance criteria indicate that the quantitative values may be outside the normal expected range of precision (i.e., the quantitative value is estimated). Examples include:
  - Results detected above the laboratory MDL but less than the laboratory reporting limit.
  - MS/MSD percent recoveries outside the acceptance criteria.
  - LCS percent recoveries outside acceptance criteria.

- R = data are considered to be rejected and shall not be used. This flag denotes the failure of quality control criteria such that it cannot be determined if the analyte is present or absent from the sample (e.g., MRL verification standard was below quality control guidelines; associated sample results that were non-detect are unusable).

- UJ = a combination of the U and J qualifiers, which indicate that the analyte is not present. The reported value is considered to be an estimated reporting limit.

- B = used for organic and inorganic analyses when the analyte is found in the method blank or any of the field blanks. This designation overrides the CLP "B" designation when used by the laboratory as an estimated value for inorganics.

Forty-two wells, including the five RCRA wells, were sampled during a 5-day sampling event from July 20-24, 2015. During the event, five trip blanks were submitted to Test America for VOCs analysis. Four additional wells were monitored for pH only.

Five field duplicates were collected during the sampling event in order to assess the quality and consistency of sample collection. Project requirements of 10% field duplicates were met for this sampling event. In addition, five laboratory splits were collected and analyzed in order to assess the quality and consistency of the laboratory analysis. The project requirements of taking 10% laboratory splits were met for this sampling event. One equipment rinsate blank was collected during each day of monitoring well sampling for laboratory analysis; a total of eight equipment rinsate blanks were collected. The project requirements of taking 5% MS/MSDs were met for this sampling event.

For the July sampling event, the following laboratory or field contamination was identified at detections greater than ½ MRL for the field QA/QC samples.

240-53411

Method Blanks

Methylene chloride was detected in the method blank at 0.64 µg/L. Samples FWGTEAM2-TRIP and FWGEQUIPRinse1-0622-GW were qualified, "B" as the reported methylene chloride detections were less than ten times method blank contamination.

The method blank analyzed 7/27/15 had barium detected at 5.27 µg/L, chromium at 1.57 µg/L, manganese at 2.85 µg/L, potassium at 70 µg/L and selenium at 4.4 µg/L. The barium results for samples FWGLL1mw-084C-0584-GF, FWGLL1mw-083C-0583-GF, FWGLL3mw-241C-0593-

GF, FWGFBQmw-174C-0574-GF and FWGLL3mw-238C-0592-GF; the chromium results for FWGLL1mw-084C-0584-GF, FWGLL2mw-059C-0588-GF, FWGLL2mw-060C-0589-GF, FWGNTAmw-119-0603-GF and FWGLL3mw-238C-0592-GF; the selenium result for sample FWGLL1mw-084C-0584-GF and the manganese result for sample FWGLL3mw-238C-0592-GF were qualified, "B" as the detected concentrations were less than 5x method blank contamination.

Trip Blanks

FWG TEAM2-TRIP had methylene chloride detected at 0.53 µg/L and acetone at 1.5 µg/L. The methylene chloride and acetone results for sample FWGEQUIPRinse1-0622-GW were qualified, "B " as the detected concentrations were less than ten times trip blank contamination.

Equipment Rinses

FWGEQUIPRinse1-0622-GW had methylene chloride detected at 0.34 µg/L and acetone at 13 µg/L. As there were no detected concentrations of methylene chloride or acetone in the associated field sample, FWGNTA119mw-0603-GW, no qualification was made as a result of equipment rinse contamination.

Diethyl phthalate was detected in FWGEQUIPRinse1-0622-GW at 1.8 µg/L. No qualification of the data was required for the equipment blank contamination as there were no detected diethyl phthalate results reported for the associated field samples.

FWGEQUIPRinse1-0622-GW had calcium detected at 260 µg/L, lead at 2 µg/L and magnesium at 55 µg/L. The lead results for samples FWGLL1mw-084C-0584-GF, FWGLL1mw-083C-0583-GF, FWGLL3mw-241C-0593-GF and FWGFBQmw-174C-0574-GF were qualified, "B" as the detected concentrations were less than 5x the equipment rinse contamination. No qualification was required for the calcium and magnesium equipment rinse contamination as all detected calcium and magnesium results in the associated field samples were less than 5x contamination.

240-53458

Method Blanks

The method blank analyzed 7/27/15 had lead detected at 2.11 µg/L. The lead results for samples FWGSCFmw-002-0607-GF, FWGLL3mw-246-0595-GF, FWGSCFmw-004-0608-GF and FWGEQUIPRinse2-0623-GW were qualified, "B" as the detected concentrations were less than 5x method blank contamination.

The method blank had nitrate/nitrite detected at 0.021 mg/L. The nitrate/nitrite results for samples FWGEQUIPRinse2-0623-GW and FWGLL12mw-242C-0600-GW were qualified, "B, as the detected results were <5x method blank contamination.

Equipment Rinses

FWGEQUIPRinse2-0623-GW had lead detected at 2 µg/L. The lead results for samples FWGSCFmw-002-0607-GF, FWGLL3mw-246-0595-GF and FWGSCFmw-004-0608-GF were qualified, "B" as the detected concentrations were less than 5x equipment rinse contamination.

FWGEQUIPRinse2-0623-GW had nitrate/nitrite detected at 0.029mg/L. The nitrate/nitrite result for sample FWGLL12mw-242-0600-GW was qualified, "B as the detected result was less than 5x rinse blank contamination.

240-53500

Method Blanks

Methylene chloride was detected in the method blank at 0.64 µg/L. Sample FWGRQLTEAM-TRIP was qualified, "B" as the reported methylene chloride concentration was less than ten times method blank contamination.

The method blank analyzed 7/27/15 had lead detected at 2.11 µg/L and silver at 1.20 µg/L. The lead results for samples FWGWBGmw-021-0612-GF, FWGLL12mw-245C-0601-GF, FWGWBGmw-009C-0610-GF, FWGWBGmw-020-0611-GF, FWGRQLmw-007C-0604-GF and FWGRQLmw-008C-0605-GF were qualified, "B" as the detected concentrations were less than 5x method blank contamination. No qualification was required for the silver contamination as there were no detected silver concentrations reported less than five times method blank contamination.

Filter Blanks

Due to excessive particulates, samples FWGRQLmw-007C-0604-GW, FWGRQLmw-DUP5-0621-GW and FWGRQLmw-008C-0605-GW were filtered prior to extraction. A filter blank was also extracted and analyzed.

The filter blank had PETN detected at 1.06ug/L. As a result of the filter blank contamination, samples FWGRQLmw-007C-0604-GW and FWGRQLmw-DUP5-0621-GW should have been qualified as non-detect, "U", since the PETN results for FWGRQLmw-007C-0604-GW and FWGRQLmw-DUP5-0621-GW were <5x filter blank contamination. Because of the filter blank contamination, samples FWGRQLmw-007C-0604-GW and FWGRQLmw-DUP5-0621-GW were reextracted. The extraction occurred outside 2x hold. The re-extracted samples had comparable PETN results for samples FWGRQLmw-007C-0604-GW and FWGRQLmw-DUP5-0621-GW, but with no detected PETN in the filter blank. Based on the reextract filter blank results, the PETN results from the initial analysis were reported unqualified for samples FWGRQLmw-007C-0604-GW and FWGRQLmw-DUP5-0621-GW.

Trip Blanks

FWGRQL-TRIP had methylene chloride detected at 0.6 µg/L and acetone at 2.5 µg/L. The acetone result for sample FWGRQLmw-008C-0605-GW was qualified, "B " as the reported acetone concentration was less than ten times trip blank contamination. No qualifications were made for the methylene chloride contamination, as methylene chloride was not reported as detected in the associated field samples.

Equipment Rinses

FWGEQUIPRinse3-0624-GW had methylene chloride detected at 0.86 µg/L, chloroform at 0.34 µg/L, 2-butanone at 4.6 µg/L and acetone at 3.5 µg/L. The acetone result for sample FWGRQLmw-008c-0605-GW was qualified, "B " as the reported acetone concentration was less than ten times equipment rinse contamination. No qualifications were made for the methylene chloride, chloroform or 2-butanone, as methylene chloride, chloroform or 2-butanone were not reported as detected in the associated field samples.

FWGEQUIPRinse3-0624-GW had lead detected at 3.2 µg/L, manganese at 1.6 µg/L and potassium at 230 µg/L. The lead results for samples FWGWBGmw-021-0612-GF, FWGLL12mw-245C-0601-GF, FWGWBGmw-009C-0610-GF, FWGWBGmw-020-0611-GF, FWGRQLmw-007C-0604-GF and FWGRQLmw-008C-0605-GF; and the potassium results for samples FWGWBGmw-006C-0609-GF, FWGWBGmw-009C-0610-GF, FWGWBGmw-020-0611-GF, FWGFWGmw-012-0578-GF, were qualified, "B" as the detected concentrations were less than 5x equipment rinse contamination. No qualification was made for the manganese contamination as all detected concentrations were greater than five times the equipment rinse contamination.

FWGEQUIPRinse3-0624-GW had sodium detected at 190 µg/L. No qualification was made for the sodium contamination as all detected concentrations were greater than five times the equipment rinse contamination.

FWGEQUIPRinse3-0624-GW had nitrate/nitrite detected at 0.006mg/L. The nitrate/nitrite results for samples FWGLL12mw-247-0602-GW, FWGLL12mw-245-0601-GW and FWGLL12mw-DUP4-0620-GW were qualified, "B as the detected results were <5x rinse blank contamination.

240-53558

Method Blanks

Methylene chloride was detected in the method blank analyzed 8/4/15 at 0.364 µg/L. The methylene chloride results for samples FWGEQUIPRinse3-0624-GW, FWGEQUIPRinse4-0625-GW, FWGTEAM3-TripBlank, FWGTEAM4-Trip and FWGTEAMDEMO-Trip were qualified, "B" as the reported methylene chloride concentrations were less than ten times method blank contamination.

The method blank analyzed 7/27/15 had lead detected at 2.71 µg/L and manganese at 0.646 µg/L. The lead results for samples FWGDA2mw-115-0571-GF, FWGEQUIPRinse3-0624-GW, FWGLL1mw-065C-0582-GF, FWGFWGmw-015-0579-GF and FWGLL7mw-001-0596-GF; and the manganese results for samples FWGEQUIPRinse3-0624-GW and FWGEQUIPRinse4-0625-GW were qualified, "B" as the detected concentrations were less than 5x method blank contamination.

Trip Blanks

FWGTEAMDEMO-Trip had acetone detected at 2.9ug/L and methylene chloride at 0.62 µg/L; FWGTEAM3-TRIPBLANK had acetone detected at 2.6 µg/L and methylene chloride at 0.56 µg/L; and FWGTEAM4-TRIP had acetone detected at 2.8 µg/L and methylene chloride at 0.69 µg/L. The acetone and methylene chloride results for samples FWGDETmw-004c-0573-GW, FWGEQUIPRinse3-0624-GW and FWGEQUIPRinse4-0625-GW were qualified, "B " as the reported acetone concentration was less than ten times trip blank and equipment rinse contamination.

Equipment Rinses

FWGEQUIPRinse4-0625-GW had methylene chloride detected at 0.84 µg/L, chloroform at 0.4 µg/L, 1,1,2,2-tetrachloroethane at 0.22 µg/L, 2-butanone at 6.8 µg/L, and acetone at 6.9 µg/L.

The acetone and methylene chloride results for samples FWGDETmw-004C-0573-GW, FWGEQUIPRinse3-0624-GW and FWGEQUIPRinse4-0625-GW were qualified, "B " as the reported acetone concentration was less than ten times equipment rinse contamination. No qualifications were made for the 1,1,2,2-tetrachloroethane, chloroform or 2-butanone, as 1,1,2,2-tetrachloroethane, chloroform and 2-butanone were not reported as detected in the associated field samples.

FWGEQUIPRinse4-0625-GW had vanadium detected at 2.9 µg/L and manganese at 0.48 µg/L. No qualification was made for the contamination reported for FWGEQUIPRinse4-0625-GW as vanadium was not detected in the associated field samples and all detected concentrations of manganese were greater than five times the equipment rinse contamination. FWGEQUIPRinse4-0625-GW had 2,4-dinitrotoluene detected at 0.054 µg/L. The 2,4-dinitrotoluene result for sample FWGLL2mw-267c-0590-GW was qualified, "B" as the reported concentration was < 5x blank contamination.

For a discussion of method blank contamination please review the Data Verification Reports and the Laboratory Case Narrative in Appendix C. Laboratory analyses were performed in analytical batches of ≤ 20 in order to maximize efficiency and group quality control requirements. Method blanks and laboratory control samples were analyzed at a frequency of 1:20 (5%) samples or per analytical batch, whichever was greater. Sufficient volume was provided to the laboratory in order to assess matrix spike analysis on project samples at a frequency of 1:10 (10%) samples. Matrix spike/matrix spike duplicate analysis was performed by the laboratory as batch quality control at a frequency of 1:20 (5%).

Field quality control and laboratory quality control results were evaluated as part of the verification assessment provided in Appendix C. Project requirements were met for the frequency and quality of these samples.

Table 3-9 presents the percent, by analytical method, of data that were acceptable (based on data not rejected) for use. No data was rejected.

All qualified data are discussed in the Data Verification Reports contained in Appendix C. All other data meet the requirements specified in the DoD QSM, LS criteria, and the QAPP associated with this site.

Table 3-9. Percent of Acceptable Data

Analytical Method	Total Number of Analytes	Number of Rejects	Percent Completeness
218.6	5	0	100.0
353.2	8	0	100.0
6010B	700	0	100.0
6020	400	0	100.0
6860	4	0	100.0
7470A	50	0	100.0
8081A	441	0	100.0
8082	56	0	100.0
8260B	663	0	100.0
8270C - SVOC 1&3	50	0	100.0
8270C -SVOC1	243	0	100.0
8270C-SVOC4	504	0	100.0
8330	768	0	100.0
9012A	8	0	100.0
SW8330 Modified	48	0	100.0
WS-WC-0050	48	0	100.0
TOTAL	**3996**	**0**	**100.0**

SECTION 4
SUMMARY OF RESULTS

Explosive and Propellant Compounds

As shown in Table 3-2, the following explosives or propellants were detected at levels above their corresponding MCLs and/or RSLs (June 2015) during the July 2015 sampling event:

- 2,4,6-Trinitrotoluene – FBQmw-174 (21 µg/L), LL1mw-083 (3.4 µg/L J), LL1mw-084 (5.8 µg/L J), LL3mw-238 (55 µg/L J) and LL3mw-241 (6.0 µg/L). There is no MCL for 2,4,6-trinitrotoluene. The RSL (June 2015) is 2.5 µg/L.

- 2,4-Dinitrotoluene – FBQmw-174 (0.60 µg/L J), LL1mw-083 (2.7 µg/L J) and LL1mw-084 (1.1 µg/L J). There is no MCL for 2,4-dinitrotoluene. The RSL (June 2015) is 0.24 µg/L.

- 2,6-Dinitrotoluene – LL1mw-083 (1.6 µg/L J), LL1mw-084 (0.62 µg/L J), LL3mw-238 (0.38 µg/L J) and LL3mw-241 (0.14 µg/L). There is no MCL for 2,6-dinitrotoluene. The RSL (June 2015) is 0.048 µg/L.

- Nitrate-Nitrite –LL12mw-185 (120 mg/L) and LL12mw-187 (1300 mg/L). The MCL for nitrate-nitrite is 10 mg/L. There is no RSL (June 2015).

- RDX – DETmw-004 (2.5 µg/L), LL1mw-084 (1.3 µg/L J), LL2mw-267 (1.3 µg/L), LL3mw-238 (6.8 µg/L J), LL3mw-241 (1.3 µg/L), WBGmw-006 (10 µg/L) and WBGmw-009 (2.8 µg/L). There is no MCL for RDX. The RSL (June 2015) is 0.7 µg/L.

Inorganic Elements

Several inorganic compounds were detected at levels exceeding the MCLs and/or RSLs (June 2015). These included aluminum, arsenic, cobalt, cyanide, iron, and manganese, in wells from all areas sampled. Table 4-1 in Section 4 presents a summary of all inorganic compounds and the associated wells that had detections exceeding MCLs and/or the RSLs (June 2015).

Volatile Organic Compounds

As shown in Table 3-4, the only VOCs detected at levels exceeding their corresponding MCLs and/or RSLs (June 2015) during the July 2015 sampling event were:

- Carbon tetrachloride – LL10mw-003 (1.3 µg/L). The MCL for carbon tetrachloride is 5.0 µg/L. The RSL (June 2015) is 0.45 µg/L.

Semivolatile Organic Compounds

As shown in Table 3-5, no SVOCs were detected at levels exceeding either their corresponding MCLs or RSLs (June 2015).

Pesticides and Polychlorinated Biphenyls (PCBs)

As shown in Table 3-6, no pesticides or PCBs were detected at levels exceeding either their corresponding MCLs or RSLs (June 2015).

Hexavalent Chromium

The analytical results for hexavalent chromium are summarized in Table 3-7. Well LL3mw-244 had a detected concentration for hexavalent chromium of 0.195 µg/L, which is elevated above the RSL (June 2015) of 0.035 µg/L (there is no MCL for hexavalent chromium).

Perchlorate

As shown in Table 3-8, perchlorates were not detected at levels exceeding either their corresponding MCLs or RSLs (June 2015).

Table 4-1. Inorganic Elements Detected at Concentrations Exceeding the MCLs or RSLs

Area	Well Number	Analyte	July 2015 Level (µg/L)	MCL (µg/L)	USEPA RSLs (µg/L)
Demolition Area #2	DA2mw-115	IRON	690	300	11000
		MANGANESE	86	50	430
	DETmw-003	ARSENIC	10	10	0.052
		IRON	1800	300	11000
		MANGANESE	220	50	430
	DETmw-004	RDX	2.5	NS	0.7
Fuze & Booster Quarry	FBQmw-174	2,4,6-TRINITROTOLUENE	21	NS	2.5
		2,4-DINITROTOLUENE	0.60 J	NS	0.24
Facility-Wide	FWGmw-011	IRON	5100	300	11000
		MANGANESE	280	50	430
	FWGmw-012	IRON	2000	300	11000
		MANGANESE	85	50	430
	FWGmw-015	MANGANESE	430	50	430
	FWGmw-016	ARSENIC	4.7 J	10	0.052
		IRON	670	300	11000
		MANGANESE	190	50	430
Load Line 1	LL1mw-064	ARSENIC	3.9 J	10	0.052
		IRON	780	300	11000
		MANGANESE	100	50	430
	LL1mw-065	MANGANESE	190	50	430
	LL1mw-083	ALUMINUM	710	200	20000
		COBALT	7.2	NS	6
		MANGANESE	380	50	430
		2,4,6-TRINITROTOLUENE	3.4 J	NS	2.5
		2,4-DINITROTOLUENE	2.7 J	NS	0.24
		2,6-DINITROTOLUENE	1.6 J	NS	0.048
	LL1mw-084	ALUMINUM	440	200	20000
		COBALT	13	NS	6
		MANGANESE	100	50	430
		2,4,6-TRINITROTOLUENE	5.8 J	NS	2.5
		2,4-DINITROTOLUENE	1.1 J	NS	0.24
		2,6-DINITROTOLUENE	0.62 J	NS	0.048
		RDX	1.3 J	NS	0.7
	LL1mw-086	MANGANESE	110	50	430
	LL1mw-087	MANGANESE	85	50	430
	LL1mw-088	ARSENIC	28	10	0.052
		IRON	1100	300	11000
		MANGANESE	52	50	430
Load Line 2	LL2mw-059	ARSENIC	5.2 J	10	0.052
		CHROMIUM	1.3 B	100	22000
		COBALT	22	NS	6
		IRON	4700	300	11000
		MANGANESE	1300	50	430
	LL2mw-267	IRON	340	300	11000
		MANGANESE	460	50	430
		RDX	1.3	NS	0.7
	LL2mw-271	ARSENIC	5.4 J	10	0.052
		COBALT	10	NS	6
		IRON	4500	300	11000
		MANGANESE	540	50	430

Table 4-1. Inorganic Elements Detected at Concentrations Exceeding the MCLs or RSLs, continued

Area	Well Number	Analyte	July 2015 Level (µg/L)	MCL (µg/L)	USEPA RSLs (µg/L)
Load Line 3	LL3mw-238	2,4,6-TRINITROTOLUENE	55 J	NS	2.5
		2,6-DINITROTOLUENE	0.38 J	NS	0.048
		RDX	6.8 J	NS	0.7
	LL3mw-241	2,4,6-TRINITROTOLUENE	6.0	NS	2.5
		2,6-DINITROTOLUENE	0.14	NS	0.048
		RDX	1.3	NS	0.7
	LL3mw-244	Hexavalent Chromium	0.195	NS	0.035
Load Line 7	LL7mw-001	IRON	8000	300	11000
		MANGANESE	420	50	430
Load Line 10	LL10mw-003	CARBON TETRACHLORIDE	1.3	5.0	0.45
Load Line 12	LL12mw-187	ARSENIC	3.5 J	10	0.052
		COBALT	11	NS	6
		MANGANESE	1900	50	430
		Nitrate-Nitrite[1]	1300	10	NS
	LL12mw-185	Nitrate-Nitrite[1]	120	10	NS
	LL12mw-242	ALUMINUM	340	200	20000
		ARSENIC	21	10	0.052
		IRON	1200	300	11000
		MANGANESE	65	50	430
	LL12mw-245	IRON	770	300	11000
		MANGANESE	330	50	430
	LL12mw-247	ARSENIC	7.1 J	10	0.052
		IRON	650	300	11000
		MANGANESE	190	50	430
NACA Test Area	NTAmw-119	ARSENIC	7.1 J	10	0.052
		IRON	1100	300	11000
		MANGANESE	300	50	430
Ramsdell Quarry	RQLmw-007	ARSENIC	68	10	0.052
		IRON	18000	300	11000
		MANGANESE	1700	50	430
		CYANIDE[1]	0.010	0.20	0.0015
	RQLmw-008	ARSENIC	26	10	0.052
		IRON	79000	300	11000
		MANGANESE	540	50	430
	RQLmw-009	ARSENIC	21	10	0.052
		IRON	10000	300	11000
		MANGANESE	1000	50	430
Sharon Conglomerate	SCFmw-002	ARSENIC	15	10	0.052
		IRON	440	300	11000
		MANGANESE	63	50	430
	SCFmw-004	MANGANESE	690	50	430
Winklepack Burning Grounds	WBGmw-006	MANGANESE	53	50	430
		RDX	10	NS	0.7
	WBGmw-009	RDX	2.8	NS	0.7
	WBGmw-020	IRON	4000	300	11000
		MANGANESE	280	50	430
	WBGmw-021	ARSENIC	4.6 J	10	0.052
		IRON	610	300	11000
		MANGANESE	210	50	430

Notes:
ACL = Maximum Contaminant Level
EPA Regional Screening Level, January 2015
1 = mg/L = milligram per liter
µg/L= micrograms per liter
NS = no standard
anics are filtered; all organics are not filtered.
been qualified "B." For more details refer to Data Verification/Validation Reports.
qualified "J." For more details refer to Data Verification/Validation Reports.

SECTION 5
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Environmental Quality Management, Inc. 2015b. *Facility-Wide Groundwater Monitoring Program, Report in the October 2014, Former Ravenna Army Ammunition Plant, Portage and Trumbell Counties, Ohio*.

Environmental Quality Management, Inc. 2015c. *Final Facility-Wide Groundwater Monitoring Program Plan RVAAP-66 Facility-Wide Groundwater Semiannual Groundwater Monitoring Addendum for 2015, Former Ravenna Army Ammunition Plant, Portage and Trumbell Counties, Ohio*.

SAIC. 2011. *Final Facility-Wide Sampling and Analysis Plan for Environmental Investigations at the Ravenna Army Ammunition Plant, Ravenna, Ohio*.

USACE. 2010. *2010 Addendum to the Facility-Wide Groundwater Monitoring Program Plan RVAAP-66 Facility-Wide Groundwater*.

APPENDIX A

MONITORING WELLS SAMPLED DURING THE JULY 2015 GROUNDWATER MONITORING EVENT

Semiannual Analyte List

Well Location	VOCs	SVOCs			Metals[d]	Explosives/ Propellants	Pesticides	PCBs	Nitrate	Cyanide	Hexavalent Chromium[d]	Perchlorate
		Nitroaromatics & Phthalates[a]	Phenols[b]	PAHs[c]								
LL1mw-064		x			x	x						
LL1mw-065		x			x	x						
LL1mw-083		x				x	x					
LL1mw-084		x				x	x					
LL1mw-086		x				x	x					
LL1mw-087		x		x	x	x						
LL1mw-088		x		x		x	x					
LL2mw-059		x		x	x	x						
LL2mw-060		x			x	x						
LL2mw-267		x		x	x	x						
LL2mw-271		x			x	x						x
LL3mw-238		x				x	x					
LL3mw-241		x				x	x					
LL3mw-244		x				x	x				x	
LL3mw-246		x		x	x	x						x
LL7mw-001	x	x		x	x	x						
LL10mw-003	x	x		x	x							
LL12mw-185					x (As. only)				x			
LL12mw-187		x			x	x			x			
LL12mw-242		x			x	x			x			
LL12mw-245		x			x	x			x			
LL12mw-247		x			x	x			x		x	
FBQmw-174		x				x	x					
FWGmw-004		x			x	x						
FWGmw-007		x			x	x						
FWGmw-011		x		x	x	x						

Semiannual Analyte List, continued

Well Location	VOCs	SVOCs			Metals[d]	Explosives/ Propellants	Pesticides	PCBs	Nitrate	Cyanide	Hexavalent Chromium[d]	Perchlorate
		Nitroaromatics & Phthalates[a]	Phenols[b]	PAHs[c]								
FWGmw-012		x			x	x						
FWGmw-015		x			x	x						
FWGmw-016		x			x	x						
NTAmw-119	x	x		x	x	x						
DA2mw-115		x			x	x						
DET-003	x	x	x	x	x	x	x	x		x		
DET-004	x	x	x	x	x	x	x	x		x		
RQLmw-007	x	x	x	x	x	x	x	x		x		
RQLmw-008	x	x	x	x	x	x	x	x		x		
RQLmw-009	x	x	x	x	x	x	x	x		x		
SCFmw-002		x				x	x				x	
SCFmw-004		x				x	x					
WBGmw-006		x			x	x						
WBGmw-009		x		x	x	x						
WBGmw-020		x		x	x	x						
WBGmw-021		x			x	x						

[a] Analyte list includes: 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, Bis(2-ethylhexyl)phthalate, Butyl benzyl phthalate, Diethyl phthalate, Dimethyl phthalate, Di-n-butyl phthalate, Di-n-octyl phthalate, and Nitrobenzene

[b] Analyte list includes: 2,4,5-Trichlorophenol, 2,4,6-Trichlorophenol, 2,4-Dichlorophenol, 2,4-Dimethylphenol, 2,4-Dinitrophenol, 2-Chlorophenol, 2-Methylphenol, 2-Nitrophenol, 4,6-Dinitro-2-methylphenol, 4-Chloro-3-methylphenol, 3&4 Methylphenol, 4-Nitrophenol, Pentachlorophenol, and Phenol

[c] Analyte list includes: Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyrene, Naphthalene, Phenanthrene, and Pyrene.

[d] Analyte list includes: Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, and Zinc. Hexavalent chromium will be sampled semiannually in wells LL3mw-244, LL12mw-247, and SCFmw-002.

APPENDIX B

WATER-LEVEL MEASUREMENTS/FIELD LOG BOOK/CALIBRATION RECORDS/ SAMPLE AND PURGE RECORDS/DAILY QUALITY CONTROL REPORTS

Signature Page

July 2015 FWGWMP Monitoring Well Event
Field Personnel Abbreviations and Signatures Page

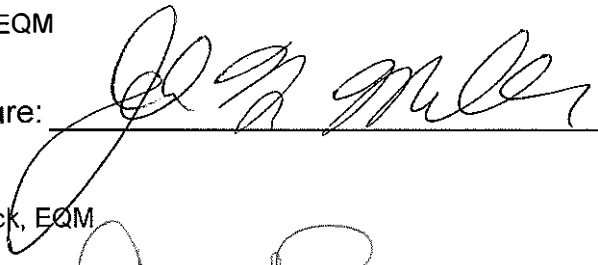
Field Personnel

Name	Affiliation	Initials
Angela S. Dragotta	EQM	AD/ASD
Colleen A. Lear	EQM	CL/CAL
Erik Corbin	EQM	EC
John Miller	EQM	JM
Stephen Stuergon	EQM	SS
Ryan Russell	EQM	RR
Scott A. Spesshardt	EQM	SAS

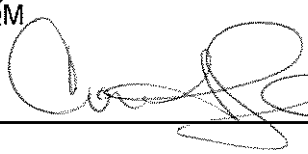
Project and Field Leads

Name, Title, Affiliation

John Miller, Project Manager / QC Check, EQM

Signature: 

Colleen A. Lear, Field Manager / QC Check, EQM

Signature: 

Logbook

KVAAP
Book #2

"Rite-in-the-Rain"

ALL-WEATHER

Environmental FIELD BOOK

No. 550

No. 550 Enviro-Poly Cover
6 32281 55011 2

120

Location RVAAP-66 Date 7-14-15

Project / Client USACE

Cal SS, AD, JB, EC, RR, JM

1015 Crews mobbed onsite unloaded and prepare for the week.

1100 H+S tailgate.

1115 Crews to landscape/weed eat event and water level event.

1130 LL 9, 10, 5, 6 8 LL 1, 2, ROL,

1430 Road to LL8 / FBQ closed need to talk to Sgt. Maj (?) Garlock should be able to access LL8 + FBQ today + before asphalt on Thursday.

~~1430~~ 1440 Continue LL 4

1450 rain storm moved in Delayed the work

1550 finalize the locations

1630 103rd Bldg

1700 offsite

CR

Location RVAAP-66 Date 7-15-15 121

Project / Client USACE

Cal SS AD JB EC RR JM

0730 onsite load for day

0745 H+S tailgate

0755 crews to location

715 Cal ~~1000~~ weed eat + water level

1600 partial crews to change

715 Cal ~~1530~~ new water

1630 partial crew to pick up equipment

1700 Double check areas LL2, LL3, LL4, LL12, ROL FBQ, BKG, LL9, LL7, LL11 UTR, MEB, DAZ CHECKED

CR

122

Location RVAAP-66 Date 7-16-15

Project / Client USACE

JM, Cal, JB, AD, EC, SS

0730 Onsite load prep

0745 H+S

0800 Green leaf entrance to UBC.

Finishing staging the bulky

Demob

123

Location RVAAP-66 Date July Event

Project / Client USACE

DRUM ID

EQM - 5 EQM-2015-5

EQM - 6 EQM-2015-6

EQM - 7 EQM-2015-7

~~EQM - 8~~

Decon at all areas @ RVAAP-66

Purge at UL 1, 2, 3, 12 DAZ, RAL

FBP, WBG, NTA, UL0

Combined Decon + Purge

Waters per K.S. + OEPA comment during event.

Location RVAAP-64 Date 7-20-15

Project / Client USACE 65-80 Fog PCldy

EC AD JM SAS RR CAL SS

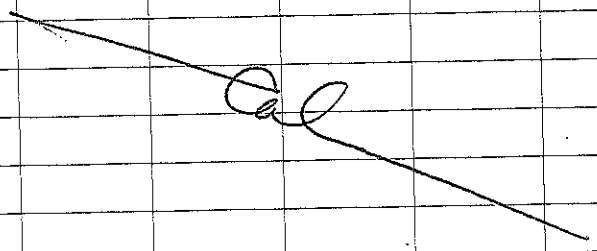
Mobilization

1030 Arrival Set up for the day
unload / load
Calibrate ss
H+S.
Organize for purge/sample event
4 crews.
Head to Load Line 1, NAD,
Loadline 2, Loadline 3 +
FBQ.

1230 Weed eater some wells.
Partial Crews to 1036
Runsate team 2
Unload and prep Samples
for lab pickup.

1720 Lab pickup
Organize

1740 Off site.



Location RVAAP-64 Date 7-21-15

Project / Client USACE humid 65-75

JM Cal SS SAS RR EC AD Cldy

0730 ONSITE TO LOAD
CALIBRATION

0800 H+S
Organize purge/sample
event for Loadline
1, 2, 3, 1/2 and SCF wells.
weed later at some
wells

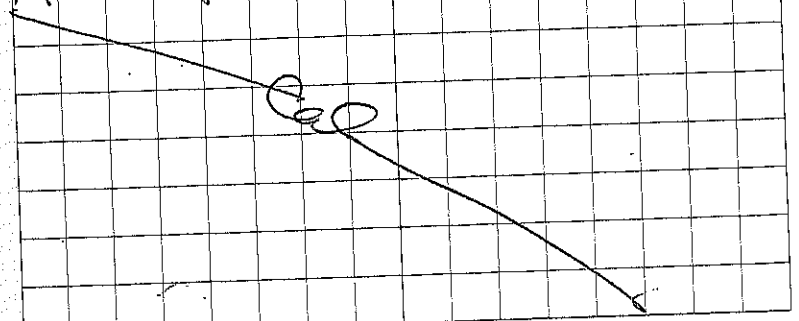
1400 notify Cr^6 labs of first
priority wells.

1600 Partial crews to 1036

1630 runsate team 4
Organize prep for fed
ex and lab pick up
lab pick up

1715 Send SS to Fed Exp.

1730 Off site.



126

Location RVAAP-66 Date 7-22-15

Project / Client USACE 60-75

EC JM CAL ~~EID~~ RR SS SAS P.Oldy

0730 Onsite
Prep forday, organize
Calibrations
H+S.

0815 Green leaf Gate access to WBG
other Locations are RQL
Start DAS to purge dry, LL12

1000 EPA and ~~OTHERS~~ on site

1230 LEAVE / secure WBG head to FWG
EPA + OTHERS leave crew

1300 JM Demob rest of crews
Continue

1600 partial crews to 1036
prepare rinse, samples

1700 DAS partial DET mw-004 work

1715 LAB Pick up Fed Exp drop off

1730 OFFsite Rinse not pickup up/dd over

127

Location RVAAP-66 Date 7-23-15

Project / Client USACE 65-80

EC ~~JM~~ CAL AD RR SS SAS poldy Holly Sm

0730 Onsite
Prep for days, organize
Calibrations
H+S setup, for days

0820 access Loadline 1, 2
FWG wells and finalize
Demob rinse 2 Area
Continue to LL2, LL10
FWG and LL7

1600 partial crews to Bldg
Check sample Count +
Prep for pickup.

1700 deliver to Fed Exp.

1715 Lab pickup

1730 Offsite

128

Location RVAAP-66 Date 4-24-15

Project / Client USACE P Cody 60-70

CAL SS SAS EC AD RR

0730 onsite

0800 Collect IDW sample
load vehicles for Demob

0900 Start Demob
Clean bldg partial crew

0930 lab samples dropped off.
Equipment dropped off.

1000 – Offsite Demob all

del

129

Location Date

Project / Client

Intentionally
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Page

Static Water Level Measurements

EQM MONITOR WELL STATIC WATER LEVEL FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

FIELD BOOK#: 2 DATE: 7/20/2015

Monitor Well Number	Location	Total Well Depth (ft)	Water Level Indicator	Sampler	Time	Depth to Static Water Level (ft)	Sounding	PID Reading (above bkgrnd)
FBQmw-174	Fuze and Bo		qed	CAL	12:20	13.36		0
	Cmt:Good,							
LL1mw-083	Loadline 1		05769	AD	12:27	29.09		0
	Cmt:Good,							
LL1mw-084	Loadline 1		1266	EC	12:45	24.68		0
	Cmt:Good,							
LL1mw-064	Loadline 1		1266	EC	16:15	0.8		0
	Cmt:Good,							
LL2mw-060	Loadline 2		05769	AD	14:50	8.75		0
	Cmt:Good,							
LL2mw-059	Loadline 2		1266	EC	14:50	11.74		0
	Cmt:Good,							
LL3mw-238	Loadline 3	23.37	HERON 2840	SAS	12:47	14.86		0
	Cmt:Good, TOP OF INTAKE - 18.58							
LL3mw-241	Loadline 3	25.57	HERON 2840	SAS	16:05	8.18		0
	Cmt:Good, TOP OF INTAKE - 20.60							
NTAmw-119	NACA Test		qed	CAL	13:58	11.34		0
	Cmt:Good,							
RQLmw-017	Ramsdell Qu	32.72	RED RVAAP	JM	8:30	26.85		
	Cmt:Good, hard							

EQM MONITOR WELL STATIC WATER LEVEL FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

FIELD BOOK#: 2 DATE: 7/21/2015

Monitor Well Number	Location	Total Well Depth (ft)	Water Level Indicator	Sampler	Time	Depth to Static Water Level (ft)	Sounding	PID Reading (above bkgrnd)
LL1mw-087	Loadline 1		qed	CAL	9:15	5.45		0
	Cmt:Good,							
LL1mw-088	Loadline 1	27.33	HERON 2840	SAS	9:23	4.63		0
	Cmt:Good, TOP OF INTAKE - 22.66							
LL1mw-086	Loadline 1	77.76	HERON 2840	SAS	13:00	6.51		0
	Cmt:Good, TOP OF INTAKE - 72.4							
LL12mw-247	Loadline 12		qed	CAL	11:55	4.3		0
	Cmt:Good,							
LL12mw-242	Loadline 12		05769	AD	13:15	6.89		0
	Cmt:Good, changed to 2 CPM after 1342							
LL12mw-185	Loadline 12		1266	EC	15:05	5.17		0
	Cmt:Good,							
LL12mw-187	Loadline 12		05769	AD	15:57	7.81		0
	Cmt:Good, stopped due to time							
LL2mw-271	Loadline 2		1266	EC	11:40	9.47		0
	Cmt:Good,							
LL3mw-244	Loadline 3		05796	AD	9:05	9.15		0
	Cmt:Good, dumped flothru after 0957, condensation on inside flothru wiped off, NTU flashing 0 swithched to U52 after 1007							
LL3mw-246	Loadline 3		1266	EC	9:10	18.04		0
	Cmt:Good,							
SCFmw-004	Sharon Con		qed	CAL	10:00	-0.2		0
	Cmt:Good,							
SCFmw-002	Sharon Con		qed	CAL	12:10	17.35		0
	Cmt:Good,							

EQM MONITOR WELL STATIC WATER LEVEL FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

FIELD BOOK#: 2 DATE: 7/22/2015

Monitor Well Number	Location	Total Well Depth (ft)	Water Level Indicator	Sampler	Time	Depth to Static Water Level (ft)	Sounding	PID Reading (above bkgrnd)
DET-004	Demo.Area		QED	CAL	17:00	8.96		0
	Cmt:Good, purge minimum vol dry @ 17:04							
FWGmw-012	Facilitywide		qed	CAL	12:30	0.81		0
	Cmt:Good,							
FWGmw-011	Facilitywide		qed	CAL	12:32	2.6		0
	Cmt:Good,							
LL1mw-065	Loadline 1		qed	CAL	15:55	10.5		0
	Cmt:Good, stopped due to time							
LL12mw-245	Loadline 12		1266	EC	11:15	5.56		0
	Cmt:Good,							
LL12mw-187	Loadline 12		05769	AD	11:55	7.75		0
	Cmt:Good,							
LL12mw-247	Loadline 12		05769	AD	13:55	3.95		0
	Cmt:Good, Repurge for No2No3 recollection.							
RQLmw-007	Ramsdell Qu	18.62	HERON 2840	SAS	9:39	4.32		0
	Cmt:Good, TOP OF INTAKE - 12.95							
RQLmw-008	Ramsdell Qu	18.68	HERON 2840	SAS	12:27	4.5		0
	Cmt:Good, TOP OF INTAKE - 13.52							
RQLmw-009	Ramsdell Qu		1266	EC	14:40	3.46		0
	Cmt:Good,							
WBGmw-006	Winklepeck		1266	EC	8:45	6.47		0
	Cmt:Good,							
WBGmw-021	Winklepeck		05769	AD	8:47	8.61		0
	Cmt:Good,							
WBGmw-009	Winklepeck		qed	CAL	9:00	11.45		0
	Cmt:Good,							
WBGmw-020	Winklepeck		qed	CAL	9:00	11.25		0
	Cmt:Good, hole in line, had to cut down in size							

EQM MONITOR WELL STATIC WATER LEVEL FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

FIELD BOOK#: 2 DATE: 7/23/2015

Monitor Well Number	Location	Total Well Depth (ft)	Water Level Indicator	Sampler	Time	Depth to Static Water Level (ft)	Sounding	PID Reading (above bkgrnd)
DA2mw-115	Demo.Area		qed	CAL	9:30	5.45		0
	Cmt:Good,							
DET-003	Demo.Area		QED	CAL	10:10	8.35		0
	Cmt:Good, measure WL place pump then return							
FWGmw-007	Facilitywide	32.15	HERON 2840	SAS	9:00	22.2		0
	Cmt:Good, TOP OF INTAKE - 26.61							
FWGmw-016	Facilitywide		05769	AD	11:00	15.85		0
	Cmt:Good, throttle started @ 80 and switched to 70 after 1113 reading.							
FWGmw-015	Facilitywide		05769	AD	11:56	5		0
	Cmt:Good, started @ 6 CPM 40FT. , after 1201 changed to 30 after 1206 kept 30 changed discharge to 5 sec. After 1211 kept at but R 6/ D4							
FWGmw-004	Facilitywide		05769	AD	13:45	12.74		0
	Cmt:Good, started @ 40, after 1350 changed to 30 with 7R/3 D							
FWGmw-002	Facilitywide		qed	CAL	13:58	22.35		0
	Cmt:Good, field ph monitoring only							
LL1mw-065	Loadline 1		05769	AD	8:56	10.56		0
	Cmt:Good, Started purge 7/22 but stopped & started again today. Run @ 40 throttle changed to 30 after 0906 reading.							
LL10mw-003	Loadline 10		1266	EC	13:55	17.64		0
	Cmt:Good,							
LL2mw-267	Loadline 2		1266	EC	9:50	9.47		0
	Cmt:Good,							
LL7mw-001	Loadline 7	33.04	HERON 2840	SAS	11:42	18.44		0
	Cmt:Good, TOP OF INTAKE - 28.85							
RQLmw-012	Ramsdell Qu		HERON 2840	SAS	15:30	19.48		0
	Cmt:Good, TOP OF INTAKE - 28.31, pH stable stop monitoring							
RQLmw-011	Ramsdell Qu		05769	AD	15:30	19.7		0
	Cmt:Good,							
RQLmw-013	Ramsdell Qu		1266	EC	15:50	23.02		0
	Cmt:Good,							

Calibration Records

TEAM # 4

	Instrument Model	Instrument ID	Date	Time	Calibrator	Calibration Type	Standard	Std Concentra	Meter Reading	Units	Comment
EXAMPLE:	Horiba U22	3074008	06-Oct-08	11:00	EC	Autocal	pH	4		pH units	
		18651	7/20/15	1130	Owl	Autocal	pH	4	4.01	pH units	
						Autocal	Cond	4.49	4.49	mS/cm	
						Autocal	Turb	0	0.0	NTU	
						Calibration	pH	7	7.06	pH units	
						Calibration	pH	10	9.	pH units	
						Temp Check	Temp		25.05	°C	
						Calibration-Chart	DO		8.29	mg/L	
						Calibration-Chart	ORP		234	mV	
		18651	7/21/15	08:20	EC	Autocal	pH	4	4.01	pH units	
						Autocal	Cond	4.49	4.49	mS/cm	
						Autocal	Turb	0	0.0	NTU	
						Calibration	pH	7	7.03	pH units	
						Calibration	pH	10	9.96	pH units	
						Temp Check	Temp		25.99	°C	
						Calibration-Chart	DO		8.27	mg/L	
						Calibration-Chart	ORP		243	mV	
		18651	7/22/15	07:45	EC	Autocal	pH	4	4.01	pH units	
						Autocal	Cond	4.49	4.50	mS/cm	
						Autocal	Turb	0	0.0	NTU	
						Calibration	pH	7	7.04	pH units	
						Calibration	pH	10	10.08	pH units	
						Temp Check	Temp		25.38	°C	
						Calibration-Chart	DO		8.34	mg/L	
						Calibration-Chart	ORP		250	mV	

KVAPP - Ravenna Ohio

TEAM # 1

	Instrument Model	Instrument ID	Date	Time	Calibrator	Calibration Type	Standard	Std Concentra	Meter Reading	Units	Comment
EXAMPLE:	Horiba U22	3074008	06-Oct-08	11:00	EC	Autocal	pH	4		pH units	
		1865I	7/23/15	07:45	EC	Autocal	pH	4	4.00	pH units	
						Autocal	Cond	4.49	4.49	mS/cm	
						Autocal	Turb	0	0.1	NTU	
						Calibration	pH	7	7.02	pH units	
						Calibration	pH	10	10.04	pH units	
						Temp Check	Temp		23.36	°C	
						Calibration-Chart	DO		8.08	mg/L	
						Calibration-Chart	ORP		237	mV	
						Autocal	pH	4		pH units	
						Autocal	Cond	4.49		mS/cm	
						Autocal	Turb	0		NTU	
						Calibration	pH	7		pH units	
						Calibration	pH	10		pH units	
						Temp Check	Temp			°C	
						Calibration-Chart	DO			mg/L	
						Calibration-Chart	ORP			mV	
						Autocal	pH	4		pH units	
						Autocal	Cond	4.49		mS/cm	
						Autocal	Turb	0		NTU	
						Calibration	pH	7		pH units	
						Calibration	pH	10		pH units	
						Temp Check	Temp			°C	
						Calibration-Chart	DO			mg/L	
						Calibration-Chart	ORP			mV	

	Instrument Model	Instrument ID	Date	Time	Calibrator	CalibrationType	Standard	Std Concentra	Meter Reading	Units	Comment
EXAMPLE:	Horiba U22	3074008	06-Oct-08	11:00	EC	Autocal	pH	4		pH units	
HORIBA U52		017528	7-20-15	1130	Cal	Autocal	pH	4	3.98	pH units	
						Autocal	Cond	4.49	4.52	mS/cm	
						Autocal	Turb	0	0.0	NTU	
						Calibration	pH	7	7.04	pH units	
						Calibration	pH	10	9.89	pH units	
						Temp Check	Temp		24.38	°C	
						Calibration-Chart	DO		7.90	mg/L	
						Calibration-Chart	ORP		232	mV	
	U52	017528	7/21/15	0730	Cal	Autocal	pH	4	4.01	pH units	
						Autocal	Cond	4.49	4.49	mS/cm	
						Autocal	Turb	0	0.0	NTU	
						Calibration	pH	7	7.15	pH units	
						Calibration	pH	10	9.89	pH units	
						Temp Check	Temp		25.82	°C	
						Calibration-Chart	DO		8.20	mg/L	
						Calibration-Chart	ORP		225	mV	
		21389	7/21/15	0940	Cal	Autocal	pH	4	3.99	pH units	
						Autocal	Cond	4.49	4.5	mS/cm	
						Autocal	Turb	0	0	NTU	
						Calibration	pH	7	7.09	pH units	
						Calibration	pH	10	9.99	pH units	
						Temp Check	Temp		26.02	°C	
						Calibration-Chart	DO		8.13	mg/L	
						Calibration-Chart	ORP		224	mV	
pid			7.20.15	now	Cal	Isobutylene	bag	99.7	✓		

RVAPP – Ravenna Ohio

TEAM # 2

	Instrument Model	Instrument ID	Date	Time	Calibrator	CalibrationType	Standard	Std Concentra	Meter Reading	Units	Comment
EXAMPLE:	Horiba U22	3074008	06-Oct-08	11:00	EC	Autocal	pH	4		pH units	
HORIBA		0175728	7-22-15	0755	Cal	Autocal	pH	4	3.99	pH units	
						Autocal	Cond	4.49	4.50	mS/cm	
						Autocal	Turb	0	0	NTU	
						Calibration	pH	7	7.11	pH units	
						Calibration	pH	10	9.97	pH units	
						Temp Check	Temp		23.70	°C	
						Calibration-Chart	DO		8.63	mg/L	
						Calibration-Chart	ORP		230	mV	
		21381	7/22/15	0810	AD	Autocal	pH	4	3.99	pH units	
						Autocal	Cond	4.49	4.49	mS/cm	
						Autocal	Turb	0	0	NTU	
						Calibration	pH	7	7.15	pH units	
						Calibration	pH	10	10.01	pH units	
						Temp Check	Temp		24.96	°C	
						Calibration-Chart	DO		8.02	mg/L	
			7/23/15			Calibration-Chart	ORP		235	mV	
		21194	~~7/23/15~~ 7/22/15	0750	Cal	Autocal	pH	4	4.01	pH units	
			7/23/15			Autocal	Cond	4.49	4.48	mS/cm	
						Autocal	Turb	0	0	NTU	
						Calibration	pH	7		pH units	
						Calibration	pH	10		pH units	
						Temp Check	Temp		21.44	°C	
						Calibration-Chart	DO		9.15	mg/L	
						Calibration-Chart	ORP		239	mV	

RVAPP ~ Ravenna Ohio

TEAM # 3

	Instrument Model	Instrument ID	Date	Time	Calibrator	CalibrationType	Standard	Std Concentra	Meter Reading	Units	Comment
EXAMPLE:	Horiba U22	3074008	06-Oct-08	11:00	EC	Autocal	pH	4	~~5.9~~	pH units	
U52 SDW60 LD			7/20/15	1130	DO	Autocal	pH	4	~~3.98~~	pH units	4.01
						Autocal	Cond	4.49	~~4.48~~	mS/cm	4.49
						Autocal	Turb	0	0	NTU	0
						Calibration	pH	7	7.04	pH units	
						Calibration	pH	10	10.10	pH units	~~10.10~~
						Temp Check	Temp		25.16	°C	
						Calibration-Chart	DO		8.13	mg/L	
						Calibration-Chart	ORP		217	mV	
U22 Horiba SD13014			7/21/15	0800	DO	Autocal	pH	4	4.05	pH units	4.02
						Autocal	Cond	4.49	4.52	mS/cm	4.49
						Autocal	Turb	0	0	NTU	0
						Calibration	pH	7	~~7.0~~	pH units	6.89
						Calibration	pH	10		pH units	9.92
						Temp Check	Temp		26.9	°C	25.83
						Calibration-Chart	DO		8.3	mg/L	8.45
						Calibration-Chart	ORP		~~217~~	mV	212
Horiba U22 SD13014			7/22/15	0800	DO	Autocal	pH	4	4	pH units	
						Autocal	Cond	4.49	4.49	mS/cm	
						Autocal	Turb	0	0	NTU	
						Calibration	pH	7	6.91	pH units	
						Calibration	pH	10	9.83	pH units	
						Temp Check	Temp		24.16	°C	
						Calibration-Chart	DO		8.51	mg/L	
						Calibration-Chart	ORP		220	mV	

RVAPP ~ Ravenna Ohio

TEAM # 3

	Instrument Model	Instrument ID	Date	Time	Calibrator	CalibrationType	Standard	Std Concentra	Meter Reading	Units	Comment
EXAMPLE:	Horiba U22	3074008	06-Oct-08	11:00	EC	Autocal	pH	4		pH units	
Horiba U52	21381 / 023240		7/23/15	0800	Cal	Autocal	pH	4	3.98	pH units	
						Autocal	Cond	4.49	4.49	mS/cm	
						Autocal	Turb	0	0	NTU	
						Calibration	pH	7	6.91	pH units	
						Calibration	pH	10	9.87	pH units	
						Temp Check	Temp		23.75	°C	
						Calibration-Chart	DO		8.31	mg/L	
						Calibration-Chart	ORP		234	mV	
						Autocal	pH	4		pH units	
						Autocal	Cond	4.49		mS/cm	
						Autocal	Turb	0		NTU	
						Calibration	pH	7		pH units	
						Calibration	pH	10		pH units	
						Temp Check	Temp			°C	
						Calibration-Chart	DO			mg/L	
						Calibration-Chart	ORP			mV	
						Autocal	pH	4		pH units	
						Autocal	Cond	4.49		mS/cm	
						Autocal	Turb	0		NTU	
						Calibration	pH	7		pH units	
						Calibration	pH	10		pH units	
						Temp Check	Temp			°C	
						Calibration-Chart	DO			mg/L	
						Calibration-Chart	ORP			mV	

	Instrument Model	Instrument ID	Date	Time	Calibrator	CalibrationType	Standard	Std Concentra	Meter Reading	Units	Comment
EXAMPLE:	Horiba U22	3074008	06-Oct-08	11:00	EC	Autocal	pH	4	~~4.06~~ 4.00	pH units	
Horiba U52	YEXERDJ4L		20-Jul-15	1132	SAS	Autocal	pH	4	4.06	pH units	
						Autocal	Cond	4.49	4.51	mS/cm	
						Autocal	Turb	0	0.1	NTU	
						Calibration	pH	7	7.99	pH units	
						Calibration	pH	10	9.76	pH units	
						Temp Check	Temp		25.52	°C	
						Calibration-Chart	DO		8.46	mg/L	
						Calibration-Chart	ORP		230	mV	
Horiba U52	YEXERDJ4L		21-Jul-15	0735	SAS	Autocal	pH	4	4.01	pH units	
						Autocal	Cond	4.49	4.49	mS/cm	
						Autocal	Turb	0	0.0	NTU	
						Calibration	pH	7	6.72	pH units	
						Calibration	pH	10	9.60	pH units	
						Temp Check	Temp		26.63	°C	
						Calibration-Chart	DO		8.53	mg/L	~~8.55~~ 7.99 chart
						Calibration-Chart	ORP		~~239~~	mV	234
Horiba U52	~~YEXERDJ4L~~ 27109		22-Jul-15	0800	SAS	Autocal	pH	4	~~3.93~~	pH units	4.00
						Autocal	Cond	4.49	~~4.49~~	mS/cm	4.49
						Autocal	Turb	0	~~0.0~~	NTU	0.0
						Calibration	pH	7		pH units	6.89
						Calibration	pH	10		pH units	9.79
						Temp Check	Temp		~~24.03~~	°C	24.17
						Calibration-Chart	DO			mg/L	8.69
						Calibration-Chart	ORP			mV	230

4

	Instrument Model	Instrument ID	Date	Time	Calibrator	CalibrationType	Standard	Std Concentra	Meter Reading	Units	Comment
EXAMPLE:	Horiba U22	3074008	06-Oct-08	11:00	EC	Autocal	pH	4		pH units	
	Hach U52	27109	23-Jul-15	0754	SAS	Autocal	pH	4	~~3.97~~	pH units	~~3.98~~ ~~3.97~~ 4.01
						Autocal	Cond	4.49	~~4.50~~	mS/cm	~~4.48~~ ~~4.45~~ 4.48
						Autocal	Turb	0	~~0.0~~	NTU	~~0.0~~ 0.4/0.0
						Calibration	pH	7	6.89	pH units	
						Calibration	pH	10	9.87	pH units	
						Temp Check	Temp		23.30	°C	
						Calibration-Chart	DO		8.40	mg/L	9.80
						Calibration-Chart	ORP		232	mV	
						Autocal	pH	4		pH units	
						Autocal	Cond	4.49		mS/cm	
						Autocal	Turb	0		NTU	
						Calibration	pH	7		pH units	
						Calibration	pH	10		pH units	
						Temp Check	Temp			°C	
						Calibration-Chart	DO			mg/L	
						Calibration-Chart	ORP			mV	
						Autocal	pH	4		pH units	
						Autocal	Cond	4.49		mS/cm	
						Autocal	Turb	0		NTU	
						Calibration	pH	7		pH units	
						Calibration	pH	10		pH units	
						Temp Check	Temp			°C	
						Calibration-Chart	DO			mg/L	
						Calibration-Chart	ORP			mV	

Purge/Sample Records

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: DEMO.AREA 2 DATE: 7/23/2015 START TIME: 9:30

WELL ID: DA2mw-115

WELL DEPTH: INITIAL WATER LEVEL: 5.45 TOTAL PURGED (L) 3.75

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 36.5 - 46.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 41.5

PUMP READINGS: Throttle (ft.) Recharge: 12 Discharge: 3

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
9:48	5.45	0.2	0	0	0	0	0	0	0
9:54	5.53	0.125	0.75	17.17	0.678	4.66	6.2	0.5	-5
9:58	5.58	0.125	0.5	14.89	0.666	2.8	6.73	0	-73
10:02	5.60	0.125	0.5	14.3	0.661	2.32	6.81	0	-83
10:06	5.62	0.125	0.5	14.1	0.658	2.12	6.79	0	-84
10:10	5.64	0.125	0.5	13.88	0.657	2	6.8	0	-86
10:14	5.65	0.125	0.5	13.64	0.656	1.9	6.8	0	-89
10:18	5.66	0.125	0.5	13.6	0.655	1.86	6.82	0	-88

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **DEMO.AREA 2** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: DA2mw-115 SampleID: FWGDA2mw-115-0571-GW/GF Dup ID: FWGDA2mw-DUP-1-0617-GW/GF

SplitID: FWGDA2mw-115-0613s-GW/GF RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/23/2015 TIME: 10:22

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0	Color:	Clear
	ORP (mV):	-90	Odor:	None

pH: 6.85 Temperature (°C): 13.53 DO (mg/L): 1.81 Specific Conductivity (mS/cm): 0.655

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 75

SHIPPED VIA: Lab PU/FedEx

SHIPPED TO: Multiple Labs

SAMPLER: CAL Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
500ml/Poly	3	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	6	4C	8270	SVOC
1L/Amber	5	4C	8081	Pest
1L/Amber	5	4C	8082	PCB
1L/Amber	4	4C	8330	Explo
40ml/Vial	9	HCl	8260	VOC
250ml/Poly	3	NaOH	9012	Cyanide
1L/Amber	6	4C	353.2/8330	Propellants

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: DEMO.AREA 2 DATE: 7/23/2015 START TIME: 10:10

WELL ID: DET-003

WELL DEPTH: INITIAL WATER LEVEL: 8.35 TOTAL PURGED (L) 3.775

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 11 - 16

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 13.5

PUMP READINGS: Throttle (ft.) Recharge: 12 Discharge: 3

COMMENTS Color: Clear, Odor:None,measure WL place pump then return

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
10:45	9.36	0.15	0	0	0	0	0	0	0
10:50	9.39	0.11	0.55	13.5	0.979	2.26	6.19	60.3	-8
10:55	9.40	0.11	0.55	12.97	0.974	1.8	6.29	15.3	-31
11:00	9.42	0.11	0.55	12.46	0.965	1.46	6.58	7.3	-67
11:05	9.43	0.125	0.625	12.28	0.96	1.35	6.69	0	-21
11:09	9.44	0.125	0.5	12.2	0.958	1.33	6.74	0	-29
11:13	9.44	0.125	0.5	12.13	0.955	1.29	6.79	0	-33
11:17	9.45	0.125	0.5	12.1	0.952	1.28	6.72	0	-29

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **DEMO.AREA 2** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: DET-003 SampleID: FWGDETMW-003C-0572-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/23/2015 TIME: 11:18

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0	Color:	Clear
	ORP (mV):	-28	Odor:	None

pH: 6.71 Temperature (°C): 12.08 DO (mg/L): 1.27 Specific Conductivity (mS/cm): 0.952

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 75

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	8081	Pest
1L/Amber	2	4C	8082	PCB
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants
250ml/Poly	1	NaOH	9012	Cyanide
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
40ml/Vial	3	HCl	8260	VOC

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: DEMO.AREA 2 DATE: 7/22/2015 START TIME: 17:00

WELL ID: DET-004

WELL DEPTH: INITIAL WATER LEVEL: 8.96 TOTAL PURGED (L) 3

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 8.75 - 13.75

PUMP/PURGING DEVICE: B - BAILER APPROXIMATE PUMP INTAKE DEPTH: N/A Bailer

PUMP READINGS: Throttle (ft.) Recharge: 0 Discharge: 0

COMMENTS Color: , Odor:,purge minimum vol dry @ 17:04

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
17:00	8.35	1	0	0	0	0	0	0	0
17:03	11.56	1	3	13	0.9	12.68	6.47	45	100

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **DEMO.AREA 2** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: DET-004 SampleID: FWGDETmw-004C-0573-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: B - Bailer MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/23/2015 TIME: 9:00

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	21	Color:	tint
	ORP (mV):	61	Odor:	None

pH: 6.78 Temperature (°C): 12.5 DO (mg/L): 10.1 Specific Conductivity (mS/cm): 0.81

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: NW AMBIENT TEMP (°F): 75

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt: sampled VOCs 1715 7-22 after well went dry 7-22 at 1705 return 7-23 after recharge

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
250ml/Poly	1	NaOH	9012	Cyanide
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	8082	PCB
1L/Amber	2	4C	8081	Pest
40ml/Vial	3	HCl	8260	VOC

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: FACILITYWIDE DATE: 7/23/2015 START TIME: 13:58

WELL ID: FWGmw-002

WELL DEPTH: INITIAL WATER LEVEL: 22.35 TOTAL PURGED (L) 12.15

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 60 - 70

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 65

PUMP READINGS: Throttle (ft.) Recharge: 11 Discharge: 4

COMMENTS Color: Clear, Odor:None,field ph monitoring only

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
13:59	22.36	0.15	0	0	0	0	0	0	0
14:03	23.32	0.15	0.75	18.17	0.582	2.73	7.79	395	-98
14:09	23.38	0.1	0.5	17.8	0.57	1.6	7.77	402	-89
14:14	23.46	0.1	0.5	16.01	0.586	1.2	7.6	231	-79
14:19	23.49	0.1	0.5	16.21	0.593	1.08	7.58	189	-78
14:24	23.50	0.1	0.5	16.4	0.59	1.03	7.58	157	-79
14:29	23.50	0.1	0.5	16.33	0.584	0.95	7.61	129	-220
14:34	23.50	0.1	0.5	16.17	0.583	0.96	7.62	108	-220
14:39	23.50	0.1	0.5	16.79	0.571	0.89	7.65	87.3	-222
14:44	23.50	0.1	0.5	17.17	0.57	0.83	7.66	83.6	-222
14:49	23.50	0.1	0.5	17.18	0.568	0.8	7.66	102	-222
14:54	23.50	0.1	0.5	17.2	0.567	0.77	7.66	74.7	-222
14:59	23.50	0.1	0.5	17.11	0.566	0.74	7.67	74.2	-222
15:04	23.50	0.1	0.5	17.08	0.566	0.74	7.67	77	-222
15:09	23.50	0.1	0.5	17.13	0.566	0.74	7.65	76.5	-222
15:14	23.50	0.1	0.5	17.81	0.56	0.77	7.64	71.8	-220
15:19	23.49	0.1	0.5	17.99	0.558	0.79	7.59	62.4	-200
15:24	23.50	0.1	0.5	18.09	0.552	0.81	7.62	63.9	-199
15:28	23.49	0.1	0.4	18.43	0.548	0.84	7.63	64	-187
15:34	23.49	0.1	0.6	18.67	0.538	0.88	7.67	48.3	-186
15:39	23.49	0.1	0.5	18.79	0.533	0.88	7.67	47.5	-190
15:44	23.49	0.1	0.5	18.8	0.527	0.9	7.67	50.6	-189
15:49	23.49	0.1	0.5	18.85	0.52	0.89	7.67	47.9	-192
15:54	23.49	0.1	0.5	18.99	0.518	0.88	7.67	44.1	-195

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: CAL

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: FACILITYWIDE DATE: 7/23/2015 START TIME: 13:58

WELL ID: FWGmw-002

WELL DEPTH: INITIAL WATER LEVEL: 22.35 TOTAL PURGED (L) 12.15

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 60 - 70

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 65

PUMP READINGS: Throttle (ft.) Recharge: 11 Discharge: 4

COMMENTS Color: Clear, Odor:None,field ph monitoring only

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
15:59	23.49	0.1	0.4	19.21	0.513	0.8	7.67	46.9	-195

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: CAL

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: FACILITYWIDE DATE: 7/23/2015 START TIME: 13:45

WELL ID: FWGmw-004

WELL DEPTH: INITIAL WATER LEVEL: 12.74 TOTAL PURGED (L) 3.95

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 12.5 - 22.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 17

PUMP READINGS: Throttle (ft.) Recharge: 7 Discharge: 3

COMMENTS Color: Clear, Odor:None,started @ 40, after 1350 changed to 30 with 7R/3 D

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
13:49	12.74	0.2	0	0	0	0	0	0	0
13:50	12.78	0.2	0.2	15	0.8	3	6.56	58	80
13:55	12.91	0.125	0.625	14.95	0.81	3.37	6.54	58.5	86
14:00	12.91	0.125	0.625	14.24	0.819	3.48	6.48	32.7	98
14:05	12.93	0.125	0.625	13.79	0.825	3.57	6.46	18	105
14:10	12.96	0.125	0.625	14.09	0.829	3.39	6.45	6.2	108
14:15	12.96	0.125	0.625	14.15	0.828	3.24	6.44	0	114
14:20	12.99	0.125	0.625	14.14	0.829	3.21	6.44	0	115

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: AD

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **FACILITYWIDE** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: FWGmw-004 SampleID: FWGFWGmw-004-0575-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/23/2015 TIME: 14:23

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0	Color:	Clear
	ORP (mV):	116	Odor:	None

pH: 6.44 Temperature (°C): 14.08 DO (mg/L): 3.2 Specific Conductivity (mS/cm): 0.83

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: NW AMBIENT TEMP (°F): 80

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: AD Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: FACILITYWIDE DATE: 7/23/2015 START TIME: 9:00

WELL ID: FWGmw-007

WELL DEPTH: 32.15 INITIAL WATER LEVEL: 22.2 TOTAL PURGED (L) 7.9

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 22 - 32

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 27

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,TOP OF INTAKE - 26.61

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
9:02	21.98	0.2	0	0	0	0	0	0	0
9:04	22.65	0.2	0.4	13.91	1.23	6	6.77	63.6	117
9:09	22.66	0.1	0.5	13.47	1.17	5.41	6.77	66.1	89
9:14	22.67	0.1	0.5	13.06	1.14	5.34	6.73	44.7	70
9:19	22.76	0.1	0.5	12.73	1.13	5.23	6.75	35.5	51
9:24	22.75	0.1	0.5	12.83	1.14	5.14	6.76	33	49
9:29	22.75	0.1	0.5	12.89	1.13	5.24	6.75	38.5	41
9:34	22.75	0.1	0.5	12.85	1.14	5.02	6.77	29.8	37
9:39	22.75	0.1	0.5	12.84	1.14	4.96	6.75	24.6	43
9:44	22.72	0.1	0.5	12.9	1.13	4.89	6.75	20.7	32
9:49	22.73	0.1	0.5	12.99	1.13	4.82	6.77	18	29
9:54	22.73	0.1	0.5	12.98	1.13	4.76	6.74	17.6	28
9:59	22.71	0.1	0.5	13.01	1.13	4.83	6.74	14.9	27
10:04	22.72	0.1	0.5	12.94	1.13	4.67	6.77	12.9	24
10:09	22.74	0.1	0.5	13.04	1.13	4.61	6.75	13.1	23
10:14	22.72	0.1	0.5	13.27	1.12	4.55	6.77	12.5	21
10:19	22.72	0.1	0.5	13.25	1.12	4.48	6.76	9.9	18

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: SAS

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **FACILITYWIDE** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: FWGmw-007 SampleID: FWGFWGmw-007-0576-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/23/2015 TIME: 10:24

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	9.9	Color:	Clear
	ORP (mV):	18	Odor:	None

pH: 6.76 Temperature (°C): 13.25 DO (mg/L): 4.48 Specific Conductivity (mS/cm): 1.12

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 74

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: SAS Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	8270	SVOC

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: FACILITYWIDE DATE: 7/22/2015 START TIME: 12:32

WELL ID: FWGmw-011

WELL DEPTH: INITIAL WATER LEVEL: 2.6 TOTAL PURGED (L) 21.56

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 7.5 - 17.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 12.5

PUMP READINGS: Throttle (ft.) Recharge: 12 Discharge: 3

COMMENTS Color: tint orange, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
13:00	2.61	0.2	0	0	0	0	0	0	0
13:05	2.70	0.15	0.75	16.66	0.451	6.74	6.91	-5	-123
13:10	2.72	0.125	0.625	16.56	0.412	655	6.33	884	-94
13:15	2.73	0.125	0.625	16.67	0.434	5.98	6.19	805	-89
13:20	2.74	0.12	0.6	17.1	0.401	5.63	6.08	768	-87
13:25	2.75	0.12	0.48	16.89	0.4	5.71	6.1	686	-90
13:30	2.76	0.12	0.48	16.37	0.401	5.61	6.18	419	-87
13:35	2.76	0.12	0.6	16.41	0.4	3.32	6.31	330	-53
13:40	2.77	0.12	0.6	16.28	0.385	3.09	6.39	314	-51
13:45	2.76	0.12	0.6	16.34	0.364	2.82	6.56	304	-59
13:50	2.77	0.12	0.6	16.3	0.364	2.67	6.72	290	-77
13:55	2.77	0.12	0.6	16.21	0.363	2.54	6.87	280	-81
14:00	2.78	0.12	0.6	16.12	0.364	2.36	6.92	254	-84
14:05	2.77	0.12	0.6	15.99	0.361	2.15	7.04	238	-91
14:10	2.77	0.12	0.6	16.2	0.362	1.99	7.06	228	-93
14:15	2.77	0.12	0.6	16.22	0.36	1.89	7.08	222	-101
14:20	2.77	0.12	0.6	16.3	0.361	1.77	7.05	191	-103
14:25	2.77	0.12	0.6	16.43	0.36	1.59	7.02	195	-102
14:30	2.77	0.12	0.6	16.39	0.359	1.5	7.04	207	-105
14:35	2.77	0.12	0.6	16.26	0.36	1.46	7.01	206	-109
14:40	2.77	0.12	0.6	16.38	0.36	1.39	7.03	205	-109
14:45	2.77	0.12	0.6	16.32	0.361	1.34	7.03	187	-109
14:50	2.77	0.12	0.6	16.28	0.359	1.29	7.03	174	-110
14:55	2.77	0.12	0.6	16.29	0.359	1.29	7.05	180	-111

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: CAL

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: FACILITYWIDE DATE: 7/22/2015 START TIME: 12:32

WELL ID: FWGmw-011

WELL DEPTH: INITIAL WATER LEVEL: 2.6 TOTAL PURGED (L) 21.56

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 7.5 - 17.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 12.5

PUMP READINGS: Throttle (ft.) Recharge: 12 Discharge: 3

COMMENTS Color: tint orange, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
15:00	2.77	0.12	7.8	16.4	0.359	1.23	7.01	163	-109

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **FACILITYWIDE** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: FWGmw-011 SampleID: FWGFWGmw-011-0577-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/22/2015 TIME: 15:02

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	159	Color:	tint orange
	ORP (mV):	-110	Odor:	None

pH: 7.02 Temperature (°C): 16.41 DO (mg/L): 1.22 Specific Conductivity (mS/cm): 0.358

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: N AMBIENT TEMP (°F): 85

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	353.2/8330	Propellants
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	1	4C	8330	Explo

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: FACILITYWIDE DATE: 7/22/2015 START TIME: 12:30

WELL ID: FWGmw-012

WELL DEPTH: INITIAL WATER LEVEL: 0.81 TOTAL PURGED (L) 3.9

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 32 - 42

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 37

PUMP READINGS: Throttle (ft.) 60 Recharge: 11 Discharge: 4

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
12:50	0.80	0.2	0	0	0	0	0	0	0
12:57	0.98	0.1	0.7	20.92	0.19	3.74	5.68	36.1	24
13:01	1.00	0.1	0.4	20.48	0.185	3.06	5.85	30.8	32
13:05	1.02	0.1	0.4	19.78	0.175	2.4	5.59	27.7	49
13:09	1.04	0.1	0.4	18.5	0.172	2.14	5.63	21.9	47
13:13	1.06	0.1	0.4	17.27	0.173	1.91	5.66	20.6	48
13:17	1.07	0.1	0.4	17.07	0.174	1.82	5.69	18	45
13:21	1.08	0.1	0.4	17.59	0.175	1.7	5.65	16.1	47
13:25	1.08	0.1	0.4	17.89	0.174	1.62	5.72	14.5	44
13:29	1.08	0.1	0.4	18.05	0.176	1.5	5.69	6.9	44

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **FACILITYWIDE** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: FWGmw-012 SampleID: FWGFWGmw-012-0578-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/22/2015 TIME: 13:32

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	6	Color:	Clear
	ORP (mV):	44	Odor:	None

pH: 5.67 Temperature (°C): 18.6 DO (mg/L): 1.49 Specific Conductivity (mS/cm): 0.18

GENERAL INFORMATION

SUN/OVERCAST Overcast PERCIPITATION: N WIND DIRECTION: AMBIENT TEMP (°F): 80

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	8270	SVOC

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: FACILITYWIDE DATE: 7/23/2015 START TIME: 11:56

WELL ID: FWGmw-015

WELL DEPTH: INITIAL WATER LEVEL: 5 TOTAL PURGED (L) 3.75

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 16 - 26

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 21

PUMP READINGS: Throttle (ft.) Recharge: 5 Discharge: 5

COMMENTS Color: Clear, Odor:None,started @ 6 CPM 40FT. , after 1201 changed to 30 after 1206 kept 30 changed discharge to 5 sec. After 1211 kept at but R 6/ D4

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
12:01	5.50	0.125	0	0	0	0		0	0
12:06	6.00	0.125	0.625	19.3	2.69	0.55	6.3	30.6	31
12:11	7.10	0.125	0.625	19.43	2.6	0.87	6.33	22	32
12:16	7.70	0.1	0.5	19.59	2.6	0.48	6.31	0.4	32
12:21	8.30	0.1	0.5	19.47	2.6	0.45	6.32	0	33
12:26	8.75	0.1	0.5	19.23	2.66	0.42	6.32	0	34
12:31	9.19	0.1	0.5	19.15	2.65	0.4	6.32	0	33
12:36	9.55	0.1	0.5	18.99	2.67	0.39	6.33	0	33

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: AD

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **FACILITYWIDE** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: FWGmw-015 SampleID: FWGFWGmw-015-0579-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/23/2015 TIME: 12:49

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0	Color:	Clear
	ORP (mV):	38	Odor:	None

pH: 6.33 Temperature (°C): 19.07 DO (mg/L): 0.39 Specific Conductivity (mS/cm): 2.67

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: NW AMBIENT TEMP (°F): 80

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: AD Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	1	4C	8330	Explo

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: FACILITYWIDE DATE: 7/23/2015 START TIME: 11:00

WELL ID: FWGmw-016

WELL DEPTH: INITIAL WATER LEVEL: 15.85 TOTAL PURGED (L) 4.625

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 57.25 - 67.25

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 62

PUMP READINGS: Throttle (ft.) Recharge: 7 Discharge: 3

COMMENTS Color: Clear, Odor:None,throttle started @ 80 and switched to 70 after 1113 reading.

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
11:03	15.87	0.15	0	0	0	0	0	0	0
11:08	15.89	0.15	0.75	15.13	0.805	9.14	6.36	0	-67
11:13	15.92	0.15	0.75	15.1	0.804	2.05	6.37	0	-67
11:18	15.90	0.125	0.625	15.53	0.8	1.36	6.36	0	-69
11:23	15.91	0.125	0.625	15.63	0.798	1.18	6.36	0	-69
11:28	15.92	0.125	0.625	15.68	0.794	1.01	6.36	0	-70
11:33	15.93	0.125	0.625	15.99	0.79	0.87	6.36	0	-71
11:38	15.93	0.125	0.625	16.14	0.787	0.77	6.36	0	-71

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: AD

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **FACILITYWIDE** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: FWGmw-016 SampleID: FWGFWGmw-016-0580-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/23/2015 TIME: 11:43

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0	Color:	Clear
	ORP (mV):	-72	Odor:	None

pH: 6.36 Temperature (°C): 16.16 DO (mg/L): 0.8 Specific Conductivity (mS/cm): 0.788

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: NW AMBIENT TEMP (°F): 80

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: AD Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	8270	SVOC
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: FUZE AND BOOSTER QUARRY DATE: 7/20/2015 START TIME: 12:20

WELL ID: FBQmw-174

WELL DEPTH: INITIAL WATER LEVEL: 13.36 TOTAL PURGED (L) 3.4

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 13 - 23

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 18

PUMP READINGS: Throttle (ft.) Recharge: 12 Discharge: 3

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
12:22	13.32	0.1	0	0	0	0	0	0	0
12:25	13.40	0.1	0.5	17.04	0.164	5.77	5.37	15.7	213
12:30	13.45	0.1	0.5	15.43	0.06	4.91	5.01	9.2	231
12:34	13.47	0.1	0.4	14.97	0.048	4.5	4.91	6.2	243
12:38	13.50	0.1	0.4	14.69	0.045	4.35	4.88	5.9	259
12:42	13.54	0.1	0.4	14.57	0.043	4.29	4.54	5	272
12:46	13.56	0.1	0.4	14.42	0.043	4.44	4.46	3.9	281
12:50	13.58	0.1	0.4	14.34	0.043	4.5	4.42	3.7	285
12:54	13.59	0.1	0.4	14.28	0.042	4.53	4.5	3.1	275

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **FUZE AND BOOSTER** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: FBQmw-174 SampleID: FWGFBQmw-174C-0574-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/20/2015 TIME: 12:57

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	3.5	Color:	Clear
	ORP (mV):	280	Odor:	None

pH: 4.5 Temperature (°C): 14.3 DO (mg/L): 4.49 Specific Conductivity (mS/cm): 0.041

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: E AMBIENT TEMP (°F): 79

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	8081	Pest
1L/Amber	1	4C	8330	Explo
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	353.2/8330	Propellants

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 1 DATE: 7/20/2015 START TIME: 16:15

WELL ID: LL1mw-064

WELL DEPTH: INITIAL WATER LEVEL: 0.8 TOTAL PURGED (L) 11

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 11 - 21

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 16

PUMP READINGS: Throttle (ft.) 20 Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
16:15	0.80	0.2	0	0	0	0	0	0	0
16:20	0.80	0.2	1	19.88	0.366	5.79	6.58	109	-94
16:25	0.80	0.2	1	19.11	0.368	3.79	6.98	275	-119
16:30	0.80	0.2	1	18.49	0.372	3.22	6.8	555	-121
16:35	0.90	0.2	1	16.92	0.366	2.42	6.96	302	-134
16:40	0.90	0.2	1	16.31	0.369	1.95	6.98	168	-140
16:45	0.90	0.2	1	15.57	0.368	1.67	7.02	76.2	-151
16:50	0.90	0.2	1	15.14	0.369	1.58	7.02	45.2	-152
16:55	0.90	0.2	1	14.82	0.37	1.51	7.03	23.4	-153
17:00	1.00	0.2	1	14.69	0.371	1.48	7.02	20.4	-154
17:05	1.00	0.2	1	14.62	0.37	1.45	7.02	8.3	-157
17:10	1.00	0.2	1	14.51	0.37	1.43	7.03	7.6	-155

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 1** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL1mw-064 SampleID: FWGLL1mw-064C-0581-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/20/2015 TIME: 17:15

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	7.9	Color:	Clear
	ORP (mV):	-157	Odor:	None

pH: 7.02 Temperature (°C): 14.51 DO (mg/L): 1.41 Specific Conductivity (mS/cm): 0.37

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 85

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: EC Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	1	4C	8330	Explo

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 1 DATE: 7/22/2015 START TIME: 15:55

WELL ID: LL1mw-065

WELL DEPTH: INITIAL WATER LEVEL: 10.5 TOTAL PURGED (L) 10.55

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 13 - 23

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 18

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: , Odor:,stopped due to time

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
15:56	10.50	0.15	0	0	0	0	0	0	0
15:58	10.53	0.15	0.3	13.6	0.547	2.55	7.03	77	75
16:03	10.54	0.15	0.45	14.1	0.525	4.15	7.11	104	88
16:07	10.56	0.15	0.6	14.12	0.535	3.9	7.16	95.4	88
16:11	10.55	0.15	0.6	0	0	0	0	0	0
16:14	10.55	0.15	2.4	13.48	0.544	2.43	7.05	74.4	74
16:18	10.55	0.15	0.6	13.31	0.545	2.24	7.02	68.2	71
16:22	10.51	0.15	0.6	13.16	0.542	2.06	7.04	60.5	61.9
16:27	10.50	0.2	1	12.7	0.532	2.19	7.06	49.3	65
16:32	10.50	0.2	1	11.89	0.535	2.03	7.08	51	61
16:37	10.51	0.2	1	11.69	0.529	2.02	7.08	51.4	72
16:42	10.51	0.2	1	10.62	0.532	1.58	6.99	28	53
16:47	10.51	0.2	1	10.61	0.529	1.47	7	19.2	42
16:52	0.00	0	0	0	0	0	0	0	0

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: CAL

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 1 DATE: 7/23/2015 START TIME: 8:56

WELL ID: LL1mw-065

WELL DEPTH: INITIAL WATER LEVEL: 10.56 TOTAL PURGED (L) 5.65

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 13 - 23

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 18

PUMP READINGS: Throttle (ft.) Recharge: 7 Discharge: 3

COMMENTS Color: Clear, Odor:None,Started purge 7/22 but stopped & started again today. Run @ 40 throttle changed to 30 after 0906 reading.

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
8:58	10.56	0.175	0	0	0	0	0	0	0
9:01	10.60	0.175	0.525	11.89	0.715	0.88	6.72	17.6	237
9:06	10.65	0.175	0.875	11.47	0.696	0.76	6.49	4.6	218
9:11	10.64	0.15	0.75	11.57	0.683	0.78	6.46	0	154
9:16	10.65	0.15	0.75	11.47	0.685	0.74	6.42	0	106
9:21	10.66	0.15	0.75	11.49	0.682	0.69	6.41	0	67
9:26	10.67	0.15	0.75	11.4	0.681	0.67	6.41	0	52
9:31	10.67	0.15	0.75	11.47	0.682	0.76	6.43	0	46

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: AD

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 1** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL1mw-065 SampleID: FWGLL1mw-065C-0582-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/23/2015 TIME: 9:33

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0	Color:	Clear
	ORP (mV):	42	Odor:	None

pH: 6.42 Temperature (°C): 11.45 DO (mg/L): 0.68 Specific Conductivity (mS/cm): 0.683

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: NW AMBIENT TEMP (°F): 75

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: AD Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	8270	SVOC
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 1 DATE: 7/20/2015 START TIME: 12:27

WELL ID: LL1mw-083

WELL DEPTH: INITIAL WATER LEVEL: 29.09 TOTAL PURGED (L) 3.5

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 31 - 41

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 36

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
12:30	29.13	0.2	0	0	0	0	0	0	0
12:35	29.29	0.2	1	31.2	0.214	6.02	4.67	31.6	250
12:40	29.33	0.2	1	31.1	0.206	6	4.65	0.5	253
12:45	29.39	0.2	1	13.75	0.191	5.71	4.59	20.6	259
12:50	29.39	0.2	1	13.76	0.187	5.51	4.61	10.5	270
12:55	29.40	0.2	1	13.77	0.185	5.48	4.59	6.1	279
12:58	29.40	0.2	0.6	13.7	0.184	5.5	4.57	4.8	286
13:01	29.40	0.2	0.6	13.76	0.182	5.44	4.58	3	294

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: AD

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 1** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL1mw-083 SampleID: FWGLL1mw-083C-0583-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/20/2015 TIME: 13:03

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	2.7	Color:	Clear
	ORP (mV):	296	Odor:	None

pH: 4.59 Temperature (°C): 13.69 DO (mg/L): 5.44 Specific Conductivity (mS/cm): 0.183

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: NW AMBIENT TEMP (°F): 90

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: AD Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	8081	Pest
1L/Amber	2	4C	8270	SVOC
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	353.2/8330	Propellants

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 1 DATE: 7/20/2015 START TIME: 12:45

WELL ID: LL1mw-084

WELL DEPTH: INITIAL WATER LEVEL: 24.68 TOTAL PURGED (L) 6.3

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 29 - 39

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 34

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
12:45	24.68	0.1	0	0	0	0	0	0	0
12:53	25.78	0.1	0.8	17.42	0.392	4.99	5.02	0	245
12:58	25.84	0.1	0.5	17.44	0.388	4.77	5.08	0	244
13:03	25.89	0.1	0.5	17.42	0.386	4.7	5.04	0	244
13:08	25.92	0.1	0.5	17.37	0.381	4.47	5.03	0	247
13:13	25.93	0.1	0.5	17.42	0.376	4.48	5.05	0	246
13:18	25.94	0.1	0.5	17.34	0.374	4.44	5.05	0	248
13:23	25.94	0.1	0.5	17.29	0.371	4.32	5.04	0	250
13:28	25.95	0.1	0.5	17.23	0.369	4.25	5.04	0	253
13:33	25.95	0.1	0.5	17.1	0.367	4.23	5.04	0	255
13:38	25.95	0.1	0.5	17.07	0.365	4.15	5.05	0	257
13:43	25.95	0.1	0.5	17.09	0.364	4.1	5.02	0	258
13:48	25.96	0.1	0.5	17.14	0.362	4	5.04	0	263

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 1** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL1mw-084 SampleID: FWGLL1mw-084C-0584-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/20/2015 TIME: 13:55

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0	Color:	Clear
	ORP (mV):	264	Odor:	None

pH: 5.05 Temperature (°C): 17.16 DO (mg/L): 3.97 Specific Conductivity (mS/cm): 0.362

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 85

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: EC Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8081	Pest
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	1	4C	8330	Explo

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 1 DATE: 7/21/2015 START TIME: 13:00

WELL ID: LL1mw-086

WELL DEPTH: 77.76 INITIAL WATER LEVEL: 6.51 TOTAL PURGED (L) 17.15

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 67.5 - 77.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 72.5

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,TOP OF INTAKE - 72.4

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
13:03	6.51	0.1	0	0	0	0	0	0	0
13:05	6.53	0.1	0.2	18.3	0.928	2.5	11.9	0	-162
13:10	6.51	0.15	0.75	15.77	0.823	1.85	11.9	0	-184
13:15	6.55	0.15	0.75	15.21	0.715	1.73	11.8	0	-199
13:20	6.55	0.15	0.75	14.89	0.591	1.6	11.5	0	-189
13:25	6.53	0.15	0.75	14.83	0.522	1.58	11.4	0	-176
13:30	6.54	0.15	0.75	14.46	0.446	1.59	11.2	0	-161
13:35	6.50	0.15	0.75	14.57	0.382	1.62	10.9	0	-149
13:40	6.50	0.15	0.75	14.51	0.332	1.62	10.7	0.8	-135
13:45	6.50	0.15	0.75	14.45	0.294	1.63	10.4	3.9	-118
13:50	6.55	0.15	0.75	14.27	0.266	1.65	10.2	5.5	-106
13:55	6.54	0.15	0.75	14.12	0.245	1.67	10.2	9.8	-115
13:58	6.51	0.15	0.75	14.1	0.239	1.69	10.2	9.9	-113
14:01	6.52	0.15	0.45	14.16	0.235	1.7	10.0	13.1	-111
14:06	6.58	0.15	0.75	14.48	0.231	1.71	9.76	14.3	-106
14:11	6.58	0.15	0.75	14.37	0.229	1.74	9.86	16.1	-112
14:16	6.53	0.15	0.75	14.32	0.227	1.76	9.85	17.9	-111
14:21	6.52	0.15	0.75	14.34	0.227	1.78	9.64	19	-108
14:26	6.52	0.15	0.75	14.35	0.227	1.79	9.6	21.6	-105
14:31	6.55	0.15	0.75	14.3	0.227	1.81	9.67	26.5	-110
14:36	6.51	0.15	0.75	14.2	0.228	1.83	9.54	29.6	-106
14:41	6.56	0.15	0.75	14.1	0.228	1.85	9.55	30.3	-103
14:46	6.52	0.15	0.75	14.03	0.228	1.86	9.51	23	-105
14:51	6.52	0.15	0.75	13.97	0.229	1.88	9.46	24.7	-101

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: SAS

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 1 DATE: 7/21/2015 START TIME: 13:00

WELL ID: LL1mw-086

WELL DEPTH: 77.76 INITIAL WATER LEVEL: 6.51 TOTAL PURGED (L) 17.15

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 67.5 - 77.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 72.5

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,TOP OF INTAKE - 72.4

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
14:56	6.52	0.15	0.75	14.13	0.228	1.89	9.42	0	-98

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: SAS

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 1** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL1mw-086 SampleID: FWGLL1mw-086-0585-GW/GF Dup ID:

SplitID: RinseID: FWGEQUIPRinse2-0623-GW

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/21/2015 TIME: 14:58

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0	Color:	Clear
	ORP (mV):	-98	Odor:	None

pH: 9.42 Temperature (°C): 14.13 DO (mg/L): 1.89 Specific Conductivity (mS/cm): 0.228

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 75

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: SAS Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	8081	Pest
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	1	4C	8330	Explo

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 1 DATE: 7/21/2015 START TIME: 9:15

WELL ID: LL1mw-087

WELL DEPTH: INITIAL WATER LEVEL: 5.45 TOTAL PURGED (L) 5.38

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 8 - 18

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 13

PUMP READINGS: Throttle (ft.) Recharge: 12 Discharge: 3

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
9:28	5.50	0.2	0	0	0	0	0	0	0
9:32	6.25	0.1	0.5	17.7	0.559	6.9	7.96	85.7	61
9:35	6.10	0.1	0.3	17.9	0.563	4.1	7.25	58.7	30
9:40	6.10	0.1	0.5	18.37	0.557	3.4	7.01	50.1	22
9:44	6.11	0.1	0.4	18.1	0.555	4.07	6.93	54.2	12
9:48	6.11	0.11	0.44	17.6	0.547	4.98	6.95	37.8	11
9:52	6.12	0.11	0.44	17.47	0.542	5.75	6.96	34.7	13
9:56	6.13	0.1	0.4	17.43	0.541	5.6	6.92	26.2	18
10:00	6.16	0.1	0.4	17.3	0.541	5.51	6.91	24.5	20
10:04	6.20	0.1	0.4	17.44	0.542	5.39	6.9	22.5	21
10:08	6.22	0.1	0.4	17.5	0.544	5.16	6.88	20.2	23
10:12	6.25	0.1	0.4	17	0.545	4.97	6.89	15.7	24
10:16	6.28	0.1	0.4	16.84	0.55	4.89	6.9	12.4	25
10:20	6.31	0.1	0.4	16.59	0.559	4.77	6.89	9.8	25

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 1** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL1mw-087 SampleID: FWGLL1mw-087-0585-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/21/2015 TIME: 10:22

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	10	Color:	Clear
	ORP (mV):	24	Odor:	None

pH: 6.88 Temperature (°C): 16.57 DO (mg/L): 4.71 Specific Conductivity (mS/cm): 0.565

GENERAL INFORMATION

SUN/OVERCAST Overcast PERCIPITATION: N WIND DIRECTION: AMBIENT TEMP (°F): 80

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	353.2/8330	Propellants
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	1	4C	8330	Explo

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 1 DATE: 7/21/2015 START TIME: 9:23

WELL ID: LL1mw-088

WELL DEPTH: 27.33 INITIAL WATER LEVEL: 4.63 TOTAL PURGED (L) 23

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 17.5 - 27.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 22

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,TOP OF INTAKE - 22.66

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
9:25	4.60	0.2	0	0	0	0	0	0	0
9:30	5.32	0.2	1	17.26	0.388	1.93	7.1	219	-82
9:35	5.41	0.2	1	16.14	0.388	1.92	6.87	219	-73
9:40	5.47	0.2	1	15.77	0.39	1.83	6.69	210	-66
9:45	5.47	0.2	1	15.49	0.39	1.74	7.09	207	-88
9:50	5.53	0.2	1	15.21	0.39	1.66	6.99	198	-73
9:55	5.56	0.2	1	15.25	0.39	1.59	7.15	197	-93
10:00	5.58	0.2	1	15.02	0.391	1.56	6.72	188	-71
10:05	5.57	0.2	1	14.7	0.391	1.53	6.78	209	-75
10:10	5.55	0.2	1	14.67	0.392	1.5	6.83	196	-80
10:15	5.60	0.2	1	14.58	0.392	1.5	7.09	155	-99
10:20	5.57	0.2	1	14.59	0.391	1.48	7.13	122	-97
10:25	5.57	0.2	1	14.59	0.391	1.46	7.12	95.7	-98
10:30	5.60	0.2	1	14.51	0.391	1.45	7.13	78.7	-98
10:35	5.57	0.2	1	14.42	0.391	1.44	7.14	63.1	-99
10:40	5.57	0.2	1	14.43	0.392	1.44	7.12	48.3	-99
10:45	5.58	0.2	1	14.5	0.392	1.43	7.13	43.5	-99
10:50	5.58	0.2	1	14.51	0.394	2.53	7.18	33.4	-103
10:55	5.60	0.2	1	14.5	0.393	3.04	7.16	25.6	-102
11:00	5.60	0.2	1	14.43	0.391	2.88	7.16	21	-102
11:05	5.61	0.2	1	14.53	0.39	2.67	7.18	19	-104
11:10	5.65	0.2	1	14.51	0.391	2.53	7.16	17.6	-103
11:15	5.60	0.2	1	14.53	0.39	2.39	7.15	13.4	-103
11:20	5.65	0.2	1	14.62	0.391	2.29	7.15	8.8	-102

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: SAS

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 1** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL1mw-088 SampleID: FWGLL1mw-088-0587-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/21/2015 TIME: 11:24

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	8.8	Color:	Clear
	ORP (mV):	-102	Odor:	None

pH: 7.15 Temperature (°C): 14.62 DO (mg/L): 2.29 Specific Conductivity (mS/cm): 0.391

GENERAL INFORMATION

SUN/OVERCAST Overcast PERCIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 70

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: SAS Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	8081	Pest
1L/Amber	1	4C	8330	Explo
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	353.2/8330	Propellants

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 2 DATE: 7/20/2015 START TIME: 14:50

WELL ID: LL2mw-059

WELL DEPTH: INITIAL WATER LEVEL: 11.74 TOTAL PURGED (L) 4.5

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 11.5 - 21.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 16.75

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
14:50	11.75	0.1	0	0	0	0	0	0	0
14:55	12.08	0.1	0.5	19.02	0.902	4.87	6.02	61	-60
15:00	12.10	0.1	0.5	18.08	0.903	3	6.21	43.3	-72
15:05	12.14	0.1	0.5	16.54	0.914	2.11	6.13	30.9	-71
15:10	12.17	0.1	0.5	16.13	0.911	1.93	6.12	24.8	-69
15:15	12.17	0.1	0.5	15.7	0.903	1.72	6.14	13.1	-64
15:20	12.19	0.1	0.5	15.4	0.897	1.66	6.11	8.7	-59
15:25	12.20	0.1	0.5	15.15	0.885	1.75	6.1	6.8	-55
15:30	12.20	0.1	0.5	15.09	0.877	1.52	6.09	5.2	-50
15:35	12.21	0.1	0.5	15.03	0.872	1.56	6.09	5.1	-48

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 2** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL2mw-059 SampleID: FWGLL2mw-059C-0588-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/20/2015 TIME: 15:41

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	4.8	Color:	Clear
	ORP (mV):	-48	Odor:	None

pH: 6.08 Temperature (°C): 14.99 DO (mg/L): 1.53 Specific Conductivity (mS/cm): 0.862

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 85

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: EC Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	353.2/8330	Propellants
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 2 DATE: 7/20/2015 START TIME: 14:50

WELL ID: LL2mw-060

WELL DEPTH: INITIAL WATER LEVEL: 8.75 TOTAL PURGED (L) 7.8

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 8.1 - 17.9

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 13

PUMP READINGS: Throttle (ft.) Recharge: 20 Discharge: 10

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
14:57	8.79	0.3	0	0	0	0	0	0	0
15:00	8.90	0.3	0.9	16.47	0.279	6.86	6.48	6.4	203
15:03	8.91	0.2	0.6	16.55	0.29	5.92	6.56	3.1	204
15:08	8.98	0.2	1	15.67	0.287	5.73	6.57	3.2	196
15:11	8.97	0.2	0.6	15.8	0.285	5.8	6.61	2	198
15:16	8.98	0.2	1	15.37	0.286	5.78	6.62	1.7	196
15:21	9.03	0.2	1	15.38	0.282	5.93	6.56	1.1	197
15:26	9.05	0.2	1	15.3	0.276	5.96	6.65	0.9	196
15:29	8.98	0.2	0.6	15.08	0.274	5.91	6.66	0.5	197
15:32	8.98	0.2	0.6	15.08	0.272	5.93	6.66	0.3	200

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: AD

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 2** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL2mw-060 SampleID: FWGLL2mw-060C-0589-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/20/2015 TIME: 15:33

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0.5	Color:	Clear
	ORP (mV):	197	Odor:	None

pH: 6.65 Temperature (°C): 14.98 DO (mg/L): 5.95 Specific Conductivity (mS/cm): 0.271

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: NW AMBIENT TEMP (°F): 90

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: AD Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	1	4C	8330	Explo
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	353.2/8330	Propellants

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 2 DATE: 7/23/2015 START TIME: 9:50

WELL ID: LL2mw-267

WELL DEPTH: INITIAL WATER LEVEL: 9.47 TOTAL PURGED (L) 9.75

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 12 - 22

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 17

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
10:00	9.67	0.15	0	0	0	0	0	0	0
10:05	9.68	0.15	0.75	15.06	0.427	5.75	5.58	117	35
10:10	9.68	0.15	0.75	14.78	0.421	4.4	5.6	99	34
10:15	9.68	0.15	0.75	14.27	0.415	4.06	5.61	77	33
10:20	9.68	0.15	0.75	13.92	0.405	3.59	5.64	52.3	31
10:25	9.68	0.15	0.75	13.73	0.401	3.67	5.69	39.1	31
10:30	9.68	0.15	0.75	13.54	0.397	3.72	5.72	29.4	31
10:35	9.68	0.15	0.75	13.42	0.392	3.79	5.75	21.4	31
10:40	9.68	0.15	0.75	13.34	0.388	3.84	5.77	17.3	34
10:45	9.68	0.15	0.75	13.32	0.387	3.9	5.78	17.2	36
10:50	9.68	0.15	0.75	13.25	0.385	3.93	5.78	13.2	38
10:55	9.68	0.15	0.75	13.17	0.384	3.9	5.77	10.4	41
11:00	9.68	0.15	0.75	13.12	0.383	3.84	5.76	8.8	42
11:05	9.68	0.15	0.75	13.1	0.383	3.72	5.75	7.3	45

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 2** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL2mw-267 SampleID: FWGLL2mw-267C-0590-GW/GF Dup ID:

SplitID: RinseID: FWGEQUIPRinse4-0625-GW

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/23/2015 TIME: 11:11

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	6.1	Color:	Clear
	ORP (mV):	46	Odor:	None

pH: 5.75 Temperature (°C): 13.08 DO (mg/L): 3.68 Specific Conductivity (mS/cm): 0.382

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: S AMBIENT TEMP (°F): 70

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: EC Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
1L/Amber	1	4C	8330	Explo
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	353.2/8330	Propellants

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 2 DATE: 7/21/2015 START TIME: 11:40

WELL ID: LL2mw-271

WELL DEPTH: INITIAL WATER LEVEL: 9.47 TOTAL PURGED (L) 8

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 17.5 - 27.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 22.5

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
11:42	9.47	0.2	0	0	0	0	0	0	0
11:47	9.47	0.2	1	16.98	0.276	5.94	6.36	56.7	-57
11:52	9.47	0.2	1	16.97	0.278	4.97	6.41	46.8	-53
11:57	9.48	0.2	1	16.02	0.283	3.71	6.4	24.6	-41
12:02	9.48	0.2	1	15.58	0.281	4.11	6.39	23.3	-39
12:07	9.48	0.2	1	15.66	0.279	4.34	6.39	19.2	-38
12:12	9.49	0.2	1	15.12	0.28	4.25	6.4	13.2	-33
12:17	9.49	0.2	1	15.02	0.279	4.11	6.39	9.7	-33
12:22	9.49	0.2	1	15.11	0.279	3.95	6.38	7.6	-29

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 2** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL2mw-271 SampleID: FWGLL2mw-271-0591-GW/GF Dup ID: FWGLL2mw-DUP2-0618-GW/GF

SplitID: FWGLL2mw-271-0613s-GW/GF RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/21/2015 TIME: 12:31

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	7.9	Color:	Clear
	ORP (mV):	-32	Odor:	None

pH: 6.39 Temperature (°C): 15.15 DO (mg/L): 3.92 Specific Conductivity (mS/cm): 0.278

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: SW AMBIENT TEMP (°F): 85

SHIPPED VIA: Lab PU/FedEx

SHIPPED TO: Multiple Labs

SAMPLER: EC Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	3	4C	8330	Explo
1L/Amber	6	4C	353.2/8330	Propellants
250ml/Poly	3	4C	6860	Perchlorate, filtered
1L/Amber	6	4C	8270	SVOC
500ml/Poly	3	HNO3	6010/6020/7470	Metals, filtered

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 3 DATE: 7/20/2015 START TIME: 12:47

WELL ID: LL3mw-238

WELL DEPTH: 23.37 INITIAL WATER LEVEL: 14.86 TOTAL PURGED (L) 16

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 13 - 23

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 18

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,TOP OF INTAKE - 18.58

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
12:50	14.75	0.1	0	0	0	0	0	0	0
12:55	15.22	0.3	0.5	16.37	0.326	6.09	6.77	63.7	212
13:00	15.45	0.2	1	16.31	0.31	5.41	6.72	62.1	214
13:05	15.66	0.2	1	16.06	0.305	4.83	6.69	56.2	214
13:10	15.88	0.2	1	15.81	0.304	4.43	6.66	46.9	222
13:15	16.04	0.2	1	15.75	0.305	4.19	6.67	44.5	213
13:20	16.22	0.1	0.5	15.71	0.309	4.12	6.65	38.4	214
13:25	16.34	0.1	0.5	15.74	0.31	4.1	6.67	38.1	211
13:30	16.47	0.1	0.5	15.81	0.311	4.06	6.69	41.1	213
13:35	16.62	0.1	0.5	15.78	0.311	4.08	6.69	61	213
13:40	16.72	0.1	0.5	15.79	0.311	4.12	6.7	76.1	213
13:45	16.81	0.1	0.5	15.83	0.311	4.1	6.71	76.8	215
13:50	16.92	0.1	0.5	15.78	0.31	4.09	6.7	70	212
13:55	16.96	0.1	0.5	15.86	0.309	4.08	6.72	59.9	213
14:00	17.02	0.1	0.5	15.81	0.309	4.05	6.71	55.3	212
14:05	17.08	0.1	0.5	15.71	0.309	4.09	6.71	54.2	214
14:10	17.15	0.1	0.5	15.75	0.307	4.12	6.73	47.9	213
14:15	17.22	0.1	0.5	15.56	0.306	4.19	6.73	45.9	214
14:20	17.28	0.1	0.5	15.53	0.306	4.26	6.74	46.1	214
14:25	17.32	0.1	0.5	15.5	0.305	4.32	6.73	46.1	214
14:30	17.40	0.1	0.5	15.64	0.305	4.35	6.74	43	214
14:35	17.43	0.1	0.5	15.55	0.305	4.43	6.74	40.9	214
14:40	17.48	0.1	0.5	15.53	0.305	4.56	6.73	38.3	216
14:45	17.55	0.2	1	15.58	0.305	4.61	6.74	36.6	215

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: SAS

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 3 DATE: 7/20/2015 START TIME: 12:47

WELL ID: LL3mw-238

WELL DEPTH: 23.37 INITIAL WATER LEVEL: 14.86 TOTAL PURGED (L) 16

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 13 - 23

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 18

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,TOP OF INTAKE - 18.58

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
14:50	17.57	0.2	1	16.04	0.302	4.56	6.74	40.4	217
14:55	17.58	0.2	1	16.22	0.301	4.63	6.74	41.3	217

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: SAS

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 3** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL3mw-238 SampleID: FWGLL3mw-238C-0592-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/20/2015 TIME: 12:47

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	41.3	Color:	Clear
	ORP (mV):	217	Odor:	None

pH: 6.74 Temperature (°C): 16.22 DO (mg/L): 4.63 Specific Conductivity (mS/cm): 0.301

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 85

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: SAS Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	8081	Pest

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 3 DATE: 7/20/2015 START TIME: 16:05

WELL ID: LL3mw-241

WELL DEPTH: 25.57 INITIAL WATER LEVEL: 8.18 TOTAL PURGED (L) 6.4

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 15 - 25

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 20.5

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,TOP OF INTAKE - 20.60

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
16:07	7.97	0.3	0	0	0	0	0	0	0
16:09	8.28	0.2	0.4	17.14	0.154	5.27	6.47	4.8	199
16:14	8.40	0.2	1	15.64	0.145	4.61	6.26	0.1	204
16:19	8.58	0.2	1	15.21	0.144	4.73	6.25	0	207
16:24	8.63	0.2	1	14.96	0.144	4.58	6.18	0	217
16:29	8.62	0.2	1	14.94	0.144	4.43	6.18	0	213
16:34	8.62	0.2	1	14.52	0.144	4.3	6.22	0	212
16:39	8.63	0.2	1	14.56	0.144	4.17	6.22	0	212

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: SAS

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 3** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL3mw-241 SampleID: FWGLL3mw-241C-0593-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/20/2015 TIME: 16:09

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0	Color:	Clear
	ORP (mV):	212	Odor:	None

pH: 6.22 Temperature (°C): 14.56 DO (mg/L): 4.17 Specific Conductivity (mS/cm): 0.144

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 85

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: SAS Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	8081	Pest
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 3 DATE: 7/21/2015 START TIME: 9:05

WELL ID: LL3mw-244

WELL DEPTH: INITIAL WATER LEVEL: 9.15 TOTAL PURGED (L) 12.7

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 37 - 47

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 41.5

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,dumped flothru after 0957, condensation on inside flothru wiped off, NTU flashing 0 swithched to U52 after 1007

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
9:27	9.15	0.3	0	0	0	0	0	0	0
9:32	9.15	0.3	1.2	12.46	0.214	9.23	5.82	0	204
9:37	9.23	0.3	1.5	11.35	0.207	11.08	5.4	28.1	216
9:42	9.22	0.3	1.5	11.35	0.203	10.91	5.21	53.8	225
9:47	9.30	0.3	1.5	11.38	0.201	10.35	5.04	83.6	231
9:52	9.32	0.2	1	12.24	0.209	9.53	5	98.6	230
9:57	9.34	0.2	1	12.19	0.211	9.52	5.01	100	229
10:02	9.35	0.2	1	12.4	0.15	6.61	5	0	230
10:07	9.35	0.2	1	12.37	0.134	4.41	5.89	0	201
10:12	9.35	0.2	1	12.11	0.138	3.48	5.9	0	205
10:17	9.34	0.2	1	12.17	0.139	3.3	5.82	0	204
10:22	9.33	0.2	1	12.21	0.139	3.21	5.81	0	207

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: AD

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 3** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL3mw-244 SampleID: FWGLL3mw-244-0594-GW/GF Dup ID: FWGLL3mw-DUP3-0619-GW/GF

SplitID: FWGLL3mw-244-0614s-GW/GF RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/21/2015 TIME: 10:26

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0	Color:	Clear
	ORP (mV):	209	Odor:	None

pH: 5.82 Temperature (°C): 12.2 DO (mg/L): 3.18 Specific Conductivity (mS/cm): 0.139

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: NW AMBIENT TEMP (°F): 80

SHIPPED VIA: Lab PU/FedEx

SHIPPED TO: Multiple Labs

SAMPLER: AD Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	6	4C	8270	SVOC
250ml/Poly	3	buffered,4C	7196A	Hex. Chromium, filtered
1L/Amber	5	4C	8081	Pest
1L/Amber	6	4C	8330	Explo
1L/Amber	6	4C	353.2/8330	Propellants
500ml/Poly	3	HNO3	6010/6020/7470	Metals, filtered

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 3 DATE: 7/21/2015 START TIME: 9:10

WELL ID: LL3mw-246

WELL DEPTH: INITIAL WATER LEVEL: 18.04 TOTAL PURGED (L) 8

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 35.5 - 45.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 40.5

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
9:14	18.05	0.2	0	0	0	0	0	0	0
9:19	18.06	0.2	1	13.58	0.141	6.35	5.77	0	179
9:24	18.08	0.2	1	13.05	0.14	5.68	5.8	0	180
9:29	18.09	0.2	1	12.69	0.137	4.96	5.86	0	186
9:34	18.09	0.2	1	12.19	0.134	4.69	5.84	0	189
9:39	18.09	0.2	1	12.68	0.133	4.43	5.81	0	196
9:44	18.09	0.2	1	12.84	0.135	4.73	5.87	0	198
9:49	18.09	0.2	1	13.03	0.133	4.63	5.89	0	199
9:54	18.09	0.2	1	12.98	0.133	4.66	5.87	0	200

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 3** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL3mw-246 SampleID: FWGLL3mw-246-0595-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: Y

GRAB: **Y** COMPOSITE: **N** DATE: 7/21/2015 TIME: 10:01

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0	Color:	Clear
	ORP (mV):	199	Odor:	None

pH: 5.89 Temperature (°C): 12.99 DO (mg/L): 4.64 Specific Conductivity (mS/cm): 0.133

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: S AMBIENT TEMP (°F): 80

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: EC Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
500ml/Poly	3	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	6	4C	8270	SVOC
250ml/Poly	3	4C	6860	Perchlorate, filtered
1L/Amber	1	4C	8330	Explo

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 7 DATE: 7/23/2015 START TIME: 11:42

WELL ID: LL7mw-001

WELL DEPTH: 33.04 INITIAL WATER LEVEL: 18.44 TOTAL PURGED (L) 14.7

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 19.5 - 29.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 28.5

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,TOP OF INTAKE - 28.85

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
11:45	18.41	0.15	0	0	0	0	0	0	0
11:48	18.51	0.15	0.45	19.51	0.333	12.6	6.4	78.1	90
11:53	18.50	0.15	0.75	19.59	0.34	12.65	6.08	63	97
11:58	18.50	0.15	0.75	19.27	0.338	11.75	5.87	79.3	110
12:03	18.51	0.15	0.75	19.61	0.336	12.04	5.8	104	128
12:08	18.51	0.15	0.75	19.37	0.334	11.8	5.64	104	134
12:13	18.51	0.15	0.75	19.4	0.332	12.93	5.3	107	156
12:18	18.53	0.15	0.75	19.07	0.33	11.51	5.33	107	186
12:23	18.50	0.15	0.75	23.11	0.329	9.2	5.59	112	172
12:28	18.50	0.15	0.75	23.35	0.328	9.03	5.61	109	174
12:33	18.50	0.15	0.75	23.98	0.327	8.71	5.61	139	188
12:38	18.50	0.1	0.5	24.27	0.311	8.53	5.66	152	193
12:43	18.50	0.1	0.5	24.43	0.31	8.45	5.76	190	190
12:48	18.50	0.1	0.5	25.09	0.308	8.18	5.81	145	187
12:53	18.50	0.1	0.5	25.94	0.3	10.53	5.94	158	190
12:58	18.51	0.1	0.5	25.99	0.301	8.33	5.86	160	188
13:03	18.50	0.1	0.5	26.24	0.308	7.87	5.97	151	187
13:08	18.50	0.1	0.5	26.39	0.316	7.75	6.02	146	178
13:13	18.50	0.1	0.5	26.4	0.31	7.64	6.05	138	171
13:18	18.50	0.1	0.5	26.52	0.308	7.55	6.12	143	166
13:23	18.48	0.1	0.5	26.74	0.302	7.48	6.15	151	169
13:28	18.48	0.1	0.5	27	0.301	7.52	6.17	153	166
13:33	18.50	0.1	0.5	26.92	0.301	7.46	6.21	139	161
13:38	18.50	0.1	0.5	27	0.298	7.36	6.17	132	159

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: SAS

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 7 DATE: 7/23/2015 START TIME: 11:42

WELL ID: LL7mw-001

WELL DEPTH: 33.04 INITIAL WATER LEVEL: 18.44 TOTAL PURGED (L) 14.7

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 19.5 - 29.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 28.5

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,TOP OF INTAKE - 28.85

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
13:43	18.50	0.1	0.5	27.23	0.302	7.23	6.19	144	162
13:48	18.50	0.1	0.5	27.26	0.298	7.12	6.25	168	163

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: SAS

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 7** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL7mw-001 SampleID: FWGLL7mw-001-0596-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/23/2015 TIME: 13:54

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	168	Color:	Clear
	ORP (mV):	163	Odor:	None

pH: 6.25 Temperature (°C): 27.26 DO (mg/L): 7.12 Specific Conductivity (mS/cm): 0.327

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 71

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: SAS Cmt: Film and orange on water

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
40ml/Vial	3	HCl	8260	VOC
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	1	4C	8330	Explo

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 10 DATE: 7/23/2015 START TIME: 13:55

WELL ID: LL10mw-003

WELL DEPTH: INITIAL WATER LEVEL: 17.64 TOTAL PURGED (L) 7

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 18.5 - 28.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 23.5

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
14:07	17.71	0.2	0	0	0	0	0	0	0
14:12	17.73	0.2	1	17.67	0.609	6.19	6.31	0	144
14:17	17.73	0.2	1	16.39	0.612	5.61	6.33	0	141
14:22	17.73	0.2	1	15.26	0.605	5.31	6.34	0	138
14:27	17.73	0.2	1	14.65	0.597	5.2	6.35	0	134
14:32	17.73	0.2	1	14.83	0.588	5.09	6.36	0	130
14:37	17.73	0.2	1	14.64	0.585	5.12	6.39	0	129
14:42	17.73	0.2	1	14.59	0.584	5.15	6.39	0	128

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 10** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL10mw-003 SampleID: FWGLL10mw-003C-0597-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/23/2015 TIME: 14:51

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0	Color:	Clear
	ORP (mV):	127	Odor:	None

pH: 6.4 Temperature (°C): 14.59 DO (mg/L): 5.13 Specific Conductivity (mS/cm): 0.583

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: S AMBIENT TEMP (°F): 75

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: EC Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	8270	SVOC
40ml/Vial	3	HCl	8260	VOC

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 12 DATE: 7/21/2015 START TIME: 15:05

WELL ID: LL12mw-185

WELL DEPTH: INITIAL WATER LEVEL: 5.17 TOTAL PURGED (L) 4.25

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 13 - 23

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 18

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
15:07	5.20	0.15	0	0	0	0	0	0	0
15:12	5.80	0.15	0.75	18.6	2.84	6.96	6.45	0	129
15:17	6.02	0.1	0.5	18.09	2.87	4.84	6.43	0	128
15:22	6.52	0.1	0.5	17.96	2.89	2.77	6.43	0	130
15:27	7.00	0.1	0.5	18.33	2.89	2.53	6.47	0	131
15:32	7.41	0.1	0.5	18.4	2.9	2.6	6.48	0	132
15:37	7.79	0.1	0.5	18.48	2.89	2.69	6.5	0	133
15:42	8.27	0.1	0.5	18.58	2.88	2.84	6.52	0	135
15:47	8.42	0.1	0.5	18.62	2.87	2.87	6.52	0	135

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 12** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL12mw-185 SampleID: FWGLL12mw-185C-0598-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: Y

GRAB: **Y** COMPOSITE: **N** DATE: 7/21/2015 TIME: 15:55

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0	Color:	Clear
	ORP (mV):	134	Odor:	None

pH: 6.53 Temperature (°C): 18.61 DO (mg/L): 2.86 Specific Conductivity (mS/cm): 2.87

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: SW AMBIENT TEMP (°F): 85

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: EC Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
250ml/Poly	3	H2SO4	353.2	NO3/NO2
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 12 DATE: 7/21/2015 START TIME: 15:57

WELL ID: LL12mw-187

WELL DEPTH: INITIAL WATER LEVEL: 7.81 TOTAL PURGED (L) 8.3

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 19.5 - 29.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 24.75

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,stopped due to time

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
15:58	7.81	0.2	0	0	0	0	0	0	0
16:03	7.84	0.2	1	12.68	7.45	5.86	5.97	73.6	124
16:08	7.83	0.2	1	12.69	7.39	5.63	6.02	51.3	132
16:13	7.85	0.2	1	12.68	7.47	5.7	6	42	138
16:18	7.97	0.2	1	12.84	7.63	5.33	6.02	12.7	141
16:23	8.30	0.2	1	13.16	7.64	4.82	6	38.8	147
16:28	8.55	0.1	0.5	13.56	7.62	4.52	6	39.6	149
16:33	8.55	0.1	0.5	14.45	7.52	4.28	6	4.7	149
16:38	7.91	0.1	0.5	15.85	7.44	3.99	6	52.4	150
16:43	7.87	0.1	0.5	15.34	7.59	4.21	6.02	16	153
16:48	7.89	0.1	0.5	15.68	7.79	4.45	6.01	0	153
16:53	7.88	0.1	0.5	15.56	7.78	4.33	6	0	155
16:56	7.89	0.1	0.3	15.63	7.76	4.07	6	0	156

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: AD

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 12 DATE: 7/22/2015 START TIME: 11:55

WELL ID: LL12mw-187

WELL DEPTH: INITIAL WATER LEVEL: 7.75 TOTAL PURGED (L) 5

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 19.5 - 29.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 24.75

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
11:55	7.75	0.125	0	0	0	0		0	0
12:00	7.80	0.125	0.625	15.42	9.45	3.24	5.9	0	166
12:05	7.90	0.125	0.625	15.08	9.57	2.61	5.92	3.4	166
12:10	7.95	0.125	0.625	14.73	9.77	1.91	5.93	15.9	166
12:15	7.95	0.125	0.625	15.4	9.76	1.63	5.94	14.6	167
12:20	7.93	0.125	0.625	15.38	9.82	1.52	5.94	12.9	169
12:25	7.94	0.125	0.625	15.02	9.8	1.42	5.95	5.4	172
12:30	7.94	0.125	0.625	14.84	9.87	1.33	5.95	1.2	174
12:35	7.94	0.125	0.625	14.91	9.91	1.22	5.95	0	175

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: AD

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 12** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL12mw-187 SampleID: FWGLL12mw-0187C-0599-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/22/2015 TIME: 12:38

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0	Color:	Clear
	ORP (mV):	175	Odor:	None

pH: 5.95 Temperature (°C): 14.92 DO (mg/L): 1.22 Specific Conductivity (mS/cm): 9.9

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: NW AMBIENT TEMP (°F): 80

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: AD Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	8270	SVOC
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants
250ml/Poly	1	H2SO4	353.2	NO3/NO2

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 12 DATE: 7/21/2015 START TIME: 13:15

WELL ID: LL12mw-242

WELL DEPTH: INITIAL WATER LEVEL: 6.89 TOTAL PURGED (L) 24.5

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 18.3 - 28.3

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 23.5

PUMP READINGS: Throttle (ft.) Recharge: 20 Discharge: 10

COMMENTS Color: Clear, Odor:None,changed to 2 CPM after 1342

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
13:17	6.82	0.2	0	0	0	0	0	0	0
13:22	6.82	0.2	1	14.61	0.751	9.18	6.3	295	-96
13:27	6.90	0.2	1	13.27	0.723	9.21	6.24	250	-68
13:32	6.95	0.2	1	13.18	0.715	8.83	6.26	226	-59
13:37	7.02	0.2	1	13.04	0.729	9.33	6.34	112	-56
13:42	7.24	0.2	1	12.99	0.722	8.55	6.44	106	-55
13:47	7.29	0.2	1	13.48	0.711	8.17	6.52	170	-55
13:52	7.41	0.2	1	13.08	0.717	8.68	6.66	164	-60
13:57	7.51	0.2	1	13.21	0.714	8.47	6.75	166	-63
14:02	7.55	0.2	1	13.25	0.716	8.33	6.76	172	-62
14:07	7.45	0.2	1	12.96	0.709	8.34	6.78	189	-63
14:12	7.54	0.2	1	12.86	0.717	8.4	6.79	221	-63
14:17	7.59	0.2	1	13.31	0.71	8.22	6.8	240	-64
14:22	7.50	0.2	1	12.94	0.716	8.27	6.8	244	-64
14:27	7.54	0.2	1	13.3	0.713	7.94	6.83	266	-66
14:32	7.55	0.2	1	12.76	0.714	7.97	6.87	280	-68
14:37	7.57	0.2	1	13.04	0.71	7.71	6.93	275	-71
14:42	7.63	0.2	1	12.99	0.712	7.68	6.94	270	-71
14:47	7.65	0.2	1	13.05	0.712	7.57	6.95	270	-72
14:52	7.69	0.2	1	13.08	0.706	7.59	6.95	292	-73
14:57	7.69	0.2	1	12.87	0.706	7.66	6.95	290	-72
15:02	7.65	0.2	1	12.94	0.701	7.48	6.96	323	-73
15:07	7.74	0.2	1	13.14	0.696	7.48	6.95	328	-73
15:12	7.69	0.2	1	13.11	0.694	7.44	6.96	369	-73

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: AD

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 12 DATE: 7/21/2015 START TIME: 13:15

WELL ID: LL12mw-242

WELL DEPTH: INITIAL WATER LEVEL: 6.89 TOTAL PURGED (L) 24.5

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 18.3 - 28.3

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 23.5

PUMP READINGS: Throttle (ft.) Recharge: 20 Discharge: 10

COMMENTS Color: Clear, Odor:None,changed to 2 CPM after 1342

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
15:17	7.72	0.2	1	13.13	0.688	7.54	6.96	386	-74

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: AD

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 12** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL12mw-242 SampleID: FWGLL12mw-242C-600-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/21/2015 TIME: 15:19

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	407	Color:	Clear
	ORP (mV):	-73	Odor:	None

pH: 6.96 Temperature (°C): 13.07 DO (mg/L): 7.62 Specific Conductivity (mS/cm): 0.69

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: NW AMBIENT TEMP (°F): 8

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: AD Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	8081	Pest
250ml/Poly	1	H2SO4	353.2	NO3/NO2

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 12 DATE: 7/22/2015 START TIME: 11:15

WELL ID: LL12mw-245

WELL DEPTH: INITIAL WATER LEVEL: 5.56 TOTAL PURGED (L) 5

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 20 - 30

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 25

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
11:24	5.91	0.1	0	0	0	0	0	0	0
11:29	6.42	0.1	0.5	20.73	1.02	3.25	6.57	19.7	-78
11:34	6.72	0.1	0.5	20.39	1.03	2.62	6.56	17.4	-83
11:39	6.93	0.1	0.5	19.92	1.04	2.04	6.51	16.4	-83
11:44	7.47	0.1	0.5	19.28	1.06	1.68	6.51	17.9	-87
11:49	8.21	0.1	0.5	18.7	1.06	1.46	6.48	20	-86
11:54	8.68	0.1	0.5	18.39	1.07	1.39	6.52	18.4	-88
11:59	9.19	0.1	0.5	18.32	1.07	1.29	6.51	13.5	-90
12:04	9.54	0.1	0.5	18.37	1.06	1.27	6.5	10.3	-88
12:09	9.82	0.1	0.5	18.44	1.06	1.23	6.49	7.5	-87
12:14	10.14	0.1	0.5	18.43	1.06	1.18	6.5	7.3	-87

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 12** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL12mw-245 SampleID: FWGLL12mw-245C-0601-GW/GF Dup ID: FWGLL12mw-DUP4-0620-GW/GF

SplitID: FWGLL12mw-245C-0615s-GW/GF RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/22/2015 TIME: 12:21

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	7.1	Color:	Clear
	ORP (mV):	-85	Odor:	None

pH: 6.51 Temperature (°C): 18.43 DO (mg/L): 1.18 Specific Conductivity (mS/cm): 1.05

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 75

SHIPPED VIA: Lab PU/FedEx

SHIPPED TO: Multiple Labs

SAMPLER: EC Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
500ml/Poly	3	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	6	4C	8270	SVOC
250ml/Poly	3	H2SO4	353.2	NO3/NO2
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	1	4C	8330	Explo

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 12 DATE: 7/21/2015 START TIME: 11:55

WELL ID: LL12mw-247

WELL DEPTH: INITIAL WATER LEVEL: 4.3 TOTAL PURGED (L) 11.3

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 12.5 - 22.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 17.5

PUMP READINGS: Throttle (ft.) Recharge: 12 Discharge: 3

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
11:58	3.86	0.15	0	0	0	0	0	0	0
12:04	4.31	0.15	0.9	21.81	0.713	4.71	6.57	313	-43
12:09	4.20	0.1	0.5	20.9	0.701	2.99	6.9	270	-81
12:14	4.56	0.1	0.5	18.65	0.723	2.93	6.76	207	-89
12:19	4.80	0.1	0.5	18.79	0.726	2.24	6.73	185	-85
12:24	4.98	0.1	0.5	18.92	0.727	2.38	6.7	185	-79
12:29	5.12	0.1	0.4	17.35	0.726	1.99	6.71	130	-76
12:34	5.36	0.1	0.5	17.11	0.724	1.8	6.73	110	-76
12:39	5.42	0.1	0.5	17.1	0.728	1.72	6.72	102	-74
12:44	5.50	0.1	0.5	17.05	0.729	1.64	6.73	86.9	-75
12:49	5.57	0.1	0.5	17.04	0.732	1.55	6.72	79.1	-73
12:54	5.63	0.1	0.5	17.65	0.731	1.4	6.73	77.3	-76
12:59	5.68	0.1	0.5	17.71	0.731	1.7	6.75	62.6	-77
13:04	5.71	0.1	0.5	17.75	0.731	1.36	6.75	45.9	-77
13:09	5.73	0.1	0.5	17.84	0.73	1.23	6.74	42.2	-77
13:14	5.75	0.1	0.5	17.9	0.728	1.2	6.73	38.5	-75
13:19	5.77	0.1	0.5	17.21	0.725	1.19	6.71	32.2	-74
13:24	5.78	0.1	0.5	17.61	0.728	1.12	6.72	26.2	-74
13:29	5.79	0.1	0.5	17.33	0.723	1.17	6.76	21.8	-75
13:34	5.80	0.1	0.5	17.12	0.721	1.08	6.74	19.2	-70
13:39	5.80	0.1	0.5	17.59	0.72	1.07	6.68	18.7	-66
13:44	5.81	0.1	0.5	17.88	0.721	1.22	6.67	14.1	-62
13:49	5.81	0.1	0.5	18	0.722	1.14	6.69	9.7	-61

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 12** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL12mw-247 SampleID: FWGLL12mw-247-0602-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/21/2015 TIME: 13:52

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	8	Color:	Clear
	ORP (mV):	-62	Odor:	None

pH: 6.7 Temperature (°C): 18.05 DO (mg/L): 1.1 Specific Conductivity (mS/cm): 0.718

GENERAL INFORMATION

SUN/OVERCAST Overcast PERCIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 80

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
250ml/Poly	1	buffered,4C	7196A	Hex. Chromium, filtered
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	1	4C	8330	Explo
250ml/Poly	1	H2SO4	353.2	NO3/NO2

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 12 DATE: 7/22/2015 START TIME: 13:55

WELL ID: LL12mw-247

WELL DEPTH: INITIAL WATER LEVEL: 3.95 TOTAL PURGED (L) 12.6

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 12.5 - 22.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 17.5

PUMP READINGS: Throttle (ft.) Recharge: 20 Discharge: 10

COMMENTS Color: Clear, Odor:None,Repurge for No2No3 recollection.

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
14:01	4.00	0.1	0	0	0	0	0	0	0
14:05	4.20	0.1	0.4	18.86	0.962	2.52	6.66	491	-16
14:45	4.44	0.1	4	21.77	0.815	1.54	6.82	515	-12
15:02	5.15	0.1	1.7	19.39	0.858	0.88	6.45	157	-13
15:07	5.35	0.1	0.5	19.02	0.851	0.86	6.48	161	-18
15:12	5.35	0.1	0.5	19.12	0.856	1.17	6.45	135	-21
15:17	5.42	0.1	0.5	18.69	0.858	0.85	6.44	115	-26
15:22	5.45	0.1	0.5	19.93	0.857	0.75	6.42	76.5	-29
15:27	5.39	0.1	0.5	21.21	0.854	0.73	6.46	54	-32
15:32	5.35	0.1	0.5	21.91	0.859	0.69	6.48	40.8	-38
15:37	5.35	0.1	0.5	22.23	0.862	0.7	6.45	43.2	-38
15:42	5.35	0.1	0.5	22.44	0.857	0.66	6.51	36.9	-39
15:47	5.34	0.1	0.5	22.57	0.865	0.7	6.52	35.5	-39
15:52	5.33	0.1	0.5	22.56	0.851	0.74	6.49	42.2	-38
15:57	5.31	0.1	0.5	22.34	0.825	0.79	6.53	31.4	-34
16:02	5.31	0.1	0.5	22.14	0.813	0.82	6.5	46.7	-34

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: AD

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 12** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL12mw-247 SampleID: FWGLL12mw-247-0602-GW/GF Dup ID:

SplitID: RinseID: FWGEQUIPRinse3-0624-GW

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/22/2015 TIME: 16:06

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	67.3	Color:	Clear
	ORP (mV):	-32	Odor:	None

pH: 6.49 Temperature (°C): 22.12 DO (mg/L): 0.816 Specific Conductivity (mS/cm): 0.817

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: NW AMBIENT TEMP (°F): 80

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: AD Cmt: Resample No3/No2 only (original parent collection on 7-21-15)

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
250ml/Poly	1	H2SO4	353.2	NO3/NO2

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: NACA TEST AREA DATE: 7/20/2015 START TIME: 13:58

WELL ID: NTAmw-119

WELL DEPTH: INITIAL WATER LEVEL: 11.34 TOTAL PURGED (L) 23.7

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 94 - 104

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 99.5

PUMP READINGS: Throttle (ft.) Recharge: 25 Discharge: 35

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
14:00	11.35	0.15	0	0	0	0	0	0	0
14:05	11.34	0.18	0.9	15.31	0.484	6.3	6.62	56	-161
14:10	11.36	0.18	0.9	13.25	0.482	3.25	7.07	175	-168
14:15	11.36	0.18	0.9	12.8	0.475	1.9	6.95	280	-133
14:20	11.36	0.2	1	12.68	0.475	1.78	6.62	320	-141
14:25	11.36	0.2	1	12.61	0.475	1.44	6.78	213	-128
14:30	11.37	0.2	1	12.2	0.476	1.36	6.9	190	-128
14:35	11.37	0.2	1	12.47	0.476	1.28	7.04	161	-130
14:40	11.37	0.2	1	12.43	0.474	1.13	7.06	110	-139
14:45	11.37	0.2	1	12.59	0.473	1.09	7.07	101	-127
14:50	11.37	0.2	1	12.61	0.473	1.01	6.99	94	-139
14:55	11.37	0.2	1	12.8	0.474	0.99	7.01	92.1	-141
15:00	11.37	0.2	1	12.99	0.474	0.96	6.98	89.1	-141
15:05	11.37	0.2	1	13.08	0.474	0.9	7.06	69.9	-138
15:10	11.37	0.2	1	13.35	0.474	0.88	6.96	64.1	-142
15:15	11.36	0.2	1	13.09	0.476	0.88	6.89	62.3	-117
15:20	11.36	0.2	1	13.69	0.476	0.84	7.02	47.4	-128
15:25	11.36	0.2	1	14.51	0.475	0.74	7.06	44.9	-140
15:30	11.36	0.2	1	15	0.476	0.73	7.08	44.1	-142
15:35	11.36	0.2	1	15.77	0.474	0.66	7.12	43.6	-146
15:40	11.36	0.2	1	16.83	0.472	0.64	7.11	41.2	-146
15:45	11.36	0.2	1	17.1	0.468	0.61	7.13	39.7	-148
15:50	11.36	0.2	1	17.21	0.47	0.58	7.13	27.1	-150
15:55	11.36	0.2	1	17.34	0.472	0.57	7.13	23.4	-150

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: CAL

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: NACA TEST AREA DATE: 7/20/2015 START TIME: 13:58

WELL ID: NTAmw-119

WELL DEPTH: INITIAL WATER LEVEL: 11.34 TOTAL PURGED (L) 23.7

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 94 - 104

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 99.5

PUMP READINGS: Throttle (ft.) Recharge: 25 Discharge: 35

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
16:00	11.36	0.2	1	17.57	0.472	0.57	7.13	24.4	-150

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **NACA TEST AREA** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: NTAmw-119 SampleID: FWGNTAmw-119-0603-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/20/2015 TIME: 16:02

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	22.9	Color:	Clear
	ORP (mV):	-150	Odor:	None

pH: 7.13 Temperature (°C): 17.67 DO (mg/L): 0.57 Specific Conductivity (mS/cm): 0.471

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: AMBIENT TEMP (°F): 80

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
40ml/Vial	3	HCl	8260	VOC
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: RAMSDELL QUARRY LANDFILL DATE: 7/22/2015 START TIME: 9:39

WELL ID: RQLmw-007

WELL DEPTH: 18.62 INITIAL WATER LEVEL: 4.32 TOTAL PURGED (L) 6.4

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 8 - 18

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 13

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,TOP OF INTAKE - 12.95

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
9:39	4.45	0.3	0	0	0	0	0	0	0
9:42	4.62	0.2	0.4	19.44	0.746	4.75	6.63	2.1	-133
9:47	4.62	0.2	1	18.94	0.763	4.13	6.71	1.3	-127
9:52	4.62	0.2	1	18.67	0.773	4.18	6.7	0.9	-117
9:57	4.63	0.2	1	18.59	0.785	4.29	6.73	0.7	-107
10:02	4.58	0.2	1	18.67	0.792	4.31	6.71	0.3	-102
10:07	4.60	0.2	1	18.49	0.807	4.35	6.75	0.6	-95
10:12	4.61	0.2	1	18.48	0.807	4.34	6.75	0.6	-95

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: SAS

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **RAMSDELL QUARRY** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: RQLmw-007 SampleID: FWGRQLmw-007C-0604-GW/GF Dup ID: FWGRQLmw-DUP5-O621-GW/GF

SplitID: FWGRQLmw-007C-0616s-GW/GF RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/22/2015 TIME: 10:14

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0.6	Color:	Clear
	ORP (mV):	-95	Odor:	None

pH: 6.75 Temperature (°C): 18.49 DO (mg/L): 4.35 Specific Conductivity (mS/cm): 0.807

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 72

SHIPPED VIA: Lab PU/FedEx

SHIPPED TO: Testamerica

SAMPLER: SAS Cmt: FILM ON THE PURGE WATER

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
250ml/Poly	1	NaOH	9012	Cyanide
40ml/Vial	3	HCl	8260	VOC
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	8082	PCB
1L/Amber	2	4C	8081	Pest
1L/Amber	2	4C	8270	SVOC

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: RAMSDELL QUARRY LANDFILL DATE: 7/22/2015 START TIME: 12:27

WELL ID: RQLmw-008

WELL DEPTH: 18.68 INITIAL WATER LEVEL: 4.5 TOTAL PURGED (L) 23.4

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 8.5 - 18.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 13.5

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,TOP OF INTAKE - 13.52

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
12:30	4.51	0.2	0	0	0	0	0	0	0
12:32	4.56	0.2	0.4	22.01	0.594	4.26	6.42	3	-98
12:37	4.57	0.2	1	21.22	0.587	4.1	6.47	2.6	-92
12:42	4.52	0.2	1	20.54	0.572	4.29	6.5	9.1	-86
12:47	4.54	0.2	1	20.02	0.559	4.47	6.51	15.3	-87
12:52	4.60	0.2	1	19.97	0.565	4.55	6.5	16.1	-89
12:57	4.58	0.2	1	20.32	0.565	4.55	6.49	13	-91
13:02	4.61	0.2	1	20.94	0.559	4.39	6.49	9.3	-91
13:07	4.56	0.2	1	21.11	0.546	4.27	6.5	10.4	-91
13:12	4.58	0.2	1	20.83	0.553	4.31	6.51	11.4	-91
13:17	4.61	0.2	1	20.88	0.562	4.34	6.48	12.8	-93
13:22	4.61	0.2	1	21.28	0.558	4.27	6.48	15	-95
13:32	4.61	0.2	1	21.22	0.565	4.46	6.5	17.7	-95
13:37	4.60	0.2	1	20.57	0.568	4.38	6.51	22	-94
13:42	4.61	0.2	1	21.03	0.571	4.23	6.48	27.6	-94
13:47	4.61	0.2	1	21.72	0.56	4.06	6.49	31.9	-94
13:52	4.55	0.2	1	20.94	0.562	4.2	6.51	36.7	-94
13:57	4.60	0.2	1	21.71	0.557	4	6.48	42.9	-95
14:02	4.60	0.2	1	22.07	0.548	3.9	6.49	49.1	-95
14:07	4.57	0.2	1	22.06	0.545	3.89	6.5	52.6	-95
14:12	4.55	0.2	1	22.23	0.545	3.86	6.48	57.1	-94
14:17	4.54	0.2	1	19.14	0.602	4.34	6.49	33.5	-95
14:22	4.58	0.2	1	19.21	0.594	4.38	6.51	36.8	-95
14:27	4.58	0.2	1	19.07	0.59	4.42	6.48	41.6	-96

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: SAS

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: RAMSDELL QUARRY LANDFILL DATE: 7/22/2015 START TIME: 12:27

WELL ID: RQLmw-008

WELL DEPTH: 18.68 INITIAL WATER LEVEL: 4.5 TOTAL PURGED (L) 23.4

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 8.5 - 18.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 13.5

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,TOP OF INTAKE - 13.52

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
14:32	4.58	0.2	1	19.55	0.588	4.24	6.49	46.6	-96

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: SAS

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **RAMSDELL QUARRY** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: RQLmw-008 SampleID: FWGRQLmw-008C-0606-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: Y

GRAB: **Y** COMPOSITE: **N** DATE: 7/22/2015 TIME: 14:38

FIELD READINGS / OBSERVATIONS

	Turb (NTU): 46.6	Color:	Clear
	ORP (mV): -96	Odor:	None

pH: 6.49 Temperature (°C): 19.55 DO (mg/L): 4.24 Specific Conductivity (mS/cm): 5.88

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 75

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: SAS Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	1	4C	8330	Explo
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	2	4C	8082	PCB
1L/Amber	2	4C	8081	Pest
1L/Amber	2	4C	8270	SVOC
40ml/Vial	3	HCl	8260	VOC
250ml/Poly	1	NaOH	9012	Cyanide

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: RAMSDELL QUARRY LANDFILL DATE: 7/22/2015 START TIME: 14:40

WELL ID: RQLmw-009

WELL DEPTH: INITIAL WATER LEVEL: 3.46 TOTAL PURGED (L) 10.15

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 8.4 - 18.4

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 13.5

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
14:48	3.46	0.15	0	0	0	0	0	0	0
14:53	3.61	0.15	0.75	22.46	0.243	7.34	6.12	2.2	-74
14:58	3.56	0.2	1	21.34	0.254	3.33	5.92	1.5	-69
15:03	3.61	0.2	1	20.62	0.247	2.88	5.97	1.9	-66
15:08	3.61	0.2	1	20.05	0.245	2.6	5.95	1.4	-68
15:13	3.62	0.2	1	20.24	0.246	2.38	5.89	0.7	-67
15:18	3.62	0.2	1	19.66	0.256	2.31	5.89	0.7	-67
15:23	3.62	0.2	1	19.49	0.262	2.16	5.89	0	-70
15:28	3.62	0.2	1	18.98	0.274	2.04	5.9	0	-72
15:31	3.62	0.2	0.6	18.94	0.278	1.92	5.88	0	-72
15:34	3.62	0.2	0.6	18.93	0.283	1.92	5.89	0	-78
15:37	3.62	0.2	0.6	18.93	0.284	1.84	5.89	0	-74
15:40	3.62	0.2	0.6	18.92	0.286	1.8	5.89	0	-74

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **RAMSDELL QUARRY** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: RQLmw-009 SampleID: FWGRQLmw-009C-0606-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/22/2015 TIME: 15:45

FIELD READINGS / OBSERVATIONS

	Turb (NTU): 0	Color:	Clear
	ORP (mV): -75	Odor:	None

pH: 5.89 Temperature (°C): 18.95 DO (mg/L): 1.79 Specific Conductivity (mS/cm): 0.287

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 75

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: EC Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8081	Pest
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	8082	PCB
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants
250ml/Poly	1	NaOH	9012	Cyanide
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
40ml/Vial	3	HCl	8260	VOC

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: RAMSDELL QUARRY LANDFILL DATE: 7/23/2015 START TIME: 15:30

WELL ID: RQLmw-011

WELL DEPTH: INITIAL WATER LEVEL: 19.7 TOTAL PURGED (L) 3.625

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 12.4 - 32.4

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 25.5

PUMP READINGS: Throttle (ft.) Recharge: 7 Discharge: 3

COMMENTS Color: , Odor:,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
15:32	19.75	0.2	0	0	0	0	0	0	0
15:37	19.85	0.125	0.625	16.95	0.239	15.08	3.31	0	416
15:42	19.90	0.1	0.5	15.8	0.244	6.17	3.18	0	462
15:47	19.90	0.1	0.5	15.65	0.244	6.09	3.17	0	464
15:52	19.91	0.1	0.5	15.38	0.246	5.65	3.13	0	473
15:57	19.90	0.1	0.5	15.47	0.245	5.31	3.13	0	475
16:02	19.91	0.1	0.5	15.26	0.246	5.14	3.12	0	477
16:07	19.93	0.1	0.5	14.98	0.248	5.34	3.13	0	471

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: AD

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: RAMSDELL QUARRY LANDFILL DATE: 7/23/2015 START TIME: 15:30

WELL ID: RQLmw-012

WELL DEPTH: INITIAL WATER LEVEL: 19.48 TOTAL PURGED (L) 7.9

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 19.8 - 29.8

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 28

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None, TOP OF INTAKE - 28.31, pH stable stop monitoring

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
15:31	19.51	0.2	0	0	0	0	0	0	0
15:36	19.50	0.1	0.5	20.36	0.25	12.68	5.52	107	106
15:41	19.52	0.1	0.5	19.31	0.37	13.01	5.46	111	105
15:46	19.51	0.1	0.5	18.72	0.545	12.47	5.36	113	104
15:51	19.51	0.1	0.5	18.14	0.42	12.19	5.38	114	103
15:56	19.51	0.1	0.5	17.85	0.33	11.74	5.32	114	108
16:01	19.51	0.1	0.5	17.73	0.202	13.64	5.35	101	105
16:06	19.52	0.1	0.5	17.66	0.114	11.77	5.35	113	111
16:11	19.52	0.1	0.5	17.53	0.084	11.52	5.4	109	111
16:16	19.54	0.1	0.5	17.28	0.001	11.56	5.44	84.2	109
16:21	19.53	0.1	0.5	17.94	0.001	11.36	5.52	110	102
16:26	19.53	0.1	0.5	17.43	0.001	11.41	5.54	112	103
16:31	19.53	0.1	0.5	17.48	0.001	11.59	5.53	111	103
16:36	19.53	0.1	0.5	17.65	0.001	11.46	5.56	111	104
16:41	19.53	0.1	0.5	17.61	0.001	11.41	5.57	109	107
16:46	19.53	0.1	0.5	17.6	0.001	11.4	5.57	108	106
16:50	19.53	0.1	0.4	17.6	0.001	11.4	5.57	108	106

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: SAS

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: RAMSDELL QUARRY LANDFILL DATE: 7/23/2015 START TIME: 15:50

WELL ID: RQLmw-013

WELL DEPTH: INITIAL WATER LEVEL: 23.02 TOTAL PURGED (L) 6.8

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 23.7 - 33.7

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 30

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
16:01	23.09	0.15	0	0	0	0	0	0	0
16:06	23.15	0.1	0.5	19.79	0.31	4.11	4.08	0	227
16:11	23.17	0.1	0.5	18.57	0.325	13.22	3.99	0	234
16:16	23.17	0.1	0.5	17.68	0.334	2.73	3.94	0	239
16:21	23.17	0.1	0.5	16.91	0.344	2.21	3.93	6.1	242
16:26	23.17	0.1	0.5	15.29	0.354	1.87	3.83	17	249
16:31	23.17	0.1	0.5	14.49	0.357	1.72	3.87	16.5	255
16:36	23.17	0.1	0.5	14.3	0.358	1.59	3.88	17.3	261
16:41	23.17	0.1	0.5	12.74	0.378	1.61	3.87	17.2	265
16:46	23.18	0.1	0.5	12.56	0.381	1.74	3.84	12.1	270
16:51	23.19	0.1	0.5	12.44	0.382	1.65	3.84	10.3	271
16:56	23.19	0.1	0.5	12.34	0.385	1.59	3.83	9.4	272
17:01	23.19	0.1	0.5	12.28	0.386	1.52	3.83	8.6	274
17:06	23.19	0.1	0.5	12.19	0.388	1.49	3.81	8.4	273
17:09	23.19	0.1	0.3	12.11	0.387	1.48	3.82	8.2	274

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: EC

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: SHARON CONGLOMERATE DATE: 7/21/2015 START TIME: 12:10

WELL ID: SCFmw-002

WELL DEPTH: INITIAL WATER LEVEL: 17.35 TOTAL PURGED (L) 4.96

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 140 - 150

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 145

PUMP READINGS: Throttle (ft.) Recharge: 25 Discharge: 35

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
12:46	17.34	0.25	0	0	0	0	0	0	0
12:51	17.58	0.16	0.8	25.16	0.529	4.4	7.4	0.5	-17
12:56	17.65	0.16	0.8	25.83	0.535	2.3	6.92	0	-65
13:01	17.70	0.16	0.8	21.79	0.567	1.8	6.77	0	-74
13:05	17.72	0.16	0.64	21.12	0.578	1.55	6.73	1	-76
13:09	17.73	0.16	0.64	20.47	0.595	1.44	6.69	0.5	-74
13:13	17.74	0.16	0.64	20.38	0.601	1.36	6.7	0	-76
13:17	17.74	0.16	0.64	20.77	0.599	1.29	6.69	0	-75

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **SHARON CONGLOM** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: SCFmw-002 SampleID: FWGSCFmw-002-0607-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/21/2015 TIME: 13:22

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0	Color:	Clear
	ORP (mV):	-75	Odor:	None

pH: 6.7 Temperature (°C): 20.37 DO (mg/L): 1.24 Specific Conductivity (mS/cm): 0.595

GENERAL INFORMATION

SUN/OVERCAST Overcast PERCIPITATION: N WIND DIRECTION: AMBIENT TEMP (°F): 80

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
250ml/Poly	1	buffered,4C	7196A	Hex. Chromium, filtered
500ml/Poly	3	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	6	4C	353.2/8330	Propellants
1L/Amber	3	4C	8330	Explo
1L/Amber	2	4C	8081	Pest
1L/Amber	6	4C	8270	SVOC

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: SHARON CONGLOMERATE DATE: 7/21/2015 START TIME: 10:00

WELL ID: SCFmw-004

WELL DEPTH: INITIAL WATER LEVEL: -0.2 TOTAL PURGED (L) 7.75

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 102.5 - 112.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 107.5

PUMP READINGS: Throttle (ft.) Recharge: 25 Discharge: 35

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
10:11	-0.20	0.25	0	0	0	0	0	0	0
10:14	-0.20	0.25	0.75	15.74	1.15	4.33	6.16	7	-24
10:18	-0.20	0.25	1	13.56	1.14	3.13	6.29	4.2	-35
10:22	-0.20	0.25	1	13.08	1.13	2.55	6.34	1.1	-52
10:26	-0.20	0.25	1	12.95	1.14	2.27	6.37	0.9	-60
10:30	-0.20	0.25	1	13.37	1.14	2.09	6.38	0.3	-64
10:34	-0.20	0.25	1	12.9	1.12	1.94	6.4	0.1	-66
10:38	-0.20	0.25	1	13.01	1.13	1.8	6.42	0	-69
10:42	-0.20	0.25	1	12.84	1.12	1.7	6.43	0	-72

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **SHARON CONGLOM** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: SCFmw-004 SampleID: FWGSCFmw-004-0608-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/21/2015 TIME: 10:47

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0	Color:	Clear
	ORP (mV):	-73	Odor:	None

pH: 6.43 Temperature (°C): 12.84 DO (mg/L): 1.67 Specific Conductivity (mS/cm): 1.13

GENERAL INFORMATION

SUN/OVERCAST Overcast PERCIPITATION: N WIND DIRECTION: NW AMBIENT TEMP (°F): 80

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	8081	Pest

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: WINKLEPECK BURNING GROUN DATE: 7/22/2015 START TIME: 8:45

WELL ID: WBGmw-006

WELL DEPTH: INITIAL WATER LEVEL: 6.47 TOTAL PURGED (L) 3.5

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 10.1 - 20.1

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 15

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
8:50	6.64	0.15	0	0	0	0	0	0	0
8:55	6.64	0.1	0.5	18.42	0.49	3.7	6.81	4.2	111
9:00	6.64	0.1	0.5	17.68	0.492	2.49	6.82	4.1	114
9:05	6.64	0.1	0.5	17.19	0.497	1.92	6.84	5.7	115
9:10	6.64	0.1	0.5	16.8	0.499	1.65	6.86	7.6	114
9:15	6.64	0.1	0.5	16.51	0.5	1.55	6.85	6.6	113
9:20	6.64	0.1	0.5	16.32	0.502	1.5	6.85	2.7	112
9:25	6.64	0.1	0.5	16.14	0.503	1.52	6.86	2.9	104

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **WINKLEPECK BURN** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: WBGmw-006 SampleID: FWGWBGmw-006C-0609-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/22/2015 TIME: 9:31

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	3	Color:	Clear
	ORP (mV):	107	Odor:	None

pH: 6.86 Temperature (°C): 16.15 DO (mg/L): 1.51 Specific Conductivity (mS/cm): 0.503

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 75

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: EC Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	1	4C	8330	Explo
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	8270	SVOC

AFCEE FORM SR. 11

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: WINKLEPECK BURNING GROUN DATE: 7/22/2015 START TIME: 9:00

WELL ID: WBGmw-009

WELL DEPTH: INITIAL WATER LEVEL: 11.45 TOTAL PURGED (L) 4.55

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 14 - 24

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 19

PUMP READINGS: Throttle (ft.) Recharge: 12 Discharge: 3

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
9:10	11.40	0.15	0	0	0	0	0	0	0
9:15	11.85	0.15	0.75	16.7	0.299	5.79	5.44	31.9	221
9:19	11.95	0.125	0.5	14.34	0.238	4.64	5.67	19.8	191
9:23	12.10	0.125	0.5	14.07	0.227	4.62	5.71	23.8	182
9:27	12.25	0.1	0.4	14.38	0.218	3.1	5.71	23.1	181
9:31	12.31	0.1	0.4	14.5	0.213	2.79	5.73	21.4	173
9:35	12.38	0.1	0.4	14.36	0.211	2.67	5.67	21	172
9:39	12.44	0.1	0.4	14.37	0.208	2.51	5.67	20.1	169
9:43	12.48	0.1	0.4	14.23	0.206	2.39	5.66	12.1	169
9:47	12.52	0.1	0.4	14.23	0.205	2.31	5.69	10.5	169
9:51	12.55	0.1	0.4	14.2	0.204	2.25	5.68	9.2	169

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **WINKLEPECK BURN** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: WBGmw-009 SampleID: FWGWBGmw-009C-0610-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/22/2015 TIME: 9:52

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	9.9	Color:	Clear
	ORP (mV):	168	Odor:	None

pH: 5.67 Temperature (°C): 14.2 DO (mg/L): 2.24 Specific Conductivity (mS/cm): 0.203

GENERAL INFORMATION

SUN/OVERCAST Overcast PERCIPITATION: N WIND DIRECTION: N AMBIENT TEMP (°F): 70

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	1	4C	8330	Explo
1L/Amber	3	4C	353.2/8330	Propellants
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	8270	SVOC

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: WINKLEPECK BURNING GROUN DATE: 7/22/2015 START TIME: 9:00

WELL ID: WBGmw-020

WELL DEPTH: INITIAL WATER LEVEL: 11.25 TOTAL PURGED (L) 5.86

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 33.5 - 43.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 38.5

PUMP READINGS: Throttle (ft.) Recharge: 12 Discharge: 3

COMMENTS Color: Clear, Odor:None,hole in line, had to cut down in size

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
10:00	11.25	0.1	0	0	0	0	0	0	0
10:08	11.30	0.1	0.8	14.54	0.217	5.31	6.07	22.5	45
10:12	11.37	0.11	0.44	13.79	0.218	4.22	6.41	21.1	-16
10:16	11.39	0.11	0.44	13.37	0.219	3.55	6.47	13.6	-53
10:20	11.40	0.11	0.44	13.09	0.221	3.25	6.51	11.1	-71
10:24	11.42	0.11	0.44	12.98	0.22	3.08	6.56	8.2	-79
10:28	11.42	0.11	0.44	12.86	0.22	2.9	6.62	5.3	-86
10:32	11.42	0.11	0.44	12.82	0.221	2.87	6.63	3.6	-89
10:36	11.42	0.11	0.44	12.76	0.221	2.58	6.64	2.6	-93
10:42	11.42	0.11	0.66	12.64	0.222	2.33	6.67	2	-94
10:46	11.43	0.11	0.44	12.66	0.221	1.98	6.72	1.8	-99
10:50	11.44	0.11	0.44	12.74	0.221	1.99	6.69	1.2	-100
10:54	11.44	0.11	0.44	12.74	0.221	2.11	6.72	0.4	-100

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **WINKLEPECK BURN** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: WBGmw-020 SampleID: FWGWBGmw-020-0611-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/22/2015 TIME: 10:57

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0.6	Color:	Clear
	ORP (mV):	-99	Odor:	None

pH: 6.7 Temperature (°C): 12.81 DO (mg/L): 1.99 Specific Conductivity (mS/cm): 0.221

GENERAL INFORMATION

SUN/OVERCAST Overcast PERCIPITATION: N WIND DIRECTION: NW AMBIENT TEMP (°F): 80

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: WINKLEPECK BURNING GROUN DATE: 7/22/2015 START TIME: 8:47

WELL ID: WBGmw-021

WELL DEPTH: INITIAL WATER LEVEL: 8.61 TOTAL PURGED (L) 18

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 33 - 43

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 38

PUMP READINGS: Throttle (ft.) Recharge: 10 Discharge: 5

COMMENTS Color: Clear, Odor:None,

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
8:50	8.61	0.2	0	0	0	0	0	0	0
8:55	8.62	0.2	1	14.45	0.551	17.09	6.25	6	91
9:00	8.62	0.2	1	13.25	0.499	10.91	6.34	9.1	30
9:05	8.73	0.2	1	12.51	0.487	9.63	6.37	34.1	-16
9:10	8.73	0.2	1	12.4	0.486	8.85	6.38	41.9	-32
9:15	8.73	0.2	1	12.18	0.486	7.9	6.41	27.2	-46
9:20	8.74	0.2	1	12.09	0.486	7.18	6.43	15.2	-53
9:25	8.73	0.2	1	12.01	0.488	6.55	6.45	8.2	-58
9:30	8.73	0.2	1	11.93	0.49	6.07	6.44	5.2	-62
9:35	8.76	0.2	1	11.93	0.491	5.53	6.47	3.1	-65
9:40	8.74	0.2	1	12	0.492	5.02	6.48	3.1	-66
9:45	8.76	0.2	1	11.95	0.493	4.62	6.47	3.3	-68
9:50	8.73	0.2	1	11.95	0.493	4.28	6.48	3.3	-70
9:55	8.74	0.2	1	11.98	0.493	3.92	6.48	3.3	-73
10:00	8.74	0.2	1	12.01	0.494	3.53	6.5	3.2	-72
10:05	8.74	0.2	1	12.04	0.494	3.27	6.48	3.8	-74
10:10	8.73	0.2	1	12.01	0.494	3.02	6.49	3.7	-75
10:15	8.73	0.2	1	12.02	0.494	2.92	6.5	3.2	-75
10:20	8.74	0.2	1	12.06	0.494	2.73	6.5	1.8	-76

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: AD

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **WINKLEPECK BURN** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: WBGmw-021 SampleID: FWGWBGmw-021-0612-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 7/22/2015 TIME: 10:23

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	1.4	Color:	Clear
	ORP (mV):	-76	Odor:	None

pH: 6.5 Temperature (°C): 12.05 DO (mg/L): 2.72 Specific Conductivity (mS/cm): 0.494

GENERAL INFORMATION

SUN/OVERCAST Sunny PERCIPITATION: N WIND DIRECTION: NW AMBIENT TEMP (°F): 0

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: AD Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered

Daily QC Records

Date: 20-Jul

S	M	T	W	T	F	S
	X					

DAILY QUALITY CONTROL REPORT

COE Project Manager: Greg Moore

Project: Ravenna Army Ammunition Plant Groundwater Monitoring

Job No.: 030174.0016.001

Contract No.: GSA Contract Number GS-10F-0293K Delivery Order W912QR-11-F-0266

Weather	Bright Sun	Clear	Over-Cast x	Rain	Snow
Temp	To 32	32-50	50-70 x	70-85 x	85 up
Wind	Still x	Moder x	High	Report No.	
Humidity	Dry	Moder x	Humid x	072015	

SUB-CONTRACTORS ON SITE:

Environmental Quality Management, Inc.

EQUIPMENT ON SITE:

Water level meters, water quality meters (Horiba-U22/U52); multigas detector (MSA); bladder pumps w/ associated controllers and compressors.

WORK PERFORMED (INCLUDING SAMPLING):

Arrive at Building 1036, unload/load and organize equipment. Purge and sample work. Calibrations completed. Crews to sample locations.
Samples were collected at the following locations:
LL1mw(-083 -084), LL2mw(-059-060), LL3mw(-238-241), FBQmw-174, NTAmw-119

A field rinsate was collected by Team # 2.

Project Ravenna Army Ammunition Plant Groundwater Monitoring Report No. 072015

Job No. 030174.0016.001 Date: 7/20/2015

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS):

All field equipment was calibrated prior to mobilizing to the field. Water level meter devices were checked for correct footage. Water quality meters were calibrated with AutoCal Solution, standards, and checks - certified values are: ORP checked okay (Ag/AgCl per chart), DO checked okay (distilled H2O per chart), AutoCal: (Conductivity - 4.49 mS/cm; Turbidity - 0 NTU; pH - 4.0) and pH 4.0, 7.0, 10.0 su.
Multigas detector calibrated with Zero Air Standard and 100 ppm Isobutylene. All field equipment was within calibration criteria.

HEALTH AND SAFETY LEVELS AND ACTIVITIES:
H&S briefing conducted prior to mobilizing to the field. All personnel to don modified Level 4 PPE (i.e. steel-toed shoes, safety glasses, & nitrile gloves). First Aid kits were included in each vehicle, & personnel were made aware of eyewash station locations.
Each team was equipped with a cellular phone. Personnel were instructed to hydrate frequently and watch for traffic. Personnel were also instructed to be alert for storms, poisonous plants, stinging insect, and roaming deer/turkey in addition to signs of bear/coyotes.

PROBLEMS ENCOUNTERED/CORRECTIVE ACTION (S) TAKEN:

N/A

SPECIAL NOTES:

Post 1 rally point, reviewed purging parameters for tailgate.

TOMORROWS EXPECTATIONS:

Expectations for tomorrow are to continue the purge and sample event.

Date: 21-Jul

S	M	T	W	T	F	S
		X				

DAILY QUALITY CONTROL REPORT

COE Project Manager Greg Moore

Project Ravenna Army Ammunition Plant Groundwater Monitoring

Job No. 030174.0016.001

Contract No. GSA Contract Number GS-10F-0293K Delivery Order W912QR-11-F-0266

Weather	Bright Sun	Clear	Over-Cast x	Rain	Snow
Temp	To 32	32-50	50-70 x	70-85 x	85 up
Wind	Still x	Moder	High	Report No.	
Humidity	Dry	Moder x	Humid x	072115	

SUB-CONTRACTORS ON SITE:

Environmental Quality Management, Inc.

EQUIPMENT ON SITE:

Water level meters, water quality meters (Horiba-U22/U52); multigas detector (MSA); bladder pumps w/ associated controllers and compressors.

WORK PERFORMED (INCLUDING SAMPLING):

Arrive at Building 1036, unload/load and organize equipment. Purge and sample work. Calibrations completed. Crews to sample locations.
Samples were collected at the following locations:
LL1mw-(064, -086, -087, -088), LL2mw-271, LL3mw(-244, -246), LL12mw(-185, -242, -247), SCFmw(-002, -004)

Additional alliquot for MSMSD collected at SCFmw-002, LL3mw-246 and LL12mw-185. Duplicate and split samples were collected from LL2mw-271, and LL3mw-244. A field rinsate was collected by Team # 4.

Project Ravenna Army Ammunition Plant Groundwater Monitoring Report No. 072115

Job No. 030174.0016.001 Date: 7/21/2015

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS):

All field equipment was calibrated prior to mobilizing to the field. Water level meter devices were checked for correct footage. Water quality meters were calibrated with AutoCal Solution, standards, and checks - certified values are: ORP checked okay (Ag/AgCl per chart), DO checked okay (distilled H2O per chart), AutoCal: (Conductivity - 4.49 mS/cm; Turbidity - 0 NTU; pH - 4.0) and pH 4.0, 7.0, 10.0 su.
Multigas detector calibrated with Zero Air Standard and 100 ppm Isobutylene. All field equipment was within calibration criteria.

HEALTH AND SAFETY LEVELS AND ACTIVITIES:
H&S briefing conducted prior to mobilizing to the field. All personnel to don modified Level 4 PPE (i.e. steel-toed shoes, safety glasses, & nitrile gloves). First Aid kits were included in each vehicle, & personnel were made aware of eyewash station locations.
Each team was equipped with a cellular phone. Personnel were instructed to hydrate frequently and watch for traffic. Personnel were also instructed to be alert for storms, poisonous plants, stinging insect, and roaming deer/turkey in addition to signs of bear/coyotes.

PROBLEMS ENCOUNTERED/CORRECTIVE ACTION (S) TAKEN:

Started LL12mw-187 late then did not stabilizes as fast as anticipated and running out of time to collect samples therefore stopped, will repurge tomorrow.

SPECIAL NOTES:

reviewed traffic rules and speed limits plus slip trip fall hazard disscusions and hydration for tailgate.

TOMORROWS EXPECTATIONS:

Expectations for tomorrow are to continue the purge and sample event.

Date: 22-Jul

S	M	T	W	T	F	S
			x			

DAILY QUALITY CONTROL REPORT

COE Project Manager: Greg Moore

Project: Ravenna Army Ammunition Plant Groundwater Monitoring

Job No.: 030174.0016.001

Contract No.: GSA Contract Number GS-10F-0293K Delivery Order W912QR-11-F-0266

Weather	Bright Sun	Clear	Over-Cast	Rain	Snow
Temp	To 32	32-50	50-70 x	70-85 x	85 up
Wind	Still x	Moder	High	Report No.	
Humidity	Dry	Moder x	Humid x	072215	

SUB-CONTRACTORS ON SITE:

Environmental Quality Management, Inc.

EQUIPMENT ON SITE:

Water level meters, water quality meters (Horiba-U22/U52); multigas detector (MSA); bladder pumps w/ associated controllers and compressors.

WORK PERFORMED (INCLUDING SAMPLING):

Arrive at Building 1036, unload/load and organize equipment. Purge and sample work. Calibrations completed. Crews to sample locations.
Samples were collected at the following locations:
WBGmw-(006, 009, 020, 021), RQLmw(-007, -008, -009), FWGmw(-011, -012), LL12mw(-187, -245, -247) start DETmw-004

Additional alliquot for MSMSD collected at RQlmw-008. Duplicate and split samples were collected from LL12mw-245 and RQLmw-007, A field rinsate was collected by Team # 3.

Project Ravenna Army Ammunition Plant Groundwater Monitoring Report No. 072215

Job No. 030174.0016.001 Date: 7/22/2015

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS):

All field equipment was calibrated prior to mobilizing to the field. Water level meter devices were checked for correct footage. Water quality meters were calibrated with AutoCal Solution, standards, and checks - certified values are: ORP checked okay (Ag/AgCl per chart), DO checked okay (distilled H2O per chart), AutoCal: (Conductivity - 4.49 mS/cm; Turbidity - 0 NTU; pH - 4.0) and pH 4.0, 7.0, 10.0 su.
Multigas detector calibrated with Zero Air Standard and 100 ppm Isobutylene. All field equipment was within calibration criteria.

HEALTH AND SAFETY LEVELS AND ACTIVITIES:
H&S briefing conducted prior to mobilizing to the field. All personnel to don modified Level 4 PPE (i.e. steel-toed shoes, safety glasses, & nitrile gloves). First Aid kits were included in each vehicle, & personnel were made aware of eyewash station locations.
Each team was equipped with a cellular phone. Personnel were instructed to hydrate frequently and watch for traffic. Personnel were also instructed to be alert for storms, poisonous plants, stinging insect, and roaming deer/turkey in addition to signs of bear/coyotes.

PROBLEMS ENCOUNTERED/CORRECTIVE ACTION (S) TAKEN:

Start DETmw-004 well went dry and will collect rest of aliquot tomorrow. LL12mw-247 NO3/NO2 was collected in the wrong container, repurge and sample for this anylyte. Rinse 3 started late and not ready for pick up, finalized and then heald over night in Building 1036 for next day pickup.

SPECIAL NOTES:

Ohio EPA and OHARNG onsite at well for a site visit and to watch sampling purging process. Access and visit at WBG. During site visit it was discussed and agreed that the purge and decontamination water shall be combined into one IDW stream.

Reviewed access to RQL, Landfill asbestos issues and reviewed access to WBG for tailgate.

TOMORROWS EXPECTATIONS:

Expectations for tomorrow are to continue the purge and sample event.

Date: 23-Jul

S	M	T	W	X T	F	S

DAILY QUALITY CONTROL REPORT

COE Project Manager Greg Moore

Project Ravenna Army Ammunition Plant Groundwater Monitoring

Job No. 030174.0016.001

Contract No. GSA Contract Number GS-10F-0293K Delivery Order W912QR-11-F-0266

Weather	Bright Sun	Clear	Over-Cast	Rain	Snow
Temp	To 32	32-50	50-70 x	70-85 x	85 up
Wind	Still x	Moder x	High	Report No.	
Humidity	Dry	Moder x	Humid x	072315	

SUB-CONTRACTORS ON SITE:

Environmental Quality Management, Inc.

EQUIPMENT ON SITE:

Water level meters, water quality meters (Horiba-U22/U52); multigas detector (MSA); bladder pumps w/ associated controllers and compressors.

WORK PERFORMED (INCLUDING SAMPLING):

Arrive at Building 1036, unload/load and organize equipment. Purge and sample work. Calibrations completed. Crews to sample locations.
Samples were collected at the following locations:
DETmw(-003, -004), DA2mw-115, LL1mw-065, LL2mw-267 LL10mw-003, FWGmw(-004, -007, -015,- 016), and LL7mw-001

Additional alliquot for MSMSD collected at RQLmw-007. Duplicate and split samples were collected from DA2mw-115, A field rinsate was collected by Team # 1.

Project Ravenna Army Ammunition Plant Groundwater Monitoring Report No. 072315

Job No. 030174.0016.001 Date: 7/23/2015

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS):

All field equipment was calibrated prior to mobilizing to the field. Water level meter devices were checked for correct footage. Water quality meters were calibrated with AutoCal Solution, standards, and checks - certified values are: ORP checked okay (Ag/AgCl per chart), DO checked okay (distilled H2O per chart), AutoCal: (Conductivity - 4.49 mS/cm; Turbidity - 0 NTU; pH - 4.0) and pH 4.0, 7.0, 10.0 su.
Multigas detector calibrated with Zero Air Standard and 100 ppm Isobutylene. All field equipment was within calibration criteria.

HEALTH AND SAFETY LEVELS AND ACTIVITIES:
H&S briefing conducted prior to mobilizing to the field. All personnel to don modified Level 4 PPE (i.e. steel-toed shoes, safety glasses, & nitrile gloves). First Aid kits were included in each vehicle, & personnel were made aware of eyewash station locations.
Each team was equipped with a cellular phone. Personnel were instructed to hydrate frequently and watch for traffic. Personnel were also instructed to be alert for storms, poisonous plants, stinging insect, and roaming deer/turkey in addition to signs of bear/coyotes.

PROBLEMS ENCOUNTERED/CORRECTIVE ACTION (S) TAKEN:

N/A

SPECIAL NOTES:

reviewed slip trip fall hazard, and biologicals for tailgate discussion

TOMORROWS EXPECTATIONS:

Expectations for tomorrow are to sample IDW, continue clean up and demob event.

Date: 24-Jul

S	M	T	W	T	X F	S

DAILY QUALITY CONTROL REPORT

COE Project Manager: Greg Moore

Project: Ravenna Army Ammunition Plant Groundwater Monitoring

Job No.: 030174.0016.001

Contract No.: GSA Contract Number GS-10F-0293K Delivery Order W912QR-11-F-0266

Weather	Bright Sun x	Clear	Over-Cast x	Rain	Snow
Temp	To 32	32-50	50-70 x	70-85 x	85 up
Wind	Still x	Moder	High	Report No.	
Humidity	Dry	Moder	Humid x	072415	

SUB-CONTRACTORS ON SITE:

Environmental Quality Management, Inc.

EQUIPMENT ON SITE:

Water level meters, water quality meters (Horiba-U22/U52); One multigas detector (MSA); bladder pumps w/ associated controllers and compressors.

WORK PERFORMED (INCLUDING SAMPLING):

Arrive at Building 1036, load and organize equipment.

IDW sampling collected. Packed equipment for return back to Cincinnati, and cleaned Building 1036. Demobilization.

Project Ravenna Army Ammunition Plant Groundwater Monitoring Report No. 072415

Job No. 030174.0016.001 Date: 7/24/2015

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS):

Tripblank packed for IDW.

HEALTH AND SAFETY LEVELS AND ACTIVITIES:

H&S briefing regarding cleaning supplies and preservatives on site. Demobilization traffic hazards discussed.

PROBLEMS ENCOUNTERED/CORRECTIVE ACTION (S) TAKEN:

NA

SPECIAL NOTES:

Confirmed wells and QA/QC count = finalized event.

TOMORROWS EXPECTATIONS:

NA

APPENDIX C

DATA VERIFICATION REPORTS/ LABORATORY DATA SHEETS

Data Verification Summary

Site: Ravenna Army Ammunition Plant
Sampling Event: July 2015
Sample Delivery Group: 240-53411

Date: October 15, 2015
Revision: 1

Data Reviewer: Angela Dragotta /Environmental Quality Management, Inc. (EQM, Inc.)

QA/QC Summary

On July 20th, 2015 the following samples were collected from groundwater-monitoring wells at the former Ravenna Army Ammunition Plant and analyzed as part of SDG 240-53411. Sample analysis was performed by Test America. Test America-North Canton performed all analyses with the exception of the analytical for methods 8330, M8330, TALSOPWS-WC-0050 and 6860. Methods 8330, M8330 and TALSOPWS-WC-0050 were performed by Test America, West Sacramento.

Sample ID	VOC by SW846 8260	SVOC 4 by SW846 8270	SVOC 1 and 3 by SW846 8270	SVOC 1 by SW846 8270	Pesticides by SW846 8081	PCBs/ SW846 8082	Explosives/Propellants by SW846 8330, Mod. 8330 and TALSOP WS-WC-0050	Cyanide SW846 9012	Perchlorate by SW846 6860	NO2/NO3, EPA 353.2	Metals [4]		
											SW846 6010B	SW846 6020	Mercury by SW846 7470A
FWGLL1mw-084c-0584-GW/GF				X	X		X				X	X	X
FWGLL2mw-059c-0588-GW/GF				X			X				X	X	X
FWGLL1mw-083c-0583-GW/GF				X	X		X				X	X	X
FWGLL2mw-060c-0589-GW/GF				X			X				X	X	X
FWGLL3mw-238c-0592-GW/GF				X	X		X				X	X	X
FWGLL3mw-241c-0593-GW/GF				X	X		X				X	X	X
FWGFBQmw-174c-0574-GW/GF				X	X		X				X	X	X
FWGNTAmw-119-0603-GW/GF	X		X				X				X	X	X
FWGEQUIPRINSE1-0622-GW	X		X		X		X				X	X	X

1) All metals samples with the exception of FWGEQUIPRINSE1-0622-GW were field filtered (GF).
2) SVOC1= Phthalates, SVOC3=PAH& Nitroaromatics
3) EPA 6020 metals include aluminum, antimony, beryllium, cadmium, iron, sodium, thallium and zinc. EPA 6010B metals include arsenic, chromium, cobalt, lead, selenium, silver, vanadium, barium, calcium, copper, magnesium, manganese, nickel and potassium.
4) FWG TEAM2-TRIP was collected on 7/20/15 and submitted to the laboratory for VOC analysis by EPA 8260B.

The data presented in this report were evaluated according to the *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January, 2012.* The following documents were used as needed to supplement the project documentation: The United States Department of Defense (DoD) Quality Services Manual (QSM) for Environmental Laboratories, Version 4.2, and the United States Army Corps of Engineers (USACE), Louisville District Quality Systems Manual Supplement (LS), *EPA National Functional Guidelines (NFG) for Organic Data Review, EPA-540/R-08-01, June 2008, NFG for Inorganic Data Review, EPA-540/R-04-004, October 2004*, Analytical Methods, and Laboratory Standard Operating Procedures. The QC criteria provided in the reference documents represent accuracy and precision performance goals for each analytical method. QC criteria reviewed for each method are listed below, along with any outliers.

All analytical results have been verified against compliance requirements specified in the project QAPP, QSM, LS, associated analytical methods and/or SOPs, as appropriate, and reported by the laboratory as directed by the DoD QSM.

Data Verification Summary

Site: Ravenna Army Ammunition Plant
Sampling Event: July 2015 **Date:** October 15, 2015
Sample Delivery Group: 240-53411 **Revision:** 1

Per the DoD QSM, the laboratory data is reported as follows: Non detected results were reported at the LOD with a "U" flag. Detected results between the DL and LOQ were reported as estimated, qualified with a "J" flag.

LOD - An estimate of the minimum amount of a substance that an analytical process can reliably detect.

LOQ - The lowest concentration that produces a quantitative result within specified limits of precision and bias.

DL- The smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence.

Checklists used in the verification process are in Attachment I and sample results with outliers requiring qualification are in Attachment II.

The completeness objective for the project was 90%. The completeness objective was met for this SDG, at 100%. Limitations, if any, on the data are indicated with qualifiers detailed below.

VOC- 8260

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Tuning criteria
- Initial Calibration Criteria including SPCC and CCC compounds
- ICV/CCV criteria
- Internal standard area counts and retention times
- LOD and MRL verification criteria
- Method /field blank criteria
- Surrogate recoveries
- Field duplicate RPD criteria
- Laboratory Control Sample criteria
- Matrix spike/spike duplicate recovery criteria and RPD

Blanks

Methylene chloride was detected in the method blank at 0.640 µg/L. Sample FWG TEAM2-TRIP and FWGEQUIPRINSE1-0622-GW was qualified, "B" as the reported methylene chloride detections were less than ten times method blank contamination.

FWG TEAM2-TRIP had methylene chloride detected at 0.53 µg/L and acetone at 1.5 µg/L. The methylene chloride and acetone results for sample FWGEQUIPRINSE1-0622-GW were qualified, "B " as the detected concentrations were less than ten times trip blank contamination.

FWGEQUIPRINSE1-0622-GW had methylene chloride detected at 0.34 µg/L and acetone at 13 µg/L. As there were no detected concentrations of methylene chloride or acetone in the associated field sample, FWGNTA119mw-0603-GW, no qualification was made as a result of equipment rinse contamination.

MRL Recovery Criteria

- The opening MRL analyzed 7/23/15 recovered above control limits of 70-130% for methylene chloride at 176% and below control limits for 2-hexanone at 56%, acetone at 37%, bromomethane at 63%, 2-butanone at 53% and 4-methyl-2-pentanone at 62%. A LOD verification was analyzed following the analytical sequence with detected results for 2-hexanone, acetone and 2-butanone.
- The closing MRL analyzed 7/23/15 recovered below control limits of 70-130% for acetone at 63% and above control limits for methylene chloride at 149% and chloroethane at 141 %.

The methylene chloride and acetone results for samples FWG TEAM2-TRIP and FWGEQUIPRINSE1-0622-GW were qualified as estimated, "J". The acetone result for sample FWGNTA119mw-0603-GW was qualified as

estimated, "UJ". The 2-hexanone, bromomethane, 4-methyl-2-pentanone and 2-butanone results for samples FWG TEAM2-TRIP, FWGEQUIPRINSE1-0622-GW and FWGNTA119mw-0603-GW were qualified as estimated, "UJ". No qualifications were made for the chloroethane outlier as there were no detected chloroethane results reported for samples FWG TEAM2-TRIP, FWGEQUIPRINSE1-0622-GW or FWGNTA119mw-0603-GW.

Matrix Spike Recovery
A matrix spike and spike duplicate were analyzed on a RVAAP sample from another SDG, FWGRQLmw-008c-0606-GW (SDG 240-53500).

Field Duplicate RPD
A field duplicate was not submitted with this set of samples.

No additional QC outliers were noted.

SVOCs- 8270C
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Tuning criteria
- Initial Calibration Criteria including SPCC and CCC compounds
- ICV/CCV criteria
- Internal standard area counts and retention times
- LOD and MRL verification criteria
- Method /field blank criteria
- Surrogate recoveries
- Field duplicate RPD criteria
- Laboratory Control Sample criteria
- Matrix Spike Recovery Criteria and RPD

Blanks
Diethyl phthalate was detected in FWGEQUIPRINSE1-0622-GW at 1.8 µg/L. No qualification of the data was required for the equipment blank contamination as there were no detected diethyl phthalate results reported for the associated field samples.

Matrix Spike/Spike Duplicate Recovery and RPD Criteria
A matrix spike or matrix spike duplicate was not requested from this set of samples.

Field Duplicate RPD Criteria
A field duplicate was not submitted with this set of samples.

No additional QC outliers were noted.

Pesticides- 8081A
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Initial Calibration criteria
- DDT and Endrin breakdown (PEM) criteria
- Retention time criteria
- ICV criteria
- CCV Criteria
- Method /field blank criteria
- LCS Recoveries
- Field Duplicate Criteria

- LOD and MRL verification criteria
- Matrix Spike Recovery Criteria and RPD
- Surrogate Recoveries
- Second Column confirmation criteria

PEM Criteria
A PEM was analyzed before and after the samples analyzed on 7/23/15 on instrument A2HP3. The closing endrin % breakdown was above 15% at 18.1%. No qualifiers were applied to the data as a result of the high % breakdown as there were no detected concentrations of endrin, endrin aldehyde or endrin ketone reported for the associated field samples and the opening PEM passed breakdown requirements-QSM does not require bracketing PEM.

Matrix Spike Recovery Criteria
Matrix spike analysis was not requested on a sample from this sample set.

Field duplicate RPD Criteria
A field duplicate was not submitted with this set of samples.

No other QC outliers were noted.

Metals - 6010B
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method /field blank criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field duplicate RPD criteria
- Post Digestion Spike & Serial Dilution criteria

Blanks
The ICB analyzed 7/27/15@ 0924 had lead detected at 2.44 µg/L and potassium at 71.5 µg/L. The lead results for samples FWGLL1mw-084c-0584-GF, FWGLL1mw-083c-0583-GF, FWGLL3mw-241c-0593-GF, FWGFBQmw-174c-0574-GFand FWGEQUIPRINSE1-0622-GW were qualified, "U" as the reported lead concentrations were less than 5x contamination. No qualification was made for the potassium contamination as all detected potassium concentrations for the associated field samples were greater than 5x blank contamination.

The CCBs analyzed 7/27/15 had lead detected at 2.25 µg/L and vanadium at 3.55 µg/L. The lead results for samples FWGLL1mw-084c-0584-GF, FWGLL1mw-083c-0583-GF, FWGLL3mw-241c-0593-GF, FWGFBQmw-174c-0574-GFand FWGEQUIPRINSE1-0622-GW were qualified, "U" as the reported lead concentrations were less than 5x contamination. No qualification was made for the vanadium contamination as all detected vanadium concentrations for the associated field samples were greater than 5x blank contamination.

The method blank analyzed 7/27/15 had barium detected at 5.27 µg/L, chromium at 1.57 µg/L, manganese at 2.85 µg/L, potassium at 70 µg/L and selenium at 4.4 µg/L. The barium results for samples FWGLL1mw-084c-0584-GF, FWGLL1mw-083c-0583-GF, FWGLL3mw-241c-0593-GF, FWGFBQmw-174c-0574-GF and FWGLL3mw-238c-0592-GF; the chromium results for FWGLL1mw-084c-0584-GF, FWGLL2mw-059c-0588-GF, FWGLL2mw-060c-0589-GF, FWGNTAmw-119-0603-GF and FWGLL3mw-238c-0592-GF; the selenium result for sample FWGLL1mw-084c-0584-GF and the manganese result for sample FWGLL3mw-238c-0592-GF were qualified, "B" as the detected concentrations were less than 5x method blank contamination.

FWGEQUIPRINSE1-0622-GW had calcium detected at 260 µg/L, lead at 2 µg/L and magnesium at 55 µg/L. The lead results for samples FWGLL1mw-084c-0584-GF, FWGLL1mw-083c-0583-GF, FWGLL3mw-241c-0593-GF and FWGFBQmw-174c-0574-GF were qualified, "B" as the detected concentrations were less than 5x equipment rinse contamination. No qualification was required for the calcium and magnesium field blank contamination as all detected calcium and magnesium results in the associated field samples were greater than 5x equipment rinse contamination.

Laboratory Duplicate RPD

The laboratory duplicate analyzed on sample FWGLL1mw-084c-0584-GF had an RPD above control limits of 20% for lead at 44% and chromium at 55%. No qualification of the data was required as the detected lead and chromium concentrations for sample FWGLL1mw-084c-0584-GF were less than the LOQ.

Post Spike Analysis

A post spike was analyzed on sample FWGLL1mw-084c-0584-GF. Silver recovered below control limits of 75-125% at 73%. The silver results for samples FWGLL1mw-084c-0584-GF, FWGLL1mw-083c-0583-GF, FWGLL3mw-241c-0593-GF, FWGFBQmw-174c-0574-GF, FWGLL3mw-238c-0592-GF, FWGLL2mw-059c-0588-GF, FWGLL2mw-060c-0589-GF, FWGNTAmw-119-0603-GF and FWGEQUIPRINSE1-0622-GW were qualified as estimated, "UJ".

No additional QC outliers were noted.

Metals - 6020

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Tuning Criteria
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method /field blank criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field Duplicate RPD criteria
- Post Digestion Spike & Serial Dilution criteria

Blanks

The ICB analyzed 7/27/15 at 0955 had cadmium detected at 0.179 µg/L. The cadmium result for sample FWGLL1mw-083c-0583-GF was qualified, "U" as the reported concentration was less than 5x cadmium contamination.

The ICB analyzed 7/29/15 at 0951 had cadmium detected at 0.162 µg/L. No qualification of the data was required as there were no field samples bracketed by the ICB.

The CCBs analyzed 7/27/15 had cadmium detected from 0.211 µg/L to 0.329 µg/L, antimony from 0.169 µg/L to 0.174 µg/L, beryllium from 0.08 µg/L to 0.089 µg/L and thallium at 0.091 µg/L. The cadmium result for sample FWGLL1mw-083c-0583-GF was qualified, "U" as the reported concentration was less than 5x cadmium contamination. No qualification was made for the thallium, beryllium or antimony contamination as there were no detected thallium, beryllium or antimony concentrations bracketed by outlier CCBs.

The CCBs analyzed 7/29/15 had cadmium detected from 0.180 µg/L to 0.387 µg/L, beryllium at 0.204 µg/L and thallium at 0.082 µg/L. No qualification of the data was required as there were no field samples bracketed by the CCBs.

No additional QC outliers were noted.

Mercury - 7470A

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method /field blank criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field duplicate RPD criteria

No QC outliers were noted.

Explosives- 8330

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Initial Calibration Criteria
- ICV and CCV criteria
- Retention time criteria
- LOD and MRL verification criteria
- Surrogate recovery criteria
- Method /field blank criteria
- LCS/LCD Recovery and RPD Criteria
- Matrix spike/spike duplicate recovery criteria and RPD
- Second column confirmation RPD
- Field Duplicate RPD

Matrix Spike/Spike Duplicate Recovery Criteria and RPD

No data was provided as a matrix spike/spike duplicate was not requested nor was sample volume provided for matrix spike analysis specific to this set of samples.

Confirmation Column RPD

The RDX result for sample FWGFBQmw-174c-0574-GW had a confirmation column RPD above control limits of 40% at 50.9%. The RDX result for sample FWGFBQmw-174c-0574-GW was qualified as estimated, "J".

Surrogate Recovery

3,4- dinitrotoluene recovered above control limits of 79-11% in samples FWGFBQmw-174c-0574-GW at 129%, FWGLL1mw-083c-0582-GW at 149%, FWGLL1mw-083c-0582-GW (DL) at 147%, FWGLL1mw-084c-0584-GW at 346%, FWGLL1mw-084c-0584-GW (DL) at 352%, FWGLL3mw-238c-0592-GW at 136% and FWGLL3mw-238c-0592-GW (DL) at 117%. The detected results for samples FWGFBQmw-174c-0574-GW, FWGLL1mw-083c-0582-GW, FWGLL1mw-084c-0584-GW, FWGLL3mw-238c-0592-GW and FWGLL3mw-238c-0592-GW were qualified as estimated, "J".

Field Duplicate RPD Criteria

A field duplicate was not submitted with this set of samples.

Blank Analysis

Samples FWGLL2mw-059C-0588-GW and FWGLL3mw-238C-0592-GW were filtered prior to extraction. A filter blank was prepped and analyzed with no detected results.

Site: Ravenna Army Ammunition Plant
Sampling Event: July 2015 **Date:** October 15, 2015
Sample Delivery Group: 240-53411 **Revision:** 1

No additional QC outliers were noted.

Nitroguanidine- 8330M

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- Retention time criteria
- LOD and MRL verification criteria
- ICV and CCV criteria
- Method /field blank criteria
- LCS/LCSD percent recoveries and RPD value criteria
- Matrix spike recovery criteria
- Second column confirmation
- Field Duplicate RPD

Field Duplicate RPD Criteria

A field duplicate was not submitted with this set of samples.

No additional QC outliers were noted.

Nitrocellulose – WS-WC-0050

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Sample preparation criteria
- Initial Calibration criteria
- ICV and CCV criteria
- Method /field blank criteria
- LOD and MRL verification criteria
- ICB and CCBs were free from contamination
- LCS/LCSD percent recoveries and RPD value criteria
- MS/MSD percent recoveries and RPD
- Field Duplicate RPD

Field Duplicate RPD

A field duplicate was not submitted with this set of samples.

No additional QC outliers were noted.

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Sample Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-53411-1	FWGLL1mw-084C-0584-GW	Water	07/20/15 13:55	07/20/15 18:34
240-53411-2	FWGLL1mw-084C-0584-GF	Water	07/20/15 13:55	07/20/15 18:34
240-53411-3	FWGLL2mw-059C-0588-GW	Water	07/20/15 15:41	07/20/15 18:34
240-53411-4	FWGLL2mw-059C-0588-GF	Water	07/20/15 15:41	07/20/15 18:34
240-53411-5	FWGLL1mw-083C-0583-GW	Water	07/20/15 13:03	07/20/15 18:34
240-53411-6	FWGLL1mw-083C-0583-GF	Water	07/20/15 13:03	07/20/15 18:34
240-53411-7	FWGLL2mw-060C-0589-GW	Water	07/20/15 15:33	07/20/15 18:34
240-53411-8	FWGLL2mw-060C-0589-GF	Water	07/20/15 15:33	07/20/15 18:34
240-53411-9	FWGLL3mw-238C-0592-GW	Water	07/20/15 14:58	07/20/15 18:34
240-53411-10	FWGLL3mw-238C-0592-GF	Water	07/20/15 14:58	07/20/15 18:34
240-53411-11	FWGLL3mw-241C-0593-GW	Water	07/20/15 16:44	07/20/15 18:34
240-53411-12	FWGLL3mw-241C-0593-GF	Water	07/20/15 16:44	07/20/15 18:34
240-53411-13	FWG TEAM 2-TRIP	Water	07/20/15 11:30	07/20/15 18:34
240-53411-14	FWGFBQmw-174C-0574-GW	Water	07/20/15 12:57	07/20/15 18:34
240-53411-15	FWGFBQmw-174C-0574-GF	Water	07/20/15 12:57	07/20/15 18:34
240-53411-16	FWGNTAmw-119-0603-GW	Water	07/20/15 16:02	07/20/15 18:34
240-53411-17	FWGNTAmw-119-0603-GF	Water	07/20/15 16:02	07/20/15 18:34
240-53411-18	FWGEQUIPRINSE1-0622-GW	Water	07/20/15 17:05	07/20/15 18:34

Method Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CAN
8081A	Organochlorine Pesticides (GC)	SW846	TAL CAN
8330 Modified	Nitroguanidine (HPLC)	SW846	TAL SAC
8330A	Nitroaromatics and Nitramines	SW846	TAL SAC
6010B	Metals (ICP)	SW846	TAL CAN
6020	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL CAN
WS-WC-0050	Nitrocellulose	TAL-SAC	TAL SAC

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-SAC = TestAmerica Laboratories, West Sacramento, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

CHAIN OF CUSTODY
AND
RECEIVING DOCUMENTS

240-53411 Chain of Custody

4101 Shuffel Street, N.W. North Canton, OH 44720 **tel** 330.497.9396 **fax** 330.497.0772 **www.testamericainc.com**

TestAmerica Canton
5101 Shuffel Street, N. H.

North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497.0772

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other:

Client Contact	Project Manager: John Miller	Site Contact: Erik Corbin	Date: 7/20/15	COC No: EC072015
Company Name: EQM	Tel/Fax:	Lab Contact: Marla Looby	Carrier: Lab Pick-up	1 of 1 COCs
Address: 1800 Carillon Blvd.	**Analysis Turnaround Time**			Sampler:
City/State/Zip: Cincinnati OH 45240	☒ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 513-825-7500	TAT if different from Below 3 weeks			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: RVAAP 66	☐ 1 week			
Site: OH.'s	☐ 2 days			Job / SDG No.:
PO #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	SVOC 8270	Pest 8081	Explosives 8330	Propellants 8095/6850/6095	Metals 6010/6020/7470	Cooler ID / Sample Specific Notes:
FWGLL1mw-084C-0584-GW	7/20/15	13:55	G	GW	7	N	N	X	X	X	X		1/2
FWGLL1mw-084C-0584-GF	7/20/15	13:55	G	GW	1	Y	N					X	1/2
FWGLL2mw-059C-0588-GW	7/20/15	15:41	G	GW	5	N	N	X		X	X		13
FWGLL2mw-059C-0588-GF	7/20/15	15:41	G	GW	1	Y	N					X	13

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

							1	1	1	1	1	4	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: All metals are field filtered.
Temps may not meet requirements if sample collection is close to lab pick-up time.

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____

	Company:	Date/Time:		Company:	Date/Time:
Relinquished by:	EQM	7/20/15 1720	Received by:	TestAmerica	7-20-15-1720
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time: 7/20/15 - 1815
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company: TA Canton	Date/Time: 7/20/15 1815

TestAmerica Canton
4101 Shuffel Street, N. H.

North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497.0772

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Client Contact	Project Manager: John Miller	Site Contact: E-Comm	Date: 7/20/15	COC No: 072015-10
Company Name: EQM	Tel/Fax:	Lab Contact: M. Loeb	Carrier: Lab Pickup	1 of 1 COCs
Address: 1800 Carillon Blvd	Analysis Turnaround Time			Sampler:
City/State/Zip: Cinti/OH/45240	☒ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 513-825-7500	TAT if different from Below 21			Walk-in Client:
Fax:	☒ 2 weeks			Lab Sampling:
Project Name: KVAAP	☐ 1 week			
Site:	☐ 2 days			Job / SDG No.:
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Pesticides 8081	Explosive / Prep.	SVOC / 8270	Metals - 6010/6020 / 7470	Sample Specific Notes:
FWGLL1MW-083C-0583-GW	7/20/15	1303	G	W		N		X	X	X		S-1
FWGLL1MW-083C-0583-GF	↓	↓	↓	↓		Y					X	↓
FWGLL2MW-060C-0589-GW	7/20/15	1533	G	W		N			X	X		AM 7
FWGLL2MW-060C-0589-GF	↓	↓	↓	↓		Y					X	↓
								1	1	1	1	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Metals field filtered. If sample pickup time is close to sample time, temp may not be met.

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd: ✓ Corr'd: _____	Therm ID No.: _____

	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	EQM	7/20/15 1720		TestAmerica	7-20-15 1720
Relinquished by:	Company:	Date/Time:	Received by:	Company: 7/20/15	Date/Time: 1815
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company: TA Canton	Date/Time: 7/20/15 1815

TestAmerica Canton

4101 Shuffel Street, N. U.

North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497. 2

Chain of Custody Record

083262

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: JOHN MILLER	Site Contact: ERIK CORBIN	Date: 07/20/2015	COC No: SAS 07 2015
Company Name: EAM	Tel/Fax: (513) 825-7500 FAX 7495	Lab Contact: MARK LOEB	Carrier: LAB PICKUP	1 of 1 COCs
Address: 1800 CARILLON BLVD.	Analysis Turnaround Time			Sampler: SAS / ROR
City/State/Zip: CINCINNATI, OH 45240	☒ CALENDAR DAYS ☒ WORKING DAYS			For Lab Use Only:
Phone: (513) 825-7500	TAT if different from Below ____			Walk-in Client:
Fax: (513) 825-7495	☒ PER 2 weeks (Calendar) 21 Days			Lab Sampling:
Project Name: RVAAP66 (OH)	☐ SOW 1 week			Job / SDG No.:
Site:	☐ 2 days			
PO# 30174.0016.001.10.1	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8270 SVOC 1	6850 PEST	8330 EXPLO	6010/6020 PROPELLANTS	7470 METALS	COOLER ID# / Sample Specific Notes:
FWGLL3MW-238C-0592-GW	07-20-15	14:58	G	GW	7	N	N	2	2	1	2		P-25
FWGLL3MW-238C-0592-GF	07-20-15	14:58	G	GW	1	F	N					1	P-25
FWGLL3MW-241C-0593-GW	07-20-15	16:44	G	GW	7	N	N	2	2	1	2		185
FWGLL3MW-241C-0593-GF	07-20-15	16:44	G	GW	1	F	N					1	185
								1	1	1	1	4	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

AD 7/20/15

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:
ALL METALS, PERCHLATE SAMPLES ARE FIELD FILTERED
TEMPS MAY NOT MEET REQUIRED IF SAMPLE COLLECTION IS CLOSE TO LAB PICKUP TIME.

ALL VOA'S IN COOLER ____

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____			
Relinquished by: David Hagenbuch	Company: EAM	Date/Time: 7/20/15 1715	Received by: RC Robin	Company: TestAmerica	Date/Time: 7-20-15 1720
Relinquished by: RC Robin	Company: TestAm 7/20/15	Date/Time: 1815	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company: TA Canton	Date/Time: 7/20/15 18:15

TestAmerica Canton
4101 Shuffel Street, N. W.
North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497.0772

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Client Contact	Project Manager: J. Miller	Site Contact: E. Corbin	Date: 7-20-15	COC No: CAL0720
Company Name: EQM	Tel/Fax: X330	Lab Contact: M. Loeb	Carrier: LAB Pickup	1 of 1 COCs
Address: 1800 Carillon Blvd	Analysis Turnaround Time			Sampler:
City/State/Zip: Cincinnati Oh 45240	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 513 825 7500	TAT if different from Below			Walk-in Client:
Fax: 513 825 7495	☒ 2 weeks			Lab Sampling:
Project Name: RVAAP-66	☐ 1 week			
Site: Ravenna Ohio	☐ 2 days			Job / SDG No.:
PO#	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	VOC 8260	SVOC 8270	SVOC 8270 SIM	8081 Pest	8330 Expl	Propellants	6010 Metals Filtered 6020/7470	Sample Specific Notes: Cooler ID
FWG Team 2-Trip	7-20-15	1130			2			X							#3
FWGFBQmw-174C-0574-GW	7-20-15	1257	G	GW	7				X		X	X	X		M-31
FWGFBQmw-174C-0574-GF	⊥	⊥	G	GW	1	X								X	M-31
FWGNTAmw-119-0603-GW	7-20-15	1602	G	GW	8			X		X		X	X		#3
FWGNTAmw-119-0603-GF	⊥	⊥	G	GW	1									X	#3
FWG EQUIPRinse1-0622-GW	7-20-15	1705	G	W	11			X		X	X	X	X	X	C222

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

								½	1	1	1	1	1	1/4	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Temps may not Meet requirements if lab pickup is close to sample time. All VOAs in cooler ID# #3

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd:	Corr'd:	Therm ID No.:

	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	EQM	7/20/15 1720		TestAmerica	7-20-15 1720
Relinquished by:	Company:	Date/Time:	Received by:	Company: 7/20/15	Date/Time: 1815
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company: TA Canton	Date/Time: 7/20/15 1815

TestAmerica Canton Sample Receipt Form/Narrative Login # : 53911
Canton Facility

Client EQM Site Name _____ Cooler unpacked by:

Cooler Received on 7/20/15 Opened on 7/20/15

FedEx: 1st Grd Exp UPS FAS Stetson Client Drop Off TestAmerica Courier Other

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt

IR GUN# A (CF +1.0 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

~~IR GUN# 4 (CF +0.5 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C~~

~~IR GUN# 5 (CF +0.4 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C~~

IR GUN# 8 (CF -1.5 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

See Multiple Cooler Form

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 9 Yes No
   -Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA
   -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Were sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC432654
12. Were VOAs on the COC? Yes No
13. Were air bubbles >6 mm in any VOA vials? Yes No NA
14. Was a trip blank present in the cooler(s)? Trip Blank Lot # B506301BD Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by: N.S.

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

TestAmerica Multiple Cooler Receipt Form/Narrative
Canton Facility

Login #: 53411

Cooler #	IR Gun #	Observed Temp °C	Corrected Temp °C	Coolant
client	A	1.4	2.4	wet ice
		1.8	2.8	
		1.6	2.6	
		3.8	4.8	
		3.2	4.2	
		3.3	4.3	
		3.6	4.6	
		4.2	5.2	
		2.8	3.8	

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
FWGLL1MW-084C-0584-GF	240-53411-A-2	Plastic 500ml - with Nitric Acid	<2		
FWGLL2MW-059C-0588-GF	240-53411-A-4	Plastic 500ml - with Nitric Acid	<2		
FWGLL1MW-083C-0583-GF	240-53411-A-6	Plastic 500ml - with Nitric Acid	<2		
FWGLL1MW-060C-0589-GF	240-53411-A-8	Plastic 500ml - with Nitric Acid	<2		
FWGLL3MW-238C-0592-GF	240-53411-A-10	Plastic 500ml - with Nitric Acid	<2		
FWGLL3MW-241C-0593-GF	240-53411-A-12	Plastic 500ml - with Nitric Acid	<2		
FWGFBQMW-174C-0574-GF	240-53411-A-15	Plastic 500ml - with Nitric Acid	<2		
FWGNTAMW-119-0603-GF	240-53411-A-17	Plastic 500ml - with Nitric Acid	<2		
FWGEQUIPRINSE1-0622-GW	240-53411-D-18	Plastic 500ml - with Nitric Acid			

Job ID: 240-53411-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: Environmental Quality Mgt., Inc.

Project: RVAAP 66 (OH)

Report Number: 240-53411-1

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

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

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

TestAmerica utilizes USEPA approved methods and DOD QSM, where applicable, in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

The 8330_NGu Nitroguanadine, the 8330A Explosives and the 353.2 Nitrocellulose analyses were performed at the TestAmerica Sacramento laboratory.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

All parameters for which TestAmerica North Canton has certification were evaluated to the limit of detection (LOD) and include qualified results where applicable. Parameters not certified under QSM, if any, were evaluated to the detection limit (DL) and include qualified results where applicable.

The sample(s) that contain constituents flagged with U are undetected. The result associated with this flag is the limit of detection (LOD).

RECEIPT

The samples were received on 7/20/2015 6:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 9 coolers at receipt time were 2.4° C, 2.6° C, 2.8° C, 3.8° C, 4.2° C, 4.3° C, 4.6° C, 4.8° C and 5.2° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples FWG TEAM 2-TRIP (240-53411-13), FWGNTAmw-119-0603-GW (240-53411-16) and FWGEQUIPRINSE1-0622-GW (240-53411-18) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B DoD. The samples were analyzed on 07/23/2015.

Job ID: 240-53411-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

Methylene Chloride was detected in method blank MB 240-190310/6 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Acetone failed the recovery criteria low for MRL 240-190310/28. Chloroethane and Methylene Chloride failed the recovery criteria high. 2-Butanone (MEK), 2-Hexanone, 4-Methyl-2-pentanone (MIBK), Acetone and Bromomethane failed the recovery criteria low for MRL 240-190310/5. Methylene Chloride failed the recovery criteria high. Refer to the QC report for details.

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

SEMIVOLATILE ORGANIC COMPOUNDS (GCMS)

Samples FWGLL1mw-084C-0584-GW (240-53411-1), FWGLL2mw-059C-0588-GW (240-53411-3), FWGLL1mw-083C-0583-GW (240-53411-5), FWGLL2mw-060C-0589-GW (240-53411-7), FWGLL3mw-238C-0592-GW (240-53411-9), FWGLL3mw-241C-0593-GW (240-53411-11), FWGFBQmw-174C-0574-GW (240-53411-14), FWGNTAmw-119-0603-GW (240-53411-16) and FWGEQUIPRINSE1-0622-GW (240-53411-18) were analyzed for semivolatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8270C. The samples were prepared on 07/21/2015 and analyzed on 07/27/2015.

Surrogates are added during the extraction process prior to dilution. When the sample is diluted, surrogate recoveries are diluted out and no corrective action is required.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 240-189869.

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

NITROGUANIDINE (HPLC)

Samples FWGLL1mw-084C-0584-GW (240-53411-1), FWGLL2mw-059C-0588-GW (240-53411-3), FWGLL1mw-083C-0583-GW (240-53411-5), FWGLL2mw-060C-0589-GW (240-53411-7), FWGLL3mw-238C-0592-GW (240-53411-9), FWGLL3mw-241C-0593-GW (240-53411-11), FWGFBQmw-174C-0574-GW (240-53411-14), FWGNTAmw-119-0603-GW (240-53411-16) and FWGEQUIPRINSE1-0622-GW (240-53411-18) were analyzed for nitroguanidine (HPLC) in accordance with EPA SW-846 Method 8330_Ngu. The samples were prepared on 07/23/2015 and analyzed on 07/30/2015 and 08/04/2015.

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

CHLORINATED PESTICIDES

Samples FWGLL1mw-084C-0584-GW (240-53411-1), FWGLL1mw-083C-0583-GW (240-53411-5), FWGLL3mw-238C-0592-GW (240-53411-9), FWGLL3mw-241C-0593-GW (240-53411-11), FWGFBQmw-174C-0574-GW (240-53411-14) and FWGEQUIPRINSE1-0622-GW (240-53411-18) were analyzed for chlorinated pesticides in accordance with EPA SW-846 Method 8081A DoD. The samples were prepared on 07/21/2015 and 07/27/2015 and analyzed on 07/23/2015 and 07/29/2015.

DCB surrogate recovery was high in the ICV and the associated samples are ND. The DCB passed in the CCV and mid range calibration point. Samples included in batch are: FWGLL1mw-084C-0584-GW (240-53411-1), FWGLL1mw-083C-0583-GW (240-53411-5), FWGLL3mw-238C-0592-GW (240-53411-9), FWGLL3mw-241C-0593-GW (240-53411-11) and FWGFBQmw-174C-0574-GW (240-53411-14).

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 240-189870.

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

EXPLOSIVES

Samples FWGLL1mw-084C-0584-GW (240-53411-1), FWGLL2mw-059C-0588-GW (240-53411-3), FWGLL1mw-083C-0583-GW (240-53411-5), FWGLL2mw-060C-0589-GW (240-53411-7), FWGLL3mw-238C-0592-GW (240-53411-9), FWGLL3mw-241C-0593-GW (240-53411-11), FWGFBQmw-174C-0574-GW (240-53411-14), FWGNTAmw-119-0603-GW (240-53411-16) and FWGEQUIPRINSE1-0622-GW (240-53411-18) were analyzed for explosives in accordance with EPA SW-846 Method 8330A. The samples

Job ID: 240-53411-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

were prepared on 07/23/2015 and analyzed on 07/27/2015, 07/31/2015, 08/03/2015 and 08/04/2015.

3,4-Dinitrotoluene failed the surrogate recovery criteria high for FWGLL1mw-084C-0584-GW (240-53411-1) and FWGFBQmw-174C-0574-GW (240-53411-14).
3,4-Dinitrotoluene and 3,4-Dinitrotoluene failed the surrogate recovery criteria high for FWGLL1mw-083C-0583-GW (240-53411-5) and FWGLL3mw-238C-0592-GW (240-53411-9). Refer to the QC report for details.

Samples FWGLL1mw-084C-0584-GW (240-53411-1)[5X], FWGLL1mw-083C-0583-GW (240-53411-5)[5X], FWGLL3mw-238C-0592-GW (240-53411-9)[10X], FWGLL3mw-241C-0593-GW (240-53411-11)[5X] and FWGFBQmw-174C-0574-GW (240-53411-14)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 320-80698.

The following samples contained sediment/particulates.FWGLL2mw-059C-0588-GW (240-53411-3) and FWGLL3mw-238C-0592-GW (240-53411-9). The samples were filtered prior extraction.

Surrogate recovery for the following samples was outside control limits: FWGLL1mw-084C-0584-GW (240-53411-1), FWGLL1mw-083C-0583-GW (240-53411-5), FWGLL3mw-238C-0592-GW (240-53411-9) and FWGFBQmw-174C-0574-GW (240-53411-14). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

The following samples required a dilution due to the nature of the sample matrix: FWGLL1mw-084C-0584-GW (240-53411-1), FWGLL1mw-083C-0583-GW (240-53411-5), FWGLL3mw-238C-0592-GW (240-53411-9), FWGLL3mw-241C-0593-GW (240-53411-11) and FWGFBQmw-174C-0574-GW (240-53411-14). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

The initial calibration verification (ICV) result for batch 320-72983 was above the upper control limit for the confirmation column. Sample results were reported from the primary column and the results above RL have dual column RPD less than 40%, therefore, no reanalysis was performed.

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

TOTAL RECOVERABLE METALS (ICP)

Samples FWGLL1mw-084C-0584-GF (240-53411-2), FWGLL2mw-059C-0588-GF (240-53411-4), FWGLL1mw-083C-0583-GF (240-53411-6), FWGLL2mw-060C-0589-GF (240-53411-8), FWGLL3mw-238C-0592-GF (240-53411-10), FWGLL3mw-241C-0593-GF (240-53411-12), FWGFBQmw-174C-0574-GF (240-53411-15), FWGNTAmw-119-0603-GF (240-53411-17) and FWGEQUIPRINSE1-0622-GW (240-53411-18) were analyzed for total recoverable metals (ICP) in accordance with EPA SW-846 Method 6010B DoD. The samples were prepared on 07/21/2015 and analyzed on 07/27/2015.

ICB, CCB, and ICSA samples are evaluated using the lowest LOD and DL criteria in LIMS. Using this criteria, an individual element may occasionally be flagged as out of control. If the element has a higher LOD or DL, the data is evaluated to the higher limit and determined to be acceptable.

Barium, Chromium, Manganese, Potassium and Selenium were detected in method blank MB 240-189945/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Chromium and Lead exceeded the RPD limit for the duplicate of sample FWGLL1mw-084C-0584-GFDU (240-53411-2). Refer to the QC report for details.

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

TOTAL RECOVERABLE METALS (ICPMS)

Samples FWGLL1mw-084C-0584-GF (240-53411-2), FWGLL2mw-059C-0588-GF (240-53411-4), FWGLL1mw-083C-0583-GF (240-53411-6), FWGLL2mw-060C-0589-GF (240-53411-8), FWGLL3mw-238C-0592-GF (240-53411-10), FWGLL3mw-241C-0593-GF (240-53411-12), FWGFBQmw-174C-0574-GF (240-53411-15), FWGNTAmw-119-0603-GF (240-53411-17) and

Job ID: 240-53411-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

FWGEQUIPRINSE1-0622-GW (240-53411-18) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020 DoD. The samples were prepared on 07/21/2015 and analyzed on 07/27/2015.

ICB, CCB, and ICSA samples are evaluated using the lowest LOD and DL criteria in LIMS. Using this criteria, an individual element may occasionally be flagged as out of control. If the element has a higher LOD or DL, the data is evaluated to the higher limit and determined to be acceptable.

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

TOTAL MERCURY

Samples FWGLL1mw-084C-0584-GF (240-53411-2), FWGLL2mw-059C-0588-GF (240-53411-4), FWGLL1mw-083C-0583-GF (240-53411-6), FWGLL2mw-060C-0589-GF (240-53411-8), FWGLL3mw-238C-0592-GF (240-53411-10), FWGLL3mw-241C-0593-GF (240-53411-12), FWGFBQmw-174C-0574-GF (240-53411-15), FWGNTAmw-119-0603-GF (240-53411-17) and FWGEQUIPRINSE1-0622-GW (240-53411-18) were analyzed for total mercury in accordance with EPA SW-846 Method 7470A. The samples were prepared on 07/21/2015 and analyzed on 07/24/2015.

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

NITROCELLULOSE

Samples FWGLL1mw-084C-0584-GW (240-53411-1), FWGLL2mw-059C-0588-GW (240-53411-3), FWGLL1mw-083C-0583-GW (240-53411-5), FWGLL2mw-060C-0589-GW (240-53411-7), FWGLL3mw-238C-0592-GW (240-53411-9), FWGLL3mw-241C-0593-GW (240-53411-11), FWGFBQmw-174C-0574-GW (240-53411-14), FWGNTAmw-119-0603-GW (240-53411-16) and FWGEQUIPRINSE1-0622-GW (240-53411-18) were analyzed for Nitrocellulose in accordance with EPA Method 353.2. The samples were prepared on 07/28/2015 and analyzed on 07/29/2015.

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

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Client Sample ID: FWGLL1mw-084C-0584-GW — **Lab Sample ID: 240-53411-1**
Date Collected: 07/20/15 13:55 — **Matrix: Water**
Date Received: 07/20/15 18:34

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		07/27/15 11:33	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		07/27/15 11:33	1
Diethyl phthalate	0.97	U	1.9	0.97	0.58	ug/L		07/27/15 11:33	1
Dimethyl phthalate	0.49	U	1.9	0.49	0.28	ug/L		07/27/15 11:33	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		07/27/15 11:33	1
Di-n-octyl phthalate	0.49	U	1.9	0.49	0.22	ug/L		07/27/15 11:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*83*		*50 - 110*	*07/21/15 05:40*	*07/27/15 11:33*	*1*
2-Fluorophenol (Surr)	*84*		*20 - 110*	*07/21/15 05:40*	*07/27/15 11:33*	*1*
Nitrobenzene-d5 (Surr)	*87*		*40 - 110*	*07/21/15 05:40*	*07/27/15 11:33*	*1*
Phenol-d5 (Surr)	*93*		*10 - 115*	*07/21/15 05:40*	*07/27/15 11:33*	*1*
Terphenyl-d14 (Surr)	*94*		*50 - 135*	*07/21/15 05:40*	*07/27/15 11:33*	*1*
2,4,6-Tribromophenol (Surr)	*84*		*40 - 125*	*07/21/15 05:40*	*07/27/15 11:33*	*1*

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.048	U	0.048	0.048	0.017	ug/L		07/23/15 19:32	1
4,4'-DDE	0.048	U	0.048	0.048	0.011	ug/L		07/23/15 19:32	1
4,4'-DDT	0.048	U Q	0.048	0.048	0.016	ug/L		07/23/15 19:32	1
Aldrin	0.048	U	0.048	0.048	0.012	ug/L		07/23/15 19:32	1
alpha-BHC	0.048	U	0.048	0.048	0.013	ug/L		07/23/15 19:32	1
alpha-Chlordane	0.048	U	0.048	0.048	0.011	ug/L		07/23/15 19:32	1
beta-BHC	0.048	U	0.048	0.048	0.017	ug/L		07/23/15 19:32	1
delta-BHC	0.048	U	0.048	0.048	0.028	ug/L		07/23/15 19:32	1
Dieldrin	0.048	U	0.048	0.048	0.012	ug/L		07/23/15 19:32	1
Endosulfan I	0.048	U	0.048	0.048	0.015	ug/L		07/23/15 19:32	1
Endosulfan II	0.048	U	0.048	0.048	0.014	ug/L		07/23/15 19:32	1
Endosulfan sulfate	0.048	U	0.048	0.048	0.014	ug/L		07/23/15 19:32	1
Endrin	0.048	U	0.048	0.048	0.012	ug/L		07/23/15 19:32	1
Endrin aldehyde	0.048	U	0.048	0.048	0.017	ug/L		07/23/15 19:32	1
Endrin ketone	0.048	U	0.048	0.048	0.015	ug/L		07/23/15 19:32	1
gamma-BHC (Lindane)	0.048	U	0.048	0.048	0.012	ug/L		07/23/15 19:32	1
gamma-Chlordane	0.048	U	0.048	0.048	0.012	ug/L		07/23/15 19:32	1
Heptachlor	0.048	U	0.048	0.048	0.013	ug/L		07/23/15 19:32	1
Heptachlor epoxide	0.048	U	0.048	0.048	0.014	ug/L		07/23/15 19:32	1
Methoxychlor	0.095	U	0.095	0.095	0.012	ug/L		07/23/15 19:32	1
Toxaphene	1.9	U	1.9	1.9	0.19	ug/L		07/23/15 19:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*65*		*30 - 135*	*07/21/15 05:42*	*07/23/15 19:32*	*1*
DCB Decachlorobiphenyl	*67*		*30 - 135*	*07/21/15 05:42*	*07/23/15 19:32*	*1*
Tetrachloro-m-xylene	*86*		*25 - 140*	*07/21/15 05:42*	*07/23/15 19:32*	*1*
Tetrachloro-m-xylene	*75*		*25 - 140*	*07/21/15 05:42*	*07/23/15 19:32*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/30/15 13:36	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Client Sample ID: FWGLL1mw-084C-0584-GW
Date Collected: 07/20/15 13:55
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-1
Matrix: Water

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	**1.8**		0.15	0.051	0.031	ug/L		07/27/15 16:38	1
1,3-Dinitrobenzene	**0.26**		0.15	0.10	0.051	ug/L		07/27/15 16:38	1
2,4,6-Trinitrotoluene	**5.8**		0.15	0.10	0.051	ug/L		07/27/15 16:38	1
2,4-Dinitrotoluene	**1.1**		0.13	0.10	0.051	ug/L		07/27/15 16:38	1
2,6-Dinitrotoluene	**0.62**		0.13	0.10	0.051	ug/L		07/27/15 16:38	1
2-Amino-4,6-dinitrotoluene	**7.5**		0.15	0.10	0.015	ug/L		07/27/15 16:38	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.089	ug/L		07/27/15 16:38	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		07/27/15 16:38	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.089	ug/L		07/27/15 16:38	1
HMX	**0.73**	**J M**	0.15	0.051	0.036	ug/L		07/27/15 16:38	1
RDX	**1.3**	**M**	0.15	0.051	0.036	ug/L		07/27/15 16:38	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/27/15 16:38	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		07/27/15 16:38	1
Nitroglycerin	0.51	U	0.66	0.51	0.33	ug/L		07/27/15 16:38	1
PETN	0.51	U	0.66	0.51	0.30	ug/L		07/27/15 16:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*346*	*Q*	*79 - 111*	*07/23/15 12:01*	*07/27/15 16:38*	*1*
3,4-Dinitrotoluene	*102*		*79 - 111*	*07/23/15 12:01*	*08/03/15 16:21*	*1*

Method: 8330A - Nitroaromatics and Nitramines - DL

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4-Amino-2,6-dinitrotoluene	**24**	**D**	0.76	0.51	0.25	ug/L		07/31/15 14:56	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*352*	*Q*	*79 - 111*	*07/23/15 12:01*	*07/31/15 14:56*	*5*
3,4-Dinitrotoluene	*105*		*79 - 111*	*07/23/15 12:01*	*08/04/15 11:15*	*5*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		07/29/15 14:22	1

Client Sample Results

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Client Sample ID: FWGLL1mw-084C-0584-GF
Date Collected: 07/20/15 13:55
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-2
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 11:04	1
Chromium	**0.88**	**J**	7.0	4.0	0.55	ug/L		07/27/15 11:04	1
Cobalt	**13**		7.0	4.0	0.56	ug/L		07/27/15 11:04	1
Lead	**2.5**	**J**	10	5.0	1.9	ug/L		07/27/15 11:04	1
Selenium	**4.1**	**J**	15	10	4.0	ug/L		07/27/15 11:04	1
Silver	5.0	U J	7.0	5.0	0.92	ug/L		07/27/15 11:04	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 11:04	1
Barium	**15**	**J**	200	5.0	1.0	ug/L		07/27/15 11:04	1
Calcium	**53000**		5000	1000	260	ug/L		07/27/15 11:04	1
Copper	**8.7**	**J**	25	10	1.9	ug/L		07/27/15 11:04	1
Magnesium	**2900**	**J**	5000	300	55	ug/L		07/27/15 11:04	1
Manganese	**100**		15	5.0	0.46	ug/L		07/27/15 11:04	1
Nickel	**24**	**J**	40	5.0	0.76	ug/L		07/27/15 11:04	1
Potassium	**3600**	**J**	5000	900	70	ug/L		07/27/15 11:04	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	**440**		60	60	20	ug/L		07/27/15 13:03	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 13:03	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 13:03	1
Cadmium	**2.3**		2.0	1.0	0.40	ug/L		07/27/15 13:03	1
Iron	100	U	150	100	44	ug/L		07/27/15 13:03	1
Sodium	**4600**		1000	400	160	ug/L		07/27/15 13:03	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 13:03	1
Zinc	**68**		50	50	27	ug/L		07/27/15 13:03	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 10:45	1

Client Sample ID: FWGLL2mw-059C-0588-GW
Date Collected: 07/20/15 15:41
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-3
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.0	U	5.0	5.0	1.7	ug/L		07/27/15 12:04	1
Butyl benzyl phthalate	0.50	U	5.0	0.50	0.26	ug/L		07/27/15 12:04	1
Diethyl phthalate	1.0	U	2.0	1.0	0.60	ug/L		07/27/15 12:04	1
Dimethyl phthalate	0.50	U	2.0	0.50	0.29	ug/L		07/27/15 12:04	1
Di-n-butyl phthalate	5.0	U	5.0	5.0	1.7	ug/L		07/27/15 12:04	1
Di-n-octyl phthalate	0.50	U	2.0	0.50	0.23	ug/L		07/27/15 12:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*79*		*50 - 110*	*07/21/15 05:40*	*07/27/15 12:04*	*1*
2-Fluorophenol (Surr)	*85*		*20 - 110*	*07/21/15 05:40*	*07/27/15 12:04*	*1*
Nitrobenzene-d5 (Surr)	*87*		*40 - 110*	*07/21/15 05:40*	*07/27/15 12:04*	*1*
Phenol-d5 (Surr)	*93*		*10 - 115*	*07/21/15 05:40*	*07/27/15 12:04*	*1*
Terphenyl-d14 (Surr)	*84*		*50 - 135*	*07/21/15 05:40*	*07/27/15 12:04*	*1*
2,4,6-Tribromophenol (Surr)	*75*		*40 - 125*	*07/21/15 05:40*	*07/27/15 12:04*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/30/15 14:29	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U M	0.15	0.052	0.032	ug/L		07/27/15 17:22	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.052	ug/L		07/27/15 17:22	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.052	ug/L		07/27/15 17:22	1
2,4-Dinitrotoluene	0.10	U M	0.13	0.10	0.052	ug/L		07/27/15 17:22	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		07/27/15 17:22	1
2-Amino-4,6-dinitrotoluene	**0.10**	**J M**	0.15	0.10	0.015	ug/L		07/27/15 17:22	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		07/27/15 17:22	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		07/27/15 17:22	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		07/27/15 17:22	1
4-Amino-2,6-dinitrotoluene	**0.13**	**J M**	0.15	0.10	0.052	ug/L		07/27/15 17:22	1
HMX	0.052	U	0.15	0.052	0.037	ug/L		07/27/15 17:22	1
RDX	0.052	U	0.15	0.052	0.037	ug/L		07/27/15 17:22	1
Nitrobenzene	0.10	U	0.15	0.10	0.052	ug/L		07/27/15 17:22	1
Tetryl	0.10	U	0.15	0.10	0.052	ug/L		07/27/15 17:22	1
Nitroglycerin	0.52	U	0.67	0.52	0.34	ug/L		07/27/15 17:22	1
PETN	**1.4**		0.67	0.52	0.31	ug/L		07/27/15 17:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*92*	*M*	*79 - 111*	*07/23/15 12:01*	*07/27/15 17:22*	*1*
3,4-Dinitrotoluene	*100*		*79 - 111*	*07/23/15 12:01*	*08/03/15 17:27*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		07/29/15 14:28	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Client Sample ID: FWGLL2mw-059C-0588-GF
Date Collected: 07/20/15 15:41
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-4
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**5.2**	**J**	10	10	2.9	ug/L		07/27/15 11:28	1
Chromium	**1.3**	**J**	7.0	4.0	0.55	ug/L		07/27/15 11:28	1
Cobalt	**22**		7.0	4.0	0.56	ug/L		07/27/15 11:28	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 11:28	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 11:28	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 11:28	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 11:28	1
Barium	**47**	**J**	200	5.0	1.0	ug/L		07/27/15 11:28	1
Calcium	**89000**		5000	1000	260	ug/L		07/27/15 11:28	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 11:28	1
Magnesium	**17000**		5000	300	55	ug/L		07/27/15 11:28	1
Manganese	**1300**		15	5.0	0.46	ug/L		07/27/15 11:28	1
Nickel	**5.3**	**J**	40	5.0	0.76	ug/L		07/27/15 11:28	1
Potassium	**380**	**J**	5000	900	70	ug/L		07/27/15 11:28	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 13:21	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 13:21	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 13:21	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 13:21	1
Iron	**4700**		150	100	44	ug/L		07/27/15 13:21	1
Sodium	**17000**		1000	400	160	ug/L		07/27/15 13:21	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 13:21	1
Zinc	50	U	50	50	27	ug/L		07/27/15 13:21	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 10:53	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Client Sample ID: FWGLL1mw-083C-0583-GW
Date Collected: 07/20/15 13:03
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-5
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		07/27/15 12:30	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		07/27/15 12:30	1
Diethyl phthalate	0.95	U	1.9	0.95	0.57	ug/L		07/27/15 12:30	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		07/27/15 12:30	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		07/27/15 12:30	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		07/27/15 12:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*77*		*50 - 110*	*07/21/15 05:40*	*07/27/15 12:30*	*1*
2-Fluorophenol (Surr)	*76*		*20 - 110*	*07/21/15 05:40*	*07/27/15 12:30*	*1*
Nitrobenzene-d5 (Surr)	*81*		*40 - 110*	*07/21/15 05:40*	*07/27/15 12:30*	*1*
Phenol-d5 (Surr)	*87*		*10 - 115*	*07/21/15 05:40*	*07/27/15 12:30*	*1*
Terphenyl-d14 (Surr)	*89*		*50 - 135*	*07/21/15 05:40*	*07/27/15 12:30*	*1*
2,4,6-Tribromophenol (Surr)	*68*		*40 - 125*	*07/21/15 05:40*	*07/27/15 12:30*	*1*

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.048	U	0.048	0.048	0.017	ug/L		07/23/15 19:54	1
4,4'-DDE	0.048	U	0.048	0.048	0.011	ug/L		07/23/15 19:54	1
4,4'-DDT	0.048	U Q	0.048	0.048	0.016	ug/L		07/23/15 19:54	1
Aldrin	0.048	U	0.048	0.048	0.012	ug/L		07/23/15 19:54	1
alpha-BHC	0.048	U	0.048	0.048	0.013	ug/L		07/23/15 19:54	1
alpha-Chlordane	0.048	U	0.048	0.048	0.011	ug/L		07/23/15 19:54	1
beta-BHC	0.048	U	0.048	0.048	0.017	ug/L		07/23/15 19:54	1
delta-BHC	0.048	U	0.048	0.048	0.028	ug/L		07/23/15 19:54	1
Dieldrin	0.048	U	0.048	0.048	0.012	ug/L		07/23/15 19:54	1
Endosulfan I	0.048	U	0.048	0.048	0.015	ug/L		07/23/15 19:54	1
Endosulfan II	0.048	U	0.048	0.048	0.014	ug/L		07/23/15 19:54	1
Endosulfan sulfate	0.048	U	0.048	0.048	0.014	ug/L		07/23/15 19:54	1
Endrin	0.048	U	0.048	0.048	0.012	ug/L		07/23/15 19:54	1
Endrin aldehyde	0.048	U	0.048	0.048	0.017	ug/L		07/23/15 19:54	1
Endrin ketone	0.048	U	0.048	0.048	0.015	ug/L		07/23/15 19:54	1
gamma-BHC (Lindane)	0.048	U	0.048	0.048	0.012	ug/L		07/23/15 19:54	1
gamma-Chlordane	0.048	U	0.048	0.048	0.012	ug/L		07/23/15 19:54	1
Heptachlor	0.048	U	0.048	0.048	0.013	ug/L		07/23/15 19:54	1
Heptachlor epoxide	0.048	U	0.048	0.048	0.014	ug/L		07/23/15 19:54	1
Methoxychlor	0.095	U	0.095	0.095	0.012	ug/L		07/23/15 19:54	1
Toxaphene	1.9	U	1.9	1.9	0.19	ug/L		07/23/15 19:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*58*		*30 - 135*	*07/21/15 05:42*	*07/23/15 19:54*	*1*
DCB Decachlorobiphenyl	*60*		*30 - 135*	*07/21/15 05:42*	*07/23/15 19:54*	*1*
Tetrachloro-m-xylene	*103*		*25 - 140*	*07/21/15 05:42*	*07/23/15 19:54*	*1*
Tetrachloro-m-xylene	*91*		*25 - 140*	*07/21/15 05:42*	*07/23/15 19:54*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/30/15 14:47	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Client Sample ID: FWGLL1mw-083C-0583-GW
Date Collected: 07/20/15 13:03
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-5
Matrix: Water

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	**5.8**		0.15	0.051	0.032	ug/L		07/27/15 18:05	1
1,3-Dinitrobenzene	**0.24**		0.15	0.10	0.051	ug/L		07/27/15 18:05	1
2,4,6-Trinitrotoluene	**3.4**		0.15	0.10	0.051	ug/L		07/27/15 18:05	1
2,4-Dinitrotoluene	**2.7**		0.13	0.10	0.051	ug/L		07/27/15 18:05	1
2,6-Dinitrotoluene	**1.6**		0.13	0.10	0.051	ug/L		07/27/15 18:05	1
2-Nitrotoluene	0.10	U M	0.51	0.10	0.090	ug/L		07/27/15 18:05	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		07/27/15 18:05	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/27/15 18:05	1
HMX	**1.5**	**J M**	0.15	0.051	0.037	ug/L		07/27/15 18:05	1
RDX	0.051	U M	0.15	0.051	0.037	ug/L		07/27/15 18:05	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/27/15 18:05	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		07/27/15 18:05	1
Nitroglycerin	0.51	U	0.66	0.51	0.34	ug/L		07/27/15 18:05	1
PETN	0.51	U	0.66	0.51	0.31	ug/L		07/27/15 18:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*149*	*Q*	*79 - 111*	*07/23/15 12:01*	*07/27/15 18:05*	*1*
3,4-Dinitrotoluene	*107*		*79 - 111*	*07/23/15 12:01*	*08/03/15 18:34*	*1*

Method: 8330A - Nitroaromatics and Nitramines - DL

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Amino-4,6-dinitrotoluene	**11**	**D**	0.76	0.51	0.076	ug/L		07/31/15 15:40	5
4-Amino-2,6-dinitrotoluene	**24**	**D**	0.76	0.51	0.25	ug/L		07/31/15 15:40	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*147*	*Q*	*79 - 111*	*07/23/15 12:01*	*07/31/15 15:40*	*5*
3,4-Dinitrotoluene	*106*		*79 - 111*	*07/23/15 12:01*	*08/04/15 12:21*	*5*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		07/29/15 14:30	1

Client Sample ID: FWGLL1mw-083C-0583-GF
Date Collected: 07/20/15 13:03
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-6
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 11:40	1
Chromium	4.0	U	7.0	4.0	0.55	ug/L		07/27/15 11:40	1
Cobalt	**7.2**		7.0	4.0	0.56	ug/L		07/27/15 11:40	1
Lead	**2.0**	**J**	10	5.0	1.9	ug/L		07/27/15 11:40	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 11:40	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 11:40	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 11:40	1
Barium	**15**	**J**	200	5.0	1.0	ug/L		07/27/15 11:40	1
Calcium	**23000**		5000	1000	260	ug/L		07/27/15 11:40	1
Copper	**3.3**	**J**	25	10	1.9	ug/L		07/27/15 11:40	1
Magnesium	**5200**		5000	300	55	ug/L		07/27/15 11:40	1
Manganese	**380**		15	5.0	0.46	ug/L		07/27/15 11:40	1
Nickel	**27**	**J**	40	5.0	0.76	ug/L		07/27/15 11:40	1
Potassium	**2600**	**J**	5000	900	70	ug/L		07/27/15 11:40	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	**710**		60	60	20	ug/L		07/27/15 13:24	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 13:24	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 13:24	1
Cadmium	**0.64**	**J**	2.0	1.0	0.40	ug/L		07/27/15 13:24	1
Iron	100	U	150	100	44	ug/L		07/27/15 13:24	1
Sodium	**7500**		1000	400	160	ug/L		07/27/15 13:24	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 13:24	1
Zinc	**38**	**J**	50	50	27	ug/L		07/27/15 13:24	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 10:55	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Client Sample ID: FWGLL2mw-060C-0589-GW — **Lab Sample ID: 240-53411-7**
Date Collected: 07/20/15 15:33 — **Matrix: Water**
Date Received: 07/20/15 18:34

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		07/27/15 12:55	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		07/27/15 12:55	1
Diethyl phthalate	0.95	U	1.9	0.95	0.57	ug/L		07/27/15 12:55	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		07/27/15 12:55	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		07/27/15 12:55	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		07/27/15 12:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*76*		*50 - 110*	*07/21/15 05:40*	*07/27/15 12:55*	*1*
2-Fluorophenol (Surr)	*77*		*20 - 110*	*07/21/15 05:40*	*07/27/15 12:55*	*1*
Nitrobenzene-d5 (Surr)	*76*		*40 - 110*	*07/21/15 05:40*	*07/27/15 12:55*	*1*
Phenol-d5 (Surr)	*88*		*10 - 115*	*07/21/15 05:40*	*07/27/15 12:55*	*1*
Terphenyl-d14 (Surr)	*85*		*50 - 135*	*07/21/15 05:40*	*07/27/15 12:55*	*1*
2,4,6-Tribromophenol (Surr)	*69*		*40 - 125*	*07/21/15 05:40*	*07/27/15 12:55*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/30/15 15:05	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		07/27/15 18:49	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/27/15 18:49	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/27/15 18:49	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/27/15 18:49	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/27/15 18:49	1
2-Amino-4,6-dinitrotoluene	**0.32**	**M**	0.15	0.10	0.015	ug/L		07/27/15 18:49	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/27/15 18:49	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		07/27/15 18:49	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/27/15 18:49	1
4-Amino-2,6-dinitrotoluene	**0.40**	**M**	0.15	0.10	0.051	ug/L		07/27/15 18:49	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		07/27/15 18:49	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		07/27/15 18:49	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/27/15 18:49	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		07/27/15 18:49	1
Nitroglycerin	0.51	U	0.66	0.51	0.34	ug/L		07/27/15 18:49	1
PETN	0.51	U	0.66	0.51	0.31	ug/L		07/27/15 18:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*92*	*M*	*79 - 111*	*07/23/15 12:01*	*07/27/15 18:49*	*1*
3,4-Dinitrotoluene	*101*		*79 - 111*	*07/23/15 12:01*	*08/03/15 19:41*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		07/29/15 14:32	1

Client Sample Results

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Client Sample ID: FWGLL2mw-060C-0589-GF
Date Collected: 07/20/15 15:33
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-8
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 11:44	1
Chromium	**1.2**	**J**	7.0	4.0	0.55	ug/L		07/27/15 11:44	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 11:44	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 11:44	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 11:44	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 11:44	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 11:44	1
Barium	**32**	**J**	200	5.0	1.0	ug/L		07/27/15 11:44	1
Calcium	**59000**		5000	1000	260	ug/L		07/27/15 11:44	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 11:44	1
Magnesium	**8100**		5000	300	55	ug/L		07/27/15 11:44	1
Manganese	**26**		15	5.0	0.46	ug/L		07/27/15 11:44	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 11:44	1
Potassium	**590**	**J**	5000	900	70	ug/L		07/27/15 11:44	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 13:46	1
Antimony	**0.43**	**J**	2.0	1.0	0.33	ug/L		07/27/15 13:46	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 13:46	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 13:46	1
Iron	100	U	150	100	44	ug/L		07/27/15 13:46	1
Sodium	**2500**		1000	400	160	ug/L		07/27/15 13:46	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 13:46	1
Zinc	50	U	50	50	27	ug/L		07/27/15 13:46	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 10:56	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Client Sample ID: FWGLL3mw-238C-0592-GW
Date Collected: 07/20/15 14:58
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-9
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		07/27/15 13:20	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		07/27/15 13:20	1
Diethyl phthalate	0.97	U	1.9	0.97	0.58	ug/L		07/27/15 13:20	1
Dimethyl phthalate	0.49	U	1.9	0.49	0.28	ug/L		07/27/15 13:20	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		07/27/15 13:20	1
Di-n-octyl phthalate	0.49	U	1.9	0.49	0.22	ug/L		07/27/15 13:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*83*		*50 - 110*	*07/21/15 05:40*	*07/27/15 13:20*	*1*
2-Fluorophenol (Surr)	*87*		*20 - 110*	*07/21/15 05:40*	*07/27/15 13:20*	*1*
Nitrobenzene-d5 (Surr)	*89*		*40 - 110*	*07/21/15 05:40*	*07/27/15 13:20*	*1*
Phenol-d5 (Surr)	*97*		*10 - 115*	*07/21/15 05:40*	*07/27/15 13:20*	*1*
Terphenyl-d14 (Surr)	*91*		*50 - 135*	*07/21/15 05:40*	*07/27/15 13:20*	*1*
2,4,6-Tribromophenol (Surr)	*81*		*40 - 125*	*07/21/15 05:40*	*07/27/15 13:20*	*1*

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.052	U	0.052	0.052	0.019	ug/L		07/23/15 20:17	1
4,4'-DDE	0.052	U	0.052	0.052	0.012	ug/L		07/23/15 20:17	1
4,4'-DDT	0.052	U Q	0.052	0.052	0.018	ug/L		07/23/15 20:17	1
Aldrin	0.052	U	0.052	0.052	0.013	ug/L		07/23/15 20:17	1
alpha-BHC	0.052	U	0.052	0.052	0.014	ug/L		07/23/15 20:17	1
alpha-Chlordane	0.052	U	0.052	0.052	0.012	ug/L		07/23/15 20:17	1
beta-BHC	0.052	U	0.052	0.052	0.019	ug/L		07/23/15 20:17	1
delta-BHC	0.052	U	0.052	0.052	0.030	ug/L		07/23/15 20:17	1
Dieldrin	0.052	U	0.052	0.052	0.013	ug/L		07/23/15 20:17	1
Endosulfan I	0.052	U	0.052	0.052	0.016	ug/L		07/23/15 20:17	1
Endosulfan II	0.052	U	0.052	0.052	0.015	ug/L		07/23/15 20:17	1
Endosulfan sulfate	0.052	U	0.052	0.052	0.015	ug/L		07/23/15 20:17	1
Endrin	0.052	U	0.052	0.052	0.013	ug/L		07/23/15 20:17	1
Endrin aldehyde	0.052	U	0.052	0.052	0.019	ug/L		07/23/15 20:17	1
Endrin ketone	0.052	U	0.052	0.052	0.016	ug/L		07/23/15 20:17	1
gamma-BHC (Lindane)	0.052	U	0.052	0.052	0.013	ug/L		07/23/15 20:17	1
gamma-Chlordane	0.052	U	0.052	0.052	0.013	ug/L		07/23/15 20:17	1
Heptachlor	0.052	U	0.052	0.052	0.014	ug/L		07/23/15 20:17	1
Heptachlor epoxide	0.052	U	0.052	0.052	0.015	ug/L		07/23/15 20:17	1
Methoxychlor	0.10	U	0.10	0.10	0.013	ug/L		07/23/15 20:17	1
Toxaphene	2.1	U	2.1	2.1	0.20	ug/L		07/23/15 20:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*56*		*30 - 135*	*07/21/15 05:42*	*07/23/15 20:17*	*1*
DCB Decachlorobiphenyl	*58*		*30 - 135*	*07/21/15 05:42*	*07/23/15 20:17*	*1*
Tetrachloro-m-xylene	*80*		*25 - 140*	*07/21/15 05:42*	*07/23/15 20:17*	*1*
Tetrachloro-m-xylene	*81*		*25 - 140*	*07/21/15 05:42*	*07/23/15 20:17*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/30/15 15:23	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Client Sample ID: FWGLL3mw-238C-0592-GW
Date Collected: 07/20/15 14:58
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-9
Matrix: Water

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3-Dinitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		07/27/15 19:32	1
2,4-Dinitrotoluene	0.10	U	0.14	0.10	0.052	ug/L		07/27/15 19:32	1
2,6-Dinitrotoluene	**0.38**		0.14	0.10	0.052	ug/L		07/27/15 19:32	1
2-Amino-4,6-dinitrotoluene	**9.0**	**M**	0.16	0.10	0.016	ug/L		07/27/15 19:32	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.092	ug/L		07/27/15 19:32	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.060	ug/L		07/27/15 19:32	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.092	ug/L		07/27/15 19:32	1
HMX	**1.1**	**M**	0.16	0.052	0.038	ug/L		07/27/15 19:32	1
RDX	**6.8**	**J M**	0.16	0.052	0.038	ug/L		07/27/15 19:32	1
Nitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		07/27/15 19:32	1
Tetryl	0.10	U	0.16	0.10	0.052	ug/L		07/27/15 19:32	1
Nitroglycerin	0.52	U	0.68	0.52	0.35	ug/L		07/27/15 19:32	1
PETN	**2.3**	**M**	0.68	0.52	0.31	ug/L		07/27/15 19:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*136*	*M Q*	*79 - 111*	*07/23/15 12:01*	*07/27/15 19:32*	*1*
3,4-Dinitrotoluene	*108*		*79 - 111*	*07/23/15 12:01*	*08/03/15 20:47*	*1*

Method: 8330A - Nitroaromatics and Nitramines - DL

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	**24**	**D**	1.6	0.52	0.32	ug/L		07/31/15 16:23	10
2,4,6-Trinitrotoluene	**55**	**D**	1.6	1.0	0.52	ug/L		07/31/15 16:23	10
4-Amino-2,6-dinitrotoluene	**25**	**D M**	1.6	1.0	0.52	ug/L		07/31/15 16:23	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*117*	*M Q*	*79 - 111*	*07/23/15 12:01*	*07/31/15 16:23*	*10*
3,4-Dinitrotoluene	*110*		*79 - 111*	*07/23/15 12:01*	*08/04/15 13:28*	*10*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		07/29/15 14:34	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Client Sample ID: FWGLL3mw-238C-0592-GF
Date Collected: 07/20/15 14:58
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-10
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 11:48	1
Chromium	**1.5**	**J**	7.0	4.0	0.55	ug/L		07/27/15 11:48	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 11:48	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 11:48	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 11:48	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 11:48	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 11:48	1
Barium	**7.6**	**J**	200	5.0	1.0	ug/L		07/27/15 11:48	1
Calcium	**51000**		5000	1000	260	ug/L		07/27/15 11:48	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 11:48	1
Magnesium	**5500**		5000	300	55	ug/L		07/27/15 11:48	1
Manganese	**3.1**	**J**	15	5.0	0.46	ug/L		07/27/15 11:48	1
Nickel	**1.3**	**J**	40	5.0	0.76	ug/L		07/27/15 11:48	1
Potassium	**2700**	**J**	5000	900	70	ug/L		07/27/15 11:48	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	**79**		60	60	20	ug/L		07/27/15 13:49	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 13:49	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 13:49	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 13:49	1
Iron	**140**	**J**	150	100	44	ug/L		07/27/15 13:49	1
Sodium	**2600**		1000	400	160	ug/L		07/27/15 13:49	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 13:49	1
Zinc	50	U	50	50	27	ug/L		07/27/15 13:49	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 10:58	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Client Sample ID: FWGLL3mw-241C-0593-GW
Date Collected: 07/20/15 16:44
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-11
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.0	U	5.0	5.0	1.7	ug/L		07/27/15 13:46	1
Butyl benzyl phthalate	0.50	U	5.0	0.50	0.26	ug/L		07/27/15 13:46	1
Diethyl phthalate	1.0	U	2.0	1.0	0.60	ug/L		07/27/15 13:46	1
Dimethyl phthalate	0.50	U	2.0	0.50	0.29	ug/L		07/27/15 13:46	1
Di-n-butyl phthalate	5.0	U	5.0	5.0	1.7	ug/L		07/27/15 13:46	1
Di-n-octyl phthalate	0.50	U	2.0	0.50	0.23	ug/L		07/27/15 13:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*72*		*50 - 110*	*07/21/15 05:40*	*07/27/15 13:46*	*1*
2-Fluorophenol (Surr)	*69*		*20 - 110*	*07/21/15 05:40*	*07/27/15 13:46*	*1*
Nitrobenzene-d5 (Surr)	*70*		*40 - 110*	*07/21/15 05:40*	*07/27/15 13:46*	*1*
Phenol-d5 (Surr)	*83*		*10 - 115*	*07/21/15 05:40*	*07/27/15 13:46*	*1*
Terphenyl-d14 (Surr)	*92*		*50 - 135*	*07/21/15 05:40*	*07/27/15 13:46*	*1*
2,4,6-Tribromophenol (Surr)	*75*		*40 - 125*	*07/21/15 05:40*	*07/27/15 13:46*	*1*

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.048	U	0.048	0.048	0.017	ug/L		07/23/15 20:39	1
4,4'-DDE	0.048	U	0.048	0.048	0.011	ug/L		07/23/15 20:39	1
4,4'-DDT	0.048	U Q	0.048	0.048	0.016	ug/L		07/23/15 20:39	1
Aldrin	0.048	U	0.048	0.048	0.012	ug/L		07/23/15 20:39	1
alpha-BHC	0.048	U	0.048	0.048	0.013	ug/L		07/23/15 20:39	1
alpha-Chlordane	0.048	U	0.048	0.048	0.011	ug/L		07/23/15 20:39	1
beta-BHC	0.048	U	0.048	0.048	0.017	ug/L		07/23/15 20:39	1
delta-BHC	0.048	U	0.048	0.048	0.028	ug/L		07/23/15 20:39	1
Dieldrin	0.048	U	0.048	0.048	0.012	ug/L		07/23/15 20:39	1
Endosulfan I	0.048	U	0.048	0.048	0.015	ug/L		07/23/15 20:39	1
Endosulfan II	0.048	U	0.048	0.048	0.014	ug/L		07/23/15 20:39	1
Endosulfan sulfate	0.048	U	0.048	0.048	0.014	ug/L		07/23/15 20:39	1
Endrin	0.048	U	0.048	0.048	0.012	ug/L		07/23/15 20:39	1
Endrin aldehyde	0.048	U	0.048	0.048	0.017	ug/L		07/23/15 20:39	1
Endrin ketone	0.048	U	0.048	0.048	0.015	ug/L		07/23/15 20:39	1
gamma-BHC (Lindane)	0.048	U	0.048	0.048	0.012	ug/L		07/23/15 20:39	1
gamma-Chlordane	0.048	U	0.048	0.048	0.012	ug/L		07/23/15 20:39	1
Heptachlor	0.048	U	0.048	0.048	0.013	ug/L		07/23/15 20:39	1
Heptachlor epoxide	0.048	U	0.048	0.048	0.014	ug/L		07/23/15 20:39	1
Methoxychlor	0.095	U	0.095	0.095	0.012	ug/L		07/23/15 20:39	1
Toxaphene	1.9	U	1.9	1.9	0.19	ug/L		07/23/15 20:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*53*		*30 - 135*	*07/21/15 05:42*	*07/23/15 20:39*	*1*
DCB Decachlorobiphenyl	*55*		*30 - 135*	*07/21/15 05:42*	*07/23/15 20:39*	*1*
Tetrachloro-m-xylene	*68*		*25 - 140*	*07/21/15 05:42*	*07/23/15 20:39*	*1*
Tetrachloro-m-xylene	*70*		*25 - 140*	*07/21/15 05:42*	*07/23/15 20:39*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/30/15 15:40	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Client Sample ID: FWGLL3mw-241C-0593-GW
Date Collected: 07/20/15 16:44
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-11
Matrix: Water

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/27/15 20:16	1
2,4,6-Trinitrotoluene	**6.0**		0.15	0.10	0.051	ug/L		07/27/15 20:16	1
2,4-Dinitrotoluene	0.10	U M	0.13	0.10	0.051	ug/L		07/27/15 20:16	1
2,6-Dinitrotoluene	**0.14**	**M**	0.13	0.10	0.051	ug/L		07/27/15 20:16	1
2-Amino-4,6-dinitrotoluene	**2.6**		0.15	0.10	0.015	ug/L		07/27/15 20:16	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.089	ug/L		07/27/15 20:16	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		07/27/15 20:16	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.089	ug/L		07/27/15 20:16	1
4-Amino-2,6-dinitrotoluene	**2.7**		0.15	0.10	0.051	ug/L		07/27/15 20:16	1
HMX	**0.32**	**M**	0.15	0.051	0.036	ug/L		07/27/15 20:16	1
RDX	**1.3**	**M**	0.15	0.051	0.036	ug/L		07/27/15 20:16	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/27/15 20:16	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		07/27/15 20:16	1
Nitroglycerin	0.51	U	0.66	0.51	0.33	ug/L		07/27/15 20:16	1
PETN	0.51	U	0.66	0.51	0.30	ug/L		07/27/15 20:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*96*		*79 - 111*	*07/23/15 12:01*	*07/27/15 20:16*	*1*
3,4-Dinitrotoluene	*104*		*79 - 111*	*07/23/15 12:01*	*08/03/15 21:54*	*1*

Method: 8330A - Nitroaromatics and Nitramines - DL

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	**14**	**D**	0.76	0.25	0.16	ug/L		07/31/15 17:07	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*101*		*79 - 111*	*07/23/15 12:01*	*07/31/15 17:07*	*5*
3,4-Dinitrotoluene	*105*		*79 - 111*	*07/23/15 12:01*	*08/04/15 14:35*	*5*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		07/29/15 14:36	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Client Sample ID: FWGLL3mw-241C-0593-GF
Date Collected: 07/20/15 16:44
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-12
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 11:52	1
Chromium	4.0	U	7.0	4.0	0.55	ug/L		07/27/15 11:52	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 11:52	1
Lead	**2.8**	**J**	10	5.0	1.9	ug/L		07/27/15 11:52	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 11:52	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 11:52	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 11:52	1
Barium	**1.0**	**J**	200	5.0	1.0	ug/L		07/27/15 11:52	1
Calcium	**16000**		5000	1000	260	ug/L		07/27/15 11:52	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 11:52	1
Magnesium	**6500**		5000	300	55	ug/L		07/27/15 11:52	1
Manganese	5.0	U	15	5.0	0.46	ug/L		07/27/15 11:52	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 11:52	1
Potassium	**650**	**J**	5000	900	70	ug/L		07/27/15 11:52	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 13:53	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 13:53	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 13:53	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 13:53	1
Iron	100	U	150	100	44	ug/L		07/27/15 13:53	1
Sodium	**2500**		1000	400	160	ug/L		07/27/15 13:53	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 13:53	1
Zinc	50	U	50	50	27	ug/L		07/27/15 13:53	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 11:00	1

Client Sample ID: FWG TEAM 2-TRIP
Date Collected: 07/20/15 11:30
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-13
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 15:32	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	0.22	ug/L		07/23/15 15:32	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.24	ug/L		07/23/15 15:32	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.30	ug/L		07/23/15 15:32	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.45	ug/L		07/23/15 15:32	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.23	ug/L		07/23/15 15:32	1
1,2-Dichloroethene, Total	1.0	U	2.0	1.0	0.20	ug/L		07/23/15 15:32	1
1,2-Dichloropropane	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 15:32	1
2-Hexanone	2.0	U	10	2.0	0.48	ug/L		07/23/15 15:32	1
Bromochloromethane	1.0	U	1.0	1.0	0.50	ug/L		07/23/15 15:32	1
Acetone	**1.5**	**J**	10	2.0	0.94	ug/L		07/23/15 15:32	1
Benzene	1.0	U	1.0	1.0	0.35	ug/L		07/23/15 15:32	1
Bromoform	1.0	U	1.0	1.0	0.56	ug/L		07/23/15 15:32	1
Bromomethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 15:32	1
Carbon disulfide	1.0	U	1.0	1.0	0.38	ug/L		07/23/15 15:32	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.43	ug/L		07/23/15 15:32	1
Chlorobenzene	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 15:32	1
Chloroethane	1.0	U	1.0	1.0	0.32	ug/L		07/23/15 15:32	1
Chloroform	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 15:32	1
Chloromethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 15:32	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	0.26	ug/L		07/23/15 15:32	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.46	ug/L		07/23/15 15:32	1
Bromodichloromethane	1.0	U	1.0	1.0	0.29	ug/L		07/23/15 15:32	1
Ethylbenzene	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 15:32	1
1,2-Dibromoethane	1.0	U	1.0	1.0	0.32	ug/L		07/23/15 15:32	1
m-Xylene & p-Xylene	1.0	U	2.0	1.0	0.24	ug/L		07/23/15 15:32	1
2-Butanone (MEK)	2.0	U	10	2.0	0.53	ug/L		07/23/15 15:32	1
4-Methyl-2-pentanone (MIBK)	2.0	U	10	2.0	0.99	ug/L		07/23/15 15:32	1
Methylene Chloride	**0.53**	**J B**	1.0	1.0	0.33	ug/L		07/23/15 15:32	1
o-Xylene	0.50	U	1.0	0.50	0.25	ug/L		07/23/15 15:32	1
Styrene	0.50	U	1.0	0.50	0.45	ug/L		07/23/15 15:32	1
Tetrachloroethene	1.0	U	1.0	1.0	0.31	ug/L		07/23/15 15:32	1
Toluene	1.0	U	1.0	1.0	0.23	ug/L		07/23/15 15:32	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	0.30	ug/L		07/23/15 15:32	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.56	ug/L		07/23/15 15:32	1
Trichloroethene	1.0	U	1.0	1.0	0.22	ug/L		07/23/15 15:32	1
Vinyl chloride	1.0	U	1.0	1.0	0.29	ug/L		07/23/15 15:32	1
Xylenes, Total	2.0	U	2.0	2.0	0.52	ug/L		07/23/15 15:32	1
Dibromochloromethane	1.0	U	1.0	1.0	0.43	ug/L		07/23/15 15:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*70 - 120*		*07/23/15 15:32*	*1*
4-Bromofluorobenzene (Surr)	*87*		*75 - 120*		*07/23/15 15:32*	*1*
Toluene-d8 (Surr)	*94*		*85 - 120*		*07/23/15 15:32*	*1*
Dibromofluoromethane (Surr)	*92*		*85 - 115*		*07/23/15 15:32*	*1*

Client Sample ID: FWGFBQmw-174C-0574-GW — **Lab Sample ID: 240-53411-14**
Date Collected: 07/20/15 12:57 — **Matrix: Water**
Date Received: 07/20/15 18:34

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.0	U	5.0	5.0	1.7	ug/L		07/27/15 14:11	1
Butyl benzyl phthalate	0.50	U	5.0	0.50	0.26	ug/L		07/27/15 14:11	1
Diethyl phthalate	0.99	U	2.0	0.99	0.59	ug/L		07/27/15 14:11	1
Dimethyl phthalate	0.50	U	2.0	0.50	0.29	ug/L		07/27/15 14:11	1
Di-n-butyl phthalate	5.0	U	5.0	5.0	1.7	ug/L		07/27/15 14:11	1
Di-n-octyl phthalate	0.50	U	2.0	0.50	0.23	ug/L		07/27/15 14:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*57*		*50 - 110*	*07/21/15 05:40*	*07/27/15 14:11*	*1*
2-Fluorophenol (Surr)	*56*		*20 - 110*	*07/21/15 05:40*	*07/27/15 14:11*	*1*
Nitrobenzene-d5 (Surr)	*61*		*40 - 110*	*07/21/15 05:40*	*07/27/15 14:11*	*1*
Phenol-d5 (Surr)	*65*		*10 - 115*	*07/21/15 05:40*	*07/27/15 14:11*	*1*
Terphenyl-d14 (Surr)	*92*		*50 - 135*	*07/21/15 05:40*	*07/27/15 14:11*	*1*
2,4,6-Tribromophenol (Surr)	*77*		*40 - 125*	*07/21/15 05:40*	*07/27/15 14:11*	*1*

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.048	U	0.048	0.048	0.017	ug/L		07/23/15 21:00	1
4,4'-DDE	0.048	U	0.048	0.048	0.011	ug/L		07/23/15 21:00	1
4,4'-DDT	0.048	U Q	0.048	0.048	0.016	ug/L		07/23/15 21:00	1
Aldrin	0.048	U	0.048	0.048	0.012	ug/L		07/23/15 21:00	1
alpha-BHC	0.048	U	0.048	0.048	0.013	ug/L		07/23/15 21:00	1
alpha-Chlordane	0.048	U	0.048	0.048	0.011	ug/L		07/23/15 21:00	1
beta-BHC	0.048	U	0.048	0.048	0.017	ug/L		07/23/15 21:00	1
delta-BHC	0.048	U	0.048	0.048	0.028	ug/L		07/23/15 21:00	1
Dieldrin	0.048	U	0.048	0.048	0.012	ug/L		07/23/15 21:00	1
Endosulfan I	0.048	U	0.048	0.048	0.015	ug/L		07/23/15 21:00	1
Endosulfan II	0.048	U	0.048	0.048	0.014	ug/L		07/23/15 21:00	1
Endosulfan sulfate	0.048	U	0.048	0.048	0.014	ug/L		07/23/15 21:00	1
Endrin	0.048	U	0.048	0.048	0.012	ug/L		07/23/15 21:00	1
Endrin aldehyde	0.048	U	0.048	0.048	0.017	ug/L		07/23/15 21:00	1
Endrin ketone	0.048	U	0.048	0.048	0.015	ug/L		07/23/15 21:00	1
gamma-BHC (Lindane)	0.048	U	0.048	0.048	0.012	ug/L		07/23/15 21:00	1
gamma-Chlordane	0.048	U	0.048	0.048	0.012	ug/L		07/23/15 21:00	1
Heptachlor	0.048	U	0.048	0.048	0.013	ug/L		07/23/15 21:00	1
Heptachlor epoxide	0.048	U	0.048	0.048	0.014	ug/L		07/23/15 21:00	1
Methoxychlor	0.095	U	0.095	0.095	0.012	ug/L		07/23/15 21:00	1
Toxaphene	1.9	U	1.9	1.9	0.19	ug/L		07/23/15 21:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*67*		*30 - 135*	*07/21/15 05:42*	*07/23/15 21:00*	*1*
DCB Decachlorobiphenyl	*52*		*30 - 135*	*07/21/15 05:42*	*07/23/15 21:00*	*1*
Tetrachloro-m-xylene	*72*		*25 - 140*	*07/21/15 05:42*	*07/23/15 21:00*	*1*
Tetrachloro-m-xylene	*80*		*25 - 140*	*07/21/15 05:42*	*07/23/15 21:00*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/30/15 15:58	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Client Sample ID: FWGFBQmw-174C-0574-GW
Date Collected: 07/20/15 12:57
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-14
Matrix: Water

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		07/27/15 21:00	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/27/15 21:00	1
2,4-Dinitrotoluene	**0.60**	**M**	0.13	0.10	0.051	ug/L		07/27/15 21:00	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/27/15 21:00	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/27/15 21:00	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		07/27/15 21:00	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/27/15 21:00	1
HMX	0.051	U M	0.15	0.051	0.037	ug/L		07/27/15 21:00	1
RDX	**0.68**	**M**	0.15	0.051	0.037	ug/L		07/27/15 21:00	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/27/15 21:00	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		07/27/15 21:00	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		07/27/15 21:00	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		07/27/15 21:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*129*	*M Q*	*79 - 111*	*07/23/15 12:01*	*07/27/15 21:00*	*1*
3,4-Dinitrotoluene	*106*		*79 - 111*	*07/23/15 12:01*	*08/03/15 23:01*	*1*

Method: 8330A - Nitroaromatics and Nitramines - DL

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2,4,6-Trinitrotoluene	**21**	**D**	0.77	0.51	0.26	ug/L		07/31/15 17:51	5
2-Amino-4,6-dinitrotoluene	**20**	**D**	0.77	0.51	0.077	ug/L		07/31/15 17:51	5
4-Amino-2,6-dinitrotoluene	**28**	**D M**	0.77	0.51	0.26	ug/L		07/31/15 17:51	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*104*	*M*	*79 - 111*	*07/23/15 12:01*	*07/31/15 17:51*	*5*
3,4-Dinitrotoluene	*101*		*79 - 111*	*07/23/15 12:01*	*08/04/15 17:55*	*5*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		07/29/15 14:46	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Client Sample ID: FWGFBQmw-174C-0574-GF
Date Collected: 07/20/15 12:57
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-15
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 11:24	1
Chromium	4.0	U	7.0	4.0	0.55	ug/L		07/27/15 11:24	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 11:24	1
Lead	**2.5**	**J**	10	5.0	1.9	ug/L		07/27/15 11:24	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 11:24	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 11:24	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 11:24	1
Barium	**13**	**J**	200	5.0	1.0	ug/L		07/27/15 11:24	1
Calcium	**4500**	**J**	5000	1000	260	ug/L		07/27/15 11:24	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 11:24	1
Magnesium	**1600**	**J**	5000	300	55	ug/L		07/27/15 11:24	1
Manganese	**17**		15	5.0	0.46	ug/L		07/27/15 11:24	1
Nickel	**4.7**	**J**	40	5.0	0.76	ug/L		07/27/15 11:24	1
Potassium	**1100**	**J**	5000	900	70	ug/L		07/27/15 11:24	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 13:57	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 13:57	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 13:57	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 13:57	1
Iron	100	U	150	100	44	ug/L		07/27/15 13:57	1
Sodium	**910**	**J**	1000	400	160	ug/L		07/27/15 13:57	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 13:57	1
Zinc	**31**	**J**	50	50	27	ug/L		07/27/15 13:57	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 11:02	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Client Sample ID: FWGNTAmw-119-0603-GW
Date Collected: 07/20/15 16:02
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-16
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 15:55	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	0.22	ug/L		07/23/15 15:55	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.24	ug/L		07/23/15 15:55	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.30	ug/L		07/23/15 15:55	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.45	ug/L		07/23/15 15:55	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.23	ug/L		07/23/15 15:55	1
1,2-Dichloroethene, Total	1.0	U	2.0	1.0	0.20	ug/L		07/23/15 15:55	1
1,2-Dichloropropane	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 15:55	1
2-Hexanone	2.0	U	10	2.0	0.48	ug/L		07/23/15 15:55	1
Bromochloromethane	1.0	U	1.0	1.0	0.50	ug/L		07/23/15 15:55	1
Acetone	2.0	U	10	2.0	0.94	ug/L		07/23/15 15:55	1
Benzene	1.0	U	1.0	1.0	0.35	ug/L		07/23/15 15:55	1
Bromoform	1.0	U	1.0	1.0	0.56	ug/L		07/23/15 15:55	1
Bromomethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 15:55	1
Carbon disulfide	**0.39**	**J**	1.0	1.0	0.38	ug/L		07/23/15 15:55	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.43	ug/L		07/23/15 15:55	1
Chlorobenzene	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 15:55	1
Chloroethane	1.0	U	1.0	1.0	0.32	ug/L		07/23/15 15:55	1
Chloroform	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 15:55	1
Chloromethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 15:55	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	0.26	ug/L		07/23/15 15:55	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.46	ug/L		07/23/15 15:55	1
Bromodichloromethane	1.0	U	1.0	1.0	0.29	ug/L		07/23/15 15:55	1
Ethylbenzene	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 15:55	1
1,2-Dibromoethane	1.0	U	1.0	1.0	0.32	ug/L		07/23/15 15:55	1
m-Xylene & p-Xylene	1.0	U	2.0	1.0	0.24	ug/L		07/23/15 15:55	1
2-Butanone (MEK)	2.0	U	10	2.0	0.53	ug/L		07/23/15 15:55	1
4-Methyl-2-pentanone (MIBK)	2.0	U	10	2.0	0.99	ug/L		07/23/15 15:55	1
Methylene Chloride	1.0	U	1.0	1.0	0.33	ug/L		07/23/15 15:55	1
o-Xylene	0.50	U	1.0	0.50	0.25	ug/L		07/23/15 15:55	1
Styrene	0.50	U	1.0	0.50	0.45	ug/L		07/23/15 15:55	1
Tetrachloroethene	1.0	U	1.0	1.0	0.31	ug/L		07/23/15 15:55	1
Toluene	1.0	U	1.0	1.0	0.23	ug/L		07/23/15 15:55	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	0.30	ug/L		07/23/15 15:55	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.56	ug/L		07/23/15 15:55	1
Trichloroethene	1.0	U	1.0	1.0	0.22	ug/L		07/23/15 15:55	1
Vinyl chloride	1.0	U	1.0	1.0	0.29	ug/L		07/23/15 15:55	1
Xylenes, Total	2.0	U	2.0	2.0	0.52	ug/L		07/23/15 15:55	1
Dibromochloromethane	1.0	U	1.0	1.0	0.43	ug/L		07/23/15 15:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*70 - 120*		*07/23/15 15:55*	*1*
4-Bromofluorobenzene (Surr)	*88*		*75 - 120*		*07/23/15 15:55*	*1*
Toluene-d8 (Surr)	*94*		*85 - 120*		*07/23/15 15:55*	*1*
Dibromofluoromethane (Surr)	*90*		*85 - 115*		*07/23/15 15:55*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.095	U	0.19	0.095	0.042	ug/L		07/27/15 15:02	1
Acenaphthylene	0.095	U	0.19	0.095	0.046	ug/L		07/27/15 15:02	1

Client Sample ID: FWGNTAmw-119-0603-GW
Date Collected: 07/20/15 16:02
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-16
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.095	U	0.19	0.095	0.084	ug/L		07/27/15 15:02	1
Benzo[a]anthracene	0.095	U	0.19	0.095	0.028	ug/L		07/27/15 15:02	1
Benzo[a]pyrene	0.095	U	0.19	0.095	0.049	ug/L		07/27/15 15:02	1
Benzo[b]fluoranthene	0.095	U	0.19	0.095	0.038	ug/L		07/27/15 15:02	1
Benzo[g,h,i]perylene	0.095	U	0.19	0.095	0.044	ug/L		07/27/15 15:02	1
Benzo[k]fluoranthene	0.095	U	0.19	0.095	0.043	ug/L		07/27/15 15:02	1
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		07/27/15 15:02	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		07/27/15 15:02	1
Chrysene	0.095	U	0.19	0.095	0.048	ug/L		07/27/15 15:02	1
Dibenz(a,h)anthracene	0.095	U	0.19	0.095	0.042	ug/L		07/27/15 15:02	1
Diethyl phthalate	0.95	U	1.9	0.95	0.57	ug/L		07/27/15 15:02	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		07/27/15 15:02	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		07/27/15 15:02	1
2,4-Dinitrotoluene	0.48	U	4.8	0.48	0.24	ug/L		07/27/15 15:02	1
2,6-Dinitrotoluene	4.8	U	4.8	4.8	1.0	ug/L		07/27/15 15:02	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		07/27/15 15:02	1
Fluoranthene	0.095	U	0.19	0.095	0.042	ug/L		07/27/15 15:02	1
Fluorene	0.095	U	0.19	0.095	0.039	ug/L		07/27/15 15:02	1
Indeno[1,2,3-cd]pyrene	0.095	U	0.19	0.095	0.041	ug/L		07/27/15 15:02	1
Naphthalene	0.095	U	0.19	0.095	0.060	ug/L		07/27/15 15:02	1
Nitrobenzene	0.095	U	0.95	0.095	0.038	ug/L		07/27/15 15:02	1
Phenanthrene	0.095	U	0.19	0.095	0.059	ug/L		07/27/15 15:02	1
Pyrene	0.095	U	0.19	0.095	0.040	ug/L		07/27/15 15:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*68*		*50 - 110*	*07/21/15 05:40*	*07/27/15 15:02*	*1*
2-Fluorophenol (Surr)	*72*		*20 - 110*	*07/21/15 05:40*	*07/27/15 15:02*	*1*
Nitrobenzene-d5 (Surr)	*73*		*40 - 110*	*07/21/15 05:40*	*07/27/15 15:02*	*1*
Phenol-d5 (Surr)	*79*		*10 - 115*	*07/21/15 05:40*	*07/27/15 15:02*	*1*
Terphenyl-d14 (Surr)	*75*		*50 - 135*	*07/21/15 05:40*	*07/27/15 15:02*	*1*
2,4,6-Tribromophenol (Surr)	*64*		*40 - 125*	*07/21/15 05:40*	*07/27/15 15:02*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/30/15 16:16	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.15	0.052	0.032	ug/L		07/27/15 21:43	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.052	ug/L		07/27/15 21:43	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.052	ug/L		07/27/15 21:43	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		07/27/15 21:43	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		07/27/15 21:43	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		07/27/15 21:43	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		07/27/15 21:43	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		07/27/15 21:43	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		07/27/15 21:43	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.052	ug/L		07/27/15 21:43	1
HMX	0.052	U	0.15	0.052	0.037	ug/L		07/27/15 21:43	1
RDX	0.052	U	0.15	0.052	0.037	ug/L		07/27/15 21:43	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Client Sample ID: FWGNTAmw-119-0603-GW — **Lab Sample ID: 240-53411-16**
Date Collected: 07/20/15 16:02 — **Matrix: Water**
Date Received: 07/20/15 18:34

Method: 8330A - Nitroaromatics and Nitramines (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrobenzene	0.10	U	0.15	0.10	0.052	ug/L		07/27/15 21:43	1
Tetryl	0.10	U	0.15	0.10	0.052	ug/L		07/27/15 21:43	1
Nitroglycerin	0.52	U	0.67	0.52	0.34	ug/L		07/27/15 21:43	1
PETN	0.52	U	0.67	0.52	0.31	ug/L		07/27/15 21:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*93*	*M*	*79 - 111*	*07/23/15 12:01*	*07/27/15 21:43*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		07/29/15 14:48	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Client Sample ID: FWGNTAmw-119-0603-GF
Date Collected: 07/20/15 16:02
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-17
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**7.1**	**J**	10	10	2.9	ug/L		07/27/15 11:56	1
Chromium	**1.2**	**J**	7.0	4.0	0.55	ug/L		07/27/15 11:56	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 11:56	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 11:56	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 11:56	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 11:56	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 11:56	1
Barium	**78**	**J**	200	5.0	1.0	ug/L		07/27/15 11:56	1
Calcium	**81000**		5000	1000	260	ug/L		07/27/15 11:56	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 11:56	1
Magnesium	**20000**		5000	300	55	ug/L		07/27/15 11:56	1
Manganese	**300**		15	5.0	0.46	ug/L		07/27/15 11:56	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 11:56	1
Potassium	**1400**	**J**	5000	900	70	ug/L		07/27/15 11:56	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 14:00	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 14:00	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 14:00	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 14:00	1
Iron	**1100**		150	100	44	ug/L		07/27/15 14:00	1
Sodium	**6500**		1000	400	160	ug/L		07/27/15 14:00	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 14:00	1
Zinc	50	U	50	50	27	ug/L		07/27/15 14:00	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 11:04	1

Client Sample ID: FWGEQUIPRINSE1-0622-GW
Date Collected: 07/20/15 17:05
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-18
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 16:18	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	0.22	ug/L		07/23/15 16:18	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.24	ug/L		07/23/15 16:18	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.30	ug/L		07/23/15 16:18	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.45	ug/L		07/23/15 16:18	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.23	ug/L		07/23/15 16:18	1
1,2-Dichloroethene, Total	1.0	U	2.0	1.0	0.20	ug/L		07/23/15 16:18	1
1,2-Dichloropropane	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 16:18	1
2-Hexanone	2.0	U	10	2.0	0.48	ug/L		07/23/15 16:18	1
Bromochloromethane	1.0	U	1.0	1.0	0.50	ug/L		07/23/15 16:18	1
Acetone	**13**		10	2.0	0.94	ug/L		07/23/15 16:18	1
Benzene	1.0	U	1.0	1.0	0.35	ug/L		07/23/15 16:18	1
Bromoform	1.0	U	1.0	1.0	0.56	ug/L		07/23/15 16:18	1
Bromomethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 16:18	1
Carbon disulfide	1.0	U	1.0	1.0	0.38	ug/L		07/23/15 16:18	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.43	ug/L		07/23/15 16:18	1
Chlorobenzene	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 16:18	1
Chloroethane	1.0	U	1.0	1.0	0.32	ug/L		07/23/15 16:18	1
Chloroform	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 16:18	1
Chloromethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 16:18	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	0.26	ug/L		07/23/15 16:18	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.46	ug/L		07/23/15 16:18	1
Bromodichloromethane	1.0	U	1.0	1.0	0.29	ug/L		07/23/15 16:18	1
Ethylbenzene	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 16:18	1
1,2-Dibromoethane	1.0	U	1.0	1.0	0.32	ug/L		07/23/15 16:18	1
m-Xylene & p-Xylene	1.0	U	2.0	1.0	0.24	ug/L		07/23/15 16:18	1
2-Butanone (MEK)	2.0	U	10	2.0	0.53	ug/L		07/23/15 16:18	1
4-Methyl-2-pentanone (MIBK)	2.0	U	10	2.0	0.99	ug/L		07/23/15 16:18	1
Methylene Chloride	**0.34**	**J B**	1.0	1.0	0.33	ug/L		07/23/15 16:18	1
o-Xylene	0.50	U	1.0	0.50	0.25	ug/L		07/23/15 16:18	1
Styrene	0.50	U	1.0	0.50	0.45	ug/L		07/23/15 16:18	1
Tetrachloroethene	1.0	U	1.0	1.0	0.31	ug/L		07/23/15 16:18	1
Toluene	1.0	U	1.0	1.0	0.23	ug/L		07/23/15 16:18	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	0.30	ug/L		07/23/15 16:18	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.56	ug/L		07/23/15 16:18	1
Trichloroethene	1.0	U	1.0	1.0	0.22	ug/L		07/23/15 16:18	1
Vinyl chloride	1.0	U	1.0	1.0	0.29	ug/L		07/23/15 16:18	1
Xylenes, Total	2.0	U	2.0	2.0	0.52	ug/L		07/23/15 16:18	1
Dibromochloromethane	1.0	U	1.0	1.0	0.43	ug/L		07/23/15 16:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*70 - 120*		*07/23/15 16:18*	*1*
4-Bromofluorobenzene (Surr)	*90*		*75 - 120*		*07/23/15 16:18*	*1*
Toluene-d8 (Surr)	*96*		*85 - 120*		*07/23/15 16:18*	*1*
Dibromofluoromethane (Surr)	*90*		*85 - 115*		*07/23/15 16:18*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.11	U	0.22	0.11	0.048	ug/L		07/27/15 14:36	1
Acenaphthylene	0.11	U	0.22	0.11	0.052	ug/L		07/27/15 14:36	1

Client Sample ID: FWGEQUIPRINSE1-0622-GW
Date Collected: 07/20/15 17:05
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-18
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.11	U	0.22	0.11	0.095	ug/L		07/27/15 14:36	1
Benzo[a]anthracene	0.11	U	0.22	0.11	0.032	ug/L		07/27/15 14:36	1
Benzo[a]pyrene	0.11	U	0.22	0.11	0.055	ug/L		07/27/15 14:36	1
Benzo[b]fluoranthene	0.11	U	0.22	0.11	0.042	ug/L		07/27/15 14:36	1
Benzo[g,h,i]perylene	0.11	U	0.22	0.11	0.050	ug/L		07/27/15 14:36	1
Benzo[k]fluoranthene	0.11	U	0.22	0.11	0.048	ug/L		07/27/15 14:36	1
Bis(2-ethylhexyl) phthalate	5.4	U	5.4	5.4	1.8	ug/L		07/27/15 14:36	1
Butyl benzyl phthalate	0.54	U	5.4	0.54	0.28	ug/L		07/27/15 14:36	1
Chrysene	0.11	U	0.22	0.11	0.054	ug/L		07/27/15 14:36	1
Dibenz(a,h)anthracene	0.11	U	0.22	0.11	0.048	ug/L		07/27/15 14:36	1
Diethyl phthalate	**1.8**	**J**	2.2	1.1	0.65	ug/L		07/27/15 14:36	1
Dimethyl phthalate	0.54	U	2.2	0.54	0.31	ug/L		07/27/15 14:36	1
Di-n-butyl phthalate	5.4	U	5.4	5.4	1.8	ug/L		07/27/15 14:36	1
2,4-Dinitrotoluene	0.54	U	5.4	0.54	0.27	ug/L		07/27/15 14:36	1
2,6-Dinitrotoluene	5.4	U	5.4	5.4	1.1	ug/L		07/27/15 14:36	1
Di-n-octyl phthalate	0.54	U	2.2	0.54	0.25	ug/L		07/27/15 14:36	1
Fluoranthene	0.11	U	0.22	0.11	0.048	ug/L		07/27/15 14:36	1
Fluorene	0.11	U	0.22	0.11	0.044	ug/L		07/27/15 14:36	1
Indeno[1,2,3-cd]pyrene	0.11	U	0.22	0.11	0.047	ug/L		07/27/15 14:36	1
Naphthalene	0.11	U	0.22	0.11	0.067	ug/L		07/27/15 14:36	1
Nitrobenzene	0.11	U	1.1	0.11	0.043	ug/L		07/27/15 14:36	1
Phenanthrene	0.11	U	0.22	0.11	0.067	ug/L		07/27/15 14:36	1
Pyrene	0.11	U	0.22	0.11	0.045	ug/L		07/27/15 14:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*80*		*50 - 110*	*07/21/15 05:40*	*07/27/15 14:36*	*1*
2-Fluorophenol (Surr)	*88*		*20 - 110*	*07/21/15 05:40*	*07/27/15 14:36*	*1*
Nitrobenzene-d5 (Surr)	*86*		*40 - 110*	*07/21/15 05:40*	*07/27/15 14:36*	*1*
Phenol-d5 (Surr)	*95*		*10 - 115*	*07/21/15 05:40*	*07/27/15 14:36*	*1*
Terphenyl-d14 (Surr)	*93*		*50 - 135*	*07/21/15 05:40*	*07/27/15 14:36*	*1*
2,4,6-Tribromophenol (Surr)	*76*		*40 - 125*	*07/21/15 05:40*	*07/27/15 14:36*	*1*

Method: 8081A - Organochlorine Pesticides (GC) - RE

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.051	U	0.051	0.051	0.018	ug/L		07/29/15 18:14	1
4,4'-DDE	0.051	U	0.051	0.051	0.012	ug/L		07/29/15 18:14	1
4,4'-DDT	0.051	U	0.051	0.051	0.017	ug/L		07/29/15 18:14	1
Aldrin	0.051	U	0.051	0.051	0.013	ug/L		07/29/15 18:14	1
alpha-BHC	0.051	U	0.051	0.051	0.014	ug/L		07/29/15 18:14	1
alpha-Chlordane	0.051	U	0.051	0.051	0.012	ug/L		07/29/15 18:14	1
beta-BHC	0.051	U	0.051	0.051	0.018	ug/L		07/29/15 18:14	1
delta-BHC	0.051	U	0.051	0.051	0.029	ug/L		07/29/15 18:14	1
Dieldrin	0.051	U	0.051	0.051	0.013	ug/L		07/29/15 18:14	1
Endosulfan I	0.051	U	0.051	0.051	0.016	ug/L		07/29/15 18:14	1
Endosulfan II	0.051	U	0.051	0.051	0.015	ug/L		07/29/15 18:14	1
Endosulfan sulfate	0.051	U	0.051	0.051	0.015	ug/L		07/29/15 18:14	1
Endrin	0.051	U	0.051	0.051	0.013	ug/L		07/29/15 18:14	1
Endrin aldehyde	0.051	U	0.051	0.051	0.018	ug/L		07/29/15 18:14	1
Endrin ketone	0.051	U	0.051	0.051	0.016	ug/L		07/29/15 18:14	1
gamma-BHC (Lindane)	0.051	U	0.051	0.051	0.013	ug/L		07/29/15 18:14	1

Client Sample ID: FWGEQUIPRINSE1-0622-GW
Date Collected: 07/20/15 17:05
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-18
Matrix: Water

Method: 8081A - Organochlorine Pesticides (GC) - RE (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
gamma-Chlordane	0.051	U	0.051	0.051	0.013	ug/L		07/29/15 18:14	1
Heptachlor	0.051	U	0.051	0.051	0.014	ug/L		07/29/15 18:14	1
Heptachlor epoxide	0.051	U	0.051	0.051	0.015	ug/L		07/29/15 18:14	1
Methoxychlor	0.10	U	0.10	0.10	0.013	ug/L		07/29/15 18:14	1
Toxaphene	2.0	U	2.0	2.0	0.20	ug/L		07/29/15 18:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*44*		*30 - 135*	*07/27/15 08:29*	*07/29/15 18:14*	*1*
DCB Decachlorobiphenyl	*35*		*30 - 135*	*07/27/15 08:29*	*07/29/15 18:14*	*1*
Tetrachloro-m-xylene	*68*		*25 - 140*	*07/27/15 08:29*	*07/29/15 18:14*	*1*
Tetrachloro-m-xylene	*64*		*25 - 140*	*07/27/15 08:29*	*07/29/15 18:14*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U M	20	6.0	2.4	ug/L		07/30/15 17:09	1

Method: 8330 Modified - Nitroguanidine (HPLC) - RA

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		08/04/15 11:55	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.055	U	0.16	0.055	0.034	ug/L		07/27/15 23:54	1
1,3-Dinitrobenzene	0.11	U	0.16	0.11	0.055	ug/L		07/27/15 23:54	1
2,4,6-Trinitrotoluene	0.11	U	0.16	0.11	0.055	ug/L		07/27/15 23:54	1
2,4-Dinitrotoluene	0.11	U M	0.14	0.11	0.055	ug/L		07/27/15 23:54	1
2,6-Dinitrotoluene	0.11	U M	0.14	0.11	0.055	ug/L		07/27/15 23:54	1
2-Amino-4,6-dinitrotoluene	0.11	U	0.16	0.11	0.016	ug/L		07/27/15 23:54	1
2-Nitrotoluene	0.11	U	0.55	0.11	0.096	ug/L		07/27/15 23:54	1
3-Nitrotoluene	0.11	U	0.55	0.11	0.062	ug/L		07/27/15 23:54	1
4-Nitrotoluene	0.11	U	0.55	0.11	0.096	ug/L		07/27/15 23:54	1
4-Amino-2,6-dinitrotoluene	0.11	U	0.16	0.11	0.055	ug/L		07/27/15 23:54	1
HMX	0.055	U	0.16	0.055	0.039	ug/L		07/27/15 23:54	1
RDX	0.055	U	0.16	0.055	0.039	ug/L		07/27/15 23:54	1
Nitrobenzene	0.11	U	0.16	0.11	0.055	ug/L		07/27/15 23:54	1
Tetryl	0.11	U	0.16	0.11	0.055	ug/L		07/27/15 23:54	1
Nitroglycerin	0.55	U	0.71	0.55	0.36	ug/L		07/27/15 23:54	1
PETN	0.55	U	0.71	0.55	0.33	ug/L		07/27/15 23:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*94*		*79 - 111*	*07/23/15 12:01*	*07/27/15 23:54*	*1*
3,4-Dinitrotoluene	*106*		*79 - 111*	*07/23/15 12:01*	*08/04/15 00:08*	*1*

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 12:00	1
Chromium	4.0	U	7.0	4.0	0.55	ug/L		07/27/15 12:00	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 12:00	1
Lead	**2.0**	**J**	10	5.0	1.9	ug/L		07/27/15 12:00	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 12:00	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 12:00	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53411-1

Client Sample ID: FWGEQUIPRINSE1-0622-GW
Date Collected: 07/20/15 17:05
Date Received: 07/20/15 18:34

Lab Sample ID: 240-53411-18
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 12:00	1
Barium	5.0	U	200	5.0	1.0	ug/L		07/27/15 12:00	1
Calcium	**260**	**J**	5000	1000	260	ug/L		07/27/15 12:00	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 12:00	1
Magnesium	**55**	**J**	5000	300	55	ug/L		07/27/15 12:00	1
Manganese	5.0	U	15	5.0	0.46	ug/L		07/27/15 12:00	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 12:00	1
Potassium	900	U	5000	900	70	ug/L		07/27/15 12:00	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 14:15	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 14:15	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 14:15	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 14:15	1
Iron	100	U	150	100	44	ug/L		07/27/15 14:15	1
Sodium	400	U	1000	400	160	ug/L		07/27/15 14:15	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 14:15	1
Zinc	50	U	50	50	27	ug/L		07/27/15 14:15	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 11:06	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		07/29/15 14:51	1

Attachment 1

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angye Dragotta/August 13, 2015

SDG: 240-53411
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1,
3. Were holding times met?	X				QAPP Table 5-1, J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1,
5. Were all QAPP addendum-specified target analytes reported?	X				QAPP Table 4-5
6. Was the GC/MS system tuned with bromofluorobenzene (BFB) during each 12 hour shift (prior to ICAL and Cal Ver.)?	X				QSM Table F-4
7. Calibration					
7a. Did the initial calibration curve consist of 5 concentration levels?	X			Instrument A3UX16–7/14/15	QSM Table F-4 R
7b. Did the Calibration Check Compounds (CCCs) (see Table 1 below) relative standard deviations (%RSD) ≤ 30%?	X				QSM Table F-4 R
7c. Were the minimum response factors (RFs) for the System Performance Check Compounds (SPCCs) (see Table 2 below) met?	X				QSM Table F-4
7d. Did target analytes with an average calibration type have an RSD ≤ 15%?	X				QSM Table F-4 15% <RSD< 20% = J/UJ
7e. IF the RSD was >15% was a different calibration option used?	X				
7f. If a linear regression curve was used, was the correlation coefficient r>0.995?			X		QSM Table F-4 R<0.995=-J/R
7g. If a non-linear regression was used, was the COD $r^2 \geq 0.99$, with a minimum of 6 points for second order and 7 points for third order?	X				QSM Table F-4 R^2<0.99=-J/R
8. Was a LOD Level Verification performed quarterly for each reported analyte with detected results?	X				QSM Table F-4 and section D.1.2.1

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angye Dragotta/August 13, 2015

SDG: 240-53411
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
9. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours?	X			7/23/15 @ 0929, 1812	
10. Were the QC/MRL recoveries 70-130%		X		• The opening MRL analyzed 7/23/15 recovered above control limits of 70-130% for methylene chloride at 176% and below control limits for 2-hexanone at 56%, acetone at 37%, bromomethane at 63%, 2-butanone at 53% and 4-methyl-2-pentanone at 62%. An LOD verification was analyzed following the analytical sequence with detected results for 2-hexanone, acetone and 2-butanone. • The closing MRL analyzed 7/23/15 recovered below control limits of 70-130% for acetone at 63% and above control limits for methylene chloride at 149% and chloroethane at 141 %. The methylene chloride, 2-hexanone, acetone, bromomethane, 4-methyl-2-pentanone and 2-butanone results for samples FWG TEAM2-TRIP, FWGEQUIPRINSE1-0622-GW and FWGNTA119mw-0603-GW were qualified as estimated, "UJ/J". No qualifications were made for the chloromethane outlier as there were no detected chloromethane results reported for samples FWG TEAM2-TRIP, FWGEQUIPRINSE1-0622-GW or FWGNTA119mw-0603-GW.	LS
11. Was a second source verification (ICV) analyzed? Did all target analytes have a recovery of 80-120%?	X			7/14/15 @ 1356	QSM Table F-4 J=<80% and >120%
12. Was a CCV run daily prior to analysis and every 12 hours of analysis time?	X			7/23/15 @ 0820	QSM Table F-4
12a. Were the average response factors (RFs) for the (SPCCs) (see Table 2 below) met?	X				QSM Table F-4
12b. Were all target analytes ≤ 20%D?	X				QSM Table F-4 %D <20% = J/UJ
13. Were the internal standards added to every sample?	X				QSM Table F-4
13a. Was the EICP area between -50% and +100% of the ICAL mid-point standard?	X				QSM Table F-4 R
13b. Were the retention times for all IS compounds within ±30 seconds from the RT of the mid-point standard in the ICAL?	X				QSM Table F-4 J/UJ

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angye Dragotta/August 13, 2015

SDG: 240-53411
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
14. Were the retention times for target analytes within ±0.06 RRT units from the RT of the mid-point standard in the ICAL or the most recently updated RRT for all samples?	X				QSM Table F-4 J
15. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-4
15a. Were target analytes detected in the method blank?	X			Checked by ADR. Methylene chloride was detected in the method blank at 0.640 µg/L. Sample FWGTEAM2-TRIP and FWGEQUIPRINSE1-0622-GW were qualified, "B" as the reported methylene chloride detections were less than ten times method blank contamination.	QSM Table F-4 <5/10X =B
16. Was a field blank (equipment and/or trip) collected and analyzed?	X			FWGEQUIPRINSE1-0622-GW and FWG TEAM2-TRIP	
16a. Were target analytes detected in the field blanks?	X			Checked by ADR. FWG TEAM2-TRIP had methylene chloride detected at 0.53 µg/L and acetone at 1.5 µg/L. The methylene chloride and acetone results for sample FWGEQUIPRINSE1-0622-GW were qualified, "B " as the detected concentrations were less than ten times trip blank contamination. FWGEQUIPRINSE1-0622-GW had methylene chloride detected at 0.34 µg/L and acetone at 13 µg/L. As there were no detected concentrations of methylene chloride or acetone in the associated field sample, FWGNTA119mw-0603-GW, no qualification was made as a result of equipment rinse contamination.	QSM Table F-4 <5/10X =B
17. Was a LCS prepared and analyzed with each batch?	X				QSM Table F-4
17a. Were the LCS recoveries within limits specified in Table G-5 of the DoD QSM?	X			ADR checked section;	QSM Table F-4, Table G-5, J/UJ
18. Was a MS/MSD prepared with each batch?	X			A matrix spike and spike duplicate were analyzed on a RVAAP sample from another SDG, FWGRQLmw-008c-0606-GW (SDG 240-53500).	QSM Table F-4
18a. Were the MS/MSD recoveries within limits specified in Table G-4 of the DoD QSM with an RPD <30%?	X				QSM Table F-4, Table G-5 J/UJ Parent sample only
19. Was a field duplicate analyzed?		X		A field duplicate was not submitted with this set of samples.	QSM Table F-4,
19a. Were the field duplicates RPDs within ±30%?			X		QSM Table F-4, RPD >30=J Parent sample only

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angye Dragotta/August 13, 2015

SDG: 240-53411
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
20. Were surrogate recoveries within control limits specified in the DOD QSM?	X				QSM Tables F-4 & G-3 >150%=J; 10% -50%=J/UJ; <10%=J/R
21. Were reported sample concentrations within calibration range?	**X**				

References:

DoD Quality Systems Manual (QSM), version 4.1, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Table1- CCCs

Analyte
1,1-Dichloroethene
Chloroform
1,2-Dichloropropane
Toluene
Ethylbenzene
Vinyl chloride

Table 2- SPCCs

Analyte	Minimum RF
Chloromethane	0.10
1,1-Dichlorethane	0.10
Bromoform	0.10
Chlorobenzene	0.30
1,1,2,2-Tetrachloroethane	0.30

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August13, 2015

SDG: 240-53411
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1,
3.Were holding times met?	X				QAPP Table 5-1, J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1,
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-6
6. Was the GC/MS system tuned each 12 hour shift (prior to ICAL and Cal Ver.)?	X				QSM Table F-4
7. Initial Calibration					
7a. Did the initial calibration curve consist of 5 concentration levels?	X			Instrument A4HP9–7/6/15	QSM Table F-4 R
7b. Did the Calibration Check Compounds (CCCs) (see Table 1 below) relative standard deviations (%RSD) ≤ 30%?	X				QSM Table F-4 R
7c. Were the minimum response factors (RFs) for the System Performance Check Compounds (SPCCs) (see Table 2 below) ≤0.050?	X				QSM Table F-4
7d. Were all other target analytes reported with an avg response have an RSD ≤ 15%?	X				QSM Table F-4 15% <RSD< 20% = J/UJ
7e. IF the RSD was >15% was a different calibration option used?	X				
7f. If a linear regression curve was used, was the correlation coefficient r>0.995?			X		QSM Table F-4 R<0.995=-J/R
7g. If a non-linear regression was used, was the COD r^2≥0.99, with a minimum of 6 points for second order and 7 points for third order?	X			Benzoic acid, 2,4-dinitrophenol, 4,6-dinitro-2-methylphenol, pentachlorophenol and benzidine used a linear fit.	QSM Table F-4 R^2<0.99=-J/R
8. Was a LOD Level Verification performed quarterly for each reported analyte?	X				QSM Table F-4 and section D.1.2.1
9 Was a breakdown check run at the beginning of and every 12 hours with DDT degradation <20% and tailing factors of benzidine and pentachlorophenol ≤2?	X				QSM Table F-4 R
10. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours with recoveries within 70-130%?	X			7/27/15 @ 1017, 1527	Louisville Supplement to the DOD QSM

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August13, 2015

SDG: 240-53411
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
11. Was a second source verification (ICV) analyzed? Were results 80-120%?	X			7/6/15 @ 1146	QSM Table F-4 J=<80% and >120%
12. Was a CCV run daily prior to analysis and every 12 hours of analysis time?	X			7/27/15 @0937	QSM Table F-4
12a. Were the average response factors (RFs) for the System Performance Check Compounds (SPCCs) ≥0.050?	X				QSM Table F-4
12b. Were all target analytes ≤ 20%D?	X				QSM Table F-4 %D <20% = J/UJ
13. Were the internal standards added to every sample?	X				QSM Table F-4
13a. Was the EICP area between -50% and +100% of the ICAL mid-point standard?	X				QSM Table F-4 R
13b. Were the retention times for all IS compounds within ±30 seconds from the RT of the mid-point standard in the ICAL?	X				QSM Table F-4 J/UJ
14. Were the retention times for target analytes within ±0.06 RRT units from the RT of the mid-point standard in the ICAL or the most recently updated RRT for all samples?	X				QSM Table F-4 J
15. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-4
15a. Were target analytes detected in the method blank >1/2 the MRL, >RL for common contaminants?		X		Checked by ADR.	QSM Table F-4 <5/10X =B
16. Was a field blank (equipment and/or trip) collected and analyzed?	X			FWGEQUIPRINSE1-0622-GW	
16a. Were target analytes detected in the field blank?	X			Diethyl phthalate was detected in FWGEQUIPRINSE1-0622-GW at 1.8 µg/L. No qualification of the data was required for the equipment blank contamination as there were no detected diethyl phthalate results reported for the associated field samples.	QSM Table F-4 <5/10X =B
17. Was a LCS prepared and analyzed with each batch?	X				QSM Table F-4
17a. Were the LCS recoveries within limits specified in Table G-6 of the DoD QSM?	X			ADR checked section;	QSM Table F-4, Table G-6, J/UJ

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August13, 2015

SDG: 240-53411
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
18. Was a MS/MSD prepared with each batch?			X	A matrix spike or spike duplicate was not requested on a sample from this workorder.	
18a. Were the MS/MSD recoveries within limits specified in Table G-6 of the DoD QSM with an RPD <30%?			X		QSM Table F-4, Table G-6 J/UJ Parent sample only
19. Was a field duplicate analyzed?		X		A field duplicate was not submitted with this set of samples.	
19a. Were the field duplicates RPDs within ±50%?			X		QSM Table F-4, RPD >50=J Parent sample only
20. Were surrogate recoveries within control limits specified in the DOD QSM?	X				QSM Tables F-4 & G-3 >150%=J; 10% - 50%=J/UJ; <10%=J/R
21. Were reported sample concentrations within calibration range?	X				

References:

- *DoD Quality Systems Manual (QSM), version 4.1, October 2010*
- *Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007*
- *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012*
- *Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011*

Additional Comments:

Table 1: CCCs *(All analytes if CCCs not included in standard)*

Base / Neutral Compounds	Acid Compounds
Acenaphthalene	4-Chloro-3-methylphenol
1,4-Dichlorobenzene	2,4-Dichlorophenol
Hexachlorobutadiene	2-Nitrophenol
N-Nitrosodiphehylamine	Phenol
Di-n-octylphthalate	Pentachlorophenol
Fluoroanthene	2,4,6-Trichlorophenol
Benzo(a)pyrene	

Table 2: SPCCs -

N-Nitroso-di-n-propylamine	0.05
Hexachlorocyclopentadiene	0.05
2,4-Dinitrophenol	0.05
4-Nitrophenol	0.05

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta / August 14, 2015

SDG: 240-53411
Analysis: SW846 8081A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?	X			Checked by ADR.	QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a DDT standard analyzed every 12 hours? Was the DDT %breakdown <15%?	X				QSM Table F-2 >15%=J/R
7. Was an endrin standard analyzed every 12 hours? Was the endrin % breakdown <15%?	X			A PEM was analyzed before and after the samples analyzed on 7/23/15 on instrument A2HP3. The closing endrin % breakdown was above 15% at 18.1%. No qualifiers were applied to the data as a result of the high % breakdown as there were no detected concentrations of endrin, endrin aldehyde or endrin ketone reported for the associated field samples and the opening PEM passed breakdown requirements-QSM does not require bracketing PEM.	QSM Table F-2 >15%=J/R
8. Initial Calibration					
8a. Does the initial calibration curve consist of 5 concentration levels?	X			A2HP15 on 7/14/15(tox), 7/28/15 A2HP3 on 7/16/15	QSM Table F-2 R
8a. Were the %RSDs for each analyte ≤ 20%? OR was the average %RSD ≥20% with the r^2 >0.990?	X				QSM Table F-2 RSD>20% or r<0.99=J/R
9. Was a LOD Level Verification performed once per quarter with all target analytes detected?	X				QSM Table F-2 R
10. Was a MRL Verification performed at the beginning and end of the sequence or every 12 hours with results within limits of 70-130%?	X			A2HP3- 7/23/15 @ 1743, 1805, 2144 and 2206 A2HP15- 7/29/15 @ 1625, 1647, 2258 and 2320	QSM Table F-2, G-14 >UL=J; <LL=J/UJ/R
11. Was a second source (ICV) verification analyzed after the ICAL? Were results 80-120%?	X			A2HP15 7/14/15 @1632 (Tox),7/28/15 @1800 A2HP3 7/23/15 @ 1721	QSM Table F-2 >120%=J;<80%=J/UJ
12. Was a CCV run every 12 hours or at the beginning and end of the analytical run with the %D for all target analytes ≤20%?		X		A2HP15 7/29/15 @ 1541 (tox),1603, 2047, 2342 (tox), 7/30/15 0025 A2HP3 7/23/15 @1234 (tox), 2334	QSM Table F-2 >120%=J; <80%=J/UJ
13. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-2
14. Were target analytes detected?		X		Checked by ADR.	QSM Table F-2 <5x=B

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta / August 14, 2015

SDG: 240-53411
Analysis: SW846 8081A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
15. Was a field blank collected and analyzed?	X				
16. Were target analytes detected in the field blank analyses >1/2 the MRL?		X			QSM Table F-2 <5x=B
17. Was an LCS prepared and analyzed with each batch?	X				QSM Table F-2
18. Were the LCS recoveries within limits specified in QSM Table G-14?	X			Checked by ADR.	QSM Table G-14 >UL=J; <LL=J/UJ/R
19. Was a MS/MSD pair prepared with each batch?		X		Matrix spike analysis was not requested on a sample from this sample set.	QSM Table F-2
20. Was the MS/MSD parent a Ravenna sample?			X		
21. Were MS/MSD recoveries and RPD within limits specified in QSM Table G-14?			X		QSM Table F-2 Pj with >UL=J; <LL=J/UJ/R
22. Were surrogate recoveries as specified in QSM table G-3?	X			Checked by ADR.	QSM Table F-2 >LL=J; <LL=UJ/J/R
23. Was a field duplicate analyzed? Were the RPDs ≤50%?			X	Checked by ADR. A field duplicate was not submitted with this set of samples.	RPD >50=J parent sample only
24. Were all positive results verified by a second column confirmation? Were the RPD's ≤ 40 for results greater than the LOQ?	X				QSM Table F-2 >40 RPD=J

References:

DoD Quality Systems Manual (QSM), version 4.1, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ October 15, 2015

SDG: 240-54311
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?	X				QAPP Table *5-1* J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table *5-1*
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Was a LOD Verification performed once per quarter with all target analytes detected?	X				DoD QSM Table F-8
7. Tuning (ICP MS Only)					
7a. Was a tune performed daily prior to calibration	X				DoD QSM Table F-8 R
7b. Mass Calibration <0.1 amu from true value	X				
7c. Resolution <0.9 amu full width at 10 % peak height	X				
7d. RSD <%5 for a minimum of four replicate analyses	X				
8.Calibration	X				
8a. Was the ICAL performed daily with at least	X			ICP(7/27/15), Hg (7/24/15) and ICPMS-(7/27/15, 7/29/15)	DoD QSM Tables F-8 and F-7
1high standard and a blank for ICP & ICPMS	X				
5 standards and a blank for Hg	X				
8b. Was the correlation coefficient r≥0.995 for Hg?	X				DoD QSM Tables F-8 and F-7 r<0.995=J/R
8c. Was the ICV (second source verification) analyzed after the ICAL with results 90-110% of the true value?	X				DoD QSM Tables F-8 and F-7
8d. Was the ICB analyzed after the ICV with detected results <1/2 the MRL?	X			ICP-The ICB analyzed 7/27/15@ 0924 had lead detected at 2.44 µg/L and potassium at 71.5 µg/L. The lead results for samples FWGLL1mw-084c-0584-GF, FWGLL1mw-083c-0583-GF, FWGLL3mw-241c-0593-GF, FWGFBQmw-174c-0574-GFand FWGEQUIPRINSE1-0622-GW were qualified, "U" as the reported lead concentrations were less than 5x contamination. No qualification was made for the potassium contamination as all detected potassium concentrations for the associated field samples were greater than 5x blank contamination.	DoD QSM, Tables F-8 and F-7 < 5x = U

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ October 15, 2015

SDG: 240-54311
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
				ICPMS- The ICB analyzed 7/27/15 at 0955 had cadmium detected at 0.179 µg/L. The cadmium result for sample FWGLL1mw-083c-0583-GF was qualified, "U" as the reported concentration was less than 5x cadmium contamination. The ICB analyzed 7/29/15 at 0951 had cadmium detected at 0.162 µg/L. No qualification of the data was required as there were no field samples bracketed by the ICB.	
Sample Analysis					
9. Was a MRL Level Verification performed at the beginning of the daily sequence and end of the analytical sequence bracketing samples? Were results 70-130%?	**X**				LS, DoD QSM Table G-18, >130%=J; 70-80%=J/UJ; <70%=J/UJ <65%=R, unless DL check with detected results
10. Were CCVs analyzed every 10 samples and at the end of the analytical sequence with results 90-110% of the true value?	X				DoD QSM, Tables F-8 and F-7 >110%=J, <85%=J/R 90-85%=J/UJ;

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ October 15, 2015

SDG: 240-54311
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
11. Were the CCBs run every 10 samples and at the end of the analytical sequence? Were results <1/2 the MRL?	X			ICP The CCBs analyzed 7/27/15 had lead detected at 2.25 µg/L and vanadium at 3.55 µg/L. The lead results for samples FWGLL1mw-084c-0584-GF, FWGLL1mw-083c-0583-GF, FWGLL3mw-241c-0593-GF, FWGFBQmw-174c-0574-GFand FWGEQUIPRINSE1-0622-GW were qualified, "U" as the reported lead concentrations were less than 5x contamination. No qualification was made for the vanadium contamination as all detected vanadium concentrations for the associated field samples were greater than 5x blank contamination. ICPMS The CCBs analyzed 7/27/15 had cadmium detected from 0.211 µg/L to 0.329 µg/L, antimony from 0.169 µg/L to 0.174 µg/L, beryllium from 0.08 µg/L to 0.089 µg/L and thallium at 0.091 µg/L. The cadmium result for sample FWGLL1mw-083c-0583-GF was qualified, "U" as the reported concentration was less than 5x cadmium contamination. No qualification was made for the thallium, beryllium or antimony contamination as there were no detected thallium, beryllium or antimony concentrations bracketed by outlier CCBs. The CCBs analyzed 7/29/15 had cadmium detected from 0.180 µg/L to 0.387 µg/L, beryllium at 0.204 µg/L and thallium at 0.082 µg/L. No qualification of the data was required as there were no field samples bracketed by the CCBs.	DoD QSM Tables F-8 and F-7 <5x = U
12. Was an Interelement Check Standard run at the beginning of the analytical sequence and every 12 hours with the ICS recovery within 80 to 120% of true value for each element of interest (ICP and ICPMS only)?	X				DoD QSM Tables F-8 and F-7 >120%=J; 50-79%=J/UJ; <50%=Pj/R
13. Was a method blank prepared and analyzed with each batch?	X				DoD QSM Tables F-8 and F-7

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ October 15, 2015

SDG: 240-54311
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
14. Were target analytes detected in the method blank?	X			Checked by ADR. ICP- The method blank analyzed 7/27/15 had barium detected at 5.27 µg/L, chromium at 1.57 µg/L, manganese at 2.85 µg/L, potassium at 70 µg/L and selenium at 4.4 µg/L. The barium results for samples FWGLL1mw-084c-0584-GF, FWGLL1mw-083c-0583-GF, FWGLL3mw-241c-0593-GF, FWGFBQmw-174c-0574-GF and FWGLL3mw-238c-0592-GF; the chromium results for FWGLL1mw-084c-0584-GF, FWGLL2mw-059c-0588-GF, FWGLL2mw-060c-0589-GF, FWGNTAmw-119-0603-GF and FWGLL3mw-238c-0592-GF; the selenium result for sample FWGLL1mw-084c-0584-GF and the manganese result for sample FWGLL3mw-238c-0592-GF were qualified, "B" as the detected concentrations were less than 5x method blank contamination.	DoD QSM Tables F-8 and F-7, <5x = B
15. Was a field blank collected and analyzed?	X				
16. Were target analytes reported in the field blank analyses?	X			ADR checked section. FWGEQUIPRINSE1-0622-GW had calcium detected at 260 µg/L, lead at 2 µg/L and magnesium at 55 µg/L. The lead results for samples FWGLL1mw-084c-0584-GF, FWGLL1mw-083c-0583-GF, FWGLL3mw-241c-0593-GF and FWGFBQmw-174c-0574-GF were qualified, "B" as the detected concentrations were less than 5x equipment rinse contamination. No qualification was required for the calcium and magnesium field blank contamination as all detected calcium and magnesium results in the associated field samples were less than 5x equipment rinse contamination.	DoD QSM Tables F-8 and F-7 <5x = B
17. Was a LCS prepared and analyzed with each batch?	X				DoD QSM, Tables F-8 and F-7
18. Were the LCS recoveries within limits specified in LCG Appendix C?	X			Checked by ADR.	DoD QSM Tables G-18, F-8 and F-7 >120%=J; 70-79%=J/UJ; <70%=J/R
19. Was a matrix spike (MS) and lab duplicate sample prepared with each batch?	X				DoD QSM Tables F-8 and F-7
20. Was the MS and Lab Duplicate parent a Ravenna sample?	X			A matrix spike analysis and laboratory duplicate analysis was performed on sample FWGLL1mw-084c-0584-GF.	

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ October 15, 2015

SDG: 240-54311
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
21. Were the MS recoveries within 80-120%?	X			Checked by ADR.	DoD QSM Tables G-18, F-8 and F-7, >120%=J;70-79%=J/UJ; <70%=J/R, All samples in batch
22. Was the lab sample duplicate RPD ≤ 20%, for sample results detected above the LOQ?		X		ICP-The laboratory duplicate analyzed on sample FWGLL1mw-084c-0584-GF had an RPD above control limits of 20% for lead at 44% and chromium at 55%. No qualification of the data was required as the detected lead and chromium concentrations for sample FWGLL1mw-084c-0584-GF were less than the LOQ.	DoD QSM Tables F-8 and F-7 >20% = J, All samples in batch
23. Was a serial dilution performed, with the fivefold dilution within ± 10% of the original result?	X				DoD QSM, Tables F-8 and F-7 >20% = J. Only evaluate results above the LOQ. Qualify all samples in batch
24. Was a Post Digestion Spike analyzed as needed? Were results within 75-125%?		X		A post spike was analyzed on sample FWGLL1mw-084c-0584-GF. Silver recovered below control limits of 75-125% at 73%. The silver results for samples FWGLL1mw-084c-0584-GF, FWGLL1mw-083c-0583-GF, FWGLL3mw-241c-0593-GF, FWGFBQmw-174c-0574-GF, FWGLL3mw-238c-0592-GF, FWGLL2mw-059c-0588-GF, FWGLL2mw-060c-0589-GF, FWGNTAmw-119-0603-GF and FWGEQUIPRINSE1-0622-GW were qualified as estimated, "UJ".	LCG Table 7, >125%=J; 30-75%=J/UJ; <30%=R
25. Was a field duplicate analyzed? Were the RPDs ± 50% for sample results detected above the LOQ?	X				>30% = J. Qualify parent sample only and only evaluate results above the LOQ
26. Were internal standards added to all ICPMS samples with intensity within 30-120% of the intensity of the ICAL internal standard?	X				DoD QSM Table F-8. >120%=J/R, <20%=J

References:
DoD Quality Systems Manual (QSM), version 4.2, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/October 15, 2015

SDG: 240-53411
Analysis: SW846 8330 Explosives

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a LOD Verification analyzed once per quarter with all target analytes detected?	X				DoD QSM Table F-3 R
7.Calibration					
7a. Does the initial calibration curve consist of 5 concentration levels? (6 stds for quadratic curves)	X			LC10 4/28/15 LC9 5/4/15	DoD QSM Table F-3 R
7b. Did all target analytes using avg response have an RSD $\leq$ 15% ?	X				
7c. If a linear regression curve was used, was the correlation coefficient r≥0.995? (0.990 for non-linear).			X		
8. Was a second source verification (ICV) analyzed after the ICAL and all analytes 80-120%?	X			LC10 on 4/28/15 at 2052 LC9 5/5/15 at 0224	DoD QSM Table F-3 >120%=J; <80%= J/UJ;
Sample Analysis					
9. Was a CCV run at the beginning of the analytical sequence, every 10 samples and at the end of the analytical run with targets and surrogates recovering 80-120% of the true value?	X			LC10- 7/27/15 @ 1344, 2227 and 7/28/15 @ 0710, 1931 7/31/15 @ 1245, 2129 LC9-8/3/15 @1301, 08/4/15 @ 0221, 1541, 8/5/15 @0502	DoD QSM Table F-3 J/UJ
10. Was a MRL Level verification run at the beginning and end of every daily? Was the %D< 30%?		X		LC10- 7/27/15 @ 1428, 2310 and 7/28/15 @ 0753, 7/31/15 @ 1329, 2212 LC9-8/3/15 @1407, 8/4/15 @0328, 1648, 8/5/15 @0609	LCG Table 5 >30%=J
11. Was a method blank prepared and analyzed with each batch?	X			Samples FWGLL2mw-059C-0588-GW and FWGLL3mw-238C-0592-GW were filtered prior to extraction. A filter blank was prepped and analyzed with no detected results.	DoD QSM Table F-3
12. Were target analytes detected in the method blank?		X		Checked by ADR.	DoD QSM Table F-3 <5x = B
13. Was a field blank collected and analyzed?	X				
14. Were target analytes detected in the field blank analyses?		X		Checked by ADR.	DoD QSM Table F-3 <5x=B

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/October 15, 2015

SDG: 240-53411
Analysis: SW846 8330 Explosives

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
15. Was a field duplicate analyzed? Were the RPDs ≤30%?		X		Checked by ADR. A field duplicate was not submitted with this set of samples.	RPD >30=J
16. Were all positive results confirmed with a second column confirmation? Were the RPDs ≤ 40%?		X		The RDX result for sample FWGFBQmw-174c-0574-GW had a confirmation column RPD above control limits of 40% at 50.9%. The RDX result for sample FWGFBQmw-174c-0574-GW was qualified as estimated, "J".	DoD QSM Table F-3 RPD>40%=J Only detected results above the LOQ were evaluated
17. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-3
18. Were the LCS recoveries within limits specified in table G-12 of the DoD QSM?	X			Checked by ADR.	DoD QSM Table F-3 <UL=J;30-LL=J/UJ; <30%=J/R
19.Was a MS/MSD or MS and sample duplicate prepared with each batch?			X	No data was provided as a matrix spike/spike duplicate was not requested nor was sample volume provided for matrix spike analysis specific to this set of samples.	DoD QSM Table F-3
20. Were MS/MSD recoveries within limits specified in table G-12 of the DoD QSM with an RPD ≤30%?			X		DoD QSM Table F-3 Pj
21. Were surrogate recoveries within laboratory limits (79-111%)?		X		3,4- dinitrotoluene recovered above control limits of 79-11% in samples FWGFBQmw-174c-0574-GW at 129%, FWGLL1mw-083c-0582-GW at 149%, FWGLL1mw-083c-0582-GW (DL) at 147%, FWGLL1mw-084c-0584-GW at 346%, FWGLL1mw-084c-0584-GW (DL) at 352%, FWGLL3mw-238c-0592-GW at 136% and FWGLL3mw-238c-0592-GW (DL) at 117%. The detected results for samples FWGFBQmw-174c-0574-GW, FWGLL1mw-083c-0582-GW, FWGLL1mw-084c-0584-GW, FWGLL3mw-238c-0592-GW and FWGLL3mw-238c-0592-GW were qualified as estimated, "J".	QSM Tables F-2 >UL=J; <LL =J/UJ

References: DoD Quality Systems Manual (QSM), version 4.2, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/August 25, 2015

SDG: 240-53411
Analysis: SW846 8330M Nitroguanidine

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a LOD Verification analyzed once per quarter with all target analytes detected?	X				DoD QSM Table F-3 R
7.Calibration					
7a. Does the initial calibration curve consist of 5 concentration levels? (6 stds for quadratic curves)	X			PDA-1/ Hydro RP80A 11/19/14 (confirmation) PDA-1/ Luna NH2 6/7/15	DoD QSM Table F-3 R
7b. Did all target analytes using avg response have an RSD $\leq$ 15% ?	X				
7c. If a linear regression curve was used, was the correlation coefficient r$\geq$0.995? (0.990 for Quadratic curve).			X		
7d. Did reanalysis of the low level standard after calibration, recover within 15%?	X			Hydro-11/19/14 @1911 Luna- 6/17/15@ 1206	
8. Was a second source verification (ICV) analyzed after the ICAL and all analytes 80-120%?	X			Hydro-11/19/14 @1851 Luna- 6/17/15@ 1206	DoD QSM Table F-3 >120%=J; <80%= J/UJ;
Sample Analysis					
9. Was a CCV run at the beginning of the analytical sequence, every 10 samples and at the end of the analytical run with targets and surrogates recovering 80-120% of the true value?	X			Luna- 7/30/15@ 1225, 1634, 2024 Hydro-8/4/15 @1053, 1235	DoD QSM Table F-3 J/UJ
10. Was a MRL Level verification run at the beginning and end of every daily sequence or every 12 hours? Was the %D < 30%?	X			Luna- 7/30/15@ 1243, 1651, 2042 Hydro-8/4/15 @1113, 1255	LCG Table 5 >30%=J
11. Was a method blank prepared and analyzed with each batch?	X				DoD QSM Table F-3

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/August 25, 2015

SDG: 240-53411
Analysis: SW846 8330M Nitroguanidine

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
12. Were target analytes detected in the method blank?		X		Checked by ADR.	DoD QSM Table F-3 <5x = B
13. Was a field blank collected and analyzed?	X				
14. Were target analytes detected in the field blank analyses?		X		Checked by ADR.	DoD QSM Table F-3 <5x=B
15. Was a field duplicate analyzed? Were the RPDs ≤30%?		X		A field duplicate was no submitted with this set of samples.	RPD >30=J
16. Were all positive results confirmed with a second column confirmation? Were the RPDs ≤ 40%?	X				DoD QSM Table F-3 RPD>40%=J
17. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-3
18. Were the LCS recoveries within laboratory limits of 79%-119%?	X			Checked by ADR.	DoD QSM Table F-3 <UL=J; 30-LL=J/UJ; <30%=J/R
19. Was a MS/MSD or MS and sample duplicate prepared with each batch?	X			FWGLL1mw-084C-0584-GW	DoD QSM Table F-3
20. Were MS/MSD recoveries within laboratory limits of 40%-150% with an RPD ≤20%?	X				DoD QSM Table F-3 Pj

References:
DoD Quality Systems Manual (QSM), version 4.2, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 21, 2015

SDG: 240-53411
Analysis: TAL SOP WS-WC-0050

Review Questions:	Yes	No	N/A	Comments	Qualifier
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Does the initial calibration curve consist of 5 concentration levels with the low standard near but > MDL?	X				SOP Section 10.2 R
7. Was the correlation coefficient >0.995?	X				SOP Section 10.2
8. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours? Was the %D <30%?	X			7/29/15 @ 1408, 1438, 1453	>30%=J
9. Was a second source verification (ICV) analyzed after the ICAL? Were all analytes 90-110%?	X			7/29/15 @ 1404	>110%=J; 90-85%=J/UJ; <85%=J/R
10. Was the ICB analyzed after the ICV with results <1/2 the MRL?	X				STL SOP Section 9.8, LCG ,< 5x = U
11. Was a CCV run every 10 samples and at the end of the analytical run?	X			7/29/15@ 1440, 1455	STL SOP Section 10.4
12. Was the ICV and CCV a mid-level standard from the initial calibration curve?	X				STL SOP Section 10.3.1
13. Were all CCV calibration analytes within 90-110%?	X				>110%=J; 85-90%=J/UJ; <85%=J/R
14. Was the ICB analyzed after the ICV with results <1/2 the MRL?	X				QSM, < 5x = U
15. Was a method blank prepared and analyzed with each batch?	X				
16. Were target analytes detected in the method blank?		X		ADR checked section.	LCG, *<5x=B*
17. Was a field blank collected and analyzed?	X				

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 21, 2015

SDG: 240-53411
Analysis: TAL SOP WS-WC-0050

Review Questions:	Yes	No	N/A	Comments	Qualifier
18. Were target analytes detected in the field blank analyses?		X			<5x=B
19. Was a field duplicate analyzed? Were the RPDs ≤30%?		X		A field duplicate was not submitted with this set of samples.	QAPP Table 3-2 RPD > 30% = J
20. Was an LCS prepared and analyzed with each batch? Was the LCS recovery within lab's in-house limits% (26-144%)?	X				>UL%=J; 50-LL%=J/UJ; <50%=J/R
21. Was a MS/MSD pair prepared with each batch?	X				
22. Was the MS/MSD parent a Ravenna sample?	X			FWGLL1mw-084c-0584-GW	
23. Were MS/MSD recoveries 26-144% and RPD ≤20?	X			Checked by ADR.	Method EPA 353.2 Section 9.4.2 >UL%=J;<LL%=J/UJ; RPD>20%=J/UJ

References:

SOP SAC-WC-0050 "Preparation and Analysis of Nitrocellulose in Aqueous and Soil/Sediment Samples by Colorimetric Autoanalyzer", Jan 2007, rev. 2.0

DoD Quality Systems Manual (QSM)

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

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Attachment 2

Data Qualifier Summary

Lab Reporting Batch ID: 240-53411-1 | **Laboratory: TA CAN**

EDD Filename: Prep240-53411-1a | **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: METALS

Method: 6010B **Matrix:** AQ

Sample ID: FWGEQUIPRINSE1-0622-GW **Collected:** 7/20/2015 5:05:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	260	J	260	MDL	5000	LOQ	ug/L	J	RI
MAGNESIUM	55	J	55	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg
LEAD	2.0	J	1.9	MDL	10	LOQ	ug/L	U	Cb

Sample ID: FWGFBQmw-174C-0574-GF **Collected:** 7/20/2015 12:57:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	13	J	1.0	MDL	200	LOQ	ug/L	B	Mb
CALCIUM	4500	J	260	MDL	5000	LOQ	ug/L	J	RI
LEAD	2.5	J	1.9	MDL	10	LOQ	ug/L	U	Eb, Cb
MAGNESIUM	1600	J	55	MDL	5000	LOQ	ug/L	J	RI
NICKEL	4.7	J	0.76	MDL	40	LOQ	ug/L	J	RI
POTASSIUM	1100	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: FWGLL1mw-083C-0583-GF **Collected:** 7/20/2015 1:03:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	15	J	1.0	MDL	200	LOQ	ug/L	B	Mb
COPPER	3.3	J	1.9	MDL	25	LOQ	ug/L	J	RI
LEAD	2.0	J	1.9	MDL	10	LOQ	ug/L	U	Eb, Cb
NICKEL	27	J	0.76	MDL	40	LOQ	ug/L	J	RI
POTASSIUM	2600	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: FWGLL1mw-084C-0584-GF **Collected:** 7/20/2015 1:55:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	15	J	1.0	MDL	200	LOQ	ug/L	B	Mb
CHROMIUM	0.88	J	0.55	MDL	7.0	LOQ	ug/L	B	Mb
COPPER	8.7	J	1.9	MDL	25	LOQ	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: W912QR-04-D-0036 - USACE Project: USACE Project: RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53411-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53411-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method Category:	**METALS**
Method:	**6010B** ***Matrix:*** **AQ**

Sample ID: **FWGLL1mw-084C-0584-GF** ***Collected:*** **7/20/2015 1:55:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
LEAD	2.5	J	1.9	MDL	10	LOQ	ug/L	U	Eb, Cb
MAGNESIUM	2900	J	55	MDL	5000	LOQ	ug/L	J	RI
NICKEL	24	J	0.76	MDL	40	LOQ	ug/L	J	RI
POTASSIUM	3600	J	70	MDL	5000	LOQ	ug/L	J	RI
SELENIUM	4.1	J	4.0	MDL	15	LOQ	ug/L	U	Mb
SILVER	7.0	U J	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: **FWGLL2mw-059C-0588-GF** ***Collected:*** **7/20/2015 3:41:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
ARSENIC	5.2	J	2.9	MDL	10	LOQ	ug/L	J	RI
BARIUM	47	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.3	J	0.55	MDL	7.0	LOQ	ug/L	B	Mb
NICKEL	5.3	J	0.76	MDL	40	LOQ	ug/L	J	RI
POTASSIUM	380	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: **FWGLL2mw-060C-0589-GF** ***Collected:*** **7/20/2015 3:33:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
BARIUM	32	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.2	J	0.55	MDL	7.0	LOQ	ug/L	B	Mb
POTASSIUM	590	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: **FWGLL3mw-238C-0592-GF** ***Collected:*** **7/20/2015 2:58:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
BARIUM	7.6	J	1.0	MDL	200	LOQ	ug/L	B	Mb
CHROMIUM	1.5	J	0.55	MDL	7.0	LOQ	ug/L	B	Mb
MANGANESE	3.1	J	0.46	MDL	15	LOQ	ug/L	B	Mb
NICKEL	1.3	J	0.76	MDL	40	LOQ	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: W912QR-04-D-0036 - USACE Project: USACE Project: RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53411-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53411-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: METALS
Method: 6010B **Matrix:** AQ

Sample ID: FWGLL3mw-238C-0592-GF **Collected:** 7/20/2015 2:58:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
POTASSIUM	2700	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: FWGLL3mw-241C-0593-GF **Collected:** 7/20/2015 4:44:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	1.0	J	1.0	MDL	200	LOQ	ug/L	B	Mb
LEAD	2.8	J	1.9	MDL	10	LOQ	ug/L	U	Eb, Cb
POTASSIUM	650	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: FWGNTAmw-119-0603-GF **Collected:** 7/20/2015 4:02:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	7.1	J	2.9	MDL	10	LOQ	ug/L	J	RI
BARIUM	78	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.2	J	0.55	MDL	7.0	LOQ	ug/L	B	Mb
POTASSIUM	1400	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Method Category: METALS
Method: 6020 **Matrix:** AQ

Sample ID: FWGFBQmw-174C-0574-GF **Collected:** 7/20/2015 12:57:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SODIUM	910	J	160	MDL	1000	LOQ	ug/L	J	RI
ZINC	31	J	27	MDL	50	LOQ	ug/L	J	RI

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-53411-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53411-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: FWGLL1mw-083C-0583-GF **Collected:** 7/20/2015 1:03:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CADMIUM	0.64	J	0.40	MDL	2.0	LOQ	ug/L	U	Cb
ZINC	38	J	27	MDL	50	LOQ	ug/L	J	RI

Sample ID: FWGLL2mw-060C-0589-GF **Collected:** 7/20/2015 3:33:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.43	J	0.33	MDL	2.0	LOQ	ug/L	J	RI

Sample ID: FWGLL3mw-238C-0592-GF **Collected:** 7/20/2015 2:58:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	140	J	44	MDL	150	LOQ	ug/L	J	RI

Method Category: SVOA

Method: 8270C - SVOC 1&3 **Matrix: AQ**

Sample ID: FWGEQUIPRINSE1-0622-GW **Collected:** 7/20/2015 5:05:00 PM **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Diethylphthalate	1.8	J	0.65	MDL	2.2	LOQ	ug/L	J	RI

Method Category: SVOA

Method: 8330 **Matrix: AQ**

Sample ID: FWGFBQmw-174C-0574-GW **Collected:** 7/20/2015 12:57:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROTOLUENE	0.60	M	0.051	MDL	0.13	LOQ	ug/L	J	Surr
Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	0.68	M	0.037	MDL	0.15	LOQ	ug/L	J	Surr, ProfJudg

* denotes a non-reportable result

Project Name and Number: W912QR-04-D-0036 - USACE Project: USACE Project: RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53411-1 | **Laboratory: TA CAN**

EDD Filename: Prep240-53411-1a | **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: SVOA

Method: 8330 **Matrix:** AQ

Sample ID: FWGLL1mw-083C-0583-GW **Collected:** 7/20/2015 1:03:00 PM **Analysis Type:** DL **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-AMINO-4,6-DINITROTOLUENE	11	D	0.076	MDL	0.76	LOQ	ug/L	J	Surr
4-AMINO-2,6-DINITROTOLUENE	24	D	0.25	MDL	0.76	LOQ	ug/L	J	Surr

Sample ID: FWGLL1mw-083C-0583-GW **Collected:** 7/20/2015 1:03:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	5.8		0.032	MDL	0.15	LOQ	ug/L	J	Surr
1,3-DINITROBENZENE	0.24		0.051	MDL	0.15	LOQ	ug/L	J	Surr
2,4,6-TRINITROTOLUENE	3.4		0.051	MDL	0.15	LOQ	ug/L	J	Surr
2,4-DINITROTOLUENE	2.7		0.051	MDL	0.13	LOQ	ug/L	J	Surr
2,6-DINITROTOLUENE	1.6		0.051	MDL	0.13	LOQ	ug/L	J	Surr
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.5	J M	0.037	MDL	0.15	LOQ	ug/L	J	Surr

Sample ID: FWGLL1mw-084C-0584-GW **Collected:** 7/20/2015 1:55:00 PM **Analysis Type:** DL **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-AMINO-2,6-DINITROTOLUENE	24	D	0.25	MDL	0.76	LOQ	ug/L	J	Surr

Sample ID: FWGLL1mw-084C-0584-GW **Collected:** 7/20/2015 1:55:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	1.8		0.031	MDL	0.15	LOQ	ug/L	J	Surr
1,3-DINITROBENZENE	0.26		0.051	MDL	0.15	LOQ	ug/L	J	Surr
2,4,6-TRINITROTOLUENE	5.8		0.051	MDL	0.15	LOQ	ug/L	J	Surr
2,4-DINITROTOLUENE	1.1		0.051	MDL	0.13	LOQ	ug/L	J	Surr
2,6-DINITROTOLUENE	0.62		0.051	MDL	0.13	LOQ	ug/L	J	Surr
2-AMINO-4,6-DINITROTOLUENE	7.5		0.015	MDL	0.15	LOQ	ug/L	J	Surr
Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	1.3	M	0.036	MDL	0.15	LOQ	ug/L	J	Surr
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.73	J M	0.036	MDL	0.15	LOQ	ug/L	J	Surr

* denotes a non-reportable result

Project Name and Number: W912QR-04-D-0036 - USACE Project: USACE Project: RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53411-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53411-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: SVOA

Method: 8330 **Matrix: AQ**

Sample ID: FWGLL2mw-059C-0588-GW **Collected:** 7/20/2015 3:41:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-AMINO-4,6-DINITROTOLUENE	0.10	J M	0.015	MDL	0.15	LOQ	ug/L	J	RI
4-AMINO-2,6-DINITROTOLUENE	0.13	J M	0.052	MDL	0.15	LOQ	ug/L	J	RI

Sample ID: FWGLL3mw-238C-0592-GW **Collected:** 7/20/2015 2:58:00 PM **Analysis Type:** DL **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	24	D	0.32	MDL	1.6	LOQ	ug/L	J	Surr
2,4,6-TRINITROTOLUENE	55	D	0.52	MDL	1.6	LOQ	ug/L	J	Surr
4-AMINO-2,6-DINITROTOLUENE	25	D M	0.52	MDL	1.6	LOQ	ug/L	J	Surr

Sample ID: FWGLL3mw-238C-0592-GW **Collected:** 7/20/2015 2:58:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.38		0.052	MDL	0.14	LOQ	ug/L	J	Surr
2-AMINO-4,6-DINITROTOLUENE	9.0	M	0.016	MDL	0.16	LOQ	ug/L	J	Surr
Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	6.8	J M	0.038	MDL	0.16	LOQ	ug/L	J	Surr
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.1	M	0.038	MDL	0.16	LOQ	ug/L	J	Surr
Pentaerythritol Tetranitrate (PETN)	2.3	M	0.31	MDL	0.68	LOQ	ug/L	J	Surr

Method Category: VOA

Method: 8260B **Matrix: AQ**

Sample ID: FWG TEAM 2-TRIP **Collected:** 7/20/2015 11:30:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	10	U	0.53	MDL	10	LOQ	ug/L	UJ	ProfJudg
2-HEXANONE	10	U	0.48	MDL	10	LOQ	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	10	U	0.99	MDL	10	LOQ	ug/L	UJ	ProfJudg
ACETONE	1.5	J	0.94	MDL	10	LOQ	ug/L	J	RI, ProfJudg
BROMOMETHANE	1.0	U	0.44	MDL	1.0	LOQ	ug/L	UJ	ProfJudg
METHYLENE CHLORIDE	0.53	J B	0.33	MDL	1.0	LOQ	ug/L	JB	Mb, ProfJudg

* denotes a non-reportable result

Project Name and Number: W912QR-04-D-0036 - USACE Project: USACE Project: RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53411-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53411-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

Sample ID: **FWGEQUIPRINSE1-0622-GW** ***Collected:*** **7/20/2015 5:05:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	10	U	0.53	MDL	10	LOQ	ug/L	UJ	ProfJudg
2-HEXANONE	10	U	0.48	MDL	10	LOQ	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	10	U	0.99	MDL	10	LOQ	ug/L	UJ	ProfJudg
ACETONE	13		0.94	MDL	10	LOQ	ug/L	JB	Tb, ProfJudg
BROMOMETHANE	1.0	U	0.44	MDL	1.0	LOQ	ug/L	UJ	ProfJudg
METHYLENE CHLORIDE	0.34	J B	0.33	MDL	1.0	LOQ	ug/L	JB	Mb, Tb, ProfJudg

Sample ID: **FWGNTAmw-119-0603-GW** ***Collected:*** **7/20/2015 4:02:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	10	U	0.53	MDL	10	LOQ	ug/L	UJ	ProfJudg
2-HEXANONE	10	U	0.48	MDL	10	LOQ	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	10	U	0.99	MDL	10	LOQ	ug/L	UJ	ProfJudg
BROMOMETHANE	1.0	U	0.44	MDL	1.0	LOQ	ug/L	UJ	ProfJudg
CARBON DISULFIDE	0.39	J	0.38	MDL	1.0	LOQ	ug/L	J	RI

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-53411-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53411-1a **eQAPP Name: RVAAP 66-rev March 2015**

Reason Code Legend

Reason Code	*Description*
Cb	Calibration Blank Contamination
Eb	Equipment Blank Contamination
Ld	Laboratory Duplicate Precision
Mb	Method Blank Contamination
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value
Surr	Surrogate/Tracer Recovery Upper Estimation
Tb	Trip Blank Contamination

* denotes a non-reportable result

Data Review Summary

Lab Reporting Batch ID: 240-53411-1

Laboratory: TA CAN

EDD Filename: 240-53411-1a

eQAPP Name: RVAAP 66-rev March 2015

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	SR
Matrix Spike/Matrix Spike Duplicates	A
Laboratory Duplicates	SR
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	N
Field Triplicates	N
Field Blanks	SR

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Trip Blank Outlier Report

Lab Reporting Batch ID: 240-53411-1 **Laboratory: TA CAN**

EDD Filename: 240-53411-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method: **8260B**
Matrix: **AQ**

Trip Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FWG TEAM 2-TRIP(RES)	7/20/2015 11:30:00 AM	ACETONE METHYLENE CHLORIDE	1.5 ug/L 0.53 ug/L	FWGEQUIPRINSE1-0622-GW FWGNTAmw-119-0603-GW

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FWGEQUIPRINSE1-0622-GW(RES)	ACETONE	13 ug/L	13U ug/L
FWGEQUIPRINSE1-0622-GW(RES)	METHYLENE CHLORIDE	0.34 ug/L	0.34U ug/L

Surrogate Outlier Report

Lab Reporting Batch ID: 240-53411-1 **Laboratory: TA CAN**

EDD Filename: 240-53411-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method: 8330
Matrix: AQ

Sample ID (Analysis Type)	Surrogate	Sample % Recovery	% Recovery Limits	Affected Compounds	Flag
FWGFBQmw-174C-0574-GW	3,4-DINITROTOLUENE	129	79.00-111.00	All Target Analytes	J (all detects)
FWGLL1mw-083C-0583-GW (DL)	3,4-DINITROTOLUENE	147	79.00-111.00	All Target Analytes	J(all detects)
FWGLL1mw-083C-0583-GW	3,4-DINITROTOLUENE	149	79.00-111.00	All Target Analytes	J(all detects)
FWGLL1mw-084C-0584-GW (DL)	3,4-DINITROTOLUENE	352	79.00-111.00	All Target Analytes	J(all detects)
FWGLL1mw-084C-0584-GW	3,4-DINITROTOLUENE	346	79.00-111.00	All Target Analytes	J(all detects)
FWGLL3mw-238C-0592-GW (DL)	3,4-DINITROTOLUENE	117	79.00-111.00	All Target Analytes	J(all detects)
FWGLL3mw-238C-0592-GW	3,4-DINITROTOLUENE	136	79.00-111.00	All Target Analytes	J(all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 240-53411-1 **Laboratory: TA CAN**

EDD Filename: 240-53411-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method: 6010B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGEQUIPRINSE1-0622-GW	CALCIUM	J	260	5000	LOQ	ug/L	J (all detects)
	LEAD	J	2.0	10	LOQ	ug/L	
	MAGNESIUM	J	55	5000	LOQ	ug/L	
FWGFBQmw-174C-0574-GF	BARIUM	J	13	200	LOQ	ug/L	J (all detects)
	CALCIUM	J	4500	5000	LOQ	ug/L	
	LEAD	J	2.5	10	LOQ	ug/L	
	MAGNESIUM	J	1600	5000	LOQ	ug/L	
	NICKEL	J	4.7	40	LOQ	ug/L	
	POTASSIUM	J	1100	5000	LOQ	ug/L	
FWGLL1mw-083C-0583-GF	BARIUM	J	15	200	LOQ	ug/L	J (all detects)
	COPPER	J	3.3	25	LOQ	ug/L	
	LEAD	J	2.0	10	LOQ	ug/L	
	NICKEL	J	27	40	LOQ	ug/L	
	POTASSIUM	J	2600	5000	LOQ	ug/L	
FWGLL1mw-084C-0584-GF	BARIUM	J	15	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	0.88	7.0	LOQ	ug/L	
	COPPER	J	8.7	25	LOQ	ug/L	
	LEAD	J	2.5	10	LOQ	ug/L	
	MAGNESIUM	J	2900	5000	LOQ	ug/L	
	NICKEL	J	24	40	LOQ	ug/L	
	POTASSIUM	J	3600	5000	LOQ	ug/L	
	SELENIUM	J	4.1	15	LOQ	ug/L	
FWGLL2mw-059C-0588-GF	ARSENIC	J	5.2	10	LOQ	ug/L	J (all detects)
	BARIUM	J	47	200	LOQ	ug/L	
	CHROMIUM	J	1.3	7.0	LOQ	ug/L	
	NICKEL	J	5.3	40	LOQ	ug/L	
	POTASSIUM	J	380	5000	LOQ	ug/L	
FWGLL2mw-060C-0589-GF	BARIUM	J	32	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	1.2	7.0	LOQ	ug/L	
	POTASSIUM	J	590	5000	LOQ	ug/L	
FWGLL3mw-238C-0592-GF	BARIUM	J	7.6	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	1.5	7.0	LOQ	ug/L	
	MANGANESE	J	3.1	15	LOQ	ug/L	
	NICKEL	J	1.3	40	LOQ	ug/L	
	POTASSIUM	J	2700	5000	LOQ	ug/L	
FWGLL3mw-241C-0593-GF	BARIUM	J	1.0	200	LOQ	ug/L	J (all detects)
	LEAD	J	2.8	10	LOQ	ug/L	
	POTASSIUM	J	650	5000	LOQ	ug/L	
FWGNTAmw-119-0603-GF	ARSENIC	J	7.1	10	LOQ	ug/L	J (all detects)
	BARIUM	J	78	200	LOQ	ug/L	
	CHROMIUM	J	1.2	7.0	LOQ	ug/L	
	POTASSIUM	J	1400	5000	LOQ	ug/L	

Method: 6020

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGFBQmw-174C-0574-GF	SODIUM	J	910	1000	LOQ	ug/L	J (all detects)
	ZINC	J	31	50	LOQ	ug/L	

Project Name and Number: W912QR-04-D-0036 - RVAAP 66 (OH)

Reporting Limit Outliers

Lab Reporting Batch ID: 240-53411-1 | **Laboratory: TA CAN**

EDD Filename: 240-53411-1a | **eQAPP Name: RVAAP 66-rev March 2015**

Method: 6020

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGLL1mw-083C-0583-GF	CADMIUM ZINC	J J	0.64 38	2.0 50	LOQ LOQ	ug/L ug/L	J (all detects)
FWGLL2mw-060C-0589-GF	ANTIMONY	J	0.43	2.0	LOQ	ug/L	J (all detects)
FWGLL3mw-238C-0592-GF	IRON	J	140	150	LOQ	ug/L	J (all detects)

Method: 8260B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWG TEAM 2-TRIP	ACETONE METHYLENE CHLORIDE	J J B	1.5 0.53	10 1.0	LOQ LOQ	ug/L ug/L	J (all detects)
FWGEQUIPRINSE1-0622-GW	METHYLENE CHLORIDE	J B	0.34	1.0	LOQ	ug/L	J (all detects)
FWGNTAmw-119-0603-GW	CARBON DISULFIDE	J	0.39	1.0	LOQ	ug/L	J (all detects)

Method: 8270C - SVOC 1&3

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGEQUIPRINSE1-0622-GW	Diethylphthalate	J	1.8	2.2	LOQ	ug/L	J (all detects)

Method: 8330

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGLL2mw-059C-0588-GW	2-AMINO-4,6-DINITROTOLUENE 4-AMINO-2,6-DINITROTOLUENE	J M J M	0.10 0.13	0.15 0.15	LOQ LOQ	ug/L ug/L	J (all detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 240-53411-1 **Laboratory: TA CAN**

EDD Filename: 240-53411-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method: 6010B
Matrix: AQ

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 240-189945/1-A	7/27/2015 10:56:00 AM	BARIUM CHROMIUM MANGANESE POTASSIUM SELENIUM	5.27 ug/L 1.57 ug/L 2.85 ug/L 70.0 ug/L 4.44 ug/L	FWGEQUIPRINSE1-0622-GW FWGFBQmw-174C-0574-GF FWGLL1mw-083C-0583-GF FWGLL1mw-084C-0584-GF FWGLL2mw-059C-0588-GF FWGLL2mw-060C-0589-GF FWGLL3mw-238C-0592-GF FWGLL3mw-241C-0593-GF FWGNTAmw-119-0603-GF

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FWGFBQmw-174C-0574-GF(RES/TOT)	BARIUM	13 ug/L	13U ug/L
FWGLL1mw-083C-0583-GF(RES/TOT)	BARIUM	15 ug/L	15U ug/L
FWGLL1mw-084C-0584-GF(RES/TOT)	BARIUM	15 ug/L	15U ug/L
FWGLL1mw-084C-0584-GF(RES/TOT)	CHROMIUM	0.88 ug/L	0.88U ug/L
FWGLL1mw-084C-0584-GF(RES/TOT)	SELENIUM	4.1 ug/L	4.1U ug/L
FWGLL2mw-059C-0588-GF(RES/TOT)	CHROMIUM	1.3 ug/L	1.3U ug/L
FWGLL2mw-060C-0589-GF(RES/TOT)	CHROMIUM	1.2 ug/L	1.2U ug/L
FWGLL3mw-238C-0592-GF(RES/TOT)	BARIUM	7.6 ug/L	7.6U ug/L
FWGLL3mw-238C-0592-GF(RES/TOT)	CHROMIUM	1.5 ug/L	1.5U ug/L
FWGLL3mw-238C-0592-GF(RES/TOT)	MANGANESE	3.1 ug/L	3.1U ug/L
FWGLL3mw-241C-0593-GF(RES/TOT)	BARIUM	1.0 ug/L	1.0U ug/L
FWGNTAmw-119-0603-GF(RES/TOT)	CHROMIUM	1.2 ug/L	1.2U ug/L

Method: 8260B
Matrix: AQ

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 240-190310/6	7/23/2015 9:52:00 AM	METHYLENE CHLORIDE	0.640 ug/L	FWG TEAM 2-TRIP FWGEQUIPRINSE1-0622-GW FWGNTAmw-119-0603-GW

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FWG TEAM 2-TRIP(RES)	METHYLENE CHLORIDE	0.53 ug/L	0.53U ug/L
FWGEQUIPRINSE1-0622-GW(RES)	METHYLENE CHLORIDE	0.34 ug/L	0.34U ug/L

Lab Duplicate Outlier Report

Lab Reporting Batch ID: 240-53411-1 **Laboratory: TA CAN**

EDD Filename: 240-53411-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method: 6010B
Matrix: AQ

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
FWGLL1mw-084C-0584-GFDUP (TOT) (FWGEQUIPRINSE1-0622-GW FWGFBQmw-174C-0574-GF FWGLL1mw-083C-0583-GF FWGLL1mw-084C-0584-GF FWGLL2mw-059C-0588-GF FWGLL2mw-060C-0589-GF FWGLL3mw-238C-0592-GF FWGLL3mw-241C-0593-GF FWGNTAmw-119-0603-GF)	CHROMIUM LEAD	55 44	20.00 20.00	J (all detects) UJ (all non-detects)

Project Name and Number: W912QR-04-D-0036 - RVAAP 66 (OH)

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: 240-53411-1 **Laboratory: TA CAN**

EDD Filename: 240-53411-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method: **6010B**
Matrix: **AQ**

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FWGEQUIPRINSE1-0622-GW(RES/TOT)	7/20/2015 5:05:00 PM	CALCIUM LEAD MAGNESIUM	260 ug/L 2 ug/L 55 ug/L	FWGFBQmw-174C-0574-GF FWGFBQmw-174C-0574-GW FWGLL1mw-083C-0583-GF FWGLL1mw-083C-0583-GW FWGLL1mw-084C-0584-GF FWGLL1mw-084C-0584-GW FWGLL2mw-059C-0588-GF FWGLL2mw-059C-0588-GW FWGLL2mw-060C-0589-GF FWGLL2mw-060C-0589-GW FWGLL3mw-238C-0592-GF FWGLL3mw-238C-0592-GW FWGLL3mw-241C-0593-GF FWGLL3mw-241C-0593-GW FWGNTAmw-119-0603-GF FWGNTAmw-119-0603-GW

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FWGFBQmw-174C-0574-GF(RES/TOT)	LEAD	2.5 ug/L	2.5U ug/L
FWGLL1mw-083C-0583-GF(RES/TOT)	LEAD	2.0 ug/L	2.0U ug/L
FWGLL1mw-084C-0584-GF(RES/TOT)	LEAD	2.5 ug/L	2.5U ug/L
FWGLL3mw-241C-0593-GF(RES/TOT)	LEAD	2.8 ug/L	2.8U ug/L

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53411-1										
6010B	FWGEQUIPRINSE1-0622-GW	AQ	EB							
				CALCIUM	5000	260J		J	ug/L	RI
				LEAD	10	2.0J		U	ug/L	Cb
				MAGNESIUM	5000	55J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGFBQmw-174C-0574-GF	AQ	N							
				BARIUM	200	13J		B	ug/L	Mb
				CALCIUM	5000	4500J		J	ug/L	RI
				LEAD	10	2.5J		U	ug/L	Eb, Cb
				MAGNESIUM	5000	1600J		J	ug/L	RI
				NICKEL	40	4.7J		J	ug/L	RI
				POTASSIUM	5000	1100J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGLL1mw-083C-0583-GF	AQ	N							
				BARIUM	200	15J		B	ug/L	Mb
				COPPER	25	3.3J		J	ug/L	RI
				LEAD	10	2.0J		U	ug/L	Eb, Cb
				NICKEL	40	27J		J	ug/L	RI
				POTASSIUM	5000	2600J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53411-1										
6010B	FWGLL1mw-084C-0584-GF	AQ	N							
				BARIUM	200	15J		B	ug/L	Mb
				CHROMIUM	7.0	0.88J		B	ug/L	Mb
				COPPER	25	8.7J		J	ug/L	RI
				LEAD	10	2.5J		U	ug/L	Eb, Cb
				MAGNESIUM	5000	2900J		J	ug/L	RI
				NICKEL	40	24J		J	ug/L	RI
				POTASSIUM	5000	3600J		J	ug/L	RI
				SELENIUM	15	4.1J		B	ug/L	Mb
				SILVER	7.0	7.0U J		UJ	ug/L	ProfJudg
6010B	FWGLL2mw-059C-0588-GF	AQ	N							
				ARSENIC	10	5.2J		J	ug/L	RI
				BARIUM	200	47J		J	ug/L	RI
				CHROMIUM	7.0	1.3J		B	ug/L	Mb
				NICKEL	40	5.3J		J	ug/L	RI
				POTASSIUM	5000	380J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGLL2mw-060C-0589-GF	AQ	N							
				BARIUM	200	32J		J	ug/L	RI
				CHROMIUM	7.0	1.2J		B	ug/L	Mb
				POTASSIUM	5000	590J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGLL3mw-238C-0592-GF	AQ	N							
				BARIUM	200	7.6J		B	ug/L	Mb
				CHROMIUM	7.0	1.5J		B	ug/L	Mb
				MANGANESE	15	3.1J		B	ug/L	Mb
				NICKEL	40	1.3J		J	ug/L	RI
				POTASSIUM	5000	2700J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53411-1										
6010B	FWGLL3mw-241C-0593-GF	AQ	N							
				BARIUM	200	1.0J		B	ug/L	Mb
				LEAD	10	2.8J		U	ug/L	Eb, Cb
				POTASSIUM	5000	650J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGNTAmw-119-0603-GF	AQ	N							
				ARSENIC	10	7.1J		J	ug/L	RI
				BARIUM	200	78J		J	ug/L	RI
				CHROMIUM	7.0	1.2J		B	ug/L	Mb
				POTASSIUM	5000	1400J		J	ug/L	RI
6020	FWGFBQmw-174C-0574-GF	AQ	N							
				SODIUM	1000	910J		J	ug/L	RI
				ZINC	50	31J		J	ug/L	RI
6020	FWGLL1mw-083C-0583-GF	AQ	N							
				CADMIUM	2.0	0.64J		U	ug/L	Cb
				ZINC	50	38J		J	ug/L	RI
6020	FWGLL2mw-060C-0589-GF	AQ	N							
				ANTIMONY	2.0	0.43J		J	ug/L	RI
6020	FWGLL3mw-238C-0592-GF	AQ	N							
				IRON	150	140J		J	ug/L	RI
8260B	FWG TEAM 2-TRIP	AQ	TB							
				2-BUTANONE	10	10U		UJ	ug/L	ProfJudg
				2-HEXANONE	10	10U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	10	10U		UJ	ug/L	ProfJudg
				ACETONE	10	1.5J		J	ug/L	RI, ProfJu
				BROMOMETHANE	1.0	1.0U		UJ	ug/L	ProfJudg
				METHYLENE CHLORIDE	1.0	0.53J B		JB	ug/L	Mb, ProfJu

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53411-1										
8260B	FWGEQUIPRINSE1-0622-GW	AQ	EB							
				2-BUTANONE	10	10U		UJ	ug/L	ProfJudg
				2-HEXANONE	10	10U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	10	10U		UJ	ug/L	ProfJudg
				ACETONE	10	13		JB	ug/L	Tb, ProfJu
				BROMOMETHANE	1.0	1.0U		UJ	ug/L	ProfJudg
				METHYLENE CHLORIDE	1.0	0.34J B		JB	ug/L	Mb, Tb, Pr
8260B	FWGNTAmw-119-0603-GW	AQ	N							
				2-BUTANONE	10	10U		UJ	ug/L	ProfJudg
				2-HEXANONE	10	10U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	10	10U		UJ	ug/L	ProfJudg
				BROMOMETHANE	1.0	1.0U		UJ	ug/L	ProfJudg
				CARBON DISULFIDE	1.0	0.39J		J	ug/L	RI
8270C - SVOC 1&3	FWGEQUIPRINSE1-0622-GW	AQ	EB							
				Diethylphthalate	2.2	1.8J		J	ug/L	RI
8330	FWGFBQmw-174C-0574-GW	AQ	N							
				2,4-DINITROTOLUENE	0.13	0.60M		J	ug/L	Surr
				Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	0.15	0.68M		J	ug/L	Surr, ProfJ
8330	FWGLL1mw-083C-0583-GW	AQ	N							
				1,3,5-TRINITROBENZENE	0.15	5.8		J	ug/L	Surr
				1,3-DINITROBENZENE	0.15	0.24		J	ug/L	Surr
				2,4,6-TRINITROTOLUENE	0.15	3.4		J	ug/L	Surr
				2,4-DINITROTOLUENE	0.13	2.7		J	ug/L	Surr
				2,6-DINITROTOLUENE	0.13	1.6		J	ug/L	Surr
				2-AMINO-4,6-DINITROTOLUENE	0.76	11D		J	ug/L	Surr
				4-AMINO-2,6-DINITROTOLUENE	0.76	24D		J	ug/L	Surr
				Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.15	1.5J M		J	ug/L	Surr

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53411-1										
8330	FWGLL1mw-084C-0584-GW	AQ	N							
				1,3,5-TRINITROBENZENE	0.15	1.8		J	ug/L	Surr
				1,3-DINITROBENZENE	0.15	0.26		J	ug/L	Surr
				2,4,6-TRINITROTOLUENE	0.15	5.8		J	ug/L	Surr
				2,4-DINITROTOLUENE	0.13	1.1		J	ug/L	Surr
				2,6-DINITROTOLUENE	0.13	0.62		J	ug/L	Surr
				2-AMINO-4,6-DINITROTOLUENE	0.15	7.5		J	ug/L	Surr
				4-AMINO-2,6-DINITROTOLUENE	0.76	24D		J	ug/L	Surr
				Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	0.15	1.3M		J	ug/L	Surr
				Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.15	0.73J M		J	ug/L	Surr
8330	FWGLL2mw-059C-0588-GW	AQ	N							
				2-AMINO-4,6-DINITROTOLUENE	0.15	0.10J M		J	ug/L	RI
				4-AMINO-2,6-DINITROTOLUENE	0.15	0.13J M		J	ug/L	RI
8330	FWGLL3mw-238C-0592-GW	AQ	N							
				1,3,5-TRINITROBENZENE	1.6	24D		J	ug/L	Surr
				2,4,6-TRINITROTOLUENE	1.6	55D		J	ug/L	Surr
				2,6-DINITROTOLUENE	0.14	0.38		J	ug/L	Surr
				2-AMINO-4,6-DINITROTOLUENE	0.16	9.0M		J	ug/L	Surr
				4-AMINO-2,6-DINITROTOLUENE	1.6	25D M		J	ug/L	Surr
				Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	0.16	6.8J M		J	ug/L	Surr
				Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.16	1.1M		J	ug/L	Surr
				Pentaerythritol Tetranitrate (PETN)	0.68	2.3M		J	ug/L	Surr

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Data Verification Summary

Site: Ravenna Army Ammunition Plant
Sampling Event: July 2015
Sample Delivery Group: 240-53458

Date: October 16, 2015
Revision: 1

Data Reviewer: Angela Dragotta /Environmental Quality Management, Inc. (EQM, Inc.)

QA/QC Summary

On July 21th, 2015 the following samples were collected from groundwater-monitoring wells at the former Ravenna Army Ammunition Plant and analyzed as part of SDG 240-53458. Sample analysis was performed by Test America. Test America-North Canton performed all analyses with the exception of the analytical for methods 8330, M8330, TALSOPWS-WC-0050 and 6860. Methods 8330, M8330 and TALSOPWS-WC-0050 were performed by Test America, West Sacramento. Method 6860 was performed by Test America- Denver.

Sample ID	VOC by SW846 8260	SVOC 4 by SW846 8270	SVOC 1 and 3 by SW846 8270	SVOC 1 by SW846 8270	Pesticides by SW846 8081	PCBs/ SW846 8082	Explosives/Propellants by SW846 8330, Mod. 8330 and TALSOP WS-WC-0050	Cyanide SW846 9012	Perchlorate by SW846 6860	NO2/NO3, EPA 353.2	Metals		
											SW846 6010B	SW846 6020	Mercury by SW846 7470A
FWGLL1mw-088-0587-GW/GF				X	X		X				X	X	X
FWGLL1mw-086-0585- GW/GF				X	X		X				X	X	X
FWGEQUIPRINSE2-0623-GW				X	X		X		X	X	X	X	X
FWGLL1mw-064C-0581- GW/GF				X			X				X	X	X
FWGLL3mw-246-0595- GW/GF				X			X		X		X	X	X
FWGLL2mw-271-0591- GW/GF				X			X		X		X	X	X
FWGLL2mw-DUP2-0618- GW/GF				X			X		X		X	X	X
FWGLL12mw-185c-0598-GW/GF										X	X		
FWGLL3mw-244-0594- GW/GF				X	X		X				X	X	X
FWGLL3mw-DUP3-0619- GW/GF				X	X		X				X	X	X
FWGLL12mw-242C-0600- GW/GF				X			X			X	X	X	X
FWGLL1mw-087C-0586- GW/GF				X			X				X	X	X
FWGSCFmw-004-0608- GW/GF				X	X		X				X	X	X
FWGSCFmw-002-0607- GW/GF				X	X		X				X	X	X
FWGLL12mw-247-0602- GW/GF				X			X				X	X	X

1) All metals samples with the exception of FWGEQUIPRINSE2-0623-GW were field filtered (GF).
2) SVOC1= Phthalates
3) EPA 6020 metals include aluminum, antimony, beryllium, cadmium, iron, sodium, thallium and zinc. EPA 6010B metals include arsenic, chromium, cobalt, lead, selenium, silver, vanadium, barium, calcium, copper, magnesium, manganese, nickel and potassium.
4) Sample FWGLL12mw-185c-0598-GF was only analyzed for arsenic as requested on the COC.
5) Sample FWGLL12mw-247-0602-GW was listed on the COC as requested for nitrate/nitrite analysis, but the volume received by the lab was not analyzed at the direction of EQM. Sample FWGLL12mw-247-0602-GW was resampled and resubmitted for nitrate/nitrite on 7/22/15 due to incorrect preservation on 7/21/15.

The data presented in this report were evaluated according to the *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January, 2012.* The following documents were used as needed to supplement the project documentation: The United States Department of Defense (DoD) Quality Services Manual (QSM) for Environmental Laboratories, Version 4.2, and the United

Data Verification Summary

Site: Ravenna Army Ammunition Plant
Sampling Event: July 2015
Sample Delivery Group: 240-53458

Date: October 16, 2015
Revision: 1

States Army Corps of Engineers (USACE), Louisville District Quality Systems Manual Supplement (LS), *EPA National Functional Guidelines (NFG) for Organic Data Review, EPA-540/R-08-01, June 2008, NFG for Inorganic Data Review, EPA-540/R-04-004, October 2004*, Analytical Methods, and Laboratory Standard Operating Procedures. The QC criteria provided in the reference documents represent accuracy and precision performance goals for each analytical method. QC criteria reviewed for each method are listed below, along with any outliers.

All analytical results have been verified against compliance requirements specified in the project QAPP, QSM, LS, associated analytical methods and/or SOPs, as appropriate, and reported by the laboratory as directed by the DoD QSM.

Per the DoD QSM, the laboratory data is reported as follows: Non detected results were reported at the LOD with a "U" flag. Detected results between the DL and LOQ were reported as estimated, qualified with a "J" flag.

LOD - An estimate of the minimum amount of a substance that an analytical process can reliably detect.

LOQ - The lowest concentration that produces a quantitative result within specified limits of precision and bias.

DL- The smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence.

Checklists used in the verification process are in Attachment I and sample results with outliers requiring qualification are in Attachment II.

The completeness objective for the project was 90%. The completeness objective was met for this SDG, at 100%. Limitations, if any, on the data are indicated with qualifiers detailed below.

SVOCs- 8270C

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Tuning criteria
- Initial Calibration Criteria including SPCC and CCC compounds
- ICV/CCV criteria
- Internal standard area counts and retention times
- LOD and MRL verification criteria
- Method /field blank criteria
- Surrogate recoveries
- Field duplicate RPD criteria
- Laboratory Control Sample criteria
- Matrix Spike Recovery Criteria and RPD

No QC outliers were noted.

Pesticides- 8081A

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Initial Calibration criteria
- DDT and Endrin breakdown (PEM) criteria
- Retention time criteria
- ICV criteria
- CCV Criteria
- Method /field blank criteria

- LCS Recoveries
- Field Duplicate Criteria
- LOD and MRL verification criteria
- Matrix Spike Recovery Criteria and RPD
- Surrogate Recoveries
- Second Column confirmation criteria

Holding Time
Due to LCS failure for endosulfan I, samples FWGLL1mw-088-0587-GW, FWGLL1mw-086-0585- GW, FWGLL3mw-244-0594- GW, FWGLL3mw-DUP3-0619- GW, FWGSCFmw-004-0608- GW, FWGSCFmw-002-0607- GW and FWGEQUIPRINSE2-0623-GW were re extracted. The re extraction was completed outside the hold time of seven days at nine days. Since extraction was performed outside hold, but within 2x hold, the endosulfan I results for samples FWGLL1mw-088-0587-GW, FWGLL1mw-086-0585- GW, FWGLL3mw-244-0594- GW, FWGLL3mw-DUP3-0619- GW, FWGSCFmw-004-0608- GW, FWGSCFmw-002-0607- GW and FWGEQUIPRINSE2-0623-GW were qualified as estimated, "UJ".

PEM Criteria
A PEM was analyzed before and after the samples analyzed on 8/3/15 on instrument A2HP3. The closing endrin % breakdown was above 15% at 18.15%. No qualifiers were applied to the data as a result of the high % breakdown as there were no detected concentrations of endrin, endrin aldehyde or endrin ketone reported from the analytical sequence and the opening PEM passed breakdown requirements. QSM does not require bracketing PEM.

ICV Criteria
The ICV analyzed at 1703 on 7/28/15 (A2HP3) recovered above control limits of 80-120% at 121.8% for alpha-BHC. No qualification of the data was required as only endosulfan I was reported from A2HP3.

Matrix Spike Recovery Criteria
Matrix spike analysis was not requested on a sample from this sample set.

No other QC outliers were noted.

Metals - 6010B
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method /field blank criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field duplicate RPD criteria
- Post Digestion Spike Criteria
- Serial Dilution Criteria

Blanks
The ICB analyzed 7/27/15@ 0924 had lead detected at 2.43 µg/L and potassium at 71.5 µg/L. On 7/30/15, the ICB had potassium detected at 92.2 µg/L. The lead results for samples FWGSCFmw-002-0607-GF, FWGLL3mw-246-0595-GF, FWGSCFmw-004-0608-GF and FWGEQUIPRINSE2-0623-GW were qualified, "U" as the reported lead concentrations were less than 5x contamination. No qualification was made for the potassium contamination as all detected potassium concentrations for the associated field samples were greater than 5x blank contamination.

The CCBs analyzed 7/27/15 had lead detected at 2.29 µg/L, chromium at 0.822 µg/L, potassium from 77.6 µg/L to 86.9 µg/L, silver at 1.09 µg/L and vanadium at 3.55 µg/L. The CCBs analyzed 7/30/15 had chromium detected at 1.4 µg/L, manganese at 0.522 µg/L, potassium at 98 µg/Land nickel from 0.779 µg/L to 0.861 µg/L. The lead results for samples FWGSCFmw-002-0607-GF, FWGLL3mw-246-0595-GF, FWGSCFmw-004-0608-GF and FWGEQUIPRINSE2-0623-GW; the silver results for sample FWGLL1mw-064c-0581-GF and the chromium results for samples FWGLL1mw-064c-0581-GF, FWGLL2mw-271-0591-GF, FWGLL3mw-246-0595-GF, FWGLL3mw-244-0594-GF, FWGLL2mw-DUP2-0618-GF, FWGLL3mw-DUP3-0619-GF, FWGLL12mw-242c-0600-GF, FWGLL1mw-087c-0586-GF, FWGSCFmw-004-0608-GF, FWGSCFmw-002-0607-GF and FWGLL12mw-247-0602-GF were qualified, "U" as the reported lead , silver and chromium concentrations were less than 5x contamination. No qualification was made for the potassium, manganese, nickel or vanadium contamination as any detected potassium, manganese, nickel or vanadium concentrations for the associated field samples were greater than 5x blank contamination.

The method blank analyzed 7/27/15 had lead detected at 2.11 µg/L. The lead results for samples FWGSCFmw-002-0607-GF, FWGLL3mw-246-0595-GF, FWGSCFmw-004-0608-GF and FWGEQUIPRINSE2-0623-GW were qualified, "B" as the detected concentrations were less than 5x method blank contamination.

FWGEQUIPRINSE2-0623-GW had lead detected at 2 µg/L. The lead results for samples FWGSCFmw-002-0607-GF, FWGLL3mw-246-0595-GF and FWGSCFmw-004-0608-GF were qualified, "B" as the detected concentrations were less than 5x equipment rinse contamination.

Lab Duplicate RPD

The lab duplicate RPDs were above 20% for chromium at 67% in sample FWGLL3mw-246-0595-GF and in sample FWGSCFmw-002-0607-GF at 39%. The lab duplicate RPD outliers did not result in any qualification of the data as the chromium results for samples FWGLL3mw-246-0595-GF and FWGSCFmw-002-0607-GF were less than the LOQ.

Post Spike Analysis

A post spike was analyzed on samples FWGLL3mw-246-0595-GF and FWGSCFmw-002-0607-GF. Silver recovered below control limits of 75-125% for both post spikes at 74%. The silver results for samples FWGLL1mw-064c-0581-GF, FWGLL2mw-271-0591-GF, FWGLL3mw-246-0595-GF, FWGLL3mw-244-0594-GF, FWGLL2mw-DUP2-0618-GF, FWGLL3mw-DUP3-0619-GF, FWGLL12mw-242c-0600-GF, FWGLL1mw-087c-0586-GF, FWGLL1mw-088c-0587-GF, FWGSCFmw-004-0608-GF, FWGSCFmw-002-0607-GF and FWGLL12mw-247-0602-GF, FWGEQUIPRINSE2-0623-GW and FWGLL1mw-086-0585-GF were qualified as estimated, "UJ"

No additional QC outliers were noted.

Metals - 6020

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Tuning Criteria
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method /field blank criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field Duplicate RPD Criteria
- Post Digestion Spike Criteria
- Serial Dilution Criteria

Blanks
The ICB analyzed 7/27/15 at 0955 had cadmium detected at 0.179 µg/L and on 7/29/15, the ICB had cadmium detected at 0.162 µg/L. No qualification of the data was required as there were no detected cadmium concentrations reported for the associated field samples.

The CCBs analyzed 7/27/15 had cadmium detected from 0.152 µg/L to 0.292 µg/L, antimony from 0.162 µg/L to 0.169 µg/L and beryllium at 0.089 µg/L. The CCBs analyzed 7/29/15 had cadmium detected from 0.180 µg/L to 0.387 µg/L and thallium at 0.082 µg/L. The antimony results for samples FWGLL3mw-246-0595-GF, FWGLL3mw-244-594-GF and FWGLL3mw-DUP3-0619-GF were qualified, "U" as the reported concentrations were less than 5x antimony contamination. No qualification was made for the thallium, beryllium or cadmium contamination as there were no detected thallium, beryllium or cadmium concentrations less than five times blank contamination bracketed by the outlier CCBs.

Lab Duplicate RPD
The lab duplicate RPD was above 20% for antimony in sample FWGLL3mw-246-0595-GF at 27%. The lab duplicate RPD outlier did not result in any qualification of the data, as the antimony result for sample FWGLL3mw-246-0595-GF was less than the LOQ.

No additional QC outliers were noted.

Mercury - 7470A
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method /field blank criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field duplicate RPD criteria

No QC outliers were noted.

Explosives- 8330
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Initial Calibration Criteria
- ICV and CCV criteria
- Retention time criteria
- LOD and MRL verification criteria
- Surrogate recovery criteria
- Method /field blank criteria
- LCS/LCD Recovery and RPD Criteria
- Matrix spike/spike duplicate recovery criteria and RPD
- Second column confirmation RPD
- Field Duplicate RPD

MRL Verification
The MRL analyzed 8/5/15 @ 1551 on LC10 recovered above control limits of 70-130% for PETN at 141%. No qualification of the data was required as there were no detected PETN concentrations reported for the associated field samples.

No additional QC outliers were noted.

Nitroguanidine- 8330M

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- Retention time criteria
- LOD and MRL verification criteria
- ICV and CCV criteria
- Method /field blank criteria
- LCS/LCSD percent recoveries and RPD value criteria
- Matrix spike recovery criteria
- Second column confirmation
- Field Duplicate RPD

No QC outliers were noted.

Nitrocellulose – WS-WC-0050

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Sample preparation criteria
- Initial Calibration criteria
- ICV and CCV criteria
- Method /field blank criteria
- LOD and MRL verification criteria
- ICB and CCBs were free from contamination
- LCS/LCSD percent recoveries and RPD value criteria
- MS/MSD percent recoveries and RPD
- Field Duplicate RPD

No QC outliers were noted.

Nitrate/Nitrite- EPA 353.2

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Sample preparation criteria
- Initial Calibration criteria
- ICV and CCV criteria
- Method /field blank criteria
- LOD and MRL verification criteria
- ICB and CCBs were free from contamination
- LCS/LCSD percent recoveries and RPD value criteria
- MS/MSD percent recoveries and RPD
- Field Duplicate RPD

Preservation

Sample FWGLL12mw-247-0602-GW was resampled and resubmitted on 7/22/15 due to incorrect preservation on 7/21/15.

Site: Ravenna Army Ammunition Plant
Sampling Event: July 2015
Sample Delivery Group: 240-53458

Date: October 16, 2015
Revision: 1

Blanks
The method blank had nitrate/nitrite detected at 0.021 mg/L. The nitrate/nitrite result for samples FWGEQUIPRINSE2-0623-GW and FWGLL12mw-242c-0600-GW were qualified, "B, as the detected results were <5x method blank contamination.

The ICB and CCBs analyzed 8/7/14 from 1455 to 1627 had nitrate/nitrite detected from 0.02 mg/L to 0.022 mg/L. The nitrate/nitrite results for samples FWGEQUIPRINSE2-0623-GW and FWGLL12mw-242c-0600-GW were qualified, "U", as detected results were less than five times instrument blank contamination.

FWGEQUIPRINSE2-0623-GW had nitrate/nitrite detected at 0.029mg/L. The nitrate/nitrite result for sample FWGLL12mw-242-0600-GW was qualified, "B, as the detected result was <5x rinse blank contamination.

No additional QC outliers were noted.

Perchlorate 6860
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method/Field blank Criteria
- MRL verification criteria
- LCS percent recovery criteria
- MS percent recovery
- Matrix Duplicate RPD criteria
- Field duplicate RPD criteria
- ICS Check Standard Recovery
- Isotope Ratio Criteria
- Internal Standard Criteria

CCB Criteria
The bracketing CCBs analyzed 8/5/15 had perchlorate detected at 0.009 µg/L. The closing CCB from 8/10/15 had perchlorate detected at 0.0201 µg/L. No qualification of the data was required as there were no detected perchlorate concentrations reported for the associated field samples less than five times contamination.

No additional QC outliers were noted.

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Sample Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-53458-1	FWGLL1mw-088-0587-GW	Water	07/21/15 11:24	07/21/15 18:17
240-53458-2	FWGLL1mw-088-0587-GF	Water	07/21/15 11:24	07/21/15 18:17
240-53458-3	FWGLL1mw-086-0585-GW	Water	07/21/15 14:58	07/21/15 18:17
240-53458-4	FWGLL1mw-086-0585-GF	Water	07/21/15 14:58	07/21/15 18:17
240-53458-5	FWGEQUIPRINSE2-0623-GW	Water	07/21/15 16:30	07/21/15 18:17
240-53458-6	FWGLL1mw-064C-0581-GW	Water	07/20/15 17:15	07/21/15 18:17
240-53458-7	FWGLL1mw-064C-0581-GF	Water	07/20/15 17:15	07/21/15 18:17
240-53458-8	FWGLL3mw-246-0595-GW	Water	07/21/15 10:01	07/21/15 18:17
240-53458-9	FWGLL3mw-246-0595-GF	Water	07/21/15 10:01	07/21/15 18:17
240-53458-10	FWGLL2mw-271-0591-GW	Water	07/21/15 12:31	07/21/15 18:17
240-53458-11	FWGLL2mw-271-0591-GF	Water	07/21/15 12:31	07/21/15 18:17
240-53458-12	FWGLL2mw-DUP2-0618-GW	Water	07/21/15 13:05	07/21/15 18:17
240-53458-13	FWGLL2mw-DUP2-0618-GF	Water	07/21/15 13:05	07/21/15 18:17
240-53458-14	FWGLL12mw-185C-0598-GW	Water	07/21/15 15:55	07/21/15 18:17
240-53458-15	FWGLL12mw-185C-0598-GF	Water	07/21/15 15:55	07/21/15 18:17
240-53458-16	FWGLL3mw-244-0594-GW	Water	07/21/15 10:26	07/21/15 18:17
240-53458-17	FWGLL3mw-244-0594-GF	Water	07/21/15 10:26	07/21/15 18:17
240-53458-18	FWGLL3mw-DUP3-0619-GW	Water	07/21/15 11:26	07/21/15 18:17
240-53458-19	FWGLL3mw-DUP3-0619-GF	Water	07/21/15 11:26	07/21/15 18:17
240-53458-20	FWGLL12mw-242C-0600-GW	Water	07/21/15 15:19	07/21/15 18:17
240-53458-21	FWGLL12mw-242C-0600-GF	Water	07/21/15 15:19	07/21/15 18:17
240-53458-22	FWGLL1mw-087C-0586-GW	Water	07/21/15 10:22	07/21/15 18:17
240-53458-23	FWGLL1mw-087C-0586-GF	Water	07/21/15 10:22	07/21/15 18:17
240-53458-24	FWGSCFmw-004-0608-GW	Water	07/21/15 10:47	07/21/15 18:17
240-53458-25	FWGSCFmw-004-0608-GF	Water	07/21/15 10:47	07/21/15 18:17
240-53458-26	FWGSCFmw-002-0607-GW	Water	07/21/15 13:22	07/21/15 18:17
240-53458-27	FWGSCFmw-002-0607-GF	Water	07/21/15 13:22	07/21/15 18:17
240-53458-28	FWGLL12mw-247-0602-GW	Water	07/21/15 13:52	07/21/15 18:17
240-53458-29	FWGLL12mw-247-0602-GF	Water	07/21/15 13:52	07/21/15 18:17

Method Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Method	Method Description	Protocol	Laboratory
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CAN
8081A	Organochlorine Pesticides (GC)	SW846	TAL CAN
8330 Modified	Nitroguanidine (HPLC)	SW846	TAL SAC
8330A	Nitroaromatics and Nitramines	SW846	TAL SAC
6860	Perchlorate by IC/MS or IC/MS/MS	EPA	TAL DEN
6010B	Metals (ICP)	SW846	TAL CAN
6020	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL CAN
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAC
WS-WC-0050	Nitrocellulose	TAL-SAC	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-SAC = TestAmerica Laboratories, West Sacramento, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

CHAIN OF CUSTODY
AND
RECEIVING DOCUMENTS

240-53458 Chain of Custody

4101 Shuffel Street, N.W. North Canton, OH 44720 **tel** 330.497.9396 **fax** 330.497.0772 **www.testamericainc.com**

TestAmerica Canton
4101 Shuffel Street, N. W.
North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497.0772

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other: DOD-QSM

Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Client Contact	Project Manager: John Miller	Site Contact: E. Corbin	Date: 7/21/15	COC No: AD072115
Company Name: EQM	Tel/Fax: 513-825-7500	Lab Contact: M. Coen	Carrier: Lab Pickup	1 of 1 COCs
Address: 1800 Carillon Blvd	Analysis Turnaround Time			Sampler: AD
City/State/Zip: Cinti OH 45240	☒ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 513-825-7500	TAT if different from Below 21 Days			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: RVAAP	☐ 1 week			
Site:	☐ 2 days			Job / SDG No.:
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8270 SVOC	8081 Pest	Explosive	Propellant	Metals - Co/Mo/Mn/Tl	Nitrate/Nitrite	Cooler ID / Sample Specific Notes:
FWGLL3mw-244-0594-GW	7/21/15	1026	G	W	7	N	M	X	X	X	X			727
FWGLL3mw-244-0594-GF	↓	1026	↓		#8 X1	Y						X		↓
FWGLL3mw-#2 DUP3-0619-GW	7/21/15	1126	↓	↓	7	N		X	X	X	X			#79
FWGLL3mw-DUP3-0619-GF	↓	1126	↓	↓	#8 X1	Y	↓					X		↓
FWGLL12mw-242c-0600-GW	7/21/15	1519	G	W	6	N	N	X		X	X		X	B81
FWGLL12mw-242c-0600-GF	↓	↓	↓	↓	1	Y	N					X		↓
~~FWGLL12mw-244-0599-GW~~			G	W		N							EC 7/21/15	
~~FWGLL12mw-244-0599-GF~~	↓	↓	↓	↓		Y	↓						EC 7/21/15	
				EC		7/21/15								

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other: _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Metals field filtered, samples collected near pickup may not meet temperature requirements

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ | Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Erik Corbin	EQM	7/21/15 17:15	TC	TestAmerica	7/21/15 1715
R Boson	EQM 7-21-15	1817		TA-Canton	7/21/15 1817
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

TestAmerica Canton
4101 Shuffel Street, N. W.
North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497.0772

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other:

Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Client Contact	Project Manager: John Miller	Site Contact: Erik Corbin	Date: 7/20/15	COC No: EC072115
Company Name: EQM	Tel/Fax:	Lab Contact: Mark Loeb	Carrier:	1 of 1 COCs
Address: 1800 Carillon Blvd	Analysis Turnaround Time			Sampler:
City/State/Zip: Cincinnati OH 45240	☒ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 513-825-7500	TAT if different from Below 3 weeks			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: RVAAP66	☐ 1 week			Job / SDG No.:
Site: Ohio	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	SVOC + 8270	Explosives 8330	Perchlorate 6850/6860/331.0	metals 6010/6020/7470	Perchlorate 6850/6860/331.0	NO2/NO3 353.2	Total As only	Cooler ID / Sample Specific Notes:
FWGLL1mw-0644-0581-GW	7/20/15	17:15	G	GW	5	N	N	X	X	X					EC9
FWGLL1mw-0644-0581-GF	7/20/15	17:15	G	GW	1	Y	N				X				EC9
FWGLL3mw-2466-0595-GW	7/21/15	10:01	G	GW	9	N	Y	X	X	X					MS/MSD on SVOC only, E-21
FWGLL3mw-2466-0595-GF	7/21/15	10:01	G	GW	6	Y	Y				X	X			E-21
FWGLL2mw-2716-0591-GW	7/21/15	12:31	G	GW	5	N	N	X	X	X					C8
FWGLL2mw-2716-0591-GF	7/21/15	12:31	G	GW	2	Y	N				X	X			C8
FWGLL2mw-DUP2-0618-GW	7/21/15	13:05	G	GW	5	N	N	X	X	X					#1
FWGLL2mw-DUP2-0618-GF	7/21/15	13:05	G	GW	2	Y	N				X	X			#1
FWGLL12mw-1856-0598-GW	7/21/15	15:55	G	GW	3	N	Y						X		MS/MSD EC9
FWGLL12mw-1856-0598-GF	7/21/15	15:55	G	GW	1	Y	N							X	EC9
					EC	7/21/15									

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: All metals and perchlorate samples are field filtered. Temps may not meet requirements if sample collection is close to lab pickup time.

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd:	Corr'd:	Therm ID No.:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Erik Corbin	EQM	7/21/15 17:15	[signature]	TestAmerica	7-21-15 1715
Relinquished by: [signature]	Company: EQM 7-21-15	Date/Time: 1817	Received by: [signature]	Company: TA-Canton	Date/Time: 7/21/15 1817
Relinquished by:	Company:	Date/Time	Received in Laboratory by: [signature]	Company:	Date/Time:

TestAmerica Canton

4101 Shuffel Street, N. N.
North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497. 3

Chain of Custody Record

083261

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: JOHN MILLER	Site Contact: ERIK CORBIN	Date: 07-21-15	COC No: SAS072115
Company Name: EQM	Tel/Fax: (513) 825-7500 FAX 7495	Lab Contact: MARK LOEB	Carrier: LAB PICKUP	1 of 1 COCs
Address: 1800 CARILLON BLVD.	Analysis Turnaround Time			Sampler:
City/State/Zip: CINCINNATI, OH 45240	☐ CALENDAR DAYS ☒ WORKING DAYS			For Lab Use Only:
Phone: (513) 825-7500	TAT if different from Below _____			Walk-in Client:
Fax: (513) 825-7495	☒ 2 weeks			Lab Sampling:
Project Name: KVAAP66 (OH)	☐ PER 1 week			
Site:	☐ SOW 2 days			Job / SDG No.:
PO# 30174.0016.001.10.1	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	8270 SVOC 1	8021 BTEX	8330 EXPLO	PROPELLANTS	Total/Dis PB METALS	PERCHLORATE	NO2/NO3	COOLER TEMP / Sample Specific Notes:
FWGLL1MW-088-0587-GW	072115	11:24	G	GW	7	N	N	2	2	1	2				0411
FWGLL1MW-088-0587-GF	072115	11:24	G	GW	1	Y	N					1			0411
FWGLL1MW-086-0585-GW	072115	14:58	G	GW	7	N	N	2	2	1	2				123
FWGLL1MW-086-0585-GF	072115	14:58	G	GW	1	Y	N					1			123
FWGEQUIPRINSE2-0623-GW	072115	16:30	G	W	10	N	N	2	2	1	2	1	1	1	173
												68R 07/21/15			
Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other								1	2	1	1	4			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: ALL METALS, PERCHLATE SAMPLES ARE FIELD FILTERED

TEMPS MAY NOT MEET REQUIREMENTS IF SAMPLES COLLECTION IS CLOSE TO LAB PICKUP TIME.

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Erik Corbin	EQM	7/21/15 17:15	TC [illegible]	TA-Canton	7-21-15 1715
Relinquished by: [illegible]	Company: T-24m 7-21-15	Date/Time: 1817	Received by: [illegible]	Company: TA-Canton	Date/Time: 7/21/15 1817
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

TestAmerica Canton
4101 Shuffel Street, N. W.
North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497.0772

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other:

Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Client Contact	Project Manager: J. Miller	Site Contact: E. Corbin	Date: 7-21-15	COC No: CAL72115
Company Name: EQM	Tel/Fax: JAMS / EQM x832	Lab Contact: M. Loes	Carrier: LAB Pickup	1 of 1 COCs
Address: 1800 Carillon Blvd	Analysis Turnaround Time			Sampler: Colleen
City/State/Zip: Cincinnati Oh 45240	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 513 825 7500	TAT if different from Below 21 Days			Walk-in Client:
Fax: 513 825 7495	☐ 2 weeks			Lab Sampling:
Project Name: RVAAP-66	☐ 1 week			
Site: Ravenna Ohio	☐ 2 days			Job / SDG No.:
PO #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N) Cal	Perform MS / MSD (Y/N)	8270 SVOC	8081 Pesticides	8330 Explosives	Propellants NO2 NO3	Metals 7470 6010 6020	Sample Specific Notes:
FWGLL1MW-087C-0586-GW	7-21-15	1022	G	GW	5	N	Y	X		X	X		H113
FWGLL1MW-087C-0586-GF	↓	↓	G	↓	1	F	Y					X	H113
FWGSCFMW-004-0608-GW	7-21-15	1047	G		7	N	Y	X	X	X	X		220
FWGSCFMW-004-0608-GF	↓	↓	G	↓	1	F	Y					X	220
FWGSCFMW-002-0607-GW	7-21-15	1322	G	GW	17	N	Y	X	X	X	X		*(not Pest) MS/MSD TS17, 081
FWGSCFMW-002-0607-GF	↓	↓	G	↓	3	F	Y					X	*MS/MSD* TS17, 051
FWGLL2MW-247-0602-GW	7-21-15	1352	G	GW	6	N	N	X		X	X		14015
FWGLL2MW-247-0602-GF	↓	↓	G	↓	1	F	N					X	14015
					EC			7/21/15					

Preservation Used: 1= Ice, 2= HCL, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: *MS/MSD FOR SCFMW-002 well on SVOC's, Explo, Propellants, Metals*
Metals, field filtered

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____	Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Eric Corbin	EQM	7/21/15 17:15	[illegible]	[illegible]	7-21-15 1715
Relinquished by: [illegible]	Company: EQM	Date/Time: 7-21-15 1817	Received by: [illegible]	Company: TA-Canton	Date/Time: 7/21/15 1817
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [illegible]	Company:	Date/Time:

TestAmerica Canton Sample Receipt Form/Narrative **Login # : 63458**
Canton Facility

Client EQM Site Name

Cooler unpacked by:

Cooler Received on 7-21-15 Opened on 7-21-15

FedEx: 1st Grd Exp UPS FAS Stetson Client Drop Off TestAmerica Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

TestAmerica Cooler # Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt
   IR GUN# A (CF +1.0 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
   ~~IR GUN# 4 (CF +0.5 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C~~
   ~~IR GUN# 5 (CF +0.4 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C~~
   IR GUN# 8 (CF -1.5 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
   ☑ See Multiple Cooler Form
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 15 Yes No
   -Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA
   -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? ~~Yes~~ No - see 14
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Were sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC432654**
12. Were VOAs on the COC? Yes No
13. Were air bubbles >6 mm in any VOA vials? Yes No NA
14. Was a trip blank present in the cooler(s)? Trip Blank Lot # Yes No

Contacted PM MJL Date 7-21-15 by NS via Verbal Voice Mail Other
Concerning #14

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

Rec'd cyn (NaOH) bottle for NO2NO3, for sample ID
FWGLLL2mw-247-0602-GW 7/21/15 @1352

15. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container.
Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory.
Time preserved: Preservative(s) added/Lot number(s):

TestAmerica Multiple Cooler Receipt Form/Narrative **Login # : 53458**

Canton Facility

Cooler #	IR Gun #	Observed Temp °C	Corrected Temp °C	Coolant
123	A	2.6	3.6	Ice
T517		4.8	5.8	
0411		1.6	2.6	
EC9		2.2	3.2	
C8		4.8	5.8	
E21		3.2	4.2	
H113		4.4	5.4	
#1		4.2	5.2	
220		2.8	3.8	
727		3.0	4.0	
081		5.7	4.7	
14015		4.2	5.2	
1381		2.6	3.6	
#29		1.8	2.8	
173		2.6	3.6	

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
FWGLL1mw-088-0587-GF	240-53458-A-2	Plastic 500ml - with Nitric Acid	<2		
FWGLL1mw-086-0585-GF	240-53458-A-4	Plastic 500ml - with Nitric Acid	<2		
FWGEQUIPRINSE2-0623-GW	240-53458-B-5	Plastic 250ml - with Sulfuric Acid	<2		
FWGEQUIPRINSE2-0623-GW	240-53458-C-5	Plastic 500ml - with Nitric Acid	<2		
FWGLL1mw-064C-0581-GF	240-53458-A-7	Plastic 500ml - with Nitric Acid	<2		
FWGLL3mw-246-0595-GF	240-53458-D-9	Plastic 500ml - with Nitric Acid	<2		
FWGLL3mw-246-0595-GF	240-53458-E-9	Plastic 500ml - with Nitric Acid	<2		
FWGLL3mw-246-0595-GF	240-53458-F-9	Plastic 500ml - with Nitric Acid	<2		
FWGLL2mw-271-0591-GF	240-53458-B-11	Plastic 500ml - with Nitric Acid	<2		
FWGLL2mw-DUP2-0618-GF	240-53458-B-13	Plastic 500ml - with Nitric Acid	<2		
FWGLL12mw-185C-0598-GW	240-53458-A-14	Plastic 250ml - with Sulfuric Acid	<2		
FWGLL12mw-185C-0598-GW	240-53458-B-14	Plastic 250ml - with Sulfuric Acid	<2		
FWGLL12mw-185C-0598-GW	240-53458-C-14	Plastic 250ml - with Sulfuric Acid	<2		
FWGLL12mw-185C-0598-GF	240-53458-A-15	Plastic 500ml - with Nitric Acid	<2		
FWGLL3mw-244-0594-GF	240-53458-A-17	Plastic 500ml - with Nitric Acid	<2		
FWGLL3mw-DUP3-0619-GF	240-53458-A-19	Plastic 500ml - with Nitric Acid	<2		
FWGLL12mw-242C-0600-GW	240-53458-A-20	Plastic 250ml - with Sulfuric Acid	<2		
FWGLL12mw-242C-0600-GF	240-53458-A-21	Plastic 500ml - with Nitric Acid	<2		
FWGLL1mw-087C-0586-GF	240-53458-A-23	Plastic 500ml - with Nitric Acid	<2		
FWGSCFmw-004-0608-GF	240-53458-A-25	Plastic 500ml - with Nitric Acid	<2		
FWGSCFmw-002-0607-GF	240-53458-A-27	Plastic 500ml - with Nitric Acid	<2		
FWGSCFmw-002-0607-GF	240-53458-B-27	Plastic 500ml - with Nitric Acid	<2		
FWGSCFmw-002-0607-GF	240-53458-C-27	Plastic 500ml - with Nitric Acid	<2		
FWGLL12mw-242-0602-GW	240-53458-A-28	Plastic 250ml - with Sodium Hydro>	>12		
FWGLL12mw-242-0602-GF	240-53458-A-29	Plastic 500ml - with Nitric Acid	<2		

Job ID: 240-53458-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: Environmental Quality Mgt., Inc.

Project: RVAAP (OH)

Report Number: 240-53458-1

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

The 353.2 Nitrate-Nitrite as Nitrogen, 353.2 Nitrocellulose, 8330_Ngu Nitroguanidine, and 8330A Explosives analyses were performed at the TestAmerica Sacramento Laboratory. The 6860 Perchlorate analysis was performed by the TestAmerica Denver Laboratory.

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

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

TestAmerica utilizes USEPA approved methods and DOD QSM, where applicable, in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

All parameters for which TestAmerica North Canton has certification were evaluated to the limit of detection (LOD) and include qualified results where applicable. Parameters not certified under QSM, if any, were evaluated to the detection limit (DL) and include qualified results where applicable.

The sample(s) that contain constituents flagged with U are undetected. The result associated with this flag is the limit of detection (LOD).

RECEIPT

The samples were received on 7/21/2015 6:17 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 15 coolers at receipt time were 2.6° C, 2.8° C, 3.2° C, 3.6° C, 3.6° C, 3.6° C, 3.8° C, 4.0° C, 4.2° C, 4.7° C, 5.2° C, 5.2° C, 5.4° C, 5.8° C and 5.8° C.

Except:
Received 1 of 3 AGB broken, no volume saved: FWGLL1mw-086-0585-GW (240-53458-3).

SEMIVOLATILE ORGANIC COMPOUNDS (GCMS)

Samples FWGLL1mw-088-0587-GW (240-53458-1), FWGLL1mw-086-0585-GW (240-53458-3), FWGEQUIPRINSE2-0623-GW (240-53458-5), FWGLL1mw-064C-0581-GW (240-53458-6), FWGLL3mw-246-0595-GW (240-53458-8), FWGLL2mw-271-0591-GW

Job ID: 240-53458-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

(240-53458-10), FWGLL2mw-DUP2-0618-GW (240-53458-12), FWGLL3mw-244-0594-GW (240-53458-16), FWGLL3mw-DUP3-0619-GW (240-53458-18), FWGLL12mw-242C-0600-GW (240-53458-20), FWGLL1mw-087C-0586-GW (240-53458-22), FWGSCFmw-004-0608-GW (240-53458-24), FWGSCFmw-002-0607-GW (240-53458-26) and FWGLL12mw-247-0602-GW (240-53458-28) were analyzed for semivolatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8270C. The samples were prepared on 07/22/2015 and analyzed on 08/04/2015.

Surrogates are added during the extraction process prior to dilution. When the sample is diluted, surrogate recoveries are diluted out and no corrective action is required.

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

NITROGUANIDINE (HPLC)

Samples FWGLL1mw-088-0587-GW (240-53458-1), FWGLL1mw-086-0585-GW (240-53458-3), FWGEQUIPRINSE2-0623-GW (240-53458-5), FWGLL1mw-064C-0581-GW (240-53458-6), FWGLL3mw-246-0595-GW (240-53458-8), FWGLL2mw-271-0591-GW (240-53458-10), FWGLL2mw-DUP2-0618-GW (240-53458-12), FWGLL3mw-244-0594-GW (240-53458-16), FWGLL3mw-DUP3-0619-GW (240-53458-18), FWGLL12mw-242C-0600-GW (240-53458-20), FWGLL1mw-087C-0586-GW (240-53458-22), FWGSCFmw-004-0608-GW (240-53458-24), FWGSCFmw-002-0607-GW (240-53458-26) and FWGLL12mw-247-0602-GW (240-53458-28) were analyzed for Nitroguanidine (HPLC) in accordance with EPA SW-846 Method 8330_Ngu. The samples were prepared on 07/28/2015 and analyzed on 07/30/2015 and 08/04/2015.

Nitroguanidine failed the recovery criteria high for the MS/MSD of sample FWGSCFmw-002-0607-GWMS/MSD (240-53458-26) in batch 320-81344.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with Batch 320-80838.

The percent difference value for the analyte listed below is above the method acceptance limits in the MRL standard. This standard was analyzed before and after the associated samples. The corrective action for this deficiency is an analysis of a standard at approximately 2x the MDL. The MRL standard for PETN is approximately 2x the MDL. The acceptance criterion for the 2x MDL standard is detection of the compound. As the compound was detected, the data is reported with no further corrective action: LC10, 8/5/2015, 15:51, PETN, Project Criteria 30%D, Actual 41%D: (CCVL 320-81895/3).

The initial calibration verification (ICV) result for batch 320-72983 was above the upper control limit for the confirmation column. Sample results were reported from the primary column and the results above RL have dual column RPD less than 40%, therefore, no reanalysis was performed.

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

CHLORINATED PESTICIDES

Samples FWGLL1mw-088-0587-GW (240-53458-1), FWGLL1mw-086-0585-GW (240-53458-3), FWGEQUIPRINSE2-0623-GW (240-53458-5), FWGLL3mw-244-0594-GW (240-53458-16), FWGLL3mw-DUP3-0619-GW (240-53458-18), FWGSCFmw-004-0608-GW (240-53458-24) and FWGSCFmw-002-0607-GW (240-53458-26) were analyzed for chlorinated pesticides in accordance with EPA SW-846 Method 8081A DoD. The samples were prepared on 07/22/2015 and 07/30/2015 and analyzed on 07/28/2015 and 07/31/2015.

Endosulfan I failed the recovery criteria low for LCS 240-190084/9-A. Refer to the QC report for details.

The laboratory control sample (LCS) for preparation batch 240-190084 and analytical batch 240-191002 recovered outside control limits for the following analyte: Endosulfan I. The associated samples were re-prepared and/or re-analyzed outside holding time. Endosulfan I reported from the re-extraction outside of hold time.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batches 240-190084 and 240-191238.

Reanalysis of the following samples was performed outside of the analytical holding time due to re-extraction completed outside the seven day hold time. Endosulfan I only reported from the out of hold batch: FWGLL1mw-088-0587-GW (240-53458-1), FWGLL1mw-086-0585-GW (240-53458-3), FWGEQUIPRINSE2-0623-GW (240-53458-5), FWGLL3mw-244-0594-GW (240-53458-16),

Job ID: 240-53458-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

FWGLL3mw-DUP3-0619-GW (240-53458-18), FWGSCFmw-004-0608-GW (240-53458-24), and FWGSCFmw-002-0607-GW (240-53458-26).

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

PERCHLORATE

Samples FWGEQUIPRINSE2-0623-GW (240-53458-5), FWGLL3mw-246-0595-GF (240-53458-9), FWGLL2mw-271-0591-GF (240-53458-11) and FWGLL2mw-DUP2-0618-GF (240-53458-13) were analyzed for Perchlorate in accordance with EPA SW-846 Method 6860. The samples were analyzed on 08/05/2015 and 08/10/2015.

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

EXPLOSIVES

Samples FWGLL1mw-088-0587-GW (240-53458-1), FWGLL1mw-086-0585-GW (240-53458-3), FWGEQUIPRINSE2-0623-GW (240-53458-5), FWGLL1mw-064C-0581-GW (240-53458-6), FWGLL3mw-246-0595-GW (240-53458-8), FWGLL2mw-271-0591-GW (240-53458-10), FWGLL2mw-DUP2-0618-GW (240-53458-12), FWGLL3mw-244-0594-GW (240-53458-16), FWGLL3mw-DUP3-0619-GW (240-53458-18), FWGLL12mw-242C-0600-GW (240-53458-20), FWGLL1mw-087C-0586-GW (240-53458-22), FWGSCFmw-004-0608-GW (240-53458-24), FWGSCFmw-002-0607-GW (240-53458-26) and FWGLL12mw-247-0602-GW (240-53458-28) were analyzed for explosives in accordance with EPA SW-846 Method 8330A. The samples were prepared on 07/24/2015 and 07/28/2015 and analyzed on 07/28/2015, 08/04/2015 and 08/05/2015.

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

TOTAL RECOVERABLE METALS (ICP)

Samples FWGLL1mw-088-0587-GF (240-53458-2), FWGLL1mw-086-0585-GF (240-53458-4), FWGEQUIPRINSE2-0623-GW (240-53458-5), FWGLL1mw-064C-0581-GF (240-53458-7), FWGLL3mw-246-0595-GF (240-53458-9), FWGLL2mw-271-0591-GF (240-53458-11), FWGLL2mw-DUP2-0618-GF (240-53458-13), FWGLL12mw-185C-0598-GF (240-53458-15), FWGLL3mw-244-0594-GF (240-53458-17), FWGLL3mw-DUP3-0619-GF (240-53458-19), FWGLL12mw-242C-0600-GF (240-53458-21), FWGLL1mw-087C-0586-GF (240-53458-23), FWGSCFmw-004-0608-GF (240-53458-25), FWGSCFmw-002-0607-GF (240-53458-27) and FWGLL12mw-247-0602-GF (240-53458-29) were analyzed for total recoverable metals (ICP) in accordance with EPA SW-846 Method 6010B DoD. The samples were prepared on 07/22/2015 and analyzed on 07/27/2015 and 07/30/2015.

ICB, CCB, and ICSA samples are evaluated using the lowest LOD and DL criteria in LIMS. Using these criteria, an individual element may occasionally be flagged as out of control. If the element has a higher LOD or DL, the data is evaluated to the higher limit and determined to be acceptable.

Lead was detected in method blank MB 240-190122/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Chromium exceeded the RPD limit for the duplicate of samples FWGLL3mw-246-0595-GFDU (240-53458-9) and FWGSCFmw-002-0607-GFDU (240-53458-27). Refer to the QC report for details.

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

TOTAL RECOVERABLE METALS (ICPMS)

Samples FWGLL1mw-088-0587-GF (240-53458-2), FWGLL1mw-086-0585-GF (240-53458-4), FWGEQUIPRINSE2-0623-GW (240-53458-5), FWGLL1mw-064C-0581-GF (240-53458-7), FWGLL3mw-246-0595-GF (240-53458-9), FWGLL2mw-271-0591-GF (240-53458-11), FWGLL2mw-DUP2-0618-GF (240-53458-13), FWGLL3mw-244-0594-GF (240-53458-17), FWGLL3mw-DUP3-0619-GF (240-53458-19), FWGLL12mw-242C-0600-GF (240-53458-21), FWGLL1mw-087C-0586-GF (240-53458-23), FWGSCFmw-004-0608-GF (240-53458-25), FWGSCFmw-002-0607-GF (240-53458-27) and FWGLL12mw-247-0602-GF (240-53458-29) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020 DoD. The samples were prepared on 07/22/2015 and analyzed on 07/27/2015.

ICB, CCB, and ICSA samples are evaluated using the lowest LOD and DL criteria in LIMS. Using this criteria, an individual element may

Job ID: 240-53458-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

occasionally be flagged as out of control. If the element has a higher LOD or DL, the data is evaluated to the higher limit and determined to be acceptable.

Antimony exceeded the RPD limit for the duplicate of sample FWGLL3mw-246-0595-GFDU (240-53458-9). Refer to the QC report for details.

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

TOTAL MERCURY

Samples FWGLL1mw-088-0587-GF (240-53458-2), FWGLL1mw-086-0585-GF (240-53458-4), FWGEQUIPRINSE2-0623-GW (240-53458-5), FWGLL1mw-064C-0581-GF (240-53458-7), FWGLL3mw-246-0595-GF (240-53458-9), FWGLL2mw-271-0591-GF (240-53458-11), FWGLL2mw-DUP2-0618-GF (240-53458-13), FWGLL3mw-244-0594-GF (240-53458-17), FWGLL3mw-DUP3-0619-GF (240-53458-19), FWGLL12mw-242C-0600-GF (240-53458-21), FWGLL1mw-087C-0586-GF (240-53458-23), FWGSCFmw-004-0608-GF (240-53458-25), FWGSCFmw-002-0607-GF (240-53458-27) and FWGLL12mw-247-0602-GF (240-53458-29) were analyzed for total mercury in accordance with EPA SW-846 Method 7470A. The samples were prepared on 07/22/2015 and analyzed on 07/29/2015.

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

NITRATE-NITRITE AS NITROGEN

Samples FWGEQUIPRINSE2-0623-GW (240-53458-5), FWGLL12mw-185C-0598-GW (240-53458-14) and FWGLL12mw-242C-0600-GW (240-53458-20) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 08/07/2015.

Nitrate Nitrite as N was detected in method blank MB 320-82216/15 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Sample FWGLL12mw-185C-0598-GW (240-53458-14)[200X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

NITROCELLULOSE

Samples FWGLL1mw-088-0587-GW (240-53458-1), FWGLL1mw-086-0585-GW (240-53458-3), FWGEQUIPRINSE2-0623-GW (240-53458-5), FWGLL1mw-064C-0581-GW (240-53458-6), FWGLL3mw-246-0595-GW (240-53458-8), FWGLL2mw-271-0591-GW (240-53458-10), FWGLL2mw-DUP2-0618-GW (240-53458-12), FWGLL3mw-244-0594-GW (240-53458-16), FWGLL3mw-DUP3-0619-GW (240-53458-18), FWGLL12mw-242C-0600-GW (240-53458-20), FWGLL1mw-087C-0586-GW (240-53458-22), FWGSCFmw-004-0608-GW (240-53458-24), FWGSCFmw-002-0607-GW (240-53458-26) and FWGLL12mw-247-0602-GW (240-53458-28) were analyzed for Nitrocellulose in accordance with EPA Method 353.2. The samples were prepared on 08/07/2015 and 08/10/2015 and analyzed on 08/07/2015 and 08/11/2015.

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

Client Sample ID: FWGLL1mw-088-0587-GW
Date Collected: 07/21/15 11:24
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-1
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.0	U	5.0	5.0	1.7	ug/L		08/04/15 11:22	1
Butyl benzyl phthalate	0.50	U	5.0	0.50	0.26	ug/L		08/04/15 11:22	1
Diethyl phthalate	1.0	U	2.0	1.0	0.60	ug/L		08/04/15 11:22	1
Dimethyl phthalate	0.50	U	2.0	0.50	0.29	ug/L		08/04/15 11:22	1
Di-n-butyl phthalate	5.0	U	5.0	5.0	1.7	ug/L		08/04/15 11:22	1
Di-n-octyl phthalate	0.50	U	2.0	0.50	0.23	ug/L		08/04/15 11:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*62*		*50 - 110*	*07/22/15 05:56*	*08/04/15 11:22*	*1*
2-Fluorophenol (Surr)	*56*		*20 - 110*	*07/22/15 05:56*	*08/04/15 11:22*	*1*
Nitrobenzene-d5 (Surr)	*54*		*40 - 110*	*07/22/15 05:56*	*08/04/15 11:22*	*1*
Phenol-d5 (Surr)	*64*		*10 - 115*	*07/22/15 05:56*	*08/04/15 11:22*	*1*
Terphenyl-d14 (Surr)	*88*		*50 - 135*	*07/22/15 05:56*	*08/04/15 11:22*	*1*
2,4,6-Tribromophenol (Surr)	*96*		*40 - 125*	*07/22/15 05:56*	*08/04/15 11:22*	*1*

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.051	U	0.051	0.051	0.018	ug/L		07/28/15 20:11	1
4,4'-DDE	0.051	U	0.051	0.051	0.012	ug/L		07/28/15 20:11	1
4,4'-DDT	0.051	U	0.051	0.051	0.017	ug/L		07/28/15 20:11	1
Aldrin	0.051	U	0.051	0.051	0.013	ug/L		07/28/15 20:11	1
alpha-BHC	0.051	U	0.051	0.051	0.014	ug/L		07/28/15 20:11	1
alpha-Chlordane	0.051	U	0.051	0.051	0.012	ug/L		07/28/15 20:11	1
beta-BHC	0.051	U	0.051	0.051	0.018	ug/L		07/28/15 20:11	1
delta-BHC	0.051	U	0.051	0.051	0.030	ug/L		07/28/15 20:11	1
Dieldrin	0.051	U	0.051	0.051	0.013	ug/L		07/28/15 20:11	1
Endosulfan II	0.051	U	0.051	0.051	0.015	ug/L		07/28/15 20:11	1
Endosulfan sulfate	0.051	U	0.051	0.051	0.015	ug/L		07/28/15 20:11	1
Endrin	0.051	U	0.051	0.051	0.013	ug/L		07/28/15 20:11	1
Endrin aldehyde	0.051	U	0.051	0.051	0.018	ug/L		07/28/15 20:11	1
Endrin ketone	0.051	U	0.051	0.051	0.016	ug/L		07/28/15 20:11	1
gamma-BHC (Lindane)	0.051	U	0.051	0.051	0.013	ug/L		07/28/15 20:11	1
gamma-Chlordane	0.051	U	0.051	0.051	0.013	ug/L		07/28/15 20:11	1
Heptachlor	0.051	U	0.051	0.051	0.014	ug/L		07/28/15 20:11	1
Heptachlor epoxide	0.051	U	0.051	0.051	0.015	ug/L		07/28/15 20:11	1
Methoxychlor	0.10	U	0.10	0.10	0.013	ug/L		07/28/15 20:11	1
Toxaphene	2.0	U	2.0	2.0	0.20	ug/L		07/28/15 20:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*31*		*30 - 135*	*07/22/15 05:59*	*07/28/15 20:11*	*1*
DCB Decachlorobiphenyl	*33*		*30 - 135*	*07/22/15 05:59*	*07/28/15 20:11*	*1*
Tetrachloro-m-xylene	*49*		*25 - 140*	*07/22/15 05:59*	*07/28/15 20:11*	*1*
Tetrachloro-m-xylene	*53*		*25 - 140*	*07/22/15 05:59*	*07/28/15 20:11*	*1*

Method: 8081A - Organochlorine Pesticides (GC) - RE

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Endosulfan I	0.051	U H	0.051	0.051	0.016	ug/L		07/31/15 16:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*38*		*30 - 135*	*07/30/15 04:42*	*07/31/15 16:42*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGLL1mw-088-0587-GW
Date Collected: 07/21/15 11:24
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-1
Matrix: Water

Method: 8081A - Organochlorine Pesticides (GC) - RE (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	*38*		*30 - 135*	*07/30/15 04:42*	*07/31/15 16:42*	*1*
Tetrachloro-m-xylene	*65*		*25 - 140*	*07/30/15 04:42*	*07/31/15 16:42*	*1*
Tetrachloro-m-xylene	*65*		*25 - 140*	*07/30/15 04:42*	*07/31/15 16:42*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/30/15 18:02	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		07/28/15 02:48	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 02:48	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 02:48	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/28/15 02:48	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/28/15 02:48	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		07/28/15 02:48	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/28/15 02:48	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.059	ug/L		07/28/15 02:48	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/28/15 02:48	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 02:48	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		07/28/15 02:48	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		07/28/15 02:48	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 02:48	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 02:48	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		07/28/15 02:48	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		07/28/15 02:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	*95*		*79 - 111*	*07/24/15 13:08*	*07/28/15 02:48*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/07/15 17:11	1

Client Sample Results

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGLL1mw-088-0587-GF
Date Collected: 07/21/15 11:24
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-2
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**28**		10	10	2.9	ug/L		07/27/15 13:00	1
Chromium	**1.3**	**J**	7.0	4.0	0.55	ug/L		07/27/15 13:00	1
Cobalt	**0.58**	**J**	7.0	4.0	0.56	ug/L		07/27/15 13:00	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 13:00	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 13:00	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 13:00	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 13:00	1
Barium	**41**	**J**	200	5.0	1.0	ug/L		07/27/15 13:00	1
Calcium	**81000**		5000	1000	260	ug/L		07/27/15 13:00	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 13:00	1
Magnesium	**38000**		5000	300	55	ug/L		07/27/15 13:00	1
Manganese	**52**		15	5.0	0.46	ug/L		07/27/15 13:00	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 13:00	1
Potassium	**2700**	**J**	5000	900	70	ug/L		07/27/15 13:00	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 15:23	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 15:23	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 15:23	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 15:23	1
Iron	**1100**		150	100	44	ug/L		07/27/15 15:23	1
Sodium	**24000**		1000	400	160	ug/L		07/27/15 15:23	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 15:23	1
Zinc	50	U	50	50	27	ug/L		07/27/15 15:23	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 15:11	1

Client Sample ID: FWGLL1mw-086-0585-GW — **Lab Sample ID: 240-53458-3**
Date Collected: 07/21/15 14:58 — **Matrix: Water**
Date Received: 07/21/15 18:17

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.0	U	5.0	5.0	1.7	ug/L		08/04/15 11:47	1
Butyl benzyl phthalate	0.50	U	5.0	0.50	0.26	ug/L		08/04/15 11:47	1
Diethyl phthalate	0.99	U	2.0	0.99	0.59	ug/L		08/04/15 11:47	1
Dimethyl phthalate	0.50	U	2.0	0.50	0.29	ug/L		08/04/15 11:47	1
Di-n-butyl phthalate	5.0	U	5.0	5.0	1.7	ug/L		08/04/15 11:47	1
Di-n-octyl phthalate	0.50	U	2.0	0.50	0.23	ug/L		08/04/15 11:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*83*		*50 - 110*	*07/22/15 05:56*	*08/04/15 11:47*	*1*
2-Fluorophenol (Surr)	*76*		*20 - 110*	*07/22/15 05:56*	*08/04/15 11:47*	*1*
Nitrobenzene-d5 (Surr)	*73*		*40 - 110*	*07/22/15 05:56*	*08/04/15 11:47*	*1*
Phenol-d5 (Surr)	*82*		*10 - 115*	*07/22/15 05:56*	*08/04/15 11:47*	*1*
Terphenyl-d14 (Surr)	*93*		*50 - 135*	*07/22/15 05:56*	*08/04/15 11:47*	*1*
2,4,6-Tribromophenol (Surr)	*101*		*40 - 125*	*07/22/15 05:56*	*08/04/15 11:47*	*1*

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.051	U	0.051	0.051	0.018	ug/L		07/28/15 20:32	1
4,4'-DDE	0.051	U	0.051	0.051	0.012	ug/L		07/28/15 20:32	1
4,4'-DDT	0.051	U	0.051	0.051	0.017	ug/L		07/28/15 20:32	1
Aldrin	0.051	U	0.051	0.051	0.013	ug/L		07/28/15 20:32	1
alpha-BHC	0.051	U	0.051	0.051	0.014	ug/L		07/28/15 20:32	1
alpha-Chlordane	0.051	U	0.051	0.051	0.012	ug/L		07/28/15 20:32	1
beta-BHC	0.051	U	0.051	0.051	0.018	ug/L		07/28/15 20:32	1
delta-BHC	0.051	U	0.051	0.051	0.030	ug/L		07/28/15 20:32	1
Dieldrin	0.051	U	0.051	0.051	0.013	ug/L		07/28/15 20:32	1
Endosulfan II	0.051	U	0.051	0.051	0.015	ug/L		07/28/15 20:32	1
Endosulfan sulfate	0.051	U	0.051	0.051	0.015	ug/L		07/28/15 20:32	1
Endrin	0.051	U	0.051	0.051	0.013	ug/L		07/28/15 20:32	1
Endrin aldehyde	0.051	U	0.051	0.051	0.018	ug/L		07/28/15 20:32	1
Endrin ketone	0.051	U	0.051	0.051	0.016	ug/L		07/28/15 20:32	1
gamma-BHC (Lindane)	0.051	U	0.051	0.051	0.013	ug/L		07/28/15 20:32	1
gamma-Chlordane	0.051	U	0.051	0.051	0.013	ug/L		07/28/15 20:32	1
Heptachlor	0.051	U	0.051	0.051	0.014	ug/L		07/28/15 20:32	1
Heptachlor epoxide	0.051	U	0.051	0.051	0.015	ug/L		07/28/15 20:32	1
Methoxychlor	0.10	U	0.10	0.10	0.013	ug/L		07/28/15 20:32	1
Toxaphene	2.0	U	2.0	2.0	0.20	ug/L		07/28/15 20:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*34*		*30 - 135*	*07/22/15 05:59*	*07/28/15 20:32*	*1*
DCB Decachlorobiphenyl	*36*		*30 - 135*	*07/22/15 05:59*	*07/28/15 20:32*	*1*
Tetrachloro-m-xylene	*77*		*25 - 140*	*07/22/15 05:59*	*07/28/15 20:32*	*1*
Tetrachloro-m-xylene	*74*		*25 - 140*	*07/22/15 05:59*	*07/28/15 20:32*	*1*

Method: 8081A - Organochlorine Pesticides (GC) - RE

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Endosulfan I	0.052	U H	0.052	0.052	0.017	ug/L		07/31/15 17:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*39*		*30 - 135*	*07/30/15 04:42*	*07/31/15 17:04*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGLL1mw-086-0585-GW — **Lab Sample ID: 240-53458-3**
Date Collected: 07/21/15 14:58 — **Matrix: Water**
Date Received: 07/21/15 18:17

Method: 8081A - Organochlorine Pesticides (GC) - RE (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	38		30 - 135	07/30/15 04:42	07/31/15 17:04	1
Tetrachloro-m-xylene	58		25 - 140	07/30/15 04:42	07/31/15 17:04	1
Tetrachloro-m-xylene	58		25 - 140	07/30/15 04:42	07/31/15 17:04	1

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/30/15 18:20	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		07/28/15 03:32	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 03:32	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 03:32	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/28/15 03:32	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/28/15 03:32	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		07/28/15 03:32	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/28/15 03:32	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		07/28/15 03:32	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/28/15 03:32	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 03:32	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		07/28/15 03:32	1
RDX	0.051	U M	0.15	0.051	0.037	ug/L		07/28/15 03:32	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 03:32	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 03:32	1
Nitroglycerin	0.51	U	0.66	0.51	0.34	ug/L		07/28/15 03:32	1
PETN	0.51	U	0.66	0.51	0.31	ug/L		07/28/15 03:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	96		79 - 111	07/24/15 13:08	07/28/15 03:32	1
3,4-Dinitrotoluene	103		79 - 111	07/24/15 13:08	08/04/15 04:34	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/07/15 17:13	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGLL1mw-086-0585-GF
Date Collected: 07/21/15 14:58
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-4
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 13:04	1
Chromium	**0.60**	**J**	7.0	4.0	0.55	ug/L		07/27/15 13:04	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 13:04	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 13:04	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 13:04	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 13:04	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 13:04	1
Barium	**52**	**J**	200	5.0	1.0	ug/L		07/27/15 13:04	1
Calcium	**34000**		5000	1000	260	ug/L		07/27/15 13:04	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 13:04	1
Magnesium	**22000**		5000	300	55	ug/L		07/27/15 13:04	1
Manganese	**110**		15	5.0	0.46	ug/L		07/27/15 13:04	1
Nickel	**1.7**	**J**	40	5.0	0.76	ug/L		07/27/15 13:04	1
Potassium	**20000**		5000	900	70	ug/L		07/27/15 13:04	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 15:26	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 15:26	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 15:26	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 15:26	1
Iron	100	U	150	100	44	ug/L		07/27/15 15:26	1
Sodium	**12000**		1000	400	160	ug/L		07/27/15 15:26	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 15:26	1
Zinc	50	U	50	50	27	ug/L		07/27/15 15:26	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 15:13	1

Client Sample ID: FWGEQUIPRINSE2-0623-GW
Date Collected: 07/21/15 16:30
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-5
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/04/15 12:12	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		08/04/15 12:12	1
Diethyl phthalate	0.96	U	1.9	0.96	0.58	ug/L		08/04/15 12:12	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		08/04/15 12:12	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/04/15 12:12	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		08/04/15 12:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*82*		*50 - 110*	*07/22/15 05:56*	*08/04/15 12:12*	*1*
2-Fluorophenol (Surr)	*70*		*20 - 110*	*07/22/15 05:56*	*08/04/15 12:12*	*1*
Nitrobenzene-d5 (Surr)	*70*		*40 - 110*	*07/22/15 05:56*	*08/04/15 12:12*	*1*
Phenol-d5 (Surr)	*76*		*10 - 115*	*07/22/15 05:56*	*08/04/15 12:12*	*1*
Terphenyl-d14 (Surr)	*99*		*50 - 135*	*07/22/15 05:56*	*08/04/15 12:12*	*1*
2,4,6-Tribromophenol (Surr)	*109*		*40 - 125*	*07/22/15 05:56*	*08/04/15 12:12*	*1*

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.050	U	0.050	0.050	0.018	ug/L		07/28/15 20:54	1
4,4'-DDE	0.050	U	0.050	0.050	0.012	ug/L		07/28/15 20:54	1
4,4'-DDT	0.050	U	0.050	0.050	0.017	ug/L		07/28/15 20:54	1
Aldrin	0.050	U	0.050	0.050	0.013	ug/L		07/28/15 20:54	1
alpha-BHC	0.050	U	0.050	0.050	0.014	ug/L		07/28/15 20:54	1
alpha-Chlordane	0.050	U	0.050	0.050	0.012	ug/L		07/28/15 20:54	1
beta-BHC	0.050	U	0.050	0.050	0.018	ug/L		07/28/15 20:54	1
delta-BHC	0.050	U	0.050	0.050	0.029	ug/L		07/28/15 20:54	1
Dieldrin	0.050	U	0.050	0.050	0.013	ug/L		07/28/15 20:54	1
Endosulfan II	0.050	U	0.050	0.050	0.015	ug/L		07/28/15 20:54	1
Endosulfan sulfate	0.050	U	0.050	0.050	0.015	ug/L		07/28/15 20:54	1
Endrin	0.050	U	0.050	0.050	0.013	ug/L		07/28/15 20:54	1
Endrin aldehyde	0.050	U	0.050	0.050	0.018	ug/L		07/28/15 20:54	1
Endrin ketone	0.050	U	0.050	0.050	0.016	ug/L		07/28/15 20:54	1
gamma-BHC (Lindane)	0.050	U	0.050	0.050	0.013	ug/L		07/28/15 20:54	1
gamma-Chlordane	0.050	U	0.050	0.050	0.013	ug/L		07/28/15 20:54	1
Heptachlor	0.050	U	0.050	0.050	0.014	ug/L		07/28/15 20:54	1
Heptachlor epoxide	0.050	U	0.050	0.050	0.015	ug/L		07/28/15 20:54	1
Methoxychlor	0.099	U	0.099	0.099	0.013	ug/L		07/28/15 20:54	1
Toxaphene	2.0	U	2.0	2.0	0.19	ug/L		07/28/15 20:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*55*		*30 - 135*	*07/22/15 05:59*	*07/28/15 20:54*	*1*
DCB Decachlorobiphenyl	*58*		*30 - 135*	*07/22/15 05:59*	*07/28/15 20:54*	*1*
Tetrachloro-m-xylene	*69*		*25 - 140*	*07/22/15 05:59*	*07/28/15 20:54*	*1*
Tetrachloro-m-xylene	*64*		*25 - 140*	*07/22/15 05:59*	*07/28/15 20:54*	*1*

Method: 8081A - Organochlorine Pesticides (GC) - RE

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Endosulfan I	0.049	U H	0.049	0.049	0.016	ug/L		07/31/15 17:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*51*		*30 - 135*	*07/30/15 04:42*	*07/31/15 17:26*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGEQUIPRINSE2-0623-GW
Date Collected: 07/21/15 16:30
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-5
Matrix: Water

Method: 8081A - Organochlorine Pesticides (GC) - RE (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	50		30 - 135	07/30/15 04:42	07/31/15 17:26	1
Tetrachloro-m-xylene	69		25 - 140	07/30/15 04:42	07/31/15 17:26	1
Tetrachloro-m-xylene	66		25 - 140	07/30/15 04:42	07/31/15 17:26	1

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/30/15 18:38	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		07/28/15 04:15	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 04:15	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 04:15	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/28/15 04:15	1
2,6-Dinitrotoluene	0.10	U M	0.13	0.10	0.051	ug/L		07/28/15 04:15	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		07/28/15 04:15	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/28/15 04:15	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.059	ug/L		07/28/15 04:15	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/28/15 04:15	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 04:15	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		07/28/15 04:15	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		07/28/15 04:15	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 04:15	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 04:15	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		07/28/15 04:15	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		07/28/15 04:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	92		79 - 111	07/24/15 13:08	07/28/15 04:15	1
3,4-Dinitrotoluene	101		79 - 111	07/24/15 13:08	08/04/15 05:41	1

Method: 6860 - Perchlorate by IC/MS or IC/MS/MS

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Perchlorate	0.020	U	0.050	0.020	0.0040	ug/L		08/05/15 19:32	1

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 13:16	1
Chromium	4.0	U	7.0	4.0	0.55	ug/L		07/27/15 13:16	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 13:16	1
Lead	**2.0**	**J**	10	5.0	1.9	ug/L		07/27/15 13:16	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 13:16	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 13:16	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 13:16	1
Barium	5.0	U	200	5.0	1.0	ug/L		07/27/15 13:16	1
Calcium	1000	U	5000	1000	260	ug/L		07/27/15 13:16	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 13:16	1
Magnesium	300	U	5000	300	55	ug/L		07/27/15 13:16	1
Manganese	5.0	U	15	5.0	0.46	ug/L		07/27/15 13:16	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 13:16	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGEQUIPRINSE2-0623-GW
Date Collected: 07/21/15 16:30
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-5
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Potassium	900	U	5000	900	70	ug/L		07/27/15 13:16	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 15:30	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 15:30	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 15:30	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 15:30	1
Iron	100	U	150	100	44	ug/L		07/27/15 15:30	1
Sodium	400	U	1000	400	160	ug/L		07/27/15 15:30	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 15:30	1
Zinc	50	U	50	50	27	ug/L		07/27/15 15:30	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 15:15	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate Nitrite as N	**0.029**	**J**	0.050	0.012	0.0031	mg/L		08/07/15 16:13	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/07/15 17:15	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGLL1mw-064C-0581-GW
Date Collected: 07/20/15 17:15
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-6
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/04/15 12:37	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		08/04/15 12:37	1
Diethyl phthalate	0.95	U	1.9	0.95	0.57	ug/L		08/04/15 12:37	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		08/04/15 12:37	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/04/15 12:37	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		08/04/15 12:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*80*		*50 - 110*	*07/22/15 05:56*	*08/04/15 12:37*	*1*
2-Fluorophenol (Surr)	*74*		*20 - 110*	*07/22/15 05:56*	*08/04/15 12:37*	*1*
Nitrobenzene-d5 (Surr)	*76*		*40 - 110*	*07/22/15 05:56*	*08/04/15 12:37*	*1*
Phenol-d5 (Surr)	*78*		*10 - 115*	*07/22/15 05:56*	*08/04/15 12:37*	*1*
Terphenyl-d14 (Surr)	*95*		*50 - 135*	*07/22/15 05:56*	*08/04/15 12:37*	*1*
2,4,6-Tribromophenol (Surr)	*95*		*40 - 125*	*07/22/15 05:56*	*08/04/15 12:37*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/30/15 18:56	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		07/28/15 04:59	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 04:59	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 04:59	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/28/15 04:59	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/28/15 04:59	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		07/28/15 04:59	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/28/15 04:59	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		07/28/15 04:59	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/28/15 04:59	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 04:59	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		07/28/15 04:59	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		07/28/15 04:59	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 04:59	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 04:59	1
Nitroglycerin	0.51	U	0.66	0.51	0.34	ug/L		07/28/15 04:59	1
PETN	0.51	U	0.66	0.51	0.31	ug/L		07/28/15 04:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*94*		*79 - 111*	*07/24/15 13:08*	*07/28/15 04:59*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/07/15 17:17	1

Client Sample Results

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGLL1mw-064C-0581-GF
Date Collected: 07/20/15 17:15
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-7
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**3.9**	**J**	10	10	2.9	ug/L		07/27/15 13:20	1
Chromium	**0.87**	**J**	7.0	4.0	0.55	ug/L		07/27/15 13:20	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 13:20	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 13:20	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 13:20	1
Silver	**0.96**	**J**	7.0	5.0	0.92	ug/L		07/27/15 13:20	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 13:20	1
Barium	**42**	**J**	200	5.0	1.0	ug/L		07/27/15 13:20	1
Calcium	**55000**		5000	1000	260	ug/L		07/27/15 13:20	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 13:20	1
Magnesium	**9100**		5000	300	55	ug/L		07/27/15 13:20	1
Manganese	**100**		15	5.0	0.46	ug/L		07/27/15 13:20	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 13:20	1
Potassium	**770**	**J**	5000	900	70	ug/L		07/27/15 13:20	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	**20**	**J**	60	60	20	ug/L		07/27/15 15:34	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 15:34	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 15:34	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 15:34	1
Iron	**780**		150	100	44	ug/L		07/27/15 15:34	1
Sodium	**4800**		1000	400	160	ug/L		07/27/15 15:34	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 15:34	1
Zinc	50	U	50	50	27	ug/L		07/27/15 15:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 15:17	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGLL3mw-246-0595-GW
Date Collected: 07/21/15 10:01
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-8
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/04/15 13:02	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		08/04/15 13:02	1
Diethyl phthalate	0.95	U	1.9	0.95	0.57	ug/L		08/04/15 13:02	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		08/04/15 13:02	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/04/15 13:02	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		08/04/15 13:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*85*		*50 - 110*	*07/22/15 05:56*	*08/04/15 13:02*	*1*
2-Fluorophenol (Surr)	*74*		*20 - 110*	*07/22/15 05:56*	*08/04/15 13:02*	*1*
Nitrobenzene-d5 (Surr)	*76*		*40 - 110*	*07/22/15 05:56*	*08/04/15 13:02*	*1*
Phenol-d5 (Surr)	*80*		*10 - 115*	*07/22/15 05:56*	*08/04/15 13:02*	*1*
Terphenyl-d14 (Surr)	*97*		*50 - 135*	*07/22/15 05:56*	*08/04/15 13:02*	*1*
2,4,6-Tribromophenol (Surr)	*99*		*40 - 125*	*07/22/15 05:56*	*08/04/15 13:02*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/30/15 19:13	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		07/28/15 05:43	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 05:43	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 05:43	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/28/15 05:43	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/28/15 05:43	1
2-Amino-4,6-dinitrotoluene	**0.48**	**M**	0.15	0.10	0.015	ug/L		07/28/15 05:43	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/28/15 05:43	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		07/28/15 05:43	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/28/15 05:43	1
4-Amino-2,6-dinitrotoluene	**0.47**	**M**	0.15	0.10	0.051	ug/L		07/28/15 05:43	1
HMX	**0.045**	**J M**	0.15	0.051	0.037	ug/L		07/28/15 05:43	1
RDX	**0.25**	**M**	0.15	0.051	0.037	ug/L		07/28/15 05:43	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 05:43	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 05:43	1
Nitroglycerin	0.51	U	0.66	0.51	0.34	ug/L		07/28/15 05:43	1
PETN	0.51	U	0.66	0.51	0.31	ug/L		07/28/15 05:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*95*	*M*	*79 - 111*	*07/24/15 13:08*	*07/28/15 05:43*	*1*
3,4-Dinitrotoluene	*101*		*79 - 111*	*07/24/15 13:08*	*08/04/15 06:48*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/07/15 17:19	1

Client Sample Results

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGLL3mw-246-0595-GF
Date Collected: 07/21/15 10:01
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-9
Matrix: Water

Method: 6860 - Perchlorate by IC/MS or IC/MS/MS

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Perchlorate	**0.067**		0.050	0.020	0.0040	ug/L		08/05/15 19:53	1

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 12:12	1
Chromium	**1.4**	**J**	7.0	4.0	0.55	ug/L		07/27/15 12:12	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 12:12	1
Lead	**2.2**	**J**	10	5.0	1.9	ug/L		07/27/15 12:12	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 12:12	1
Silver	5.0	U J	7.0	5.0	0.92	ug/L		07/27/15 12:12	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 12:12	1
Barium	**15**	**J**	200	5.0	1.0	ug/L		07/27/15 12:12	1
Calcium	**23000**		5000	1000	260	ug/L		07/27/15 12:12	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 12:12	1
Magnesium	**7400**		5000	300	55	ug/L		07/27/15 12:12	1
Manganese	**2.7**	**J**	15	5.0	0.46	ug/L		07/27/15 12:12	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 12:12	1
Potassium	**1400**	**J**	5000	900	70	ug/L		07/27/15 12:12	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 14:40	1
Antimony	**0.49**	**J**	2.0	1.0	0.33	ug/L		07/27/15 14:40	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 14:40	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 14:40	1
Iron	100	U	150	100	44	ug/L		07/27/15 14:40	1
Sodium	**3500**		1000	400	160	ug/L		07/27/15 14:40	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 14:40	1
Zinc	50	U	50	50	27	ug/L		07/27/15 14:40	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 14:59	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGLL2mw-271-0591-GW
Date Collected: 07/21/15 12:31
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-10
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/04/15 14:17	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		08/04/15 14:17	1
Diethyl phthalate	0.95	U	1.9	0.95	0.57	ug/L		08/04/15 14:17	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		08/04/15 14:17	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/04/15 14:17	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		08/04/15 14:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*85*		*50 - 110*	*07/22/15 05:56*	*08/04/15 14:17*	*1*
2-Fluorophenol (Surr)	*81*		*20 - 110*	*07/22/15 05:56*	*08/04/15 14:17*	*1*
Nitrobenzene-d5 (Surr)	*77*		*40 - 110*	*07/22/15 05:56*	*08/04/15 14:17*	*1*
Phenol-d5 (Surr)	*86*		*10 - 115*	*07/22/15 05:56*	*08/04/15 14:17*	*1*
Terphenyl-d14 (Surr)	*101*		*50 - 135*	*07/22/15 05:56*	*08/04/15 14:17*	*1*
2,4,6-Tribromophenol (Surr)	*106*		*40 - 125*	*07/22/15 05:56*	*08/04/15 14:17*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/30/15 19:31	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		07/28/15 06:26	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 06:26	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 06:26	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/28/15 06:26	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/28/15 06:26	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		07/28/15 06:26	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.091	ug/L		07/28/15 06:26	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.059	ug/L		07/28/15 06:26	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.091	ug/L		07/28/15 06:26	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 06:26	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		07/28/15 06:26	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		07/28/15 06:26	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 06:26	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 06:26	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		07/28/15 06:26	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		07/28/15 06:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*94*		*79 - 111*	*07/24/15 13:08*	*07/28/15 06:26*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/07/15 17:21	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGLL2mw-271-0591-GF
Date Collected: 07/21/15 12:31
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-11
Matrix: Water

Method: 6860 - Perchlorate by IC/MS or IC/MS/MS

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Perchlorate	0.020	U	0.050	0.020	0.0040	ug/L		08/10/15 17:27	1

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**5.4**	**J**	10	10	2.9	ug/L		07/27/15 13:24	1
Chromium	**1.1**	**J**	7.0	4.0	0.55	ug/L		07/27/15 13:24	1
Cobalt	**10**		7.0	4.0	0.56	ug/L		07/27/15 13:24	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 13:24	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 13:24	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 13:24	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 13:24	1
Barium	**3.2**	**J**	200	5.0	1.0	ug/L		07/27/15 13:24	1
Calcium	**53000**		5000	1000	260	ug/L		07/27/15 13:24	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 13:24	1
Magnesium	**19000**		5000	300	55	ug/L		07/27/15 13:24	1
Manganese	**540**		15	5.0	0.46	ug/L		07/27/15 13:24	1
Nickel	**40**		40	5.0	0.76	ug/L		07/27/15 13:24	1
Potassium	**1200**	**J**	5000	900	70	ug/L		07/27/15 13:24	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 15:37	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 15:37	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 15:37	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 15:37	1
Iron	**4500**		150	100	44	ug/L		07/27/15 15:37	1
Sodium	**4600**		1000	400	160	ug/L		07/27/15 15:37	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 15:37	1
Zinc	50	U	50	50	27	ug/L		07/27/15 15:37	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 15:18	1

Client Sample ID: FWGLL2mw-DUP2-0618-GW
Date Collected: 07/21/15 13:05
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-12
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/04/15 14:42	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		08/04/15 14:42	1
Diethyl phthalate	0.95	U	1.9	0.95	0.57	ug/L		08/04/15 14:42	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		08/04/15 14:42	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/04/15 14:42	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		08/04/15 14:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*76*		*50 - 110*	*07/22/15 05:56*	*08/04/15 14:42*	*1*
2-Fluorophenol (Surr)	*75*		*20 - 110*	*07/22/15 05:56*	*08/04/15 14:42*	*1*
Nitrobenzene-d5 (Surr)	*73*		*40 - 110*	*07/22/15 05:56*	*08/04/15 14:42*	*1*
Phenol-d5 (Surr)	*76*		*10 - 115*	*07/22/15 05:56*	*08/04/15 14:42*	*1*
Terphenyl-d14 (Surr)	*98*		*50 - 135*	*07/22/15 05:56*	*08/04/15 14:42*	*1*
2,4,6-Tribromophenol (Surr)	*98*		*40 - 125*	*07/22/15 05:56*	*08/04/15 14:42*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/30/15 19:49	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.050	U	0.15	0.050	0.031	ug/L		07/28/15 08:37	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.050	ug/L		07/28/15 08:37	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.050	ug/L		07/28/15 08:37	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.050	ug/L		07/28/15 08:37	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.050	ug/L		07/28/15 08:37	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		07/28/15 08:37	1
2-Nitrotoluene	0.10	U	0.50	0.10	0.089	ug/L		07/28/15 08:37	1
3-Nitrotoluene	0.10	U	0.50	0.10	0.058	ug/L		07/28/15 08:37	1
4-Nitrotoluene	0.10	U	0.50	0.10	0.089	ug/L		07/28/15 08:37	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.050	ug/L		07/28/15 08:37	1
HMX	0.050	U	0.15	0.050	0.036	ug/L		07/28/15 08:37	1
RDX	0.050	U	0.15	0.050	0.036	ug/L		07/28/15 08:37	1
Nitrobenzene	0.10	U	0.15	0.10	0.050	ug/L		07/28/15 08:37	1
Tetryl	0.10	U	0.15	0.10	0.050	ug/L		07/28/15 08:37	1
Nitroglycerin	0.50	U	0.66	0.50	0.33	ug/L		07/28/15 08:37	1
PETN	0.50	U	0.66	0.50	0.30	ug/L		07/28/15 08:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*95*		*79 - 111*	*07/24/15 13:08*	*07/28/15 08:37*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/07/15 17:23	1

Client Sample Results

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGLL2mw-DUP2-0618-GF
Date Collected: 07/21/15 13:05
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-13
Matrix: Water

Method: 6860 - Perchlorate by IC/MS or IC/MS/MS

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Perchlorate	0.020	U	0.050	0.020	0.0040	ug/L		08/10/15 17:47	1

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**4.7**	**J**	10	10	2.9	ug/L		07/27/15 13:28	1
Chromium	**2.5**	**J**	7.0	4.0	0.55	ug/L		07/27/15 13:28	1
Cobalt	**11**		7.0	4.0	0.56	ug/L		07/27/15 13:28	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 13:28	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 13:28	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 13:28	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 13:28	1
Barium	**3.3**	**J**	200	5.0	1.0	ug/L		07/27/15 13:28	1
Calcium	**53000**		5000	1000	260	ug/L		07/27/15 13:28	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 13:28	1
Magnesium	**19000**		5000	300	55	ug/L		07/27/15 13:28	1
Manganese	**550**		15	5.0	0.46	ug/L		07/27/15 13:28	1
Nickel	**42**		40	5.0	0.76	ug/L		07/27/15 13:28	1
Potassium	**1200**	**J**	5000	900	70	ug/L		07/27/15 13:28	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 15:41	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 15:41	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 15:41	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 15:41	1
Iron	**4600**		150	100	44	ug/L		07/27/15 15:41	1
Sodium	**4600**		1000	400	160	ug/L		07/27/15 15:41	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 15:41	1
Zinc	50	U	50	50	27	ug/L		07/27/15 15:41	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 15:20	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGLL12mw-185C-0598-GW
Date Collected: 07/21/15 15:55
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-14
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate Nitrite as N	120	D	10	2.4	0.62	mg/L		08/07/15 16:15	200

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGLL12mw-185C-0598-GF
Date Collected: 07/21/15 15:55
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-15
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 13:32	1

Client Sample ID: FWGLL3mw-244-0594-GW
Date Collected: 07/21/15 10:26
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-16
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/04/15 15:07	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		08/04/15 15:07	1
Diethyl phthalate	0.95	U	1.9	0.95	0.57	ug/L		08/04/15 15:07	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		08/04/15 15:07	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/04/15 15:07	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		08/04/15 15:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*79*		*50 - 110*	*07/22/15 05:56*	*08/04/15 15:07*	*1*
2-Fluorophenol (Surr)	*72*		*20 - 110*	*07/22/15 05:56*	*08/04/15 15:07*	*1*
Nitrobenzene-d5 (Surr)	*76*		*40 - 110*	*07/22/15 05:56*	*08/04/15 15:07*	*1*
Phenol-d5 (Surr)	*76*		*10 - 115*	*07/22/15 05:56*	*08/04/15 15:07*	*1*
Terphenyl-d14 (Surr)	*96*		*50 - 135*	*07/22/15 05:56*	*08/04/15 15:07*	*1*
2,4,6-Tribromophenol (Surr)	*91*		*40 - 125*	*07/22/15 05:56*	*08/04/15 15:07*	*1*

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.048	U	0.048	0.048	0.017	ug/L		07/28/15 21:16	1
4,4'-DDE	0.048	U	0.048	0.048	0.011	ug/L		07/28/15 21:16	1
4,4'-DDT	0.048	U	0.048	0.048	0.016	ug/L		07/28/15 21:16	1
Aldrin	0.048	U	0.048	0.048	0.012	ug/L		07/28/15 21:16	1
alpha-BHC	0.048	U	0.048	0.048	0.013	ug/L		07/28/15 21:16	1
alpha-Chlordane	0.048	U	0.048	0.048	0.011	ug/L		07/28/15 21:16	1
beta-BHC	0.048	U	0.048	0.048	0.017	ug/L		07/28/15 21:16	1
delta-BHC	0.048	U	0.048	0.048	0.028	ug/L		07/28/15 21:16	1
Dieldrin	0.048	U	0.048	0.048	0.012	ug/L		07/28/15 21:16	1
Endosulfan II	0.048	U	0.048	0.048	0.014	ug/L		07/28/15 21:16	1
Endosulfan sulfate	0.048	U	0.048	0.048	0.014	ug/L		07/28/15 21:16	1
Endrin	0.048	U	0.048	0.048	0.012	ug/L		07/28/15 21:16	1
Endrin aldehyde	0.048	U	0.048	0.048	0.017	ug/L		07/28/15 21:16	1
Endrin ketone	0.048	U	0.048	0.048	0.015	ug/L		07/28/15 21:16	1
gamma-BHC (Lindane)	0.048	U	0.048	0.048	0.012	ug/L		07/28/15 21:16	1
gamma-Chlordane	0.048	U M	0.048	0.048	0.012	ug/L		07/28/15 21:16	1
Heptachlor	0.048	U	0.048	0.048	0.013	ug/L		07/28/15 21:16	1
Heptachlor epoxide	0.048	U	0.048	0.048	0.014	ug/L		07/28/15 21:16	1
Methoxychlor	0.095	U	0.095	0.095	0.012	ug/L		07/28/15 21:16	1
Toxaphene	1.9	U	1.9	1.9	0.19	ug/L		07/28/15 21:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*67*		*30 - 135*	*07/22/15 05:59*	*07/28/15 21:16*	*1*
Tetrachloro-m-xylene	*67*		*25 - 140*	*07/22/15 05:59*	*07/28/15 21:16*	*1*

Method: 8081A - Organochlorine Pesticides (GC) - RE

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Endosulfan I	0.048	U H	0.048	0.048	0.015	ug/L		07/31/15 17:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*65*		*30 - 135*	*07/30/15 04:42*	*07/31/15 17:48*	*1*
DCB Decachlorobiphenyl	*64*		*30 - 135*	*07/30/15 04:42*	*07/31/15 17:48*	*1*
Tetrachloro-m-xylene	*66*		*25 - 140*	*07/30/15 04:42*	*07/31/15 17:48*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGLL3mw-244-0594-GW
Date Collected: 07/21/15 10:26
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-16
Matrix: Water

Method: 8081A - Organochlorine Pesticides (GC) - RE (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	64		25 - 140	07/30/15 04:42	07/31/15 17:48	1

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/30/15 20:06	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		07/28/15 09:21	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 09:21	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 09:21	1
2,4-Dinitrotoluene	0.10	U M	0.13	0.10	0.051	ug/L		07/28/15 09:21	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/28/15 09:21	1
2-Amino-4,6-dinitrotoluene	**0.58**	**M**	0.15	0.10	0.015	ug/L		07/28/15 09:21	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/28/15 09:21	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		07/28/15 09:21	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/28/15 09:21	1
4-Amino-2,6-dinitrotoluene	**0.57**	**M**	0.15	0.10	0.051	ug/L		07/28/15 09:21	1
HMX	**0.064**	**J M**	0.15	0.051	0.037	ug/L		07/28/15 09:21	1
RDX	**0.30**	**M**	0.15	0.051	0.037	ug/L		07/28/15 09:21	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 09:21	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 09:21	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		07/28/15 09:21	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		07/28/15 09:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	93	M	79 - 111	07/24/15 13:08	07/28/15 09:21	1
3,4-Dinitrotoluene	99		79 - 111	07/24/15 13:08	08/04/15 07:54	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/07/15 17:25	1

Client Sample Results

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGLL3mw-244-0594-GF
Date Collected: 07/21/15 10:26
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-17
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 13:36	1
Chromium	**0.91**	**J**	7.0	4.0	0.55	ug/L		07/27/15 13:36	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 13:36	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 13:36	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 13:36	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 13:36	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 13:36	1
Barium	**15**	**J**	200	5.0	1.0	ug/L		07/27/15 13:36	1
Calcium	**24000**		5000	1000	260	ug/L		07/27/15 13:36	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 13:36	1
Magnesium	**7700**		5000	300	55	ug/L		07/27/15 13:36	1
Manganese	**0.66**	**J**	15	5.0	0.46	ug/L		07/27/15 13:36	1
Nickel	**0.76**	**J**	40	5.0	0.76	ug/L		07/27/15 13:36	1
Potassium	**1400**	**J**	5000	900	70	ug/L		07/27/15 13:36	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 15:45	1
Antimony	**0.41**	**J**	2.0	1.0	0.33	ug/L		07/27/15 15:45	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 15:45	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 15:45	1
Iron	100	U	150	100	44	ug/L		07/27/15 15:45	1
Sodium	**3500**		1000	400	160	ug/L		07/27/15 15:45	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 15:45	1
Zinc	50	U	50	50	27	ug/L		07/27/15 15:45	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 15:26	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGLL3mw-DUP3-0619-GW
Date Collected: 07/21/15 11:26
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-18
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/04/15 15:32	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		08/04/15 15:32	1
Diethyl phthalate	0.95	U	1.9	0.95	0.57	ug/L		08/04/15 15:32	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		08/04/15 15:32	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/04/15 15:32	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		08/04/15 15:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*81*		*50 - 110*	*07/22/15 05:56*	*08/04/15 15:32*	*1*
2-Fluorophenol (Surr)	*73*		*20 - 110*	*07/22/15 05:56*	*08/04/15 15:32*	*1*
Nitrobenzene-d5 (Surr)	*74*		*40 - 110*	*07/22/15 05:56*	*08/04/15 15:32*	*1*
Phenol-d5 (Surr)	*75*		*10 - 115*	*07/22/15 05:56*	*08/04/15 15:32*	*1*
Terphenyl-d14 (Surr)	*99*		*50 - 135*	*07/22/15 05:56*	*08/04/15 15:32*	*1*
2,4,6-Tribromophenol (Surr)	*94*		*40 - 125*	*07/22/15 05:56*	*08/04/15 15:32*	*1*

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.048	U	0.048	0.048	0.017	ug/L		07/28/15 21:38	1
4,4'-DDE	0.048	U	0.048	0.048	0.011	ug/L		07/28/15 21:38	1
4,4'-DDT	0.048	U	0.048	0.048	0.016	ug/L		07/28/15 21:38	1
Aldrin	0.048	U	0.048	0.048	0.012	ug/L		07/28/15 21:38	1
alpha-BHC	0.048	U	0.048	0.048	0.013	ug/L		07/28/15 21:38	1
alpha-Chlordane	0.048	U	0.048	0.048	0.011	ug/L		07/28/15 21:38	1
beta-BHC	0.048	U	0.048	0.048	0.017	ug/L		07/28/15 21:38	1
delta-BHC	0.048	U	0.048	0.048	0.028	ug/L		07/28/15 21:38	1
Dieldrin	0.048	U	0.048	0.048	0.012	ug/L		07/28/15 21:38	1
Endosulfan II	0.048	U	0.048	0.048	0.014	ug/L		07/28/15 21:38	1
Endosulfan sulfate	0.048	U	0.048	0.048	0.014	ug/L		07/28/15 21:38	1
Endrin	0.048	U	0.048	0.048	0.012	ug/L		07/28/15 21:38	1
Endrin aldehyde	0.048	U	0.048	0.048	0.017	ug/L		07/28/15 21:38	1
Endrin ketone	0.048	U	0.048	0.048	0.015	ug/L		07/28/15 21:38	1
gamma-BHC (Lindane)	0.048	U	0.048	0.048	0.012	ug/L		07/28/15 21:38	1
gamma-Chlordane	0.048	U	0.048	0.048	0.012	ug/L		07/28/15 21:38	1
Heptachlor	0.048	U	0.048	0.048	0.013	ug/L		07/28/15 21:38	1
Heptachlor epoxide	0.048	U	0.048	0.048	0.014	ug/L		07/28/15 21:38	1
Methoxychlor	0.095	U	0.095	0.095	0.012	ug/L		07/28/15 21:38	1
Toxaphene	1.9	U	1.9	1.9	0.19	ug/L		07/28/15 21:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*64*		*30 - 135*	*07/22/15 05:59*	*07/28/15 21:38*	*1*
DCB Decachlorobiphenyl	*65*		*30 - 135*	*07/22/15 05:59*	*07/28/15 21:38*	*1*
Tetrachloro-m-xylene	*68*		*25 - 140*	*07/22/15 05:59*	*07/28/15 21:38*	*1*
Tetrachloro-m-xylene	*69*		*25 - 140*	*07/22/15 05:59*	*07/28/15 21:38*	*1*

Method: 8081A - Organochlorine Pesticides (GC) - RE

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Endosulfan I	0.048	U H	0.048	0.048	0.015	ug/L		07/31/15 18:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*69*		*30 - 135*	*07/30/15 04:42*	*07/31/15 18:10*	*1*

Client Sample ID: FWGLL3mw-DUP3-0619-GW
Date Collected: 07/21/15 11:26
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-18
Matrix: Water

Method: 8081A - Organochlorine Pesticides (GC) - RE (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*71*		*30 - 135*	*07/30/15 04:42*	*07/31/15 18:10*	*1*
Tetrachloro-m-xylene	*71*		*25 - 140*	*07/30/15 04:42*	*07/31/15 18:10*	*1*
Tetrachloro-m-xylene	*70*		*25 - 140*	*07/30/15 04:42*	*07/31/15 18:10*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/30/15 21:00	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		07/28/15 10:04	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 10:04	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 10:04	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/28/15 10:04	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/28/15 10:04	1
2-Amino-4,6-dinitrotoluene	**0.59**	**M**	0.15	0.10	0.015	ug/L		07/28/15 10:04	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/28/15 10:04	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.059	ug/L		07/28/15 10:04	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/28/15 10:04	1
4-Amino-2,6-dinitrotoluene	**0.58**	**M**	0.15	0.10	0.051	ug/L		07/28/15 10:04	1
HMX	**0.055**	**J M**	0.15	0.051	0.037	ug/L		07/28/15 10:04	1
RDX	**0.30**	**M**	0.15	0.051	0.037	ug/L		07/28/15 10:04	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 10:04	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 10:04	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		07/28/15 10:04	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		07/28/15 10:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*97*	*M*	*79 - 111*	*07/24/15 13:08*	*07/28/15 10:04*	*1*
3,4-Dinitrotoluene	*103*		*79 - 111*	*07/24/15 13:08*	*08/04/15 09:01*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/07/15 17:35	1

Client Sample Results

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGLL3mw-DUP3-0619-GF
Date Collected: 07/21/15 11:26
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-19
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 13:41	1
Chromium	**0.79**	**J**	7.0	4.0	0.55	ug/L		07/27/15 13:41	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 13:41	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 13:41	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 13:41	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 13:41	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 13:41	1
Barium	**15**	**J**	200	5.0	1.0	ug/L		07/27/15 13:41	1
Calcium	**24000**		5000	1000	260	ug/L		07/27/15 13:41	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 13:41	1
Magnesium	**7900**		5000	300	55	ug/L		07/27/15 13:41	1
Manganese	**1.2**	**J**	15	5.0	0.46	ug/L		07/27/15 13:41	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 13:41	1
Potassium	**1400**	**J**	5000	900	70	ug/L		07/27/15 13:41	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 15:56	1
Antimony	**0.53**	**J**	2.0	1.0	0.33	ug/L		07/27/15 15:56	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 15:56	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 15:56	1
Iron	100	U	150	100	44	ug/L		07/27/15 15:56	1
Sodium	**3700**		1000	400	160	ug/L		07/27/15 15:56	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 15:56	1
Zinc	50	U	50	50	27	ug/L		07/27/15 15:56	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 15:28	1

Client Sample ID: FWGLL12mw-242C-0600-GW — **Lab Sample ID: 240-53458-20**
Date Collected: 07/21/15 15:19 — **Matrix: Water**
Date Received: 07/21/15 18:17

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/04/15 15:57	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		08/04/15 15:57	1
Diethyl phthalate	0.95	U	1.9	0.95	0.57	ug/L		08/04/15 15:57	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		08/04/15 15:57	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/04/15 15:57	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		08/04/15 15:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*86*		*50 - 110*	*07/22/15 05:56*	*08/04/15 15:57*	*1*
2-Fluorophenol (Surr)	*78*		*20 - 110*	*07/22/15 05:56*	*08/04/15 15:57*	*1*
Nitrobenzene-d5 (Surr)	*79*		*40 - 110*	*07/22/15 05:56*	*08/04/15 15:57*	*1*
Phenol-d5 (Surr)	*82*		*10 - 115*	*07/22/15 05:56*	*08/04/15 15:57*	*1*
Terphenyl-d14 (Surr)	*98*		*50 - 135*	*07/22/15 05:56*	*08/04/15 15:57*	*1*
2,4,6-Tribromophenol (Surr)	*95*		*40 - 125*	*07/22/15 05:56*	*08/04/15 15:57*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/30/15 21:18	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.16	0.052	0.032	ug/L		07/28/15 10:48	1
1,3-Dinitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		07/28/15 10:48	1
2,4,6-Trinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		07/28/15 10:48	1
2,4-Dinitrotoluene	0.10	U	0.14	0.10	0.052	ug/L		07/28/15 10:48	1
2,6-Dinitrotoluene	0.10	U	0.14	0.10	0.052	ug/L		07/28/15 10:48	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.16	0.10	0.016	ug/L		07/28/15 10:48	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.092	ug/L		07/28/15 10:48	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.060	ug/L		07/28/15 10:48	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.092	ug/L		07/28/15 10:48	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		07/28/15 10:48	1
HMX	0.052	U	0.16	0.052	0.038	ug/L		07/28/15 10:48	1
RDX	0.052	U	0.16	0.052	0.038	ug/L		07/28/15 10:48	1
Nitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		07/28/15 10:48	1
Tetryl	0.10	U	0.16	0.10	0.052	ug/L		07/28/15 10:48	1
Nitroglycerin	0.52	U	0.68	0.52	0.35	ug/L		07/28/15 10:48	1
PETN	0.52	U	0.68	0.52	0.31	ug/L		07/28/15 10:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*91*		*79 - 111*	*07/24/15 13:08*	*07/28/15 10:48*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate Nitrite as N	**0.028**	**J**	0.050	0.012	0.0031	mg/L		08/07/15 16:21	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/07/15 17:37	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGLL12mw-242C-0600-GF
Date Collected: 07/21/15 15:19
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-21
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**21**		10	10	2.9	ug/L		07/30/15 12:50	1
Chromium	**1.9**	**J**	7.0	4.0	0.55	ug/L		07/30/15 12:50	1
Cobalt	**0.65**	**J**	7.0	4.0	0.56	ug/L		07/30/15 12:50	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/30/15 12:50	1
Selenium	10	U	15	10	4.0	ug/L		07/30/15 12:50	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/30/15 12:50	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/30/15 12:10	1
Barium	**24**	**J**	200	5.0	1.0	ug/L		07/30/15 12:50	1
Calcium	**67000**		5000	1000	260	ug/L		07/30/15 12:50	1
Copper	10	U	25	10	1.9	ug/L		07/30/15 12:50	1
Magnesium	**43000**		5000	300	55	ug/L		07/30/15 12:50	1
Manganese	**65**		15	5.0	0.46	ug/L		07/30/15 12:50	1
Nickel	**38**	**J**	40	5.0	0.76	ug/L		07/30/15 12:10	1
Potassium	**2000**	**J**	5000	900	70	ug/L		07/30/15 12:50	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	**340**		60	60	20	ug/L		07/27/15 15:59	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 15:59	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 15:59	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 15:59	1
Iron	**1200**		150	100	44	ug/L		07/27/15 15:59	1
Sodium	**33000**		1000	400	160	ug/L		07/27/15 15:59	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 15:59	1
Zinc	50	U	50	50	27	ug/L		07/27/15 15:59	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 15:29	1

Client Sample ID: FWGLL1mw-087C-0586-GW — **Lab Sample ID: 240-53458-22**
Date Collected: 07/21/15 10:22 — **Matrix: Water**
Date Received: 07/21/15 18:17

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.3	U	5.3	5.3	1.8	ug/L		08/04/15 16:22	1
Butyl benzyl phthalate	0.53	U	5.3	0.53	0.28	ug/L		08/04/15 16:22	1
Diethyl phthalate	1.1	U	2.1	1.1	0.64	ug/L		08/04/15 16:22	1
Dimethyl phthalate	0.53	U	2.1	0.53	0.31	ug/L		08/04/15 16:22	1
Di-n-butyl phthalate	5.3	U	5.3	5.3	1.8	ug/L		08/04/15 16:22	1
Di-n-octyl phthalate	0.53	U	2.1	0.53	0.24	ug/L		08/04/15 16:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*86*		*50 - 110*	*07/22/15 05:56*	*08/04/15 16:22*	*1*
2-Fluorophenol (Surr)	*76*		*20 - 110*	*07/22/15 05:56*	*08/04/15 16:22*	*1*
Nitrobenzene-d5 (Surr)	*76*		*40 - 110*	*07/22/15 05:56*	*08/04/15 16:22*	*1*
Phenol-d5 (Surr)	*80*		*10 - 115*	*07/22/15 05:56*	*08/04/15 16:22*	*1*
Terphenyl-d14 (Surr)	*92*		*50 - 135*	*07/22/15 05:56*	*08/04/15 16:22*	*1*
2,4,6-Tribromophenol (Surr)	*100*		*40 - 125*	*07/22/15 05:56*	*08/04/15 16:22*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/30/15 21:35	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.031	ug/L		07/28/15 11:31	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 11:31	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 11:31	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/28/15 11:31	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/28/15 11:31	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		07/28/15 11:31	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.089	ug/L		07/28/15 11:31	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		07/28/15 11:31	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.089	ug/L		07/28/15 11:31	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 11:31	1
HMX	0.051	U	0.15	0.051	0.036	ug/L		07/28/15 11:31	1
RDX	0.051	U	0.15	0.051	0.036	ug/L		07/28/15 11:31	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 11:31	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		07/28/15 11:31	1
Nitroglycerin	0.51	U	0.66	0.51	0.33	ug/L		07/28/15 11:31	1
PETN	0.51	U	0.66	0.51	0.30	ug/L		07/28/15 11:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*94*		*79 - 111*	*07/24/15 13:08*	*07/28/15 11:31*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/07/15 17:41	1

Client Sample Results

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGLL1mw-087C-0586-GF
Date Collected: 07/21/15 10:22
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-23
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 13:45	1
Chromium	**0.69**	**J**	7.0	4.0	0.55	ug/L		07/27/15 13:45	1
Cobalt	**0.69**	**J**	7.0	4.0	0.56	ug/L		07/27/15 13:45	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 13:45	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 13:45	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 13:45	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 13:45	1
Barium	**24**	**J**	200	5.0	1.0	ug/L		07/27/15 13:45	1
Calcium	**100000**		5000	1000	260	ug/L		07/27/15 13:45	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 13:45	1
Magnesium	**28000**		5000	300	55	ug/L		07/27/15 13:45	1
Manganese	**85**		15	5.0	0.46	ug/L		07/27/15 13:45	1
Nickel	**0.94**	**J**	40	5.0	0.76	ug/L		07/27/15 13:45	1
Potassium	**570**	**J**	5000	900	70	ug/L		07/27/15 13:45	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 16:03	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 16:03	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 16:03	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 16:03	1
Iron	100	U	150	100	44	ug/L		07/27/15 16:03	1
Sodium	**8400**		1000	400	160	ug/L		07/27/15 16:03	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 16:03	1
Zinc	50	U	50	50	27	ug/L		07/27/15 16:03	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 15:31	1

Client Sample ID: FWGSCFmw-004-0608-GW
Date Collected: 07/21/15 10:47
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-24
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.0	U	5.0	5.0	1.7	ug/L		08/04/15 16:47	1
Butyl benzyl phthalate	0.50	U	5.0	0.50	0.26	ug/L		08/04/15 16:47	1
Diethyl phthalate	0.99	U	2.0	0.99	0.59	ug/L		08/04/15 16:47	1
Dimethyl phthalate	0.50	U	2.0	0.50	0.29	ug/L		08/04/15 16:47	1
Di-n-butyl phthalate	5.0	U	5.0	5.0	1.7	ug/L		08/04/15 16:47	1
Di-n-octyl phthalate	0.50	U	2.0	0.50	0.23	ug/L		08/04/15 16:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*71*		*50 - 110*	*07/22/15 05:56*	*08/04/15 16:47*	*1*
2-Fluorophenol (Surr)	*62*		*20 - 110*	*07/22/15 05:56*	*08/04/15 16:47*	*1*
Nitrobenzene-d5 (Surr)	*63*		*40 - 110*	*07/22/15 05:56*	*08/04/15 16:47*	*1*
Phenol-d5 (Surr)	*67*		*10 - 115*	*07/22/15 05:56*	*08/04/15 16:47*	*1*
Terphenyl-d14 (Surr)	*93*		*50 - 135*	*07/22/15 05:56*	*08/04/15 16:47*	*1*
2,4,6-Tribromophenol (Surr)	*91*		*40 - 125*	*07/22/15 05:56*	*08/04/15 16:47*	*1*

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.049	U	0.049	0.049	0.017	ug/L		07/28/15 21:59	1
4,4'-DDE	0.049	U	0.049	0.049	0.012	ug/L		07/28/15 21:59	1
4,4'-DDT	0.049	U	0.049	0.049	0.017	ug/L		07/28/15 21:59	1
Aldrin	0.049	U	0.049	0.049	0.013	ug/L		07/28/15 21:59	1
alpha-BHC	0.049	U	0.049	0.049	0.014	ug/L		07/28/15 21:59	1
alpha-Chlordane	0.049	U	0.049	0.049	0.012	ug/L		07/28/15 21:59	1
beta-BHC	0.049	U	0.049	0.049	0.017	ug/L		07/28/15 21:59	1
delta-BHC	0.049	U	0.049	0.049	0.028	ug/L		07/28/15 21:59	1
Dieldrin	0.049	U	0.049	0.049	0.013	ug/L		07/28/15 21:59	1
Endosulfan II	0.049	U	0.049	0.049	0.015	ug/L		07/28/15 21:59	1
Endosulfan sulfate	0.049	U	0.049	0.049	0.015	ug/L		07/28/15 21:59	1
Endrin	0.049	U	0.049	0.049	0.013	ug/L		07/28/15 21:59	1
Endrin aldehyde	0.049	U	0.049	0.049	0.017	ug/L		07/28/15 21:59	1
Endrin ketone	0.049	U	0.049	0.049	0.016	ug/L		07/28/15 21:59	1
gamma-BHC (Lindane)	0.049	U	0.049	0.049	0.013	ug/L		07/28/15 21:59	1
gamma-Chlordane	0.049	U	0.049	0.049	0.013	ug/L		07/28/15 21:59	1
Heptachlor	0.049	U	0.049	0.049	0.014	ug/L		07/28/15 21:59	1
Heptachlor epoxide	0.049	U	0.049	0.049	0.015	ug/L		07/28/15 21:59	1
Methoxychlor	0.097	U	0.097	0.097	0.013	ug/L		07/28/15 21:59	1
Toxaphene	1.9	U	1.9	1.9	0.19	ug/L		07/28/15 21:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*9*	*Q*	*30 - 135*	*07/22/15 05:59*	*07/28/15 21:59*	*1*
DCB Decachlorobiphenyl	*57*		*30 - 135*	*07/22/15 05:59*	*07/28/15 21:59*	*1*
Tetrachloro-m-xylene	*10*	*Q*	*25 - 140*	*07/22/15 05:59*	*07/28/15 21:59*	*1*
Tetrachloro-m-xylene	*57*		*25 - 140*	*07/22/15 05:59*	*07/28/15 21:59*	*1*

Method: 8081A - Organochlorine Pesticides (GC) - RE

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Endosulfan I	0.048	U H	0.048	0.048	0.015	ug/L		07/31/15 18:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*61*		*30 - 135*	*07/30/15 04:42*	*07/31/15 18:32*	*1*

Client Sample ID: FWGSCFmw-004-0608-GW
Date Collected: 07/21/15 10:47
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-24
Matrix: Water

Method: 8081A - Organochlorine Pesticides (GC) - RE (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	61		30 - 135	07/30/15 04:42	07/31/15 18:32	1
Tetrachloro-m-xylene	61		25 - 140	07/30/15 04:42	07/31/15 18:32	1
Tetrachloro-m-xylene	59		25 - 140	07/30/15 04:42	07/31/15 18:32	1

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U M	20	6.0	2.4	ug/L		07/30/15 21:53	1

Method: 8330 Modified - Nitroguanidine (HPLC) - RA

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		08/04/15 12:15	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.15	0.052	0.032	ug/L		07/28/15 12:15	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.052	ug/L		07/28/15 12:15	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.052	ug/L		07/28/15 12:15	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		07/28/15 12:15	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		07/28/15 12:15	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		07/28/15 12:15	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		07/28/15 12:15	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		07/28/15 12:15	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		07/28/15 12:15	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.052	ug/L		07/28/15 12:15	1
HMX	0.052	U	0.15	0.052	0.037	ug/L		07/28/15 12:15	1
RDX	0.052	U	0.15	0.052	0.037	ug/L		07/28/15 12:15	1
Nitrobenzene	0.10	U	0.15	0.10	0.052	ug/L		07/28/15 12:15	1
Tetryl	0.10	U	0.15	0.10	0.052	ug/L		07/28/15 12:15	1
Nitroglycerin	0.52	U	0.67	0.52	0.34	ug/L		07/28/15 12:15	1
PETN	0.52	U	0.67	0.52	0.31	ug/L		07/28/15 12:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	91		79 - 111	07/24/15 13:08	07/28/15 12:15	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/07/15 17:43	1

Client Sample Results

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGSCFmw-004-0608-GF
Date Collected: 07/21/15 10:47
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-25
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 13:49	1
Chromium	**1.5**	**J**	7.0	4.0	0.55	ug/L		07/27/15 13:49	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 13:49	1
Lead	**2.7**	**J**	10	5.0	1.9	ug/L		07/27/15 13:49	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 13:49	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 13:49	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 13:49	1
Barium	**69**	**J**	200	5.0	1.0	ug/L		07/27/15 13:49	1
Calcium	**150000**		5000	1000	260	ug/L		07/27/15 13:49	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 13:49	1
Magnesium	**59000**		5000	300	55	ug/L		07/27/15 13:49	1
Manganese	**690**		15	5.0	0.46	ug/L		07/27/15 13:49	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 13:49	1
Potassium	**2800**	**J**	5000	900	70	ug/L		07/27/15 13:49	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 16:07	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 16:07	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 16:07	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 16:07	1
Iron	100	U	150	100	44	ug/L		07/27/15 16:07	1
Sodium	**10000**		1000	400	160	ug/L		07/27/15 16:07	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 16:07	1
Zinc	50	U	50	50	27	ug/L		07/27/15 16:07	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 15:32	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGSCFmw-002-0607-GW
Date Collected: 07/21/15 13:22
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-26
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.1	U	5.1	5.1	1.7	ug/L		08/04/15 17:37	1
Butyl benzyl phthalate	0.51	U	5.1	0.51	0.26	ug/L		08/04/15 17:37	1
Diethyl phthalate	1.0	U	2.0	1.0	0.61	ug/L		08/04/15 17:37	1
Dimethyl phthalate	0.51	U	2.0	0.51	0.29	ug/L		08/04/15 17:37	1
Di-n-butyl phthalate	5.1	U	5.1	5.1	1.7	ug/L		08/04/15 17:37	1
Di-n-octyl phthalate	0.51	U	2.0	0.51	0.23	ug/L		08/04/15 17:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*72*		*50 - 110*	*07/22/15 05:56*	*08/04/15 17:37*	*1*
2-Fluorophenol (Surr)	*60*		*20 - 110*	*07/22/15 05:56*	*08/04/15 17:37*	*1*
Nitrobenzene-d5 (Surr)	*62*		*40 - 110*	*07/22/15 05:56*	*08/04/15 17:37*	*1*
Phenol-d5 (Surr)	*67*		*10 - 115*	*07/22/15 05:56*	*08/04/15 17:37*	*1*
Terphenyl-d14 (Surr)	*93*		*50 - 135*	*07/22/15 05:56*	*08/04/15 17:37*	*1*
2,4,6-Tribromophenol (Surr)	*94*		*40 - 125*	*07/22/15 05:56*	*08/04/15 17:37*	*1*

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.051	U	0.051	0.051	0.018	ug/L		07/28/15 22:21	1
4,4'-DDE	0.051	U	0.051	0.051	0.012	ug/L		07/28/15 22:21	1
4,4'-DDT	0.051	U	0.051	0.051	0.017	ug/L		07/28/15 22:21	1
Aldrin	0.051	U	0.051	0.051	0.013	ug/L		07/28/15 22:21	1
alpha-BHC	0.051	U	0.051	0.051	0.014	ug/L		07/28/15 22:21	1
alpha-Chlordane	0.051	U	0.051	0.051	0.012	ug/L		07/28/15 22:21	1
beta-BHC	0.051	U	0.051	0.051	0.018	ug/L		07/28/15 22:21	1
delta-BHC	0.051	U	0.051	0.051	0.029	ug/L		07/28/15 22:21	1
Dieldrin	0.051	U	0.051	0.051	0.013	ug/L		07/28/15 22:21	1
Endosulfan II	0.051	U	0.051	0.051	0.015	ug/L		07/28/15 22:21	1
Endosulfan sulfate	0.051	U	0.051	0.051	0.015	ug/L		07/28/15 22:21	1
Endrin	0.051	U	0.051	0.051	0.013	ug/L		07/28/15 22:21	1
Endrin aldehyde	0.051	U	0.051	0.051	0.018	ug/L		07/28/15 22:21	1
Endrin ketone	0.051	U	0.051	0.051	0.016	ug/L		07/28/15 22:21	1
gamma-BHC (Lindane)	0.051	U	0.051	0.051	0.013	ug/L		07/28/15 22:21	1
gamma-Chlordane	0.051	U	0.051	0.051	0.013	ug/L		07/28/15 22:21	1
Heptachlor	0.051	U	0.051	0.051	0.014	ug/L		07/28/15 22:21	1
Heptachlor epoxide	0.051	U	0.051	0.051	0.015	ug/L		07/28/15 22:21	1
Methoxychlor	0.10	U	0.10	0.10	0.013	ug/L		07/28/15 22:21	1
Toxaphene	2.0	U	2.0	2.0	0.20	ug/L		07/28/15 22:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*61*		*30 - 135*	*07/22/15 05:59*	*07/28/15 22:21*	*1*
DCB Decachlorobiphenyl	*65*		*30 - 135*	*07/22/15 05:59*	*07/28/15 22:21*	*1*
Tetrachloro-m-xylene	*63*		*25 - 140*	*07/22/15 05:59*	*07/28/15 22:21*	*1*
Tetrachloro-m-xylene	*66*		*25 - 140*	*07/22/15 05:59*	*07/28/15 22:21*	*1*

Method: 8081A - Organochlorine Pesticides (GC) - RE

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Endosulfan I	0.051	U H	0.051	0.051	0.016	ug/L		07/31/15 18:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*61*		*30 - 135*	*07/30/15 04:42*	*07/31/15 18:53*	*1*

Client Sample ID: FWGSCFmw-002-0607-GW
Date Collected: 07/21/15 13:22
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-26
Matrix: Water

Method: 8081A - Organochlorine Pesticides (GC) - RE (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	59		30 - 135	07/30/15 04:42	07/31/15 18:53	1
Tetrachloro-m-xylene	64		25 - 140	07/30/15 04:42	07/31/15 18:53	1
Tetrachloro-m-xylene	62		25 - 140	07/30/15 04:42	07/31/15 18:53	1

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U J	20	6.0	2.4	ug/L		07/30/15 22:11	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.031	ug/L		08/05/15 19:29	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		08/05/15 19:29	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		08/05/15 19:29	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		08/05/15 19:29	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		08/05/15 19:29	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		08/05/15 19:29	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.089	ug/L		08/05/15 19:29	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		08/05/15 19:29	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.089	ug/L		08/05/15 19:29	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		08/05/15 19:29	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		08/05/15 19:29	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		08/05/15 19:29	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		08/05/15 19:29	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		08/05/15 19:29	1
Nitroglycerin	0.51	U	0.66	0.51	0.33	ug/L		08/05/15 19:29	1
PETN	0.51	U	0.66	0.51	0.30	ug/L		08/05/15 19:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	93		79 - 111	07/28/15 11:01	08/05/15 19:29	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/07/15 17:45	1

Client Sample Results

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53458-1

Client Sample ID: FWGSCFmw-002-0607-GF
Date Collected: 07/21/15 13:22
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-27
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**15**		10	10	2.9	ug/L		07/27/15 12:40	1
Chromium	**1.3**	**J**	7.0	4.0	0.55	ug/L		07/27/15 12:40	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 12:40	1
Lead	**2.5**	**J**	10	5.0	1.9	ug/L		07/27/15 12:40	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 12:40	1
Silver	5.0	U J	7.0	5.0	0.92	ug/L		07/27/15 12:40	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 12:40	1
Barium	**36**	**J**	200	5.0	1.0	ug/L		07/27/15 12:40	1
Calcium	**80000**		5000	1000	260	ug/L		07/27/15 12:40	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 12:40	1
Magnesium	**25000**		5000	300	55	ug/L		07/27/15 12:40	1
Manganese	**63**		15	5.0	0.46	ug/L		07/27/15 12:40	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 12:40	1
Potassium	**2300**	**J**	5000	900	70	ug/L		07/27/15 12:40	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 14:58	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 14:58	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 14:58	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 14:58	1
Iron	**440**		150	100	44	ug/L		07/27/15 14:58	1
Sodium	**19000**		1000	400	160	ug/L		07/27/15 14:58	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 14:58	1
Zinc	50	U	50	50	27	ug/L		07/27/15 14:58	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 15:07	1

Client Sample ID: FWGLL12mw-247-0602-GW — **Lab Sample ID: 240-53458-28**
Date Collected: 07/21/15 13:52 — **Matrix: Water**
Date Received: 07/21/15 18:17

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.2	U	5.2	5.2	1.8	ug/L		08/04/15 17:12	1
Butyl benzyl phthalate	0.52	U	5.2	0.52	0.27	ug/L		08/04/15 17:12	1
Diethyl phthalate	1.0	U	2.1	1.0	0.62	ug/L		08/04/15 17:12	1
Dimethyl phthalate	0.52	U	2.1	0.52	0.30	ug/L		08/04/15 17:12	1
Di-n-butyl phthalate	5.2	U	5.2	5.2	1.8	ug/L		08/04/15 17:12	1
Di-n-octyl phthalate	0.52	U	2.1	0.52	0.24	ug/L		08/04/15 17:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*86*		*50 - 110*	*07/22/15 05:56*	*08/04/15 17:12*	*1*
2-Fluorophenol (Surr)	*73*		*20 - 110*	*07/22/15 05:56*	*08/04/15 17:12*	*1*
Nitrobenzene-d5 (Surr)	*80*		*40 - 110*	*07/22/15 05:56*	*08/04/15 17:12*	*1*
Phenol-d5 (Surr)	*79*		*10 - 115*	*07/22/15 05:56*	*08/04/15 17:12*	*1*
Terphenyl-d14 (Surr)	*90*		*50 - 135*	*07/22/15 05:56*	*08/04/15 17:12*	*1*
2,4,6-Tribromophenol (Surr)	*108*		*40 - 125*	*07/22/15 05:56*	*08/04/15 17:12*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/30/15 23:04	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.053	U	0.16	0.053	0.033	ug/L		07/28/15 15:09	1
1,3-Dinitrobenzene	0.11	U	0.16	0.11	0.053	ug/L		07/28/15 15:09	1
2,4,6-Trinitrotoluene	0.11	U	0.16	0.11	0.053	ug/L		07/28/15 15:09	1
2,4-Dinitrotoluene	0.11	U	0.14	0.11	0.053	ug/L		07/28/15 15:09	1
2,6-Dinitrotoluene	0.11	U	0.14	0.11	0.053	ug/L		07/28/15 15:09	1
2-Amino-4,6-dinitrotoluene	0.11	U	0.16	0.11	0.016	ug/L		07/28/15 15:09	1
2-Nitrotoluene	0.11	U	0.53	0.11	0.093	ug/L		07/28/15 15:09	1
3-Nitrotoluene	0.11	U	0.53	0.11	0.060	ug/L		07/28/15 15:09	1
4-Nitrotoluene	0.11	U	0.53	0.11	0.093	ug/L		07/28/15 15:09	1
4-Amino-2,6-dinitrotoluene	0.11	U	0.16	0.11	0.053	ug/L		07/28/15 15:09	1
HMX	0.053	U	0.16	0.053	0.038	ug/L		07/28/15 15:09	1
RDX	0.053	U	0.16	0.053	0.038	ug/L		07/28/15 15:09	1
Nitrobenzene	0.11	U	0.16	0.11	0.053	ug/L		07/28/15 15:09	1
Tetryl	0.11	U	0.16	0.11	0.053	ug/L		07/28/15 15:09	1
Nitroglycerin	0.53	U	0.68	0.53	0.35	ug/L		07/28/15 15:09	1
PETN	0.53	U	0.68	0.53	0.32	ug/L		07/28/15 15:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*95*		*79 - 111*	*07/24/15 13:08*	*07/28/15 15:09*	*1*
3,4-Dinitrotoluene	*102*		*79 - 111*	*07/24/15 13:08*	*08/04/15 10:08*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/11/15 13:32	1

Client Sample ID: FWGLL12mw-247-0602-GF
Date Collected: 07/21/15 13:52
Date Received: 07/21/15 18:17

Lab Sample ID: 240-53458-29
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**7.1**	**J**	10	10	2.9	ug/L		07/27/15 13:53	1
Chromium	**1.1**	**J**	7.0	4.0	0.55	ug/L		07/27/15 13:53	1
Cobalt	**0.63**	**J**	7.0	4.0	0.56	ug/L		07/27/15 13:53	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 13:53	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 13:53	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 13:53	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 13:53	1
Barium	**22**	**J**	200	5.0	1.0	ug/L		07/27/15 13:53	1
Calcium	**94000**		5000	1000	260	ug/L		07/27/15 13:53	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 13:53	1
Magnesium	**49000**		5000	300	55	ug/L		07/27/15 13:53	1
Manganese	**190**		15	5.0	0.46	ug/L		07/27/15 13:53	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 13:53	1
Potassium	**2300**	**J**	5000	900	70	ug/L		07/27/15 13:53	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 16:10	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 16:10	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 16:10	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 16:10	1
Iron	**650**		150	100	44	ug/L		07/27/15 16:10	1
Sodium	**23000**		1000	400	160	ug/L		07/27/15 16:10	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 16:10	1
Zinc	50	U	50	50	27	ug/L		07/27/15 16:10	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 15:34	1

Attachment 1

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 24, 2015

SDG: 240-53458
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1,
3. Were holding times met?	X				QAPP Table 5-1, J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1,
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-6
6. Was the GC/MS system tuned each 12 hour shift (prior to ICAL and Cal Ver.)?	X				QSM Table F-4
7. Initial Calibration					
7a. Did the initial calibration curve consist of 5 concentration levels?	X			Instrument A4HP9–7/29/15	QSM Table F-4 R
7b. Did the Calibration Check Compounds (CCCs) (see Table 1 below) relative standard deviations (%RSD) ≤ 30%?	X				QSM Table F-4 R
7c. Were the minimum response factors (RFs) for the System Performance Check Compounds (SPCCs) (see Table 2 below) <0.050?	X				QSM Table F-4
7d. Were all other target analytes reported with an avg response have an RSD ≤ 15%?	X				QSM Table F-4 15% <RSD< 20% = J/UJ
7e. IF the RSD was >15% was a different calibration option used?	X				
7f. If a linear regression curve was used, was the correlation coefficient r>0.995?			X		QSM Table F-4 R<0.995=-J/R
7g. If a non-linear regression was used, was the COD $r^2 \geq 0.99$, with a minimum of 6 points for second order and 7 points for third order?	X			2,4-dinitrophenol, 4,6-dinitro-2-methylphenol and benzidine used a linear fit.	QSM Table F-4 R^2<0.99=-J/R
8. Was a LOD Level Verification performed quarterly for each reported analyte?	X				QSM Table F-4 and section D.1.2.1
9 Was a breakdown check run at the beginning of and every 12 hours with DDT degradation <20% and tailing factors of benzidine and pentachlorophenol ≤2?	X				QSM Table F-4 R
10. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours with recoveries within 70-130%?	X			8/4/15 @0827, 1852	Louisville Supplement to the DOD QSM

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 24, 2015

SDG: 240-53458
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
11. Was a second source verification (ICV) analyzed? Were results 80-120%?	X			7/29/15 @ 1307	QSM Table F-4 J=<80% and >120%
12. Was a CCV run daily prior to analysis and every 12 hours of analysis time?	X			8/4/15 @0802	QSM Table F-4
12a. Were the average response factors (RFs) for the System Performance Check Compounds (SPCCs) ≥0.050?	X				QSM Table F-4
12b. Were all target analytes ≤ 20%D?	X				QSM Table F-4 %D <20% = J/UJ
13. Were the internal standards added to every sample?	X				QSM Table F-4
13a. Was the EICP area between -50% and +100% of the ICAL mid-point standard?	X				QSM Table F-4 R
13b. Were the retention times for all IS compounds within ±30 seconds from the RT of the mid-point standard in the ICAL?	X				QSM Table F-4 J/UJ
14. Were the retention times for target analytes within ±0.06 RRT units from the RT of the mid-point standard in the ICAL or the most recently updated RRT for all samples?	X				QSM Table F-4 J
15. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-4
15a. Were target analytes detected in the method blank >1/2 the MRL, >RL for common contaminants?		X		Checked by ADR.	QSM Table F-4 <5/10X =B
16. Was a field blank (equipment and/or trip) collected and analyzed?	X			FWGEQUIPRINSE2-0623-GW	
16a. Were target analytes detected in the field blank?		X			QSM Table F-4 <5/10X =B
17. Was a LCS prepared and analyzed with each batch?	X				QSM Table F-4
17a. Were the LCS recoveries within limits specified in Table G-6 of the DoD QSM?	X			ADR checked section;	QSM Table F-4, Table G-6, J/UJ
18. Was a MS/MSD prepared with each batch?	X			Parents samples were FWGLL3mw-246-0595-GW and FWGSCFmw-002-0607-GW	

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 24, 2015

SDG: 240-53458
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
18a. Were the MS/MSD recoveries within limits specified in Table G-6 of the DoD QSM with an RPD <30%?	X				QSM Table F-4, Table G-6 J/UJ Parent sample only
19. Was a field duplicate analyzed?	X			A field duplicate was not submitted with this set of samples.	
19a. Were the field duplicates RPDs within ±50%?	X			Checked by ADR.	QSM Table F-4, RPD >50=J Parent sample only
20. Were surrogate recoveries within control limits specified in the DOD QSM?	X				QSM Tables F-4 & G-3 >150%=J; 10% - 50%=J/UJ; <10%=J/R
21. Were reported sample concentrations within calibration range?	X				

References:

- *DoD Quality Systems Manual (QSM), version 4.1, October 2010*
- *Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007*
- *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012*
- *Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011*

Additional Comments:

Table 1: CCCs *(All analytes if CCCs not included in standard)*

Base / Neutral Compounds	Acid Compounds
Acenaphthalene	4-Chloro-3-methylphenol
1,4-Dichlorobenzene	2,4-Dichlorophenol
Hexachlorobutadiene	2-Nitrophenol
N-Nitrosodiphehylamine	Phenol
Di-n-octylphthalate	Pentachlorophenol
Fluoroanthene	2,4,6-Trichlorophenol
Benzo(a)pyrene	

Table 2: SPCCs -

N-Nitroso-di-n-propylamine	0.05
Hexachlorocyclopentadiene	0.05
2,4-Dinitrophenol	0.05
4-Nitrophenol	0.05

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta / August 21, 2015

SDG: 240-53458
Analysis: SW846 8081A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?		X		Checked by ADR. Due to LCS failure for endosulfan I, samples FWGLL1mw-088-0587-GW, FWGLL1mw-086-0585- GW, FWGLL3mw-244-0594- GW, FWGLL3mw-DUP3-0619- GW, FWGSCFmw-004-0608- GW, FWGSCFmw-002-0607- GW and FWGEQUIPRINSE2-0623-GW were re extracted. The re extraction was completed outside the hold time of seven days at nine days. Since extraction was performed outside hold, but within 2x hold, the endosulfan I results for samples FWGLL1mw-088-0587-GW, FWGLL1mw-086-0585-GW, FWGLL3mw-244-0594- GW, FWGLL3mw-DUP3-0619- GW, FWGSCFmw-004-0608- GW, FWGSCFmw-002-0607- GW and FWGEQUIPRINSE2-0623-GW were qualified as estimated, "UJ".	QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a DDT standard analyzed every 12 hours? Was the DDT %breakdown <15%?	X				QSM Table F-2 >15%=J/R
7. Was an endrin standard analyzed every 12 hours? Was the endrin % breakdown <15%?	X			A PEM was analyzed before and after the samples analyzed on 8/3/15 on instrument A2HP3. The closing endrin % breakdown was above 15% at 18.15%. No qualifiers were applied to the data as a result of the high % breakdown as there were no detected concentrations of endrin, endrin aldehyde or endrin ketone reported from the analytical sequence and the opening PEM passed breakdown requirements. QSM does not require bracketing PEM.	QSM Table F-2 >15%=J/R
8. Initial Calibration					
8a. Does the initial calibration curve consist of 5 concentration levels?	X			A2HP15 on 7/14/15(tox), 7/28/15 A2HP3 on 7/16/15, 7/28/15, 8/3/15	QSM Table F-2 R
8a. Were the %RSDs for each analyte $\leq$ 20%? OR was the average %RSD $\geq$20% with the r^2>0.990?	X				QSM Table F-2 RSD>20% or r<0.99=J/R
9. Was a LOD Level Verification performed once per quarter with all target analytes detected?	X				QSM Table F-2 R
10. Was a MRL Verification performed at the beginning and end of the sequence or every 12 hours with results within limits of 70-130%?	X			A2HP15- 7/28/15 @ 1821, 1843, 2243, 2305 A2HP3- 7/31/15 @ 1451,1514, 1915, 1937 and 8/3/15 @ 2059, 2121, 2204, 2226	QSM Table F-2, G-14 >UL=J; <LL=J/UJ/R

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta / August 21, 2015

SDG: 240-53458
Analysis: SW846 8081A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
11. Was a second source (ICV) verification analyzed after the ICAL? Were results 80-120%?		X		A2HP15 7/14/15 @1632 (Tox), 7/28/15 @1800 A2HP3 7/28/15 @1703, 8/3/15 @ 1551, 2036, The ICV analyzed at 1703 on 7/28/15 (A2HP3) recovered above control limits of 80-120% at 121.8% for alpha-BHC. No qualification of the data was required as only endosulfan I was reported from A2HP3.	QSM Table F-2 >120%=J;<80%=J/UJ
12. Was a CCV run every 12 hours or at the beginning and end of the analytical run with the %D for all target analytes ≤20%?		X		A2HP15 7/28/15 @ 1527 and 2348 (tox),7/29/15 @ 0032, A2HP3 7/31/15 @1405 and 1959 (tox), 1428, 2022.	QSM Table F-2 >120%=J; <80%=J/UJ
13. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-2
14. Were target analytes detected?		X		Checked by ADR.	QSM Table F-2 <5x=B
15. Was a field blank collected and analyzed?	X				
16. Were target analytes detected in the field blank analyses >1/2 the MRL?		X			QSM Table F-2 <5x=B
17. Was an LCS prepared and analyzed with each batch?	X				QSM Table F-2
18. Were the LCS recoveries within limits specified in QSM Table G-14?	X			Checked by ADR.	QSM Table G-14 >UL=J; <LL=J/UJ/R
19. Was a MS/MSD pair prepared with each batch?		X		Matrix spike analysis was not requested on a sample from this sample set.	QSM Table F-2
20. Was the MS/MSD parent a Ravenna sample?			X		
21. Were MS/MSD recoveries and RPD within limits specified in QSM Table G-14?			X		QSM Table F-2 Pj with >UL=J; <LL=J/UJ/R
22. Were surrogate recoveries as specified in QSM table G-3?	X			Checked by ADR.	QSM Table F-2 >LL=J; <LL=UJ/J/R
23. Was a field duplicate analyzed? Were the RPDs ≤50%?			X	Checked by ADR. A field duplicate was submitted for sample FWGLL3mw-244-0594- GW (FWGLL3mw-DUP3-0619- GW).	RPD >50=J parent sample only
24. Were all positive results verified by a second column confirmation? Were the RPD's ≤ 40 for results greater than the LOQ?			X	No detected concentrations were reported that required second column confirmation.	QSM Table F-2 >40 RPD=J

References: DoD Quality Systems Manual (QSM), version 4.1, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ October 16, 2015

SDG: 240-53458
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?	X				QAPP Table *5-1* J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table *5-1*
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Was a LOD Verification performed once per quarter with all target analytes detected?	X				DoD QSM Table F-8
7. Tuning (ICP MS Only)					
7a. Was a tune performed daily prior to calibration	X				DoD QSM Table F-8 R
7b. Mass Calibration <0.1 amu from true value	X				
7c. Resolution <0.9 amu full width at 10 % peak height	X				
7d. RSD <%5 for a minimum of four replicate analyses	X				
8.Calibration	X				
8a. Was the ICAL performed daily with at least	X			ICP(7/27/15, 7/30/15), Hg (7/29/15) and ICPMS-(7/27/15, 7/29/15)	DoD QSM Tables F-8 and F-7
1high standard and a blank for ICP & ICPMS	X				
5 standards and a blank for Hg	X				
8b. Was the correlation coefficient r≥0.995 for Hg?	X				DoD QSM Tables F-8 and F-7 r<0.995=J/R
8c. Was the ICV (second source verification) analyzed after the ICAL with results 90-110% of the true value?	X				DoD QSM Tables F-8 and F-7
8d. Was the ICB analyzed after the ICV with detected results <1/2 the MRL?	X			ICP-The ICB analyzed 7/27/15@ 0924 had lead detected at 2.43 µg/L and potassium at 71.5 µg/L. On 7/30/15, the ICB had potassium detected at 92.2 µg/L. The lead results for samples FWGSCFmw-002-0607-GF, FWGLL3mw-246-0595-GF, FWGSCFmw-004-0608-GF and FWGEQUIPRINSE2-0623-GW were qualified, "U" as the reported lead concentrations were less than 5x contamination. No qualification was made for the potassium contamination as all detected potassium concentrations for the associated field samples were greater than 5x blank contamination.	DoD QSM, Tables F-8 and F-7 < 5x = U

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 24, 2015

SDG: 240-53458
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
				ICPMS- The ICB analyzed 7/27/15 at 0955 had cadmium detected at 0.179 µg/L, and on 7/29/15, the ICB had cadmium detected at 0.162 µg/L. No qualification of the data was required as there were no detected cadmium concentrations reported for the associated field samples.	
Sample Analysis					
9. Was a MRL Level Verification performed at the beginning of the daily sequence and end of the analytical sequence bracketing samples? Were results 70-130%?	X				LS, DoD QSM Table G-18, >130%=J; 70-80%=J/UJ; <70%=J/UJ <65%=R, unless DL check with detected results
10. Were CCVs analyzed every 10 samples and at the end of the analytical sequence with results 90-110% of the true value?	X				DoD QSM, Tables F-8 and F-7 >110%=J, <85%=J/R 90-85%=J/UJ;
11. Were the CCBs run every 10 samples and at the end of the analytical sequence? Were results <1/2 the MRL?		X		ICP The CCBs analyzed 7/27/15 had lead detected at 2.29 µg/L, chromium at 0.822 µg/L, potassium from 77.6 µg/L to 86.9 µg/L, silver at 1.09 µg/L and vanadium at 3.55 µg/L. The CCBs analyzed 7/30/15 had chromium detected at 1.4 µg/L, manganese at 0.522 µg/L, potassium at 98 µg/Land nickel from 0.779 µg/L to 0.861 µg/L. The lead results for samples FWGSCFmw-002-0607-GF, FWGLL3mw-246-0595-GF, FWGSCFmw-004-0608-GF and FWGEQUIPRINSE2-0623-GW; the silver results for sample FWGLL1mw-064c-0581-GF and the chromium results for samples FWGLL1mw-064c-0581-GF, FWGLL2mw-271-0591-GF, FWGLL3mw-246-0595-GF, FWGLL3mw-244-0594-GF, FWGLL2mw-DUP2-0618-GF, FWGLL3mw-DUP3-0619-GF, FWGLL12mw-242c-0600-GF, FWGLL1mw-087c-0586-GF, FWGSCFmw-004-0608-GF, FWGSCFmw-002-0607-GF and FWGLL12mw-247-0602-GF were qualified, "U" as the reported lead , silver and chromium concentrations were less than 5x contamination. No qualification was made for the potassium, manganese, nickel or vanadium contamination as any detected potassium, manganese, nickel or vanadium concentrations for the associated field samples were greater than 5x blank contamination.	DoD QSM Tables F-8 and F-7 <5x = U

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ October 16, 2015

SDG: 240-53458
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
				ICPMS The CCBs analyzed 7/27/15 had cadmium detected from 0.152 µg/L to 0.292 µg/L, antimony from 0.162 µg/L to 0.169 µg/L and beryllium at 0.089 µg/L. The CCBs analyzed 7/29/15 had cadmium detected from 0.180 µg/L to 0.387 µg/L and thallium at 0.082 µg/L. The antimony results for samples FWGLL3mw-246-0595-GF, FWGLL3mw-244-594-GF and FWGLL3mw-DUP3-0619-GF were qualified, "U" as the reported concentrations were less than 5x antimony contamination. No qualification was made for the thallium, beryllium or cadmium contamination as there were no detected thallium, beryllium or cadmium concentrations less than five times blank contamination bracketed by the outlier CCBs.	
12. Was an Interelement Check Standard run at the beginning of the analytical sequence and every 12 hours with the ICS recovery within 80 to 120% of true value for each element of interest (ICP and ICPMS only)?	X				DoD QSM Tables F-8 and F-7 >120%=J; 50-79%=J/UJ; <50%=Pj/R
13. Was a method blank prepared and analyzed with each batch?	X				DoD QSM Tables F-8 and F-7
14. Were target analytes detected in the method blank?	X			Checked by ADR. ICP- The method blank analyzed 7/27/15 had lead detected at 2.11 µg/L. The lead results for samples FWGSCFmw-002-0607-GF, FWGLL3mw-246-0595-GF, FWGSCFmw-004-0608-GF and FWGEQUIPRINSE2-0623-GW were qualified, "B" as the detected concentrations were less than 5x method blank contamination.	DoD QSM Tables F-8 and F-7, <5x = B
15. Was a field blank collected and analyzed?	X				
16. Were target analytes reported in the field blank analyses?	X			ADR checked section. FWGEQUIPRINSE2-0623-GW had lead detected at 2 µg/L. The lead results for samples FWGSCFmw-002-0607-GF, FWGLL3mw-246-0595-GF and FWGSCFmw-004-0608-GF were qualified, "B" as the detected concentrations were less than 5x equipment rinse contamination.	DoD QSM Tables F-8 and F-7 <5x = B
17. Was a LCS prepared and analyzed with each batch?	X				DoD QSM, Tables F-8 and F-7
18. Were the LCS recoveries within limits specified in LCG Appendix C?	X			Checked by ADR.	DoD QSM Tables G-18, F-8 and F-7 >120%=J;70-79%=J/UJ; <70%=J/R

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 24, 2015

SDG: 240-53458
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
19. Was a matrix spike (MS) and lab duplicate sample prepared with each batch?	X				DoD QSM Tables F-8 and F-7
20. Was the MS and Lab Duplicate parent a Ravenna sample?	X			A matrix spike analysis and laboratory duplicate analysis were performed on samples FWSCFmw-002-0607-GF and FWGLL3mw-246-0595-GF.	
21. Were the MS recoveries within 80-120%?	X			Checked by ADR.	DoD QSM Tables G-18, F-8 and F-7, >120%=J;70-79%=J/UJ; <70%=J/R, All samples in batch
22. Was the lab sample duplicate RPD ≤ 20%, for sample results detected above the LOQ?	X			Checked by ADR. The lab duplicate RPDs were above 20% for chromium at 67% and at 27% for antimony in sample FWGLL3mw-246-0595-GF. Sample FWGSCFmw-002-0607-GF had a lab duplicate RPD above control limits of 20% for chromium at 39%. The lab duplicate RPD outliers did not result in any qualification of the data as the chromium and antimony results for sample FWGLL3mw-246-0595-GF and the chromium result for sample FWGSCFmw-002-0607-GF were e less than the LOQ.	DoD QSM, Tables F-8 and F-7 >20% = J, All samples in batch
23. Was a serial dilution performed, with the fivefold dilution within ± 10% of the original result?	X				DoD QSM, Tables F-8 and F-7 >20% = J. Only evaluate results above the LOQ. Qualify all samples in batch
24. Was a Post Digestion Spike analyzed as needed? Were results within 75-125%?		X		A post spike was analyzed on samples FWGLL3mw-246-0595-GF and FWGSCFmw-002-0607-GF. Silver recovered below control limits of 75-125% for both post spikes at 74%. The silver results for samples FWGLL1mw-064c-0581-GF, FWGLL2mw-271-0591-GF, FWGLL3mw-246-0595-GF, FWGLL3mw-244-0594-GF, FWGLL2mw-DUP2-0618-GF, FWGLL3mw-DUP3-0619-GF, FWGLL12mw-242c-0600-GF, FWGLL1mw-087c-0586-GF, FWGLL1mw-088c-0587-GF, FWGSCFmw-004-0608-GF, FWGSCFmw-002-0607-GF and FWGLL12mw-247-0602-GF, FWGEQUIPRINSE2-0623-GW and FWGLL1mw-086-0585-GF were qualified as estimated, "UJ".	LCG Table 7, >125%=J; 30-75%=J/UJ; <30%=R
25. Was a field duplicate analyzed? Were the RPDs ± 50% for sample results detected above the LOQ?	X				>30% = J. Qualify parent sample only and only evaluate results above the LOQ

Ravenna, OH Data Review Checklist

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Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ October 16, 2015

SDG: 240-53458
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
26. Were internal standards added to all ICPMS samples with intensity within 30-120% of the intensity of the ICAL internal standard?	X				DoD QSM Table F-8. >120%=J/R, <20%=J

References:

- *DoD Quality Systems Manual (QSM), version 4.2, October 2010*
- *Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007*
- *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012*
- *Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011*

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/August 25, 2015

SDG: 240-53458
Analysis: SW846 8330 Explosives

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a LOD Verification analyzed once per quarter with all target analytes detected?	X				DoD QSM Table F-3 R
7.Calibration					
7a. Does the initial calibration curve consist of 5 concentration levels? (6 stds for quadratic curves)	X			LC10 4/28/15 LC9 5/4/15	DoD QSM Table F-3 R
7b. Did all target analytes using avg response have an RSD $\leq$ 15% ?	X				
7c. If a linear regression curve was used, was the correlation coefficient r≥0.995? (0.990 for non-linear).			X		
8. Was a second source verification (ICV) analyzed after the ICAL and all analytes 80-120%?	X			LC10 on 4/28/15 at 2052 LC9 5/5/15 at 0224	DoD QSM Table F-3 >120%=J; <80%= J/UJ;
Sample Analysis					
9. Was a CCV run at the beginning of the analytical sequence, every 10 samples and at the end of the analytical run with targets and surrogates recovering 80-120% of the true value?	X			LC10- 7/27/15 @ 2227 and 7/28/15 @ 0710, 1342, 1931 and 8/5/15 @1508, 8/6/15 @0034 LC9-8/3/15 @0114, 1541	DoD QSM Table F-3 J/UJ
10. Was a MRL Level verification run at the beginning and end of every daily? Was the %D< 30%?		X		LC10- 7/27/15 @ 2310 and 7/28/15 @ 0753, 1426, 2014 and 8/5/15 @1508, 8/6/15 @0034 LC9-8/3/15 @0328, 1648 The MRL analyzed 8/5/15 @ 1551 on LC10 recovered above control limits of 70-130% for PETN at 141%. No qualification of the data was required as there were no detected PETN concentrations reported for the associated field samples.	LCG Table 5 >30%=J
11. Was a method blank prepared and analyzed with each batch?	X				DoD QSM Table F-3
12. Were target analytes detected in the method blank?		X		Checked by ADR.	DoD QSM Table F-3 <5x = B

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/August 25, 2015

SDG: 240-53458
Analysis: SW846 8330 Explosives

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
13. Was a field blank collected and analyzed?	X				
14. Were target analytes detected in the field blank analyses?		X		Checked by ADR.	DoD QSM Table F-3 <5x=B
15. Was a field duplicate analyzed? Were the RPDs ≤30%?	X			Checked by ADR. Field duplicates were collected and submitted for samples FWGLL2mw-271-0591- GW and FWGLL3mw-244-0594- GW.	RPD >30=J
16. Were all positive results confirmed with a second column confirmation? Were the RPDs ≤ 40%?	X				DoD QSM Table F-3 RPD>40%=J Only detected results above the LOQ were evaluated
17. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-3
18. Were the LCS recoveries within limits specified in table G-12 of the DoD QSM?	X			Checked by ADR.	DoD QSM Table F-3 <UL=J;30-LL=J/UJ; <30%=J/R
19.Was a MS/MSD or MS and sample duplicate prepared with each batch?	X			FWGSCFmw-002-0607-GW	DoD QSM Table F-3
20. Were MS/MSD recoveries within limits specified in table G-12 of the DoD QSM with an RPD ≤30%?	X				DoD QSM Table F-3 Pj
21. Were surrogate recoveries within laboratory limits (79-111%)?	X			Checked by ADR.	QSM Tables F-2 >UL=J; <LL =J/UJ

References: DoD Quality Systems Manual (QSM), version 4.2, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/August 25, 2015

SDG: 240-53458
Analysis: SW846 8330M Nitroguanidine

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a LOD Verification analyzed once per quarter with all target analytes detected?	X				DoD QSM Table F-3 R
7.Calibration					
7a. Does the initial calibration curve consist of 5 concentration levels? (6 stds for quadratic curves)	X			PDA-1/ Hydro RP80A 11/19/14 (confirmation) PDA-1/ Luna NH2 6/7/15	DoD QSM Table F-3 R
7b. Did all target analytes using avg response have an RSD ≤ 15% ?	X				
7c. If a linear regression curve was used, was the correlation coefficient r≥0.995? (0.990 for Quadratic curve).			X		
7d. Did reanalysis of the low level standard after calibration, recover within 15%?	X			Hydro-11/19/14 @1911 Luna- 6/17/15@ 1206	
8. Was a second source verification (ICV) analyzed after the ICAL and all analytes 80-120%?	X			Hydro-11/19/14 @1851 Luna- 6/17/15@ 1206	DoD QSM Table F-3 >120%=J; <80%= J/UJ;
Sample Analysis					
9. Was a CCV run at the beginning of the analytical sequence, every 10 samples and at the end of the analytical run with targets and surrogates recovering 80-120% of the true value?	X			Luna- 7/30/15@ 1634, 2024, 7/31/15 @ 0015 Hydro 8/4/15 @1053, 1235	DoD QSM Table F-3 J/UJ
10. Was a MRL Level verification run at the beginning and end of every daily sequence or every 12 hours? Was the %D < 30%?	X			Luna- 7/30/15@ 1243, 1651, 2042, 7/31/15 @ 0033 Hydro 8/4/15 @1113, 1255	LCG Table 5 >30%=J
11. Was a method blank prepared and analyzed with each batch?	X				DoD QSM Table F-3

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/August 25, 2015

SDG: 240-53458
Analysis: SW846 8330M Nitroguanidine

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
12. Were target analytes detected in the method blank?		X		Checked by ADR.	DoD QSM Table F-3 <5x = B
13. Was a field blank collected and analyzed?	X				
14. Were target analytes detected in the field blank analyses?		X		Checked by ADR.	DoD QSM Table F-3 <5x=B
15. Was a field duplicate analyzed? Were the RPDs ≤30%?	X				RPD >30=J
16. Were all positive results confirmed with a second column confirmation? Were the RPDs ≤ 40%?	X				DoD QSM Table F-3 RPD>40%=J
17. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-3
18. Were the LCS recoveries within laboratory limits of 79%-119%?	X			Checked by ADR.	DoD QSM Table F-3 <UL=J; 30-LL=J/UJ; <30%=J/R
19. Was a MS/MSD or MS and sample duplicate prepared with each batch?	X			FWGSCFmw-002-0607-GW	DoD QSM Table F-3
20. Were MS/MSD recoveries within laboratory limits of 40%-150% with an RPD ≤20%?	X				DoD QSM Table F-3 Pj

References:
DoD Quality Systems Manual (QSM), version 4.2, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 25, 2015

SDG: 240-53458
Analysis: TAL SOP WS-WC-0050

Review Questions:	Yes	No	N/A	Comments	Qualifier
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Does the initial calibration curve consist of 5 concentration levels with the low standard near but > MDL?	X				SOP Section 10.2 R
7. Was the correlation coefficient >0.995?	X				SOP Section 10.2
8. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours? Was the %D <30%?	X			8/7/15 @ 1657, 1727, 1751 and 8/11/15 @ 1242, 1312, 1334	>30%=J
9. Was a second source verification (ICV) analyzed after the ICAL? Were all analytes 90-110%?	X			8/7/15 @ 1653 and 8/11/15 @ 1238	>110%=J; 90-85%=J/UJ; <85%=J/R
10. Was the ICB analyzed after the ICV with results <1/2 the MRL?	X				STL SOP Section 9.8, LCG ,< 5x = U
11. Was a CCV run every 10 samples and at the end of the analytical run?	X			8/7/15 @ 1729, 1753 and 8/11/15 @ 1314, 1336	STL SOP Section 10.4
12. Was the ICV and CCV a mid-level standard from the initial calibration curve?	X				STL SOP Section 10.3.1
13. Were all CCV calibration analytes within 90-110%?	X				>110%=J; 85-90%=J/UJ; <85%=J/R
14. Was the ICB analyzed after the ICV with results <1/2 the MRL?	X				QSM, < 5x = U
15. Was a method blank prepared and analyzed with each batch?	X				
16. Were target analytes detected in the method blank?		X		ADR checked section.	LCG, *<5x=B*
17. Was a field blank collected and analyzed?	X				

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 25, 2015

SDG: 240-53458
Analysis: TAL SOP WS-WC-0050

Review Questions:	Yes	No	N/A	Comments	Qualifier
18. Were target analytes detected in the field blank analyses?		X			<5x=B
19. Was a field duplicate analyzed? Were the RPDs ≤30%?	X				QAPP Table 3-2 RPD > 30% = J
20. Was an LCS prepared and analyzed with each batch? Was the LCS recovery within lab's in-house limits% (26-144%)?	X				>UL%=J; 50-LL%=J/UJ; <50%=J/R
21. Was a MS/MSD pair prepared with each batch?	X				
22. Was the MS/MSD parent a Ravenna sample?	X			FWGSCFmw-002-0607-GW	
23. Were MS/MSD recoveries 26-144% and RPD ≤20?	X			Checked by ADR.	Method EPA 353.2 Section 9.4.2 >UL%=J;<LL%=J/UJ; RPD>20%=J/UJ

References:

SOP SAC-WC-0050 "Preparation and Analysis of Nitrocellulose in Aqueous and Soil/Sediment Samples by Colorimetric Autoanalyzer", Jan 2007, rev. 2.0

DoD Quality Systems Manual (QSM)

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/August 25, 2015

SDG: 240-53458
Analysis: EPA 353.2

Review Questions:	Yes	No	N/A	Comments	Qual/Crtieria
1. Did Chain-of-Custody information agree with laboratory report?		X		Sample FWGLL12mw-247-0602-GW was listed on the COC as requested for nitrate/nitrite analysis, but was not analyzed, per the direction of EQM.	
2. Were samples preserved properly and received in good condition?	X			Sample FWGLL12mw-247-0602-GW was resampled and resubmitted on 7/22/15 due to incorrect preservation on 7/21/15.	*QAPP Table 5-1, NELAC*
3. Were holding times met?	X				QAPP Table *5-1* J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table *5-1*
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Was the Linear Calibration Range verified using 3 standards and 1 blank?	X				Method EPA 353.2 Section 9.2.2, *J*
7. Were the calibration standards verified by preparation and analysis of a Quality Control Sample? Were results within 10% of the stated values?	X				Method EPA 353.2 Section 9.2.3 Pj
8. Was an Instrument Performance Check Solution (CCV) analyzed immediately following daily calibration, after every 10th sample, and at the end of the analytical sequence?	X				Method EPA 353.2 Section 9.3.4
9. Was the CCV a mid-level standard from the initial calibration curve, with recovery 90-110%?	X				Method EPA 353.2 Section 9.3.4 >110%=J; <85%=J/R 85-90%=J/UJ;
10. Was an MRL check standard analyzed at the beginning and end of each analytical run, with recoveries 70-130%	X				LCG >130%=J; <70%=J/UJ;
11.Was a method blank and calibration blanks prepared and analyzed with each batch?	X				Method EPA 353.2 Section 9.3.1, 9.3.4
12. Were target analytes detected in the method blank or calibration blank >1/2 the MRL?	X			ADR checked section; The method blank had nitrate/nitrite detected at 0.021 mg/L. The nitrate/nitrite result for samples FWGEQUIPRINSE2-0623-GW and FWGLL12mw-242c-0600-GW were qualified, "B, as the detected results were <5x method blank contamination. The ICB and CCBs analyzed 8/7/14 from 1455 to 1627 had nitrate/nitrite	<5x = B(method blank) U (calibration blank)

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/August 25, 2015

SDG: 240-53458
Analysis: EPA 353.2

Review Questions:	Yes	No	N/A	Comments	Qual/Crtieria
				detected from 0.02mg/L to 0.022 mg/L. The nitrate/nitrite results for samples FWGEQUIPRINSE2-0623-GW and FWGLL12mw-242c-0600-GW were qualified, "U", as the detected results were less than five times instrument blank contamination.	
13. Was a field blank (trip or equipment) collected and analyzed?	X				
14. Were target analytes detected in the field blank analyses (trip or equipment) >1/2 the MRL?	X			ADR checked section; FWGEQUIPRINSE2-0623-GW had nitrate/nitrite detected at 0.029mg/L. The nitrate/nitrite result for sample FWGLL12mw-242-0600-GW was qualified, "B, as the detected result was <5x rinse blank contamination.	<5x=B
15. Was a field duplicate analyzed? Were the RPDs acceptable?	X				
16. Was an LCS prepared and analyzed with each batch? Was the LCS recovery within 90-110%?	X				Method EPA 353.2 Section 9.3.3 J/UJ; <50%= R
17. Was a MS/MSD pair prepared with each batch?	X				Method EPA 353.2 Section 9.4.1
18. Was the MS/MSD parent a Ravenna sample?	X			FWGLL12mw-185c-0598-GW	
19. Were MS/MSD recoveries and RPD within acceptance criteria?	X			Checked by ADR.	Method EPA 353.2 Section 9.4.2 Pj

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angye Dragotta/August 25, 2015

SDG: 240-53458
Analysis: SW846 6860/ Perchlorate

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				
3. Were holding times met (28 days)?	X				UJ/J/R
4. Were sample storage requirements met?	X				
5. Was the DOD specified PQLs of 0.5ug/L achieved?	X				
6. Were all QAPP-specified target analytes reported?	X				
7. Did the initial calibration curve consist of 5 concentration levels?	X			LC_LCMS2 8/5/15, 8/10/15 Standards(ng/L): 20, 50, 100, 200, 500, 1000	R
8. Was the correlation coefficient r≥0.995?	X				R<0.995 =-J/R
9. Was a second source verification (SSCV) analyzed after the ICAL? Were results 90-110%?	X				LCG Table 1 >120%=J; 60-80%=J/UJ; <60%=J/R
10. Was an ICV analyzed after the ICAL and daily before sample analysis?	X			8/5/15 at 1345, 8/10/15 at 1359	R
11. Was the %Difference ≤ 15%?	X				R
12. Was a CCV analyzed after every 10 samples?	X			8/5/15 @1628, 2054, 8/10/15 @ 1807	
13. Was the %Difference ≤ 15%?	X				%D > 15% = UJ/J
14. Was a MRL Verification analyzed bracketing analysis?	X			8/5/15 @1649, 2115 8/10/15 @ 1828	
15. Were the MRL recoveries 70-130%?	X				R
16. Was an Interference Check Sample extracted and analyzed with every batch?	X				
17.Was the ICS recovery within 70 to 130%?	X				>120%=J; <50%=Pj/R 50-79%=J/UJ;
18. Was a method blank prepared and analyzed with each batch?	X				
19. Were target analytes detected in the method blank at >1/2 the MRL?		X		Checked by ADR.	<5X =B

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angye Dragotta/August 25, 2015

SDG: 240-53458
Analysis: SW846 6860/ Perchlorate

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
20. Was a field blank (equipment) collected and analyzed?	X			FWGEQUIPRINSE2-0623-GW	
21. Were target analytes detected in the field blank analyses?		X		Checked by ADR.	<5X =B
22. Were target analytes detected in the calibration blank analyses?	X			The bracketing CCBs analyzed 8/5/15 had perchlorate detected at 0.009 µg/L. The closing CCB from 8/10/15 had perchlorate detected at 0.0201 µg/L. No qualification of the data was required as there were no detected perchlorate concentrations reported for the associated field samples less than five times contamination.	<5X =U
23. Was a LCS prepared and analyzed with each batch, with recoveries within 85-115%?	X			Checked by ADR.	>115%=J; 50%-85%=J/UJ; <50%=J/R
24. Was a MS/MSD prepared with each batch?	X			FWGLL3mw-246-0595-GF	
25. Were MS/MSD recoveries 75-125% and RPD values ≤20%?	X				>125% = J 30% - 75% = J/UJ <30% = J/R
26. Was a Laboratory Reagent Blank (LRB) analyzed prior to analysis and after high concentration samples?			X	No data provided.	
27. Were target analytes detected in the LRB?		X			<5X =B
28. Were the internal standards added to every sample?	X				
29. Did the IS recover within 50% to150% of the ICAL mid-point standard?	X				R
30. Was a field duplicate analyzed? Were the RPDs within ±30%?	X				RPD >30=J
31. Was the Isotope ratio between 101 and 85 monitored and fell between 2.3 and 3.8?	X				J/UJ
32. Were reported sample concentrations within calibration range?	X				

References:
DOD Perchlorate Handbook, March 2006; Section G "Selecting Analytical Methods and Services"
Additional Comments:

Attachment 2

Data Qualifier Summary

Lab Reporting Batch ID: 240-53458-1 **Laboratory: TESTAME**

EDD Filename: Prep240-53458-1 **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: GENCHEM

Method: 353.2 **Matrix: AQ**

Sample ID: FWGEQUIPRINSE2-0623-GW **Collected:** 7/21/2015 4:30:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate-Nitrite	0.029	J	0.0031	MDL	0.050	LOQ	mg/L	U	Mb, Cb

Sample ID: FWGLL12mw-242C-0600-GW **Collected:** 7/21/2015 3:19:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate-Nitrite	0.028	J	0.0031	MDL	0.050	LOQ	mg/L	U	Mb, Eb, Cb

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: FWGEQUIPRINSE2-0623-GW **Collected:** 7/21/2015 4:30:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	2.0	J	1.9	MDL	10	LOQ	ug/L	U	Mb, Cb
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: FWGLL12mw-242C-0600-GF **Collected:** 7/21/2015 3:19:00 PM **Analysis Type:** RE2/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	24	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.9	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
COBALT	0.65	J	0.56	MDL	7.0	LOQ	ug/L	J	RI
POTASSIUM	2000	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: FWGLL12mw-242C-0600-GF **Collected:** 7/21/2015 3:19:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	38	J	0.76	MDL	40	LOQ	ug/L	J	RI

Sample ID: FWGLL12mw-247-0602-GF **Collected:** 7/21/2015 1:52:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	7.1	J	2.9	MDL	10	LOQ	ug/L	J	RI
BARIUM	22	J	1.0	MDL	200	LOQ	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 30174.0016.0010.1 - USACE Project: USACE Project: RVAAP (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53458-1 **Laboratory: TESTAME**

EDD Filename: Prep240-53458-1 **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: METALS

Method: 6010B **Matrix:** AQ

Sample ID: FWGLL12mw-247-0602-GF **Collected:** 7/21/2015 1:52:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	1.1	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
COBALT	0.63	J	0.56	MDL	7.0	LOQ	ug/L	J	RI
POTASSIUM	2300	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: FWGLL1mw-064C-0581-GF **Collected:** 7/20/2015 5:15:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	3.9	J	2.9	MDL	10	LOQ	ug/L	J	RI
BARIUM	42	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	0.87	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
POTASSIUM	770	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	0.96	J	0.92	MDL	7.0	LOQ	ug/L	U	Cb

Sample ID: FWGLL1mw-086-0585-GF **Collected:** 7/21/2015 2:58:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	52	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	0.60	J	0.55	MDL	7.0	LOQ	ug/L	J	RI
NICKEL	1.7	J	0.76	MDL	40	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: FWGLL1mw-087C-0586-GF **Collected:** 7/21/2015 10:22:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	24	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	0.69	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
COBALT	0.69	J	0.56	MDL	7.0	LOQ	ug/L	J	RI
NICKEL	0.94	J	0.76	MDL	40	LOQ	ug/L	J	RI
POTASSIUM	570	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

* denotes a non-reportable result

Project Name and Number: 30174.0016.0010.1 - USACE Project: USACE Project: RVAAP (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53458-1

Laboratory: TESTAME

EDD Filename: Prep240-53458-1

eQAPP Name: RVAAP 66-rev March 2015

Method Category: METALS

Method: 6010B **Matrix:** AQ

Sample ID: FWGLL1mw-088-0587-GF **Collected:** 7/21/2015 11:24:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	41	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.3	J	0.55	MDL	7.0	LOQ	ug/L	J	RI
COBALT	0.58	J	0.56	MDL	7.0	LOQ	ug/L	J	RI
POTASSIUM	2700	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: FWGLL2mw-271-0591-GF **Collected:** 7/21/2015 12:31:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	5.4	J	2.9	MDL	10	LOQ	ug/L	J	RI
BARIUM	3.2	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.1	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
POTASSIUM	1200	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: FWGLL2mw-DUP2-0618-GF **Collected:** 7/21/2015 1:05:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	4.7	J	2.9	MDL	10	LOQ	ug/L	J	RI
BARIUM	3.3	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	2.5	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
POTASSIUM	1200	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: FWGLL3mw-244-0594-GF **Collected:** 7/21/2015 10:26:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	15	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	0.91	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
MANGANESE	0.66	J	0.46	MDL	15	LOQ	ug/L	J	RI
NICKEL	0.76	J	0.76	MDL	40	LOQ	ug/L	J	RI
POTASSIUM	1400	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

* denotes a non-reportable result

Project Name and Number: 30174.0016.0010.1 - USACE Project: USACE Project: RVAAP (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53458-1

Laboratory: TESTAME

EDD Filename: Prep240-53458-1

eQAPP Name: RVAAP 66-rev March 2015

Method Category: METALS

Method: 6010B **Matrix:** AQ

Sample ID: FWGLL3mw-246-0595-GF **Collected:** 7/21/2015 10:01:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	15	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.4	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
LEAD	2.2	J	1.9	MDL	10	LOQ	ug/L	U	Mb, Eb, Cb
MANGANESE	2.7	J	0.46	MDL	15	LOQ	ug/L	J	RI
POTASSIUM	1400	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U J	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: FWGLL3mw-DUP3-0619-GF **Collected:** 7/21/2015 11:26:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	15	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	0.79	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
MANGANESE	1.2	J	0.46	MDL	15	LOQ	ug/L	J	RI
POTASSIUM	1400	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: FWGSCFmw-002-0607-GF **Collected:** 7/21/2015 1:22:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	36	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.3	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
LEAD	2.5	J	1.9	MDL	10	LOQ	ug/L	U	Mb, Eb, Cb
POTASSIUM	2300	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U J	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: FWGSCFmw-004-0608-GF **Collected:** 7/21/2015 10:47:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	69	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.5	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
LEAD	2.7	J	1.9	MDL	10	LOQ	ug/L	U	Mb, Eb, Cb
POTASSIUM	2800	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-53458-1 **Laboratory: TESTAME**

EDD Filename: Prep240-53458-1 **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: FWGLL1mw-064C-0581-GF **Collected:** 7/20/2015 5:15:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	20	J	20	MDL	60	LOQ	ug/L	J	RI

Sample ID: FWGLL3mw-244-0594-GF **Collected:** 7/21/2015 10:26:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.41	J	0.33	MDL	2.0	LOQ	ug/L	U	Cb

Sample ID: FWGLL3mw-246-0595-GF **Collected:** 7/21/2015 10:01:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.49	J	0.33	MDL	2.0	LOQ	ug/L	U	Cb

Sample ID: FWGLL3mw-DUP3-0619-GF **Collected:** 7/21/2015 11:26:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.53	J	0.33	MDL	2.0	LOQ	ug/L	U	Cb

Method Category: SVOA

Method: 8081A **Matrix: AQ**

Sample ID: FWGEQUIPRINSE2-0623-GW **Collected:** 7/21/2015 4:30:00 PM **Analysis Type:** RE **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ENDOSULFAN I	0.049	U H	0.016	MDL	0.049	LOQ	ug/L	UJ	StoE

Sample ID: FWGLL1mw-086-0585-GW **Collected:** 7/21/2015 2:58:00 PM **Analysis Type:** RE **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ENDOSULFAN I	0.052	U H	0.017	MDL	0.052	LOQ	ug/L	UJ	StoE

Sample ID: FWGLL1mw-088-0587-GW **Collected:** 7/21/2015 11:24:00 AM **Analysis Type:** RE **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ENDOSULFAN I	0.051	U H	0.016	MDL	0.051	LOQ	ug/L	UJ	StoE

* denotes a non-reportable result

Project Name and Number: 30174.0016.0010.1 - USACE Project: USACE Project: RVAAP (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53458-1 **Laboratory: TESTAME**

EDD Filename: Prep240-53458-1 **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: SVOA

Method: 8081A **Matrix: AQ**

Sample ID: FWGLL3mw-244-0594-GW **Collected:** 7/21/2015 10:26:00 AM **Analysis Type:** RE **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ENDOSULFAN I	0.048	U H	0.015	MDL	0.048	LOQ	ug/L	UJ	StoE

Sample ID: FWGLL3mw-DUP3-0619-GW **Collected:** 7/21/2015 11:26:00 AM **Analysis Type:** RE **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ENDOSULFAN I	0.048	U H	0.015	MDL	0.048	LOQ	ug/L	UJ	StoE

Sample ID: FWGSCFmw-002-0607-GW **Collected:** 7/21/2015 1:22:00 PM **Analysis Type:** RE **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ENDOSULFAN I	0.051	U H	0.016	MDL	0.051	LOQ	ug/L	UJ	StoE

Sample ID: FWGSCFmw-004-0608-GW **Collected:** 7/21/2015 10:47:00 AM **Analysis Type:** RE **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ENDOSULFAN I	0.048	U H	0.015	MDL	0.048	LOQ	ug/L	UJ	StoE

Method Category: SVOA

Method: 8330 **Matrix: AQ**

Sample ID: FWGLL3mw-244-0594-GW **Collected:** 7/21/2015 10:26:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.064	J M	0.037	MDL	0.15	LOQ	ug/L	J	RI

Sample ID: FWGLL3mw-246-0595-GW **Collected:** 7/21/2015 10:01:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.045	J M	0.037	MDL	0.15	LOQ	ug/L	J	RI

Sample ID: FWGLL3mw-DUP3-0619-GW **Collected:** 7/21/2015 11:26:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.055	J M	0.037	MDL	0.15	LOQ	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 30174.0016.0010.1 - USACE Project: USACE Project: RVAAP (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53458-1 **Laboratory: TESTAME**

EDD Filename: Prep240-53458-1 **eQAPP Name: RVAAP 66-rev March 2015**

* denotes a non-reportable result

Project Name and Number: 30174.0016.0010.1 - USACE Project: USACE Project: RVAAP (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53458-1

EDD Filename: Prep240-53458-1

Laboratory: TESTAME

eQAPP Name: RVAAP 66-rev March 2015

Reason Code Legend

Reason Code	*Description*
Cb	Calibration Blank Contamination
Eb	Equipment Blank Contamination
Lcs	Laboratory Control Spike Lower Estimation
Ld	Laboratory Duplicate Precision
Mb	Method Blank Contamination
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value
StoE	Sampling to Extraction Estimation

* denotes a non-reportable result

Data Review Summary

Lab Reporting Batch ID: 240-53458-1
EDD Filename: Prep240-53458-1

Laboratory: TESTAME
eQAPP Name: RVAAP 66-rev March 2015

Validation Area	*Note*
Technical Holding Times	SR
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	A
Laboratory Duplicates	SR
Laboratory Replicates	N
Laboratory Control Samples	SR
Compound Quantitation	SR
Field Duplicates	A
Field Triplicates	N
Field Blanks	SR

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Reporting Limit Outliers

Lab Reporting Batch ID: 240-53458-1 **Laboratory: TESTAME**

EDD Filename: Prep240-53458-1 **eQAPP Name: RVAAP 66-rev March 2015**

Method: 353.2

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGEQUIPRINSE2-0623-GW	Nitrate-Nitrite	J	0.029	0.050	LOQ	mg/L	J (all detects)
FWGLL12mw-242C-0600-GW	Nitrate-Nitrite	J	0.028	0.050	LOQ	mg/L	J (all detects)

Method: 6010B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGEQUIPRINSE2-0623-GW	LEAD	J	2.0	10	LOQ	ug/L	J (all detects)
FWGLL12mw-242C-0600-GF	BARIUM	J	24	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	1.9	7.0	LOQ	ug/L	
	COBALT	J	0.65	7.0	LOQ	ug/L	
	NICKEL	J	38	40	LOQ	ug/L	
	POTASSIUM	J	2000	5000	LOQ	ug/L	
FWGLL12mw-247-0602-GF	ARSENIC	J	7.1	10	LOQ	ug/L	J (all detects)
	BARIUM	J	22	200	LOQ	ug/L	
	CHROMIUM	J	1.1	7.0	LOQ	ug/L	
	COBALT	J	0.63	7.0	LOQ	ug/L	
	POTASSIUM	J	2300	5000	LOQ	ug/L	
FWGLL1mw-064C-0581-GF	ARSENIC	J	3.9	10	LOQ	ug/L	J (all detects)
	BARIUM	J	42	200	LOQ	ug/L	
	CHROMIUM	J	0.87	7.0	LOQ	ug/L	
	POTASSIUM	J	770	5000	LOQ	ug/L	
	SILVER	J	0.96	7.0	LOQ	ug/L	
FWGLL1mw-086-0585-GF	BARIUM	J	52	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	0.60	7.0	LOQ	ug/L	
	NICKEL	J	1.7	40	LOQ	ug/L	
FWGLL1mw-087C-0586-GF	BARIUM	J	24	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	0.69	7.0	LOQ	ug/L	
	COBALT	J	0.69	7.0	LOQ	ug/L	
	NICKEL	J	0.94	40	LOQ	ug/L	
	POTASSIUM	J	570	5000	LOQ	ug/L	
FWGLL1mw-088-0587-GF	BARIUM	J	41	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	1.3	7.0	LOQ	ug/L	
	COBALT	J	0.58	7.0	LOQ	ug/L	
	POTASSIUM	J	2700	5000	LOQ	ug/L	
FWGLL2mw-271-0591-GF	ARSENIC	J	5.4	10	LOQ	ug/L	J (all detects)
	BARIUM	J	3.2	200	LOQ	ug/L	
	CHROMIUM	J	1.1	7.0	LOQ	ug/L	
	POTASSIUM	J	1200	5000	LOQ	ug/L	
FWGLL2mw-DUP2-0618-GF	ARSENIC	J	4.7	10	LOQ	ug/L	J (all detects)
	BARIUM	J	3.3	200	LOQ	ug/L	
	CHROMIUM	J	2.5	7.0	LOQ	ug/L	
	POTASSIUM	J	1200	5000	LOQ	ug/L	

Reporting Limit Outliers

Lab Reporting Batch ID: 240-53458-1

Laboratory: TESTAME

EDD Filename: Prep240-53458-1

eQAPP Name: RVAAP 66-rev March 2015

Method: 6010B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGLL3mw-244-0594-GF	BARIUM	J	15	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	0.91	7.0	LOQ	ug/L	
	MANGANESE	J	0.66	15	LOQ	ug/L	
	NICKEL	J	0.76	40	LOQ	ug/L	
	POTASSIUM	J	1400	5000	LOQ	ug/L	
FWGLL3mw-246-0595-GF	BARIUM	J	15	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	1.4	7.0	LOQ	ug/L	
	LEAD	J	2.2	10	LOQ	ug/L	
	MANGANESE	J	2.7	15	LOQ	ug/L	
	POTASSIUM	J	1400	5000	LOQ	ug/L	
FWGLL3mw-DUP3-0619-GF	BARIUM	J	15	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	0.79	7.0	LOQ	ug/L	
	MANGANESE	J	1.2	15	LOQ	ug/L	
	POTASSIUM	J	1400	5000	LOQ	ug/L	
FWGSCFmw-002-0607-GF	BARIUM	J	36	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	1.3	7.0	LOQ	ug/L	
	LEAD	J	2.5	10	LOQ	ug/L	
	POTASSIUM	J	2300	5000	LOQ	ug/L	
FWGSCFmw-004-0608-GF	BARIUM	J	69	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	1.5	7.0	LOQ	ug/L	
	LEAD	J	2.7	10	LOQ	ug/L	
	POTASSIUM	J	2800	5000	LOQ	ug/L	

Method: 6020

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGLL1mw-064C-0581-GF	ALUMINUM	J	20	60	LOQ	ug/L	J (all detects)
FWGLL3mw-244-0594-GF	ANTIMONY	J	0.41	2.0	LOQ	ug/L	J (all detects)
FWGLL3mw-246-0595-GF	ANTIMONY	J	0.49	2.0	LOQ	ug/L	J (all detects)
FWGLL3mw-DUP3-0619-GF	ANTIMONY	J	0.53	2.0	LOQ	ug/L	J (all detects)

Method: 8330

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGLL3mw-244-0594-GW	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	J M	0.064	0.15	LOQ	ug/L	J (all detects)
FWGLL3mw-246-0595-GW	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	J M	0.045	0.15	LOQ	ug/L	J (all detects)
FWGLL3mw-DUP3-0619-GW	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	J M	0.055	0.15	LOQ	ug/L	J (all detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 240-53458-1 **Laboratory: TESTAME**

EDD Filename: Prep240-53458-1 **eQAPP Name: RVAAP 66-rev March 2015**

Method: **353.2**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 320-82216/15	8/7/2015 3:05:00 PM	Nitrate-Nitrite	0.0210 mg/L	FWGEQUIPRINSE2-0623-GW FWGLL12mw-185C-0598-GW FWGLL12mw-242C-0600-GW

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FWGEQUIPRINSE2-0623-GW(RES/TOT)	Nitrate-Nitrite	0.029 mg/L	0.029U mg/L
FWGLL12mw-242C-0600-GW(RES/TOT)	Nitrate-Nitrite	0.028 mg/L	0.028U mg/L

Method: **6010B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 240-190122/1-A	7/27/2015 12:04:00 PM	LEAD	2.11 ug/L	FWGEQUIPRINSE2-0623-GW FWGLL12mw-185C-0598-GF FWGLL12mw-242C-0600-GF FWGLL12mw-247-0602-GF FWGLL1mw-064C-0581-GF FWGLL1mw-086-0585-GF FWGLL1mw-087C-0586-GF FWGLL1mw-088-0587-GF FWGLL2mw-271-0591-GF FWGLL2mw-DUP2-0618-GF FWGLL3mw-244-0594-GF FWGLL3mw-246-0595-GF FWGLL3mw-DUP3-0619-GF FWGSCFmw-002-0607-GF FWGSCFmw-004-0608-GF

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FWGEQUIPRINSE2-0623-GW(RES/TOT)	LEAD	2.0 ug/L	2.0U ug/L
FWGLL3mw-246-0595-GF(RES/TOT)	LEAD	2.2 ug/L	2.2U ug/L
FWGSCFmw-002-0607-GF(RES/TOT)	LEAD	2.5 ug/L	2.5U ug/L
FWGSCFmw-004-0608-GF(RES/TOT)	LEAD	2.7 ug/L	2.7U ug/L

Lab Duplicate Outlier Report

Lab Reporting Batch ID: 240-53458-1 **Laboratory: TESTAME**

EDD Filename: Prep240-53458-1 **eQAPP Name: RVAAP 66-rev March 2015**

Method: 6010B
Matrix: AQ

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
FWGLL3mw-246-0595-GFDUP (TOT) (FWGEQUIPRINSE2-0623-GW FWGLL12mw-185C-0598-GF FWGLL12mw-242C-0600-GF FWGLL12mw-247-0602-GF FWGLL1mw-064C-0581-GF FWGLL1mw-086-0585-GF FWGLL1mw-087C-0586-GF FWGLL1mw-088-0587-GF FWGLL2mw-271-0591-GF FWGLL2mw-DUP2-0618-GF FWGLL3mw-244-0594-GF FWGLL3mw-246-0595-GF FWGLL3mw-DUP3-0619-GF FWGSCFmw-002-0607-GF FWGSCFmw-004-0608-GF)	CHROMIUM	67	20.00	J (all detects) UJ (all non-detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
FWGLL3mw-246-0595-GFDUP (TOT) (FWGEQUIPRINSE2-0623-GW FWGLL12mw-185C-0598-GF FWGLL12mw-242C-0600-GF FWGLL12mw-247-0602-GF FWGLL1mw-064C-0581-GF FWGLL1mw-086-0585-GF FWGLL1mw-087C-0586-GF FWGLL1mw-088-0587-GF FWGLL2mw-271-0591-GF FWGLL2mw-DUP2-0618-GF FWGLL3mw-244-0594-GF FWGLL3mw-246-0595-GF FWGLL3mw-DUP3-0619-GF FWGSCFmw-002-0607-GF FWGSCFmw-004-0608-GF)	ANTIMONY	27	20.00	J(all detects) UJ(all non-detects)

Lab Duplicate Outlier Report

Lab Reporting Batch ID: 240-53458-1 **Laboratory: TESTAME**

EDD Filename: Prep240-53458-1 **eQAPP Name: RVAAP 66-rev March 2015**

Method: 6010B
Matrix: AQ

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
FWGSCFmw-002-0607-GFDUP (TOT) (FWGEQUIPRINSE2-0623-GW FWGLL12mw-185C-0598-GF FWGLL12mw-242C-0600-GF FWGLL12mw-247-0602-GF FWGLL1mw-064C-0581-GF FWGLL1mw-086-0585-GF FWGLL1mw-087C-0586-GF FWGLL1mw-088-0587-GF FWGLL2mw-271-0591-GF FWGLL2mw-DUP2-0618-GF FWGLL3mw-244-0594-GF FWGLL3mw-246-0595-GF FWGLL3mw-DUP3-0619-GF FWGSCFmw-002-0607-GF FWGSCFmw-004-0608-GF)	CHROMIUM	39	20.00	J(all detects) UJ(all non-detects)

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: 240-53458-1 **Laboratory: TESTAME**

EDD Filename: Prep240-53458-1 **eQAPP Name: RVAAP 66-rev March 2015**

Method: **8081A**
Matrix: **AQ**

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
LCS 240-190084/9-A (FWGEQUIPRINSE2-0623-GW FWGLL1mw-086-0585-GW FWGLL1mw-088-0587-GW FWGLL3mw-244-0594-GW FWGLL3mw-DUP3-0619-GW FWGSCFmw-002-0607-GW FWGSCFmw-004-0608-GW)	ENDOSULFAN I	38	-	50.00-110.00	-	ENDOSULFAN I	J (all detects) UJ (all non-detects)

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 240-53458-1
EDD Filename: Prep240-53458-1

Laboratory: TESTAME
eQAPP Name: RVAAP 66-rev March 2015

Method: 8081A **Preparation Method: 3520C**
Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
FWGEQUIPRINSE2-0623-GW (RE)	Sampling To Extraction	9.00	7.00	DAYS	J (all detects)
FWGLL1mw-086-0585-GW (RE)		9.00	7.00	DAYS	UJ (all non-detects)
FWGLL1mw-088-0587-GW (RE)		9.00	7.00	DAYS	
FWGLL3mw-244-0594-GW (RE)		9.00	7.00	DAYS	
FWGLL3mw-DUP3-0619-GW (RE)		9.00	7.00	DAYS	
FWGSCFmw-002-0607-GW (RE)		9.00	7.00	DAYS	
FWGSCFmw-004-0608-GW (RE)		9.00	7.00	DAYS	

Field Duplicate RPD Report

Lab Reporting Batch ID: 240-53458-1 **Laboratory: TESTAME**

EDD Filename: Prep240-53458-1 **eQAPP Name: RVAAP 66-rev March 2015**

Method: 6010B
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	FWGLL2mw-271-0591-GF (TOT)	FWGLL2mw-DUP2-0618-GF (TOT)			
ARSENIC	5.4	4.7	14	50.00	No Qualifiers Applied
BARIUM	3.2	3.3	3	50.00	
CALCIUM	53000	53000	0	50.00	
CHROMIUM	1.1	2.5	78	50.00	
COBALT	10	11	10	50.00	
MAGNESIUM	19000	19000	0	50.00	
MANGANESE	540	550	2	50.00	
NICKEL	40	42	5	50.00	
POTASSIUM	1200	1200	0	50.00	

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	FWGLL3mw-244-0594-GF (TOT)	FWGLL3mw-DUP3-0619-GF (TOT)			
BARIUM	15	15	0	50.00	No Qualifiers Applied
CALCIUM	24000	24000	0	50.00	
CHROMIUM	0.91	0.79	14	50.00	
MAGNESIUM	7700	7900	3	50.00	
MANGANESE	0.66	1.2	58	50.00	
NICKEL	0.76	40 U	200	50.00	
POTASSIUM	1400	1400	0	50.00	

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	FWGLL2mw-271-0591-GF (TOT)	FWGLL2mw-DUP2-0618-GF (TOT)			
IRON	4500	4600	2	50.00	No Qualifiers Applied
SODIUM	4600	4600	0	50.00	

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	FWGLL3mw-244-0594-GF (TOT)	FWGLL3mw-DUP3-0619-GF (TOT)			
ANTIMONY	0.41	0.53	26	50.00	No Qualifiers Applied
SODIUM	3500	3700	6	50.00	

Method: 8330
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	FWGLL3mw-244-0594-GW	FWGLL3mw-DUP3-0619-GW			
2-AMINO-4,6-DINITROTOLUENE	0.58	0.59	2	50.00	No Qualifiers Applied
4-AMINO-2,6-DINITROTOLUENE	0.57	0.58	2	50.00	
Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	0.30	0.30	0	50.00	
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (	0.064	0.055	15	50.00	

Project Name and Number: 30174.0016.0010.1 - USACE Project: USACE Project: RVAAP (OH)

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: 240-53458-1 **Laboratory: TESTAME**

EDD Filename: Prep240-53458-1 **eQAPP Name: RVAAP 66-rev March 2015**

Method: **353.2**
Matrix: **AQ**

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FWGEQUIPRINSE2-0623-GW(RES/TOT)	7/21/2015 4:30:00 PM	Nitrate-Nitrite	0.029 mg/L	FWGLL12mw-185C-0598-GF FWGLL12mw-185C-0598-GW FWGLL12mw-242C-0600-GF FWGLL12mw-242C-0600-GW FWGLL12mw-247-0602-GF FWGLL12mw-247-0602-GW FWGLL1mw-064C-0581-GF FWGLL1mw-064C-0581-GW FWGLL1mw-086-0585-GF FWGLL1mw-086-0585-GW FWGLL1mw-087C-0586-GF FWGLL1mw-087C-0586-GW FWGLL1mw-088-0587-GF FWGLL1mw-088-0587-GW FWGLL2mw-271-0591-GF FWGLL2mw-271-0591-GW FWGLL2mw-DUP2-0618-GF FWGLL2mw-DUP2-0618-GW FWGLL3mw-244-0594-GF FWGLL3mw-244-0594-GW FWGLL3mw-246-0595-GF FWGLL3mw-246-0595-GW FWGLL3mw-DUP3-0619-GF FWGLL3mw-DUP3-0619-GW FWGSCFmw-002-0607-GF FWGSCFmw-002-0607-GW FWGSCFmw-004-0608-GF FWGSCFmw-004-0608-GW

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FWGLL12mw-242C-0600-GW(RES/TOT)	Nitrate-Nitrite	0.028 mg/L	0.028U mg/L

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: 240-53458-1

Laboratory: TESTAME

EDD Filename: Prep240-53458-1

eQAPP Name: RVAAP 66-rev March 2015

Method: **6010B**
Matrix: **AQ**

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FWGEQUIPRINSE2-0623-GW(RES/TOT)	7/21/2015 4:30:00 PM	LEAD	2 ug/L	FWGLL12mw-185C-0598-GF FWGLL12mw-185C-0598-GW FWGLL12mw-242C-0600-GF FWGLL12mw-242C-0600-GW FWGLL12mw-247-0602-GF FWGLL12mw-247-0602-GW FWGLL1mw-064C-0581-GF FWGLL1mw-064C-0581-GW FWGLL1mw-086-0585-GF FWGLL1mw-086-0585-GW FWGLL1mw-087C-0586-GF FWGLL1mw-087C-0586-GW FWGLL1mw-088-0587-GF FWGLL1mw-088-0587-GW FWGLL2mw-271-0591-GF FWGLL2mw-271-0591-GW FWGLL2mw-DUP2-0618-GF FWGLL2mw-DUP2-0618-GW FWGLL3mw-244-0594-GF FWGLL3mw-244-0594-GW FWGLL3mw-246-0595-GF FWGLL3mw-246-0595-GW FWGLL3mw-DUP3-0619-GF FWGLL3mw-DUP3-0619-GW FWGSCFmw-002-0607-GF FWGSCFmw-002-0607-GW FWGSCFmw-004-0608-GF FWGSCFmw-004-0608-GW

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FWGLL3mw-246-0595-GF(RES/TOT)	LEAD	2.2 ug/L	2.2U ug/L
FWGSCFmw-002-0607-GF(RES/TOT)	LEAD	2.5 ug/L	2.5U ug/L
FWGSCFmw-004-0608-GF(RES/TOT)	LEAD	2.7 ug/L	2.7U ug/L

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53458-1										
353.2	FWGEQUIPRINSE2-0623-GW	AQ	EB							
				Nitrate-Nitrite	0.050	0.029J		U	mg/L	Mb, Cb
353.2	FWGLL12mw-242C-0600-GW	AQ	N							
				Nitrate-Nitrite	0.050	0.028J		U	mg/L	Mb, Eb, C
6010B	FWGEQUIPRINSE2-0623-GW	AQ	EB							
				LEAD	10	2.0J		U	ug/L	Mb, Cb
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGLL12mw-242C-0600-GF	AQ	N							
				BARIUM	200	24J		J	ug/L	RI
				CHROMIUM	7.0	1.9J		U	ug/L	Cb
				COBALT	7.0	0.65J		J	ug/L	RI
				NICKEL	40	38J		J	ug/L	RI
				POTASSIUM	5000	2000J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGLL12mw-247-0602-GF	AQ	N							
				ARSENIC	10	7.1J		J	ug/L	RI
				BARIUM	200	22J		J	ug/L	RI
				CHROMIUM	7.0	1.1J		U	ug/L	Cb
				COBALT	7.0	0.63J		J	ug/L	RI
				POTASSIUM	5000	2300J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGLL1mw-064C-0581-GF	AQ	N							
				ARSENIC	10	3.9J		J	ug/L	RI
				BARIUM	200	42J		J	ug/L	RI
				CHROMIUM	7.0	0.87J		U	ug/L	Cb
				POTASSIUM	5000	770J		J	ug/L	RI
				SILVER	7.0	0.96J		U	ug/L	Cb

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53458-1										
6010B	FWGLL1mw-086-0585-GF	AQ	N							
				BARIUM	200	52J		J	ug/L	RI
				CHROMIUM	7.0	0.60J		J	ug/L	RI
				NICKEL	40	1.7J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGLL1mw-087C-0586-GF	AQ	N							
				BARIUM	200	24J		J	ug/L	RI
				CHROMIUM	7.0	0.69J		U	ug/L	Cb
				COBALT	7.0	0.69J		J	ug/L	RI
				NICKEL	40	0.94J		J	ug/L	RI
				POTASSIUM	5000	570J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGLL1mw-088-0587-GF	AQ	N							
				BARIUM	200	41J		J	ug/L	RI
				CHROMIUM	7.0	1.3J		J	ug/L	RI
				COBALT	7.0	0.58J		J	ug/L	RI
				POTASSIUM	5000	2700J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGLL2mw-271-0591-GF	AQ	N							
				ARSENIC	10	5.4J		J	ug/L	RI
				BARIUM	200	3.2J		J	ug/L	RI
				CHROMIUM	7.0	1.1J		U	ug/L	Cb
				POTASSIUM	5000	1200J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGLL2mw-DUP2-0618-GF	AQ	FD							
				ARSENIC	10	4.7J		J	ug/L	RI
				BARIUM	200	3.3J		J	ug/L	RI
				CHROMIUM	7.0	2.5J		U	ug/L	Cb
				POTASSIUM	5000	1200J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53458-1										
6010B	FWGLL3mw-244-0594-GF	AQ	N							
				BARIUM	200	15J		J	ug/L	RI
				CHROMIUM	7.0	0.91J		U	ug/L	Cb
				MANGANESE	15	0.66J		J	ug/L	RI
				NICKEL	40	0.76J		J	ug/L	RI
				POTASSIUM	5000	1400J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGLL3mw-246-0595-GF	AQ	N							
				BARIUM	200	15J		J	ug/L	RI
				CHROMIUM	7.0	1.4J		U	ug/L	Cb
				LEAD	10	2.2J		U	ug/L	Mb, Eb, C
				MANGANESE	15	2.7J		J	ug/L	RI
				POTASSIUM	5000	1400J		J	ug/L	RI
				SILVER	7.0	7.0U J		UJ	ug/L	ProfJudg
6010B	FWGLL3mw-DUP3-0619-GF	AQ	FD							
				BARIUM	200	15J		J	ug/L	RI
				CHROMIUM	7.0	0.79J		U	ug/L	Cb
				MANGANESE	15	1.2J		J	ug/L	RI
				POTASSIUM	5000	1400J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGSCFmw-002-0607-GF	AQ	N							
				BARIUM	200	36J		J	ug/L	RI
				CHROMIUM	7.0	1.3J		U	ug/L	Cb
				LEAD	10	2.5J		U	ug/L	Mb, Eb, C
				POTASSIUM	5000	2300J		J	ug/L	RI
				SILVER	7.0	7.0U J		UJ	ug/L	ProfJudg

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53458-1										
6010B	FWGSCFmw-004-0608-GF	AQ	N							
				BARIUM	200	69J		J	ug/L	RI
				CHROMIUM	7.0	1.5J		U	ug/L	Cb
				LEAD	10	2.7J		U	ug/L	Mb, Eb, C
				POTASSIUM	5000	2800J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6020	FWGLL1mw-064C-0581-GF	AQ	N							
				ALUMINUM	60	20J		J	ug/L	RI
6020	FWGLL3mw-244-0594-GF	AQ	N							
				ANTIMONY	2.0	0.41J		U	ug/L	Cb
6020	FWGLL3mw-246-0595-GF	AQ	N							
				ANTIMONY	2.0	0.49J		U	ug/L	Cb
6020	FWGLL3mw-DUP3-0619-GF	AQ	FD							
				ANTIMONY	2.0	0.53J		U	ug/L	Cb
8081A	FWGEQUIPRINSE2-0623-GW	AQ	EB							
				ENDOSULFAN I	0.049	0.049U H		UJ	ug/L	StoE
8081A	FWGLL1mw-086-0585-GW	AQ	N							
				ENDOSULFAN I	0.052	0.052U H		UJ	ug/L	StoE
8081A	FWGLL1mw-088-0587-GW	AQ	N							
				ENDOSULFAN I	0.051	0.051U H		UJ	ug/L	StoE
8081A	FWGLL3mw-244-0594-GW	AQ	N							
				ENDOSULFAN I	0.048	0.048U H		UJ	ug/L	StoE
8081A	FWGLL3mw-DUP3-0619-GW	AQ	FD							
				ENDOSULFAN I	0.048	0.048U H		UJ	ug/L	StoE

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53458-1										
8081A	FWGSCFmw-002-0607-GW	AQ	N	ENDOSULFAN I	0.051	0.051U H		UJ	ug/L	StoE
8081A	FWGSCFmw-004-0608-GW	AQ	N	ENDOSULFAN I	0.048	0.048U H		UJ	ug/L	StoE
8330	FWGLL3mw-244-0594-GW	AQ	N	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.15	0.064J M		J	ug/L	RI
8330	FWGLL3mw-246-0595-GW	AQ	N	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.15	0.045J M		J	ug/L	RI
8330	FWGLL3mw-DUP3-0619-GW	AQ	FD	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.15	0.055J M		J	ug/L	RI

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

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Data Verification Summary

Site: Ravenna Army Ammunition Plant
Sampling Event: July 2015 **Date:** October 10, 2015
Workorder: R1505920 **Revision:** 1

Data Reviewer: Angye Dragotta /Environmental Quality Management, Inc. (EQM, Inc.)

QA/QC Summary

On July 21, 2015 the following samples were collected from groundwater-monitoring wells at Ravenna Army Ammunition Plant and analyzed as part of work order R1505920. The hexavalent chromium analysis was performed by ALS Laboratories (formerly Columbia Analytical Services), Rochester, New York by method EPA 218.6.

FWGSCFmw-002-0607-GF
FWGLL12mw-247-0602-GF
FWGEQUIPRINSE2-247-0623-GW
FWGLL3mw-244-0594-GF
FWGLL3mw-DUP3-0619-GF

The data presented in this report were evaluated according to the *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January, 2012.* The following documents were used as needed to supplement the project documentation: The United States Department of Defense (DoD) Quality Services Manual (QSM) for Environmental Laboratories, Version 4.2, and the United States Army Corps of Engineers (USACE), Louisville District Quality Systems Manual Supplement (LS), *EPA National Functional Guidelines (NFG) for Organic Data Review, EPA-540/R-08-01, June 2008, NFG for Inorganic Data Review, EPA-540/R-04-004, October 2004*, Analytical Methods, and Laboratory Standard Operating Procedures. The QC criteria provided in the reference documents represent accuracy and precision performance goals for each analytical method. QC criteria reviewed for each method are listed below, along with any outliers.

All analytical results have been verified against compliance requirements specified in the project QAPP, QSM, LS, associated analytical methods and/or SOPs, as appropriate, and reported by the laboratory as directed by the DoD QSM.

Checklists used in review of the data have been presented in Attachment1. Outliers have been noted below and results requiring qualification, as a result of this verification process, have been summarized in Attachment 2.

The completeness objective for the project was 90%. The completeness objective was met for this SDG, 100%. Limitations, if any, on the data are indicated with qualifiers detailed below.

Hexavalent Chromium – 218.6
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration Criteria including SPCC and CCC compounds
- ICV/CCV criteria
- Retention times
- MRL verification criteria
- Instrument, Method and Field Blank Criteria
- Field duplicate RPD criteria
- Laboratory Control Sample criteria
- Matrix Spike Recovery Criteria and RPD
- Instrument/method and field blanks free of contamination

Blanks
FWGEQUIPRINSE2-0623-GW had hexavalent chromium detected at 0.017 µg/L. No qualification of the data was required as any detected hexavalent chromium results were greater than five times blank contamination.

Data Verification Summary

Site: Ravenna Army Ammunition Plant
Sampling Event: July 2015
Workorder: R1505920

Date: October 10, 2015
Revision: 1

Matrix Spike and Spike Duplicate Recovery
The matrix spike duplicate analyzed on sample FWGLL12mw-247-0602-GF recovered above control limits of 90-110% at 116%. Sample FWGEQUIPRINSE2-0623-GW was qualified as estimated, "J".

No additional QC outliers were noted.

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ALS ASP/CLP Batching Form/Login Sheet

Client Proj #:		Batch Complete: Yes	Date Revised:
Submission:	R1505920	Diskette Requested: Yes	Date Due: 8/5/15
Client:	Environmental Quality Manageme	Date: 7/22/15	Protocol: MCAWW
Client Rep:	JJAEGER	Custody Seal: Present/Absent:	Shipping No.:
Project:	RVAAP, EQM PN 030174.0016	Chain of Custody: Present/Absent:	SDG #:

CAS Job #	Client/EPA ID	Matrix	Requested Parameters	Date Sampled	Date Received	pH (Solids)	% Solids	Remarks Sample Condition
R1505920-001	FWGLL3mw-244-0594-GF	Water	218.6 LL	7/21/15	7/22/15			
R1505920-002	FWGLL3mw-DUP3-0619-GF	Water	218.6 LL	7/21/15	7/22/15			
R1505920-003QC	FWGLL12mw-247-0602-GF	Water	218.6 LL	7/21/15	7/22/15			
R1505920-004	FWGSCFmw-002-0607-GF	Water	218.6 LL	7/21/15	7/22/15			
R1505920-005	FWGEQUIPRINSE2-0623-GW	Water	218.6 LL	7/21/15	7/22/15			

Folder Comments: Need opening & closing MRL check & ADR.net checker, DoD report

ALS Environmental

CHAINS OF CUSTODY

ALS Environmental - Rochester, NY
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Phone (585) 288-5380 Fax (585) 288-8475
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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

27557

ALS Environmental

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name: RVAAP-66	Project Number: 30174.0016.01.12
Project Manager: John Miller	Report CC: A. Dragotta
Company/Address: EQM 1800 Carillon Blvd Cincinnati Oh 45240	
Phone #: 513 825 7500	Email: adragotta@eqm.com
Sampler's Signature:	Sampler's Printed Name: Colleen Lear

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	●CMS VOAs ○8260 ○624 ○CLP	GCMS SVOAs ○8270 ○625	GC VOAs ○8021 ○601/602	PESTICIDES ○8081 ○608	PCBs ○8082 ○608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	Hex Chromium (Cr6) 8/18/15						REMARKS/ ALTERNATE DESCRIPTION
~~DES~~ FWGLL3MW-244-0514-GF		7-21-15	1026	GW	1								X						
FWGLL3MW-DUP3-0019-GF		7-21-15	1126	GW	1								X						
FWGLL12MW-247-0602-GF		7-21-15	1352	GW	1								X						MS/MSD
FWGSEFMW-002-0607-GF		7-21-15	1322	GW	1								X						
FWGEQUIPRINSE2-0623-GW		7-21-15	1630	GW	1								X						

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS
Metals

FedEx. 872856948965

CR+6 *
* SHORT HOLD

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
____ 1 day ____ 2 day ____ 3 day
____ 4 day ____ 5 day

REQUESTED REPORT DATE
_____

REPORT REQUIREMENTS
____ I. Results Only
____ II. Results + QC Summaries (LCS, DUP, MS/MSD as req
____ III. Results + QC and Calib Summaries
____ IV. Data Validation Report w

Edata ____ Yes ____ No

INVOICE INFORMATION
PO #

R1505920 5
Environmental Quality Management
RVAAP, EQM PN 03D174.0016

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature	Signature FED EXP	Signature	Signature	Signature	Signature
Printed Name Colleen Lear	Printed Name	Printed Name	Printed Name Matt Stone	Printed Name	Printed Name
Firm EQM	Firm	Firm	Firm ALS	Firm	Firm
Date/Time 7-21-15 1730	Date/Time	Date/Time	Date/Time 7/22/15 1135	Date/Time	Date/Time

Distribution: White - Lab Copy; Yellow - Return to Originator

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Cooler Receipt and Preservation Check Form

Project/Client EQM Folder Number M5-5920

Cooler received on 7/22/15 by: MDS COURIER: ALS UPS (FEDEX) VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	(Y) N		5a	**Perchlorate** samples have required headspace?	Y N (NA)	
2	**Custody papers** properly completed (ink, signed)?	(Y) N		5b	Did VOA vials, Alk, or Sulfide have sig* **bubbles**?	Y N (NA)	
3	Did all bottles arrive in good **condition** (unbroken)?	(Y) N		6	Where did the bottles originate?	(ALS/ROC) CLIENT	
4	Circle: **Wet Ice** **Dry Ice** **Gel packs** present?	(Y) N		7	Soil VOA received as: Bulk Encore 5035set		(NA)

8. Temperature Readings Date: 7/22/15 Time: 1142 ID: IR#3 (IR#5) From: Temp Blank **Sample Bottle**

Observed Temp (°C)	4.5						
Correction Factor (°C)	-0.2						
Corrected Temp (°C)	4.3						
Within 0-6°C?	(Y) N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: JMW 7/22/15

All samples held in storage location: R-002 by MDS on 7/22/15 at 0-1143
5035 samples placed in storage location: _____ by _____ on _____ at _____

PC Secondary Review: JMW 7/22/15

Cooler Breakdown: Date: 7/22/15 Time: 1420 by: SB

1. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (YES) NO
2. Did all bottle labels and tags agree with custody papers? (YES) NO
3. Were correct containers used for the tests indicated? (YES) NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated (N/A)

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO_3								
≤2	H_2SO_4								
<4	$NaHSO_4$								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add $Na_2S_2O_3$ (CN), ascorbic (phenol).					
	$Na_2S_2O_3$	-	-						
	ZnAcetate	-	-						
	HCl	**	**						

**Not to be tested before analysis – pH tested and recorded by VOAs on a separate worksheet

Yes=All samples OK

No=Samples were preserved at The lab as listed

PM OK to Adjust: _____

Bottle lot numbers: _____

Other Comments: Cr^{+6} Buffer: WC140185A exp: 4/16

(5) 21.6

7/21 1626 - 1630

PC Secondary Review: JMW 7/22/15 *significant air bubbles: VOA > 5-6 mm : WC>1 in. diameter

ALS ENVIRONMENTAL
Chain of Custody Report

Client: Environmental Quality Management
Project: RVAAP, EQM PN 030174.0016

Service Request: R1505920

Bottle ID	Tests	Date	Time	Sample Location / User	Disposed On
R1505920-001.01					
	218.6 LL				
		7/22/15	1413	SMO / GLAFORCE	
		7/22/15	1413	R-002 / GLAFORCE	
		7/23/15	0927	In Lab / CWOODS	
		7/23/15	1836	R-002 / BKALKMAN	
		7/31/15	1256	In Lab / CWOODS	
R1505920-002.01					
	218.6 LL				
		7/22/15	1413	SMO / GLAFORCE	
		7/22/15	1413	R-002 / GLAFORCE	
		7/23/15	0927	In Lab / CWOODS	
		7/23/15	1836	R-002 / BKALKMAN	
		7/31/15	1256	In Lab / CWOODS	
R1505920-003.01					
	218.6 LL				
		7/22/15	1413	SMO / GLAFORCE	
		7/22/15	1413	R-002 / GLAFORCE	
		7/23/15	0927	In Lab / CWOODS	
		7/23/15	1836	R 002 / BKALKMAN	
		7/31/15	1256	In Lab / CWOODS	
R1505920-004.01					
	218.6 LL				
		7/22/15	1413	SMO / GLAFORCE	
		7/22/15	1413	R-002 / GLAFORCE	
		7/23/15	0926	In Lab / CWOODS	
		7/23/15	1836	R 002 / BKALKMAN	
		7/31/15	1256	In Lab / CWOODS	
R1505920-005.01					
	218.6 LL				
		7/22/15	1413	SMO / GLAFORCE	
		7/22/15	1413	R-002 / GLAFORCE	
		7/23/15	0927	In Lab / CWOODS	
		7/23/15	1836	R-002 / BKALKMAN	
		7/31/15	1256	In Lab / CWOODS	

ALS Environmental

Client:	Environmental Quality Management
Service Request No.:	R1505920
Project:	RVAAP
Date Received:	7/22/15
Sample Matrix:	Water
Project/Case No.:	

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Control Sample (LCS).

Sample Receipt

Water samples were received for analysis at ALS Environmental on 7/22/15. The samples were received in good condition and consistent with the accompanying chain of custody form. All sampling activities performed by ALS personnel have been in accordance with "ALS Field Procedures and Measurements Manual" or by client specifications. The samples were stored in a refrigerator between 1°C and 6°C upon receipt at the laboratory.

Inorganic Analysis

Water samples were analyzed for a site specific list of inorganic parameters. Samples that were not received at a pH between 9.3-9.7 were pH adjusted upon receipt.

Site specific QC was performed as requested on these samples. All outlying QC has been flagged with an "*".

All Method Blanks and CCB's were free of contamination.

The Blank Spike recoveries were all within QC limits.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Quality Management	**Service Request:**	R1505920
Project:	RVAAP, EQM PN 030174.0016	**Date Collected:**	7/21/15 1026
Sample Matrix:	Water	**Date Received:**	7/22/15
Sample Name:	FWGLL3mw-244-0594-GF		
Lab Code:	R1505920-001	**Basis:**	NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chromium, Hexavalent, Dissolved	218.6 LL	0.195		µg/L	0.020	0.01	0.010	1	NA	7/31/15 13:24	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Quality Management	**Service Request:**	R1505920
Project:	RVAAP, EQM PN 030174.0016	**Date Collected:**	7/21/15 1126
Sample Matrix:	Water	**Date Received:**	7/22/15
Sample Name:	FWGLL3mw-DUP3-0619-GF		
Lab Code:	R1505920-002	**Basis:**	NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chromium, Hexavalent, Dissolved	218.6 LL	0.175		µg/L	0.020	0.01	0.010	1	NA	7/31/15 13:34	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Quality Management	**Service Request:**	R1505920
Project:	RVAAP, EQM PN 030174.0016	**Date Collected:**	7/21/15 1352
Sample Matrix:	Water	**Date Received:**	7/22/15
Sample Name:	FWGLL12mw-247-0602-GF		
Lab Code:	R1505920-003	**Basis:**	NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chromium, Hexavalent, Dissolved	218.6 LL	ND	U	µg/L	0.020	0.01	0.010	1	NA	7/31/15 13:44	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Quality Management	**Service Request:**	R1505920
Project:	RVAAP, EQM PN 030174.0016	**Date Collected:**	7/21/15 1322
Sample Matrix:	Water	**Date Received:**	7/22/15
Sample Name:	FWGSCFmw-002-0607-GF		
Lab Code:	R1505920-004	**Basis:**	NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chromium, Hexavalent, Dissolved	218.6 LL	ND	U	µg/L	0.020	0.01	0.010	1	NA	7/31/15 14:14	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Quality Management	**Service Request:**	R1505920
Project:	RVAAP, EQM PN 030174.0016	**Date Collected:**	7/21/15 1630
Sample Matrix:	Water	**Date Received:**	7/22/15
Sample Name:	FWGEQUIPRINSE2-0623-GW		
Lab Code:	R1505920-005	**Basis:**	NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chromium, Hexavalent, Dissolved	218.6LL	0.017	J	µg/L	0.020	0.01	0.010	1	NA	7/31/15 14:24	

Attachment 1

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angye Dragotta/August 27, 2015

SDG: R1505920
Analysis: EPA 218.6

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	✓				
2. Were samples preserved properly and received in good condition?	✓				pH verified to be with 9.3-9.7 with 24 hours of sampling, 4°C
3. Were holding times met?	✓				J/UJ/R
4. Were sample storage requirements met?	✓				
5. Does the initial calibration curve consist of at least 3 standards and one blank?	✓				
6. Was a MRL Level Verification performed at the beginning and end of every daily sequence? Were results within 70-130%?	✓				>130%=J; 65-70%=J/UJ; <65%=J/R
7. Was the ICB analyzed after the ICV with results <1/2 the MRL?	✓				< 5x = U
8. Was a CCV run at the beginning and end of the analytical sequence?	✓				
9. Were the CCV results 95-105%?	✓				>110%=J; <90%=J/UJ;
10. Was a method blank prepared and analyzed with each batch?	✓				
11. Were target analytes detected in the method blank?		✓		Checked by ADR.	LCG Table 10 <5x=B
12. Was a field blank collected and analyzed?	✓				
13. Were target analytes in the field blank analyses <1/2 the MRL?	✓			FWGEQUIPRINSE2-0623-GW had hexavalent chromium detected at 0.017 µg/L. No qualification of the data was required as any detected hexavalent chromium results were greater than five times blank contamination.	<5x=B
14. Was a field duplicate analyzed? Were the RPDs ≤30%?	✓			Checked by ADR.	>30% = J
15. Was an LCS prepared and analyzed with each batch?	✓				
16. Were the LCS recoveries within lab limits%?	✓			Checked by ADR.	>UL=J; <LL=J/UJ;

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angye Dragotta/August 27, 2015

SDG: R1505920
Analysis: EPA 218.6

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
17. Was a MS prepared once per every 10 samples?	✓				LCG Table 10
18. Was the MS parent a Ravenna sample?	✓			Matrix spike analysis performed on sample FWGLL12mw-247-0602-GF.	
19. Were MS/MSD recoveries within lab limits%?		✓		The matrix spike duplicate analyzed on sample FWGLL12mw-247-0602-GF recovered above control limits of 90-110% at 116%. Sample FWGEQUIPRINSE2-0623-GW was qualified as estimated, "J".	>UL=J; <LL=J/UJ;
20. Were reported sample concentrations within calibration range?	✓				

References:
DoD Quality Systems Manual (QSM), version 4.2, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Attachment 2

Data Qualifier Summary

Lab Reporting Batch ID: R1505920 **Laboratory: ALS_R**

EDD Filename: R1505920 **eQAPP Name: RVAAP Cr6+ oct 2013**

Method Category: **METALS**

Method: **218.6** ***Matrix:*** **AQ**

Sample ID: **FWGEQUIPRINSE2-0623-GW** ***Collected:*** **7/21/2015 4:30:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
HEXAVALENT CHROMIUM	0.017	J	0.010	MDL	0.020	PQL	ug/L	J	RI, Ms

* denotes a non-reportable result

Project Name and Number: 030174.0016 - RVAAP, EQM

Data Qualifier Summary

Lab Reporting Batch ID: R1505920 **Laboratory: ALS_R**

EDD Filename: R1505920 **eQAPP Name: RVAAP Cr6+ oct 2013**

Reason Code Legend

Reason Code	*Description*
Ms	Matrix Spike Upper Estimation
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 030174.0016 - RVAAP, EQM

Data Review Summary

Lab Reporting Batch ID: R1505920
EDD Filename: PrepR1505920

Laboratory: ALS_R
eQAPP Name: RVAAP Cr6+ oct 2013

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	N
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	A
Field Triplicates	N
Field Blanks	A

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Reporting Limit Outliers

Lab Reporting Batch ID: R1505920 **Laboratory: ALS_R**

EDD Filename: PrepR1505920 **eQAPP Name: RVAAP Cr6+ oct 2013**

Method: **218.6**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
FWGEQUIPRINSE2-0623-GW	HEXAVALENT CHROMIUM	J	0.017	0.020	PQL	ug/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: R1505920 **Laboratory: ALS_R**

EDD Filename: PrepR1505920 **eQAPP Name: RVAAP Cr6+ oct 2013**

Method: 218.6
Matrix: AQ

Analyte	*Concentration (ug/L)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FWGLL3mw-244-0594-GF (DIS)	FWGLL3mw-DUP3-0619-GF (DIS)			
HEXAVALENT CHROMIUM	0.195	0.175	11	20.00	No Qualifiers Applied

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: R1505920										
218.6	FWGEQUIPRINSE2-0623-GW	AQ	EB							
				Hexavalent Chromium	0.020	0.017 J		J	ug/L	Ms, RI

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Data Verification Summary

Site: Ravenna Army Ammunition Plant
Sampling Event: July 2015
Sample Delivery Group: 240-53500

Date: October 16, 2015
Revision: 0

Data Reviewer: Angela Dragotta /Environmental Quality Management, Inc. (EQM, Inc.)

QA/QC Summary

On July 22th, 2015 the following samples were collected from groundwater-monitoring wells at the former Ravenna Army Ammunition Plant and analyzed as part of SDG 240-53500. Sample analysis was performed by Test America. Test America-North Canton performed all analyses with the exception of the analytical for methods 8330, M8330, TALSOPWS-WC-0050 and 6860. Methods 8330, M8330 and TALSOPWS-WC-0050 were performed by Test America, West Sacramento.

Sample ID	VOC by SW846 8260	SVOC 4 by SW846 8270	SVOC 1 and 3 by SW846 8270	SVOC 1 by SW846 8270	Pesticides by SW846 8081	PCBs/ SW846 8082	Explosives/Propellants by SW846 8330, Mod. 8330 and TALSOP WS-WC-0050	Cyanide SW846 9012	Perchlorate by SW846 6860	NO2/NO3, EPA 353.2	Metals		
											SW846 6010B	SW846 6020	Mercury by SW846 7470A
FWGWBGmw-021-0612-GW/GF				X			X				X	X	X
FWGLL12mw-0187C-0599-GW/GF				X			X			X	X	X	X
FWGLL12mw-0247-0602-GW										X			
FWGWBGmw-006c-0609-GW/GF				X			X				X	X	X
FWGLL12mw-245C-0601-GW/GF				X			X			X	X	X	X
FWGLL12mw-DUP4-0620-GW/GF				X						X	X	X	X
FWGRQLmw-009C-0606-GW/GF	X	X			X	X	X	X			X	X	X
FWGWBGmw-009C-0610-GW/GF				X			X				X	X	X
FWGWBGmw-020-0611-GW/GF				X			X				X	X	X
FWGFWGmw-012-0578-GW/GF				X			X				X	X	X
FWGFWGmw-011-0577-GW/GF				X			X				X	X	X
FWGRQLmw-007C-0604-GW/GF	X	X			X	X	X	X			X	X	X
FWGRQLmw-DUP5-0621-GW/GF	X	X			X	X	X	X			X	X	X
FWGRQLmw-008C-0605-GW	X	X			X	X	X	X			X	X	X
FWGRQLmw-008C-0606-GF	X	X			X	X	X	X			X	X	X

1) All metals samples were field filtered (GF).
2) FWGEQUIPRINSE3-0623-GW was collected on 7/22/15, but after lab pickup. FWGEQUIPRINSE3-0623-GW was picked up and reported by the lab with samples from 7/23/15- SDG 240-43558.
3) SVOC1= Phthalates, SVOC4= Full list SVOC
4) EPA 6020 metals include aluminum, antimony, beryllium, cadmium, iron, sodium, thallium and zinc. EPA 6010B metals include arsenic, chromium, cobalt, lead, selenium, silver, vanadium, barium, calcium, copper, magnesium, manganese, nickel and potassium.
5) FWGTEAMRQL-TRIP was collected on 7/22/15 and submitted to the laboratory for VOC analysis by EPA 8260B.
6) FWGRQLmw-008C-0605-GW was listed on the COC as FWGRQLmw-008c-0606-GW.

The data presented in this report were evaluated according to the *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January, 2012.* The following documents were used as needed to supplement the project documentation: The United States Department of Defense (DoD) Quality Services Manual (QSM) for Environmental Laboratories, Version 4.2, and the United

Data Verification Summary

Site: Ravenna Army Ammunition Plant
Sampling Event: July 2015 **Date:** October 16, 2015
Sample Delivery Group: 240-53500 **Revision:** 0

States Army Corps of Engineers (USACE), Louisville District Quality Systems Manual Supplement (LS), *EPA National Functional Guidelines (NFG) for Organic Data Review, EPA-540/R-08-01, June 2008, NFG for Inorganic Data Review, EPA-540/R-04-004, October 2004*, Analytical Methods, and Laboratory Standard Operating Procedures. The QC criteria provided in the reference documents represent accuracy and precision performance goals for each analytical method. QC criteria reviewed for each method are listed below, along with any outliers.

All analytical results have been verified against compliance requirements specified in the project QAPP, QSM, LS, associated analytical methods and/or SOPs, as appropriate, and reported by the laboratory as directed by the DoD QSM.

Per the DoD QSM, the laboratory data is reported as follows: Non detected results were reported at the LOD with a "U" flag. Detected results between the DL and LOQ were reported as estimated, qualified with a "J" flag.

LOD - An estimate of the minimum amount of a substance that an analytical process can reliably detect.

LOQ - The lowest concentration that produces a quantitative result within specified limits of precision and bias.

DL- The smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence.

Checklists used in the verification process are in Attachment I and sample results with outliers requiring qualification are in Attachment II.

The completeness objective for the project was 90%. The completeness objective was met for this SDG, at 100%. Limitations, if any, on the data are indicated with qualifiers detailed below.

VOC- 8260

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Tuning criteria
- Initial Calibration Criteria including SPCC and CCC compounds
- ICV/CCV criteria
- Internal standard area counts and retention times
- LOD and MRL verification criteria
- Method /field blank criteria
- Surrogate recoveries
- Field duplicate RPD criteria
- Laboratory Control Sample criteria
- Matrix spike/spike duplicate recovery criteria and RPD

MRL Recoveries

- The opening MRL analyzed 7/23/15 recovered above control limits of 70-130% for methylene chloride at 176% and below control limits for 2-hexanone at 56%, acetone at 37%, bromomethane at 63%, 2-butanone at 53% and 4-methyl-2-pentanone at 62%. An LOD verification was analyzed following the analytical sequence with detected results for 2-hexanone, acetone and 2-butanone.
- The closing MRL analyzed 7/23/15 recovered below control limits of 70-130% for acetone at 63% and above control limits for methylene chloride at 149% and chloroethane at 141 %.

The methylene chloride and acetone results for sample FWGTEAMRQL-Trip and the acetone result for sample FWGRQLmw-008c-0605-GW were qualified as estimated, "J". The methylene chloride, acetone, 2-hexanone, bromomethane, 2-butanone and 4-methyl-2-pentanone results for samples FWGRQLmw-007c-0604-GW, FWGRQLmw-009c-0606-GW and FWGRQLmw-DUP5-0621-GW and the methylene chloride, 2-hexanone, bromomethane, 2-butanone and 4-methyl-2-pentanone results for sample FWGRQLmw-008c-0605-GW were

qualified as estimated, "UJ/J". No qualifications were made for the chloroethane outlier as there were no detected chloroethane results reported for samples FWGRQLmw-007c-0604-GW, FWGRQLmw-008c-0605-GW, FWGRQLmw-009c-0606-GW, FWGTEAMRQL-Trip or FWGRQLmw-DUP5-0621-GW.

Blanks

Methylene chloride was detected in the method blank at 0.640 µg/L. Sample FWGRQLTEAM-TRIP was qualified, "B" as the reported methylene chloride concentration was less than ten times method blank contamination.

FWGRQL-TRIP had methylene chloride detected at 0.6 µg/L and acetone at 2.5 µg/L. FWGEQUIPRINSE3-0624-GW had methylene chloride detected at 0.86 µg/L, chloroform at 0.34 µg/L, 2-butanone at 4.6 µg/L and acetone at 3.5 µg/L. The acetone result for sample FWGRQLmw-008c-0605-GW was qualified, "B " as the reported acetone concentration was less than ten times trip blank and equipment rinse contamination. No qualifications were made for the methylene chloride, chloroform or 2-butanone , as methylene chloride, chloroform or 2-butanone were not reported as detected in the associated field samples.

No additional QC outliers were noted.

SVOCs- 8270C

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Tuning criteria
- Initial Calibration Criteria including SPCC and CCC compounds
- ICV/CCV criteria
- Internal standard area counts and retention times
- LOD and MRL verification criteria
- Method /field blank criteria
- Surrogate recoveries
- Field duplicate RPD criteria
- Laboratory Control Sample criteria
- Matrix Spike Recovery Criteria and RPD

CCV

4-nitrophenol had a %D above control limits of 20% at 23%. No qualification of the data was required as there were no detected 4-nitrophenol results reported for the associated field samples.

Matrix Spike Recovery and RPD

The MS/MSD analyzed on sample FWGRQLmw-008C-0605-GW did not recover for 3,3'-dichlorobenzidine and the RPD was above control limits of 30% for 4-chloroaniline at 39%. As there were no detected 4-chloroaniline results reported for the field samples, no qualification was required for the RPD outlier. The 3,3'-dichlorobenzidine result for sample FWGRQLmw-008C-0605-GW was qualified as estimated, "UJ" versus unusable, as the 3,3'-dichlorobenzidine recovery was within in control limits in the associated LCS.

No additional QC outliers were noted.

Pesticides- 8081A

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Initial Calibration criteria
- DDT and Endrin breakdown (PEM) criteria
- Retention time criteria
- ICV criteria
- CCV Criteria

Site: Ravenna Army Ammunition Plant
Sampling Event: July 2015
Sample Delivery Group: 240-53500

Date: October 16, 2015
Revision: 0

- Method /field blank criteria
- LCS Recoveries
- Field Duplicate Criteria
- LOD and MRL verification criteria
- Matrix Spike Recovery Criteria and RPD
- Surrogate Recoveries
- Second Column confirmation criteria

CCV Recovery

The CCVs analyzed 8/3/15 at 1633 and the CCV analyzed 8/4/15 @ 0242 had a %D above control limits of 20% for endosulfan II at 20.8% and 23.0%. No qualification of the data was required as there were no detected endosulfan II results reported for the bracketed method blank.

LCS Recovery

The LCS recovered above control limits as follows:

Analyte	*LCS %R*	*%R Limits*
4,4'-DDD	194	25.00-150.00
4,4'-DDE	194	35.00-140.00
4,4'-DDT	189	45.00-140.00
ALDRIN	175	25.00-140.00
ALPHA-BHC	176	60.00-130.00
ALPHA-CHLORDANE	182	65.00-125.00
BETA-BHC	170	65.00-125.00
DIELDRIN	184	60.00-130.00
ENDOSULFAN I	154	50.00-110.00
ENDOSULFAN II	148	30.00-130.00
ENDOSULFAN SULFATE	174	55.00-135.00
ENDRIN	182	55.00-135.00
ENDRIN ALDEHYDE	174	55.00-135.00
ENDRIN KETONE gamma-	171	75.00-125.00
BHC (Lindane)	173	25.00-135.00
GAMMA-CHLORDANE	182	60.00-125.00
HEPTACHLOR	176	40.00-130.00
HEPTACHLOR EPOXIDE	175	60.00-130.00
METHOXYCHLOR	157	55.00-150.00

No qualification of the data was made as a result of the LCS outliers as there were no detected concentrations reported for the associated field samples.

Matrix Spike Recovery

The matrix spike analyzed on sample FWGRQLmw-008c-0605-GW recovered outside control limits for the following analytes.

Analyte	*MS %R*	*MSD %R*	*%R Limits*
ALPHA-CHLORDANE	127	128	65.00-125.00
DIELDRIN	133	136	60.00-130.00
ENDOSULFAN I	-	113	50.00-110.00
ENDRIN	143	145	55.00-135.00
GAMMA-CHLORDANE	128	130	60.00-125.00
HEPTACHLOR EPOXIDE	-	131	60.00-130.00
TOXAPHENE	55	54	70.00-130.00

No qualification was made for the alpha-chlordane, dieldrin, endosulfan I, endrin, gamma-chlordane or heptachlor epoxide matrix spike recoveries as all outliers recovered above control limits and there were no detected alpha-chlordane, dieldrin, endosulfan I, endrin, gamma-chlordane or heptachlor epoxide concentrations reported for FWGRQLmw-008c-0605-GW. The toxaphene result for sample FWGRQLmw-008c-0605-GW was qualified as estimated, "UJ".

Surrogate Recovery
The surrogate DCB recovered below control limits of 30-135% for sample FWGRQLmw-008c-0605-GW at 27% and sample FWGRQLmw-009c-0606-GW at 22%. The sample results for FWGRQLmw-008c-0605-GW and FWGRQLmw-009c-0606-GW were qualified as estimated, "UJ".

Second Column Confirmation
No detected concentrations were reported that required second column confirmation.

No other QC outliers were noted.

PCB- 8082
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Initial Calibration criteria
- Retention time criteria
- ICV criteria
- CCV Criteria
- Method /field blank criteria
- LCS Recoveries
- Field Duplicate Criteria
- LOD and MRL verification criteria
- Matrix Spike Recovery Criteria and RPD
- Surrogate Recoveries
- Second Column confirmation criteria

Matrix Spike and Spike Duplicate RPD
The MS/MSD %RPD was above control limits of 30% for aroclor 1016 at 50% and for aroclor 1260 at 59%. No qualification of the data was required as there were no detected aroclor concentrations reported for sample FWGRQLmw-008c-0605-GW.

Surrogate Recovery
The surrogate DCB recovered below control limits of 30-135% for sample FWGRQLmw-007c-0604-GW at 32% and sample FWGRQLmw-008c-0605-GW at 30%. The sample results for FWGRQLmw-008c-0605-GW and FWGRQLmw-007c-0604-GW were qualified as estimated, "UJ".

Second Column Confirmation
No detected concentrations were reported for the field samples that required second column confirmation.

No additional QC outliers were noted.

Metals - 6010B
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria

- Method /field blank criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field duplicate RPD criteria
- Post Digestion Spike Criteria
- Serial Dilution Criteria

Blanks

The ICB analyzed 7/27/15@ 0924 had lead detected at 2.43 µg/L and potassium at 71.5 µg/L. The lead results for samples FWGWBGmw-021-0612-GF, FWGLL12mw-245c-0601-GF, FWGWBGmw-009c-0610-GF, FWGWBGmw-020-0611-GF, FWGRQLmw-007c-0604-GF and FWGRQLmw-008c-0605-GF were qualified, "U" as the reported lead concentrations were less than 5x contamination. No qualification was made for the potassium contamination as all detected potassium concentrations for the associated field samples were greater than 5x blank contamination.

The CCBs analyzed 7/27/15 had lead detected at 1.96 µg/L, chromium from 0.620 µg/L to 0.822 µg/L, potassium from 77.6 µg/L to 83.69 µg/L, silver from 0.925 µg/L to 0.948 µg/L. The lead results for samples FWGWBGmw-021-0612-GF, FWGLL12mw-245c-0601-GF, FWGWBGmw-009c-0610-GF, FWGWBGmw-020-0611-GF, FWGRQLmw-007c-0604-GF and FWGRQLmw-008c-0605-GF; and the chromium results for samples FWGWBGmw-021-0612-GF, FWGWBGmw-006c-0609-GF, FWGLL12mw-245c-0601-GF, FWGLL12mw-187c-0599-GF, FWGWBGmw-009c-0610-GF, FWGFWGmw-012-0578-GF, FWGFWGmw-011-0577-GF, FWGWBGmw-020-0611-GF, FWGRQLmw-007c-0604-GF, FWGRQLmw-DUP5-0621-GF and FWGRQLmw-008c-0605-GF were qualified, "U" as the reported lead and chromium concentrations were less than 5x contamination. No qualification was made for the potassium contamination as all detected potassium concentrations for the associated field samples were greater than 5x blank contamination. No qualification was made for the silver contamination as silver was not reported as detected in the bracketed samples.

The method blank analyzed 7/27/15 had lead detected at 2.11 µg/L and silver at 1.20 µg/L. The lead results for samples FWGWBGmw-021-0612-GF, FWGLL12mw-245c-0601-GF, FWGWBGmw-009c-0610-GF, FWGWBGmw-020-0611-GF, FWGRQLmw-007c-0604-GF and FWGRQLmw-008c-0605-GF were qualified, "B" as the detected concentrations were less than 5x method blank contamination. No qualification was required for the silver contamination as there were no detected silver concentrations reported less than five times method blank contamination.

FWGEQUIPRINSE3-0624-GW had lead detected at 3.2 µg/L, manganese at 1.6 µg/L and potassium at 230 µg/L. The lead results for samples FWGWBGmw-021-0612-GF, FWGLL12mw-245c-0601-GF, FWGWBGmw-009c-0610-GF, FWGWBGmw-020-0611-GF, FWGRQLmw-007c-0604-GF and FWGRQLmw-008c-0605-GF; and the potassium results for samples FWGWBGmw-006c-0609-GF, FWGWBGmw-009c-0610-GF, FWGWBGmw-020-0611-GF, FWGFWGmw-012-0578-GF, were qualified, "B" as the detected concentrations were less than 5x equipment rinse contamination. No qualification was made for the manganese contamination as all detected concentrations were greater than five times the equipment rinse contamination.

Lab Duplicate RPD

The lab duplicate analyzed on sample FWGRQLmw-008c-0606-GF had an RPD above control limits of 20% for chromium at 30% and cobalt at 24%. No qualification of the data was required as the reported chromium and cobalt concentrations were less than the LOQ.

Post Spike Recovery

The post spike analyzed on sample FWGRQLmw-008c-0606-GF had a recovery of 68% for magnesium and 40% for manganese. No qualification was required as the parent concentrations were greater than 4x the spike value and the serial dilutions recovered with control limits.

No additional QC outliers were noted.

Metals - 6020

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Tuning Criteria
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method /field blank criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field Duplicate RPD Criteria
- Post Digestion Spike Criteria
- Serial Dilution Criteria

Blanks

The ICB analyzed 7/27/15 at 1204 had cadmium detected at 0.179 µg/L. The cadmium results for samples, FWGLL12mw-187c-0599-GF and FWGRQLmw-008c-0605-GF were qualified, "U" as the reported cadmium concentrations were less than 5x contamination.

The CCBs analyzed 7/27/15 had cadmium detected from 0.182 µg/L to 0.212 µg/L . The cadmium results for samples, FWGLL12mw-187c-0599-GF and FWGRQLmw-008c-0605-GF were qualified, "U" as the reported cadmium concentrations were less than 5x contamination.

FWGEQUIPRINSE3-0624-GW had sodium detected at 190 µg/L. No qualification was made for the sodium contamination as all detected concentrations were greater than five times the equipment rinse contamination.

Post Spike Recovery

The post spike analyzed on sample FWGRQLmw-008c-0606-GF had a recovery of 62% for iron. No qualification was required as the parent concentration was greater than 4x the spike value and the serial dilution recovered with control limits.

No additional QC outliers were noted.

Mercury - 7470A

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method /field blank criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field duplicate RPD criteria

No QC outliers were noted.

Data Verification Summary

Site: Ravenna Army Ammunition Plant
Sampling Event: July 2015
Sample Delivery Group: 240-53500

Date: October 16, 2015
Revision: 0

Explosives- 8330

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Initial Calibration Criteria
- ICV and CCV criteria
- Retention time criteria
- LOD and MRL verification criteria
- Surrogate recovery criteria
- Method /field blank criteria
- LCS/LCD Recovery and RPD Criteria
- Matrix spike/spike duplicate recovery criteria and RPD
- Second column confirmation RPD
- Field Duplicate RPD

MRL Verification

The MRL analyzed 8/5/15 @ 1551 on LC10 recovered above control limits of 70-130% for PETN at 141%. No qualification of the data was required as there were no detected PETN concentrations reported for the bracketed field samples.

Blanks

Due to excessive particulates, samples FWGRQLmw-007C-0604-GW, FWGRQLmw-DUP5-0621-GW and FWGRQLmw-008C-0605-GW were filtered prior to extraction. A filter blank was also extracted and analyzed.

The filter blank had PETN detected at 1.06ug/L. As a result of the filter blank contamination, samples FWGRQLmw-007C-0604-GW and FWGRQLmw-DUP5-0621-GW should have been qualified as non-detect, "U", since the PETN results for FWGRQLmw-007C-0604-GW and FWGRQLmw-DUP5-0621-GW were <5x filter blank contamination. Because of the filter blank contamination, samples FWGRQLmw-007C-0604-GW and FWGRQLmw-DUP5-0621-GW were reextracted. The extraction occurred outside 2x hold. The re-extracted samples had comparable PETN results for samples FWGRQLmw-007C-0604-GW and FWGRQLmw-DUP5-0621-GW, but with no detected PETN in the filter blank. Based on the reextract filter blank results, the PETN results from the initial analysis were reported unqualified for samples FWGRQLmw-007C-0604-GW and FWGRQLmw-DUP5-0621-GW.

Second Column Confirmation

The second column confirmation for sample FWGRQLmw-008c-0605-GW had an RPD above control limits of 40% for tetryl at 114% and 1,3-dinitrobenzene at 93%. The tetryl and 1,3-dinitrobenzene results for sample FWGRQLmw-008c-0605-GW were qualified as estimated, "J".

MS/MSD RPD

The MS/MSD RPD recovered above control limits of 30% for nitrobenzene at 34%. No qualification of the data was required as there were no detected nitrobenzene concentrations reported for sample FWGRQLmw-008c-0605-GW.

No additional QC outliers were noted.

Nitroguanidine- 8330M

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- Retention time criteria
- LOD and MRL verification criteria
- ICV and CCV criteria

- Method /field blank criteria
- LCS/LCSD percent recoveries and RPD value criteria
- Matrix spike recovery criteria
- Second column confirmation
- Field Duplicate RPD

Matrix Spike Recovery
The matrix spike duplicate analyzed on sample FWGRQLmw-008C-0605-GW, recovered above control limits of 73-117% at 118%. No qualification of the data was required as there were no detected nitroguanidine results reported for sample FWGRQLmw-008C-0605-GW.

No additional QC outliers were noted.

Nitrocellulose – WS-WC-0050
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Sample preparation criteria
- Initial Calibration criteria
- ICV and CCV criteria
- Method /field blank criteria
- LOD and MRL verification criteria
- ICB and CCBs were free from contamination
- LCS/LCSD percent recoveries and RPD value criteria
- MS/MSD percent recoveries and RPD
- Field Duplicate RPD

No QC outliers were noted.

Nitrate/Nitrite- EPA 353.2
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Sample preparation criteria
- Initial Calibration criteria
- ICV and CCV criteria
- Method /field blank criteria
- LOD and MRL verification criteria
- ICB and CCBs were free from contamination
- LCS/LCSD percent recoveries and RPD value criteria
- MS/MSD percent recoveries and RPD
- Field Duplicate RPD

Blanks
FWGEQUIPRINSE3-0624-GW had nitrate/nitrite detected at 0.006mg/L. The nitrate/nitrite results for samples FWGLL12mw-247-0602-GW, FWGLL12mw-245-0601-GW and FWGLL12mw-DUP4-0620-GW were qualified, "B, as the detected results were <5x rinse blank contamination.

No additional QC outliers were noted.

Data Verification Summary

Site: Ravenna Army Ammunition Plant
Sampling Event: July 2015
Sample Delivery Group: 240-53500

Date: October 16, 2015
Revision: 0

Cyanide- 9012

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method /field blank criteria
- LOD and MRL verification criteria
- High and Low Distilled Standard
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field duplicate RPD criteria

No QC outliers were noted.

Sample Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-53500-1	FWGWBGmw-021-0612-GW	Water	07/22/15 10:23	07/22/15 18:19
240-53500-2	FWGWBGmw-021-0612-GF	Water	07/22/15 10:23	07/22/15 18:19
240-53500-3	FWGLL12mw-0187C-0599-GW	Water	07/22/15 12:38	07/22/15 18:19
240-53500-4	FWGLL12mw-0187C-0599-GF	Water	07/22/15 12:38	07/22/15 18:19
240-53500-5	FWGLL12mw-0247-0602-GW	Water	07/22/15 16:06	07/22/15 18:19
240-53500-6	FWGWBGmw-006C-0609-GW	Water	07/22/15 09:31	07/22/15 18:19
240-53500-7	FWGWBGmw-006C-0609-GF	Water	07/22/15 09:31	07/22/15 18:19
240-53500-8	FWGLL12mw-245C-0601-GW	Water	07/22/15 12:21	07/22/15 18:19
240-53500-9	FWGLL12mw-245C-0601-GF	Water	07/22/15 12:21	07/22/15 18:19
240-53500-10	FWGLL12mw-DUP4-0620-GW	Water	07/22/15 13:11	07/22/15 18:19
240-53500-11	FWGLL12mw-DUP4-0620-GF	Water	07/22/15 13:11	07/22/15 18:19
240-53500-12	FWGRQLmw-009C-0606-GW	Water	07/22/15 15:45	07/22/15 18:19
240-53500-13	FWGRQLmw-009C-0606-GF	Water	07/22/15 15:45	07/22/15 18:19
240-53500-14	FWGWBGmw-009C-0610-GW	Water	07/22/15 09:52	07/22/15 18:19
240-53500-15	FWGWBGmw-009C-0610-GF	Water	07/22/15 09:52	07/22/15 18:19
240-53500-16	FWGWBGmw-020-0611-GW	Water	07/22/15 10:57	07/22/15 18:19
240-53500-17	FWGWBGmw-020-0611-GF	Water	07/22/15 10:57	07/22/15 18:19
240-53500-18	FWGFWGmw-012-0578-GW	Water	07/22/15 13:32	07/22/15 18:19
240-53500-19	FWGFWGmw-012-0578-GF	Water	07/22/15 13:32	07/22/15 18:19
240-53500-20	FWGFWGmw-011-0577-GW	Water	07/22/15 15:02	07/22/15 18:19
240-53500-21	FWGFWGmw-011-0577-GF	Water	07/22/15 15:02	07/22/15 18:19
240-53500-22	FWGTEAMRQL-TRIP	Water	07/22/15 09:00	07/22/15 18:19
240-53500-23	FWGRQLmw-007C-0604-GW	Water	07/22/15 10:14	07/22/15 18:19
240-53500-24	FWGRQLmw-007C-0604-GF	Water	07/22/15 10:14	07/22/15 18:19
240-53500-25	FWGRQLmw-DUP5-0621-GW	Water	07/22/15 10:14	07/22/15 18:19
240-53500-26	FWGRQLmw-DUP5-0621-GF	Water	07/22/15 10:14	07/22/15 18:19
240-53500-27	FWGRQLmw-008C-0605-GW	Water	07/22/15 14:38	07/22/15 18:19
240-53500-28	FWGRQLmw-008C-0606-GF	Water	07/22/15 14:38	07/22/15 18:19

Method Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CAN
8081A	Organochlorine Pesticides (GC)	SW846	TAL CAN
8082	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CAN
8330 Modified	Nitroguanidine (HPLC)	SW846	TAL SAC
8330A	Nitroaromatics and Nitramines	SW846	TAL SAC
6010B	Metals (ICP)	SW846	TAL CAN
6020	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL CAN
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAC
9012A	Cyanide, Total and/or Amenable	SW846	TAL CAN
WS-WC-0050	Nitrocellulose	TAL-SAC	TAL SAC

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-SAC = TestAmerica Laboratories, West Sacramento, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

CHAIN OF CUSTODY
AND
RECEIVING DOCUMENTS

240-53500 Chain of Custody

4101 Shuffel Street, N.W. North Canton, OH 44720 **tel** 330.497.9396 **fax** 330.497.0772 **www.testamericainc.com**

TestAmerica Canton
4101 Shuffel Street, N. W.
North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497.0772

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Client Contact	Project Manager: John Miller	Site Contact: E Corbin	Date: 7/22/15	COC No: ADO72213
Company Name: EQM	Tel/Fax:	Lab Contact: Mark Loeb	Carrier: Lab Pickup	1 of 1 COCs
Address: 1800 Carillon Blvd	Analysis Turnaround Time			Sampler:
City/State/Zip: Cinti, OH 45240	☒ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 513-825-7500	TAT if different from Below 21			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: EVAAP	☐ 1 week			Job / SDG No.:
Site:	☐ 2 days			
PO #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	SVOC1 - 8270	Explosive / Propel 8330	Metals - 6010B / 7470	Nitrate/Nitrite	Cooler ID / Sample Specific Notes:
FWGLWBGmw-021-0612-GW	7/22/15	1023	G	GW	5	N	N	X	X			AC1
FWGLWBGMW-021-0612-GF	↓	↓	G	GW	1	Y	N			X		AC1
~~DUP~~ FWGLL12MW-0187C-0599-GW	↓	1238	↓	↓	5	N	N	X	X		X	C119
FWGLL12MW-0187C-0599-GF	↓	↓	↓	↓	1	Y	N			X		↓
FWGLL12MW-0547-0602-GW		1606	G	GW	1	N	N				X	M12

AD 7/22/15

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Metals field filtered, Samples collected near pickup time may not meet requirements for temp.

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd:	Corr'd:	Therm ID No.:
Relinquished by:	Company: BAR	Date/Time: 7/22/15 1720	Received by:	Company: TestAmerica	Date/Time: 7-22-15-1720
Relinquished by:	Company: 7-22-15	Date/Time: 1814	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: Heather Mygoni	Company: TAL	Date/Time: 7/22/15 1814

TestAmerica Canton
4101 Shuffel Street, N. W.
North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497.0772

Chain of Custody Record

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TestAmerica Laboratories, Inc.

Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other:

Client Contact	Project Manager: John Miller	Site Contact: Erik Corbin	Date: 7/22/15	COC No: EC072215
Company Name: ERM	Tel/Fax:	Lab Contact: Mark Loeb	Carrier: Lab Pickup	1 of 1 COCs
Address: 1800 Carillon Blvd.	Analysis Turnaround Time			Sampler:
City/State/Zip: Cincinnati OH 45240	☒ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 513-825-7500	TAT if different from Below 3 weeks			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: RVAAP 66	☐ 1 week			
Site:	☐ 2 days			Job / SDG No.:
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	5VOC+ 8270	Explosives 8330	Propellants	Metals (6010B/7470A)	Nitrate 353.2	SVOC+ 8270	VOC 8260	Pesticides 8081	PCBs 8082	Cyanide 9012	Cooler ID / Sample Specific Notes:
FWGWBGmw-036C-0609-GW	7/22/15	09:31	G	GW	5	N	N	X	X	X								36
FWGWBGmw-036C-0609-GF	7/22/15	09:31	G	GW	1	Y	N				X							36
FWGLL12mw-245C-0601-GW	7/22/15	12:21	G	GW	6	N	N	X	X	X		X						All
FWGLL12mw-245C-0601-GF	7/22/15	12:21	G	GW	1	Y	N				X							All
FWGLL12mw-DUP4-0620-GW	7/22/15	13:11	G	GW	3	N	N	X				X						M12
FWGLL12mw-DUP4-0620-GF	7/22/15	13:11	G	GW	1	Y	N				X							M12
FWGRQLmw-009C-0606-GW	7/22/15	15:45	G	GW	13	N	N		X	X			X	X	X	X	X	C9 VOC in T5Q
FWGRQLmw-009C-0606-GF	7/22/15	15:45	G	GW	1	Y	N				X							C9

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other

	1	1	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Metals are field filtered. Temps may not meet requirements if sample collection is close to lab pickup times.

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ | Therm ID No.: _____

Relinquished by:	Company: ERM	Date/Time: 7-22-15 1720	Received by: RC/Fedex	Company: TestAmerica	Date/Time: 7-22-15 1720
Relinquished by: Fedex	Company: TA 7-22-15	Date/Time: 1819	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: Heather Mizer	Company: TA	Date/Time: 7/22/15 1819

TestAmerica Canton
4101 Shuffel Street, N. W.
North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497.0772

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Client Contact	Project Manager: John Miller	Site Contact: E. Corbin	Date: 7-22-15	COC No: Cal 72215
Company Name: FWM	Tel/Fax: 513 825 7500 X7330	Lab Contact: M. Loeb	Carrier: Lab Pickup	1 of 1 COCs
Address: 1600 Carillon BLVD	Analysis Turnaround Time			Sampler: Colleen
City/State/Zip: Cincinnati	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 513 825 7500	TAT if different from Below			Walk-in Client:
Fax: 513 825 7495	☒ 2 weeks			Lab Sampling:
Project Name: RVAAP-16	☐ 1 week			
Site: Ravenna Ohio	☐ 2 days			Job / SDG No.:
PO#	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	SVOC 8270	EXPLOSIVES 8330	Propellants	Metals 6010	Sample Specific Notes: cooler 10
FWGWBGMW-009C-0610-GW	7-22-15	0952	G	GW	5	N	N	X	X	X		P-25
FWGWBGMW-009C-0610-GF	↓	↓	↓	↓	1	Y	N				X	P-25
FWGWBGMW-020-0611-GW	7-22-15	1057	G	GW	5	N	N	X	X	X		AD7
FWGWBGMW-020-0611-GF	↓	↓	↓	↓	1	Y	N				X	AD7
FWGFWGMW-012-0578-GW	7-22-15	1332	G	GW		N	N	X	X	X		S-7
FWGFWGMW-012-0578-GF	↓	↓	↓	↓		Y	N				X	S-7
FWGFWGMW-011-0577-GW	7-22-15	1502	G	GW		N	N	X	X	X		C7
FWGFWGMW-011-0577-GW	↓	↓	↓	↓		Y	N				X	C7

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

ND

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Temps may not meet requirements if lab pickup time is close to sample time.

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____	Therm ID No.: _____

	Company	Date/Time		Company	Date/Time
Relinquished by:	FWM	7-22-15 1720	Received by: RC Robison	TestAmerica	7-22-15 1720
Relinquished by: RC Robison	TestAm	7-22-15 1819	Received by:		
Relinquished by:			Received in Laboratory by:	TDR	7/22/15 1819

TestAmerica Canton
4101 Shuffel Street, N. N.
North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497. 2

Chain of Custody Record

083260

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: JOHN MILLER	Site Contact: ERIK CORBIN	Date: 07-22-15	COC No: SAS0722215
Company Name: EQM	Tel/Fax: (513) 825-7500 FAX 7495	Lab Contact: MARK LOEB	Carrier: LAB PICKUP	1 of 1 COCs
Address: 1800 CARILLON BLVD.	Analysis Turnaround Time			Sampler:
City/State/Zip: CINCINNATI, OH 45240	☐ CALENDAR DAYS ☒ WORKING DAYS			For Lab Use Only:
Phone: (513) 825-7506	TAT if different from Below			Walk-in Client:
Fax: (513) 825-7495	☒ PER SOW: 2 weeks; ☐ 1 week; ☐ 2 days; ☐ 1 day			Lab Sampling:
Project Name: RVAAP66				Job / SDG No.:
Site:				
PO # 30174.0016.001.10.1				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8260 VOC	8270 SVOC 4	8081 PEST	8082 PCB	6330 EXPLO	PROPELLANTS	CYANIDE	6010 6020 7470 METALS	COOLER 10 # Sample Specific Notes:
FWGTEAM X-TRIP	07 22 15	0800	G	GW		N	N	3								T52
FWGRQLmw-007C-0604-GW	07 22 15	1014	G	GW	13	N	N	3	2	2	2	1	2	1		T52
FWGRQLmw-007C-0604-GF	07 22 15	1014	G	GW	1	Y	N								1	T52
FWGRQLmw-DUP5-0621-GW	07 22 15	1014	G	GW	13	N	N	3	2	2	2	1	2	1		L142
FWGRQLmw-DUP5-0621-GF	07 22 15	1014	G	GW	1	Y	N								1	L142
FWGRQLmw-008C-0606-GW	07 22 15	1438	G	GW	39	N	Y	9	6	6	6	3	6	3		MS MSD 404, A1, 002
FWGRQLmw-008C-0606-GF	07 22 15	1438	G	GW	3	Y	Y								3	MS MSD 404, A1, 002
Preservation Used: 1= Ice, 2= HCL, 3=H2SO4, 4=HNO3, 5=NaOH, 6= Other								2	1	1	1	1	5	1		

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: ALL METALS, PERCHLORATE SAMPLES ARE FIELD FILTERED. ALL VOAs IN COOLER T52
TEMPS MAY NOT MEET REQUIREMENTS IF SAMPLE COLLECTION IS CLOSE TO LAB PICKUP TIME.

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd:	Corr'd:	Therm ID No.:
Relinquished by:	Company: EQM	Date/Time: 7-22-15 1720	Received by: RC 06.80	Company: TestAmerica	Date/Time: 7-22-15 1720
Relinquished by: Robson	Company: TAL Can 7-22-15	Date/Time: 1819	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company: TAL	Date/Time: 7/22/15 1819

TestAmerica Canton Sample Receipt Form/Narrative **Login # : 53600**
Canton Facility

Client EQM Site Name _____ Cooler unpacked by: Heather Mugone

Cooler Received on 7/22/15 Opened on 7/22/15

FedEx: 1st Grd Exp UPS FAS Stetson Client Drop Off (TestAmerica Courier) Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box Client Cooler Box (Other) mef

Packing material used: (Bubble Wrap) Foam Plastic Bag None Other _____

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt
   IR GUN# A (CF +1.0 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
   ~~IR GUN# 4 (CF +0.5 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C~~
   ~~IR GUN# 5 (CF +0.4 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C~~
   IR GUN# 8 (CF -1.5 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
   ☒ See Multiple Cooler Form
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1 each (Yes) No
   -Were custody seals on the outside of the cooler(s) signed & dated? (Yes) No NA
   -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes (No)
3. Shippers' packing slip attached to the cooler(s)? Yes (No)
4. Did custody papers accompany the sample(s)? (Yes) No
5. Were the custody papers relinquished & signed in the appropriate place? (Yes) No
6. Was/were the person(s) who collected the samples clearly identified on the COC? (Yes) No
7. Did all bottles arrive in good condition (Unbroken)? (Yes) No
8. Could all bottle labels be reconciled with the COC? Yes (No)
9. Were correct bottle(s) used for the test(s) indicated? (Yes) No
10. Sufficient quantity received to perform indicated analyses? (Yes) No
11. Were sample(s) at the correct pH upon receipt? (Yes) No NA pH Strip Lot# HC432654
12. Were VOAs on the COC? (Yes) No
13. Were air bubbles >6 mm in any VOA vials? Yes (No) NA
14. Was a trip blank present in the cooler(s)? Trip Blank Lot # B506301VB (Yes) No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

Received 250mL H_2SO_4 bottle labeled as FWGLL12mw-247-0600-GW - by process of Elimination determined that this sample is supposed to be labeled as FWGLL12mw-247-0602-GW. will log per COC

All volume received for sample FWGRALmw-008C-0606-GW/GF were labeled as FWGRALmw-008C-0605-GW/GF.

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

TestAmerica Multiple Cooler Receipt Form/Narrative
Canton Facility

Login # : 53520

Cooler #	IR Gun #	Observed Temp °C	Corrected Temp °C	Coolant
A11	A	3.2	4.2	ICE
M12		2.0	3.0	
C9		3.0	4.0	
C119		3.2	4.2	
A1		3.6	4.6	
L142		2.8	3.8	
~~from L237~~ C1		1.8	2.8	
404		2.2	3.2	
36		3.2	4.2	
T52		1.2	2.2	
S1		3.7	4.7	
A57		3.2	4.2	
002		4.2	5.2	
~~R25~~		4.1	5.1	
AC1		4.6	5.6	

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
FWGBGmw-021-0612-GF	240-53500-A-2	Plastic 500ml - with Nitric Acid	<2		
FWGLL12mw-0187C-0599-GW	240-53500-A-3	Plastic 250ml - with Sulfuric Acid	<2		
FWGLL12mw-0187C-0599-GF	240-53500-A-4	Plastic 500ml - with Nitric Acid	<2		
FWGLL12mw-0247-0602-GW	240-53500-A-5	Plastic 250ml - with Sulfuric Acid	<2		
FWGWBGmw-006C-0609-GF	240-53500-A-7	Plastic 500ml - with Nitric Acid	<2		
FWGLL12mw-245C-0601-GW	240-53500-A-8	Plastic 250ml - with Sulfuric Acid	<2		
FWGLL12mw-245C-0601-GF	240-53500-A-9	Plastic 500ml - with Nitric Acid	<2		
FWGLL12mw-DUP4-0620-GW	240-53500-A-10	Plastic 250ml - with Sulfuric Acid	<2		
FWGLL12mw-DUP4-0620-GF	240-53500-A-11	Plastic 500ml - with Nitric Acid	<2		
FWGRQLmw-009C-0606-GW	240-53500-D-12	Plastic 250ml - with Sodium Hydro	>12		
FWGRQLmw-009C-0606-GF	240-53500-A-13	Plastic 500ml - with Nitric Acid	<2		
FWGWBGmw-009C-0610-GF	240-53500-A-15	Plastic 500ml - with Nitric Acid	<2		
FWGWBGmw-020-0611-GF	240-53500-A-17	Plastic 500ml - with Nitric Acid	<2		
FWGWBGmw-012-0578-GF	240-53500-A-19	Plastic 500ml - with Nitric Acid	<2		
FWGWBGmw-011-0577-GF	240-53500-A-21	Plastic 500ml - with Nitric Acid	<2		
FWGRQLmw-007C-0604-GW	240-53500-D-23	Plastic 250ml - with Sodium Hydro	>12		
FWGRQLmw-007C-0604-GF	240-53500-A-24	Plastic 500ml - with Nitric Acid	<2		
FWGRQLmw-DUP5-0621-GW	240-53500-D-25	Plastic 250ml - with Sodium Hydro	>12		
FWGRQLmw-DUP5-0621-GF	240-53500-A-26	Plastic 500ml - with Nitric Acid	<2		
FWGRQLmw-008C-0606-GW	240-53500-J-27	Plastic 250ml - with Sodium Hydro	>12		
FWGRQLmw-008C-0606-GW	240-53500-K-27	Plastic 250ml - with Sodium Hydro	>12		
FWGRQLmw-008C-0606-GW	240-53500-L-27	Plastic 250ml - with Sodium Hydro	>12		
FWGRQLmw-008C-0606-GF	240-53500-A-28	Plastic 500ml - with Nitric Acid	<2		
FWGRQLmw-008C-0606-GF	240-53500-B-28	Plastic 500ml - with Nitric Acid	<2		
FWGRQLmw-008C-0606-GF	240-53500-C-28	Plastic 500ml - with Nitric Acid	<2		

Job ID: 240-53500-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: Environmental Quality Mgt., Inc.

Project: RVAAP 66 (OH)

Report Number: 240-53500-1

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

The 353.2 Nirate-Nitrite as Nitrogen, 353.2 Nitrocellulose, 8330 Nitroguanidine and 8330A Explosives analysis were performed at the TestAmerica Sacramento Laboratory.

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

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

TestAmerica utilizes USEPA approved methods and DOD QSM, where applicable, in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

All parameters for which TestAmerica North Canton has certification were evaluated to the limit of detection (LOD) and include qualified results where applicable. Parameters not certified under QSM, if any, were evaluated to the detection limit (DL) and include qualified results where applicable.

The sample(s) that contain constituents flagged with U are undetected. The result associated with this flag is the limit of detection (LOD).

RECEIPT

The samples were received on 7/22/2015 6:19 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 15 coolers at receipt time were 2.2° C, 2.8° C, 3.0° C, 3.2° C, 3.8° C, 4.0° C, 4.2° C, 4.2° C, 4.2° C, 4.2° C, 4.6° C, 4.7° C, 5.1° C, 5.2° C and 5.6° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples FWGRQLmw-009C-0606-GW (240-53500-12), FWGTEAMRQL-TRIP (240-53500-22), FWGRQLmw-007C-0604-GW (240-53500-23), FWGRQLmw-DUP5-0621-GW (240-53500-25) and FWGRQLmw-008C-0605-GW (240-53500-27) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B DoD. The samples were analyzed on 07/23/2015.

Job ID: 240-53500-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

Methylene Chloride was detected in method blank MB 240-190310/6 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Acetone failed the recovery criteria low for MRL 240-190310/28. Chloroethane and Methylene Chloride failed the recovery criteria high.

2-Butanone (MEK), 2-Hexanone, 4-Methyl-2-pentanone (MIBK), Acetone and Bromomethane failed the recovery criteria low for MRL 240-190310/5. Methylene Chloride failed the recovery criteria high.

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

SEMIVOLATILE ORGANIC COMPOUNDS (GCMS)

Samples FWGWBGmw-021-0612-GW (240-53500-1), FWGLL12mw-0187C-0599-GW (240-53500-3), FWGWBGmw-006C-0609-GW (240-53500-6), FWGLL12mw-245C-0601-GW (240-53500-8), FWGLL12mw-DUP4-0620-GW (240-53500-10), FWGRQLmw-009C-0606-GW (240-53500-12), FWGWBGmw-009C-0610-GW (240-53500-14), FWGWBGmw-020-0611-GW (240-53500-16), FWGFWGmw-012-0578-GW (240-53500-18), FWGFWGmw-011-0577-GW (240-53500-20), FWGRQLmw-007C-0604-GW (240-53500-23), FWGRQLmw-DUP5-0621-GW (240-53500-25) and FWGRQLmw-008C-0605-GW (240-53500-27) were analyzed for semivolatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8270C. The samples were prepared on 07/23/2015 and analyzed on 08/05/2015.

Surrogates are added during the extraction process prior to dilution. When the sample is diluted, surrogate recoveries are diluted out and no corrective action is required.

3,3'-Dichlorobenzidine failed the recovery criteria low for the MS and MSD of sample FWGRQLmw-008C-0605-GW (240-53500-27) in batch 240-191933. 4-Chloroaniline exceeded the RPD limit.

The continuing calibration verification (CCV) associated with analytical batch 191933 recovered above the upper control limit for 4-nitrophenol. The samples associated with this CCV were non-detect for this analyte; therefore, the data have been reported. The following samples are impacted: FWGWBGmw-021-0612-GW (240-53500-1), FWGLL12mw-0187C-0599-GW (240-53500-3), FWGWBGmw-006C-0609-GW (240-53500-6), FWGLL12mw-245C-0601-GW (240-53500-8), FWGLL12mw-DUP4-0620-GW (240-53500-10), FWGRQLmw-009C-0606-GW (240-53500-12), FWGWBGmw-009C-0610-GW (240-53500-14), FWGWBGmw-020-0611-GW (240-53500-16), FWGFWGmw-012-0578-GW (240-53500-18), FWGFWGmw-011-0577-GW (240-53500-20), FWGRQLmw-007C-0604-GW (240-53500-23), FWGRQLmw-DUP5-0621-GW (240-53500-25), FWGRQLmw-008C-0605-GW (240-53500-27) and (MB 240-190301/16-A).

The matrix spike / matrix spike duplicate (MS/MSD), associate with sample FWGRQLmw-008C-0605-GW (240-53500-27[1.0]), FWGRQLmw-008C-0605-GW (240-53500-27[MS][1.0]) and FWGRQLmw-008C-0605-GW (240-53500-27[MSD][1.0]) had recoveries and %RPD outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

NITROGUANIDINE (HPLC)

Samples FWGWBGmw-021-0612-GW (240-53500-1), FWGLL12mw-0187C-0599-GW (240-53500-3), FWGWBGmw-006C-0609-GW (240-53500-6), FWGLL12mw-245C-0601-GW (240-53500-8), FWGRQLmw-009C-0606-GW (240-53500-12), FWGWBGmw-009C-0610-GW (240-53500-14), FWGWBGmw-020-0611-GW (240-53500-16), FWGFWGmw-012-0578-GW (240-53500-18), FWGFWGmw-011-0577-GW (240-53500-20), FWGRQLmw-007C-0604-GW (240-53500-23), FWGRQLmw-DUP5-0621-GW (240-53500-25) and FWGRQLmw-008C-0605-GW (240-53500-27) were analyzed for nitroguanidine (HPLC) in accordance with EPA SW-846 Method 8330_Ngu. The samples were prepared on 07/27/2015 and analyzed on 07/30/2015 and 07/31/2015.

Nitroguanidine failed the recovery criteria high for the MSD of sample FWGRQLmw-008C-0606-GWMSD (240-53500-27) in batch 320-81344.

Job ID: 240-53500-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 320-80988 and analytical batch 320-81344 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

The following samples contained sediment/particulates.FWGRQLmw-007C-0604-GW (240-53500-23), FWGRQLmw-DUP5-0621-GW (240-53500-25), FWGRQLmw-008C-0605-GW (240-53500-27), FWGRQLmw-008C-0605-GW (240-53500-27[MS]) and FWGRQLmw-008C-0605-GW (240-53500-27[MSD]) We filtered prior extraction.

Samples had excessive sediment and turbidity. Samples were filtered prior to extraction. A Preparation Blank (Filter Blank) was extracted with this batch. FWGRQLmw-007C-0604-GW (240-53500-23) and FWGRQLmw-DUP5-0621-GW (240-53500-25)

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

CHLORINATED PESTICIDES

Samples FWGRQLmw-009C-0606-GW (240-53500-12), FWGRQLmw-007C-0604-GW (240-53500-23), FWGRQLmw-DUP5-0621-GW (240-53500-25) and FWGRQLmw-008C-0605-GW (240-53500-27) were analyzed for chlorinated pesticides in accordance with EPA SW-846 Method 8081A DoD. The samples were prepared on 07/28/2015 and analyzed on 07/29/2015.

DCB Decachlorobiphenyl failed the surrogate recovery criteria low for FWGRQLmw-009C-0606-GW (240-53500-12), FWGRQLmw-008C-0605-GW (240-53500-27), and FWGRQLmw-008C-0605-GWMS (240-53500-27MS).

Several analytes failed the recovery criteria high for LCS 240-190983/11-A. Refer to the QC report for details.

alpha-Chlordane, Dieldrin, Endrin and gamma-Chlordane failed the recovery criteria high for the MS of sample FWGRQLmw-008C-0605-GWMS (240-53500-27) in batch 240-191186.

Several analytes failed the recovery criteria high for the MSD of sample FWGRQLmw-008C-0606-GWMSD (240-53500-27) in batch 240-191186.

Surrogate recovery for the following samples was outside control limits: FWGRQLmw-009C-0606-GW (240-53500-12) and FWGRQLmw-008C-0605-GW (240-53500-27). Re-extraction was performed with concurring results. DCB only.

The laboratory control sample (LCS) for batch preparation batch 240-190983 and analytical batch 240-191186 recovered outside control limits for the following analytes: multiple analytes. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

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

POLYCHLORINATED BIPHENYLS (PCBS)

Samples FWGRQLmw-009C-0606-GW (240-53500-12), FWGRQLmw-007C-0604-GW (240-53500-23), FWGRQLmw-DUP5-0621-GW (240-53500-25) and FWGRQLmw-008C-0605-GW (240-53500-27) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082 DoD. The samples were prepared on 07/23/2015 and 07/28/2015 and analyzed on 07/24/2015 and 07/29/2015.

Surrogates are added during the extraction process prior to dilution. When the sample dilution is 5X or greater, surrogate recoveries are diluted out and no corrective action is required. All of the samples in this data set analyzed for PCBs were subjected to the sulfuric acid cleanup procedure before instrumental analysis, per EPA Method 3665A.

DCB Decachlorobiphenyl failed the surrogate recovery criteria low for FWGRQLmw-007C-0604-GW (240-53500-23), FWGRQLmw-008C-0605-GW (240-53500-27), FWGRQLmw-008C-0605-GWMS (240-53500-27MS) and FWGRQLmw-008C-0605-GWMSD (240-53500-27MSD).

Aroclor-1016 and Aroclor-1260 exceeded the RPD limit for the MSD of sample FWGRQLmw-008C-0606-GWMSD (240-53500-27) in batch 240-191069.

Job ID: 240-53500-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

The Internal standard (ISTD) response for the following sample exceeded the control limit on Front Column(ECD1A): FWGRQLmw-009C-0606-GW (240-53500-12). As such, the sample results associated with this ISTD were reported from the other column, which met ISTD acceptance criteria.

Surrogate recovery for the following samples were outside control limits: FWGRQLmw-DUP5-0621-GW (240-53500-25), FWGRQLmw-008C-0605-GW (240-53500-27), FWGRQLmw-008C-0605-GW (240-53500-27[MS]) and FWGRQLmw-008C-0605-GW (240-53500-27[MSD]). Re-extraction and/or re-analysis was performed with concurring results. The re-extract analysis has been reported within holding time.

Surrogate recovery for the following sample was outside control limits: FWGRQLmw-007C-0604-GW (240-53500-23). Re-extraction and/or re-analysis was performed with concurring results. The original analysis has been reported.

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

EXPLOSIVES

Samples FWGWBGmw-021-0612-GW (240-53500-1), FWGLL12mw-0187C-0599-GW (240-53500-3), FWGWBGmw-006C-0609-GW (240-53500-6), FWGLL12mw-245C-0601-GW (240-53500-8), FWGRQLmw-009C-0606-GW (240-53500-12), FWGWBGmw-009C-0610-GW (240-53500-14), FWGWBGmw-020-0611-GW (240-53500-16), FWGFWGmw-012-0578-GW (240-53500-18), FWGFWGmw-011-0577-GW (240-53500-20), FWGRQLmw-007C-0604-GW (240-53500-23), FWGRQLmw-DUP5-0621-GW (240-53500-25) and FWGRQLmw-008C-0605-GW (240-53500-27) were analyzed for explosives in accordance with EPA SW-846 Method 8330A. The samples were prepared on 07/28/2015 and 08/17/2015 and analyzed on 08/05/2015, 08/06/2015, 08/13/2015 and 08/18/2015.

PETN was detected in method blank PB 320-81071/2-A at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Nitrobenzene exceeded the RPD limit for the MSD of sample FWGRQLmw-008C-0606-GWMSD (240-53500-27) in batch 320-81895.

Samples contained sediment/particulates.FWGRQLmw-007C-0604-GW (240-53500-23), FWGRQLmw-DUP5-0621-GW (240-53500-25), FWGRQLmw-008C-0605-GW (240-53500-27), FWGRQLmw-008C-0605-GW (240-53500-27[MS]) and FWGRQLmw-008C-0605-GW (240-53500-27[MSD]) We filtered prior extraction.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 320-83110.

The following samples were re-prepared outside of preparation holding time because the Preparation Blank (Filter Blank) in the original batch had a hit for PETN above the reporting limit.

Samples had excessive sediment and turbidity. Samples were filtered prior to extraction. A Preparation Blank (Filter Blank) was extracted with this batch. FWGRQLmw-007C-0604-GW (240-53500-23) and FWGRQLmw-DUP5-0621-GW (240-53500-25)

The percent difference value for the analyte listed below is above the method acceptance limits in the MRL standard. This standard was analyzed before and after the associated samples. The corrective action for this deficiency is an analysis of a standard at approximately 2x the MDL. The MRL standard for PETN is approximately 2x the MDL. The acceptance criteria for the 2x MDL standard is detection of the compound. As the compound was detected, the data is reported with no further corrective action.

LC10, 8/5/2015, 15:51
PETN, Project Criteria 30%D, Actual 41%D

(CCVL 320-81895/3)

The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for preparation batch 320-81071 and analytical batch 320-81895 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected.

Re-extraction of the following samples was performed outside of the extraction holding time due to the PETN result above the reporting limit in the filter blank of the original batch. Both sets of results for PETN were reported. : FWGRQLmw-007C-0604-GW (240-53500-23)

Job ID: 240-53500-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

and FWGRQLmw-DUP5-0621-GW (240-53500-25).

PETN was detected above the reporting limit (RL) in the filter blank (PB) associated with preparation batch 320-81071 and analytical batch 320-81895 as well as in the following samples: FWGRQLmw-007C-0604-GW (240-53500-23), FWGRQLmw-DUP5-0621-GW (240-53500-25) and (PB 320-81071/2-A). All affected samples were re-extracted outside of holding time. Both sets of data have been reported.

The method blank for preparation batch 320-81071 contained PETN above the reporting limit (RL). Sample 240-53500-27 was non-detect for the target compound PETN; therefore, re-extraction and re-analysis of this sample was not performed.

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

TOTAL RECOVERABLE METALS (ICP)

Samples FWGWBGmw-021-0612-GF (240-53500-2), FWGLL12mw-0187C-0599-GF (240-53500-4), FWGWBGmw-006C-0609-GF (240-53500-7), FWGLL12mw-245C-0601-GF (240-53500-9), FWGLL12mw-DUP4-0620-GF (240-53500-11), FWGRQLmw-009C-0606-GF (240-53500-13), FWGWBGmw-009C-0610-GF (240-53500-15), FWGWBGmw-020-0611-GF (240-53500-17), FWGFWGmw-012-0578-GF (240-53500-19), FWGFWGmw-011-0577-GF (240-53500-21), FWGRQLmw-007C-0604-GF (240-53500-24), FWGRQLmw-DUP5-0621-GF (240-53500-26) and FWGRQLmw-008C-0606-GF (240-53500-28) were analyzed for total recoverable metals (ICP) in accordance with EPA SW-846 Method 6010B DoD. The samples were prepared on 07/23/2015 and analyzed on 07/27/2015 and 07/28/2015.

ICB, CCB, and ICSA samples are evaluated using the lowest LOD and DL criteria in LIMS. Using this criteria, an individual element may occasionally be flagged as out of control. If the element has a higher LOD or DL, the data is evaluated to the higher limit and determined to be acceptable.

Lead and Silver were detected in method blank MB 240-190339/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Chromium and Cobalt exceeded the RPD limit for the duplicate of sample FWGRQLmw-008C-0606-GFDU (240-53500-28). Refer to the QC report for details.

Sample FWGLL12mw-0187C-0599-GF (240-53500-4)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The following sample was diluted due to the nature of the sample matrix: FWGLL12mw-0187C-0599-GF (240-53500-4). Elevated reporting limits (RLs) are provided.

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

TOTAL RECOVERABLE METALS (ICPMS)

Samples FWGWBGmw-021-0612-GF (240-53500-2), FWGLL12mw-0187C-0599-GF (240-53500-4), FWGWBGmw-006C-0609-GF (240-53500-7), FWGLL12mw-245C-0601-GF (240-53500-9), FWGLL12mw-DUP4-0620-GF (240-53500-11), FWGRQLmw-009C-0606-GF (240-53500-13), FWGWBGmw-009C-0610-GF (240-53500-15), FWGWBGmw-020-0611-GF (240-53500-17), FWGFWGmw-012-0578-GF (240-53500-19), FWGFWGmw-011-0577-GF (240-53500-21), FWGRQLmw-007C-0604-GF (240-53500-24), FWGRQLmw-DUP5-0621-GF (240-53500-26) and FWGRQLmw-008C-0606-GF (240-53500-28) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020 DoD. The samples were prepared on 07/23/2015 and analyzed on 07/27/2015.

ICB, CCB, and ICSA samples are evaluated using the lowest LOD and DL criteria in LIMS. Using this criteria, an individual element may occasionally be flagged as out of control. If the element has a higher LOD or DL, the data is evaluated to the higher limit and determined to be acceptable.

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

TOTAL MERCURY

Samples FWGWBGmw-021-0612-GF (240-53500-2), FWGLL12mw-0187C-0599-GF (240-53500-4), FWGWBGmw-006C-0609-GF

Job ID: 240-53500-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

(240-53500-7), FWGLL12mw-245C-0601-GF (240-53500-9), FWGLL12mw-DUP4-0620-GF (240-53500-11), FWGRQLmw-009C-0606-GF (240-53500-13), FWGWBGmw-009C-0610-GF (240-53500-15), FWGWBGmw-020-0611-GF (240-53500-17), FWGFWGmw-012-0578-GF (240-53500-19), FWGFWGmw-011-0577-GF (240-53500-21), FWGRQLmw-007C-0604-GF (240-53500-24), FWGRQLmw-DUP5-0621-GF (240-53500-26) and FWGRQLmw-008C-0606-GF (240-53500-28) were analyzed for total mercury in accordance with EPA SW-846 Method 7470A. The samples were prepared on 07/23/2015 and analyzed on 07/24/2015.

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

NITRATE-NITRITE AS NITROGEN

Samples FWGLL12mw-0187C-0599-GW (240-53500-3), FWGLL12mw-0247-0602-GW (240-53500-5), FWGLL12mw-245C-0601-GW (240-53500-8) and FWGLL12mw-DUP4-0620-GW (240-53500-10) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 08/10/2015.

Sample FWGLL12mw-0187C-0599-GW (240-53500-3)[1000X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

NITROCELLULOSE

Samples FWGWBGmw-021-0612-GW (240-53500-1), FWGLL12mw-0187C-0599-GW (240-53500-3), FWGWBGmw-006C-0609-GW (240-53500-6), FWGLL12mw-245C-0601-GW (240-53500-8), FWGRQLmw-009C-0606-GW (240-53500-12), FWGWBGmw-009C-0610-GW (240-53500-14), FWGWBGmw-020-0611-GW (240-53500-16), FWGFWGmw-012-0578-GW (240-53500-18), FWGFWGmw-011-0577-GW (240-53500-20), FWGRQLmw-007C-0604-GW (240-53500-23), FWGRQLmw-DUP5-0621-GW (240-53500-25) and FWGRQLmw-008C-0605-GW (240-53500-27) were analyzed for Nitrocellulose in accordance with EPA Method 353.2. The samples were prepared on 08/10/2015 and analyzed on 08/11/2015.

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

TOTAL CYANIDE

Samples FWGRQLmw-009C-0606-GW (240-53500-12), FWGRQLmw-007C-0604-GW (240-53500-23), FWGRQLmw-DUP5-0621-GW (240-53500-25) and FWGRQLmw-008C-0605-GW (240-53500-27) were analyzed for total cyanide in accordance with EPA SW-846 Method 9012A DoD. The samples were prepared and analyzed on 08/04/2015.

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

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGWBGmw-021-0612-GW
Date Collected: 07/22/15 10:23
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-1
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		08/05/15 12:35	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		08/05/15 12:35	1
Diethyl phthalate	0.98	U	2.0	0.98	0.59	ug/L		08/05/15 12:35	1
Dimethyl phthalate	0.49	U	2.0	0.49	0.28	ug/L		08/05/15 12:35	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		08/05/15 12:35	1
Di-n-octyl phthalate	0.49	U	2.0	0.49	0.23	ug/L		08/05/15 12:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*76*		*50 - 110*	*07/23/15 06:39*	*08/05/15 12:35*	*1*
2-Fluorophenol (Surr)	*74*		*20 - 110*	*07/23/15 06:39*	*08/05/15 12:35*	*1*
Nitrobenzene-d5 (Surr)	*72*		*40 - 110*	*07/23/15 06:39*	*08/05/15 12:35*	*1*
Phenol-d5 (Surr)	*77*		*10 - 115*	*07/23/15 06:39*	*08/05/15 12:35*	*1*
Terphenyl-d14 (Surr)	*92*		*50 - 135*	*07/23/15 06:39*	*08/05/15 12:35*	*1*
2,4,6-Tribromophenol (Surr)	*90*		*40 - 125*	*07/23/15 06:39*	*08/05/15 12:35*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/30/15 23:57	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		08/05/15 21:40	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		08/05/15 21:40	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		08/05/15 21:40	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		08/05/15 21:40	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		08/05/15 21:40	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		08/05/15 21:40	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		08/05/15 21:40	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.059	ug/L		08/05/15 21:40	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		08/05/15 21:40	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		08/05/15 21:40	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		08/05/15 21:40	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		08/05/15 21:40	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		08/05/15 21:40	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		08/05/15 21:40	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		08/05/15 21:40	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		08/05/15 21:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*95*		*79 - 111*	*07/28/15 11:01*	*08/05/15 21:40*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/11/15 12:56	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGWBGmw-021-0612-GF
Date Collected: 07/22/15 10:23
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-2
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**4.6**	**J**	10	10	2.9	ug/L		07/27/15 14:32	1
Chromium	**0.84**	**J**	7.0	4.0	0.55	ug/L		07/27/15 14:32	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 14:32	1
Lead	**3.2**	**J**	10	5.0	1.9	ug/L		07/27/15 14:32	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 14:32	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 14:32	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 14:32	1
Barium	**55**	**J**	200	5.0	1.0	ug/L		07/27/15 14:32	1
Calcium	**72000**		5000	1000	260	ug/L		07/27/15 14:32	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 14:32	1
Magnesium	**18000**		5000	300	55	ug/L		07/27/15 14:32	1
Manganese	**210**		15	5.0	0.46	ug/L		07/27/15 14:32	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 14:32	1
Potassium	**1300**	**J**	5000	900	70	ug/L		07/27/15 14:32	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 16:50	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 16:50	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 16:50	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 16:50	1
Iron	**610**		150	100	44	ug/L		07/27/15 16:50	1
Sodium	**4600**		1000	400	160	ug/L		07/27/15 16:50	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 16:50	1
Zinc	50	U	50	50	27	ug/L		07/27/15 16:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 11:53	1

Client Sample ID: FWGLL12mw-0187C-0599-GW — **Lab Sample ID: 240-53500-3**
Date Collected: 07/22/15 12:38 — **Matrix: Water**
Date Received: 07/22/15 18:19

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/05/15 13:00	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		08/05/15 13:00	1
Diethyl phthalate	0.95	U	1.9	0.95	0.57	ug/L		08/05/15 13:00	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		08/05/15 13:00	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/05/15 13:00	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		08/05/15 13:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*78*		*50 - 110*	*07/23/15 06:39*	*08/05/15 13:00*	*1*
2-Fluorophenol (Surr)	*64*		*20 - 110*	*07/23/15 06:39*	*08/05/15 13:00*	*1*
Nitrobenzene-d5 (Surr)	*71*		*40 - 110*	*07/23/15 06:39*	*08/05/15 13:00*	*1*
Phenol-d5 (Surr)	*69*		*10 - 115*	*07/23/15 06:39*	*08/05/15 13:00*	*1*
Terphenyl-d14 (Surr)	*82*		*50 - 135*	*07/23/15 06:39*	*08/05/15 13:00*	*1*
2,4,6-Tribromophenol (Surr)	*92*		*40 - 125*	*07/23/15 06:39*	*08/05/15 13:00*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 00:51	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.050	U	0.15	0.050	0.031	ug/L		08/05/15 22:24	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.050	ug/L		08/05/15 22:24	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.050	ug/L		08/05/15 22:24	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.050	ug/L		08/05/15 22:24	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.050	ug/L		08/05/15 22:24	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		08/05/15 22:24	1
2-Nitrotoluene	0.10	U	0.50	0.10	0.088	ug/L		08/05/15 22:24	1
3-Nitrotoluene	0.10	U	0.50	0.10	0.057	ug/L		08/05/15 22:24	1
4-Nitrotoluene	0.10	U	0.50	0.10	0.088	ug/L		08/05/15 22:24	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.050	ug/L		08/05/15 22:24	1
HMX	0.050	U	0.15	0.050	0.036	ug/L		08/05/15 22:24	1
RDX	0.050	U	0.15	0.050	0.036	ug/L		08/05/15 22:24	1
Nitrobenzene	0.10	U	0.15	0.10	0.050	ug/L		08/05/15 22:24	1
Tetryl	0.10	U	0.15	0.10	0.050	ug/L		08/05/15 22:24	1
Nitroglycerin	0.50	U	0.65	0.50	0.33	ug/L		08/05/15 22:24	1
PETN	0.50	U M	0.65	0.50	0.30	ug/L		08/05/15 22:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*95*		*79 - 111*	*07/28/15 11:01*	*08/05/15 22:24*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate Nitrite as N	**1300**	**D**	50	12	3.1	mg/L		08/10/15 16:21	1000
Nitrocellulose	**0.77**	**J**	2.0	1.0	0.48	mg/L		08/11/15 12:58	1

Client Sample Results

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGLL12mw-0187C-0599-GF
Date Collected: 07/22/15 12:38
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-4
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**3.5**	**J**	10	10	2.9	ug/L		07/27/15 14:36	1
Chromium	**1.4**	**J**	7.0	4.0	0.55	ug/L		07/27/15 14:36	1
Cobalt	**11**		7.0	4.0	0.56	ug/L		07/27/15 14:36	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 14:36	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 14:36	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 14:36	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 14:36	1
Barium	**220**		200	5.0	1.0	ug/L		07/27/15 14:36	1
Calcium	**970000**	**D**	10000	2000	520	ug/L		07/28/15 07:17	2
Copper	20	U	50	20	3.8	ug/L		07/28/15 07:17	2
Magnesium	**280000**		5000	300	55	ug/L		07/27/15 14:36	1
Manganese	**1900**		15	5.0	0.46	ug/L		07/27/15 14:36	1
Nickel	**20**	**J**	40	5.0	0.76	ug/L		07/27/15 14:36	1
Potassium	**48000**		5000	900	70	ug/L		07/27/15 14:36	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 16:54	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 16:54	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 16:54	1
Cadmium	**0.56**	**J**	2.0	1.0	0.40	ug/L		07/27/15 16:54	1
Iron	100	U	150	100	44	ug/L		07/27/15 16:54	1
Sodium	**35000**		1000	400	160	ug/L		07/27/15 16:54	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 16:54	1
Zinc	50	U	50	50	27	ug/L		07/27/15 16:54	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 11:55	1

Client Sample Results

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGLL12mw-0247-0602-GW
Date Collected: 07/22/15 16:06
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-5
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate Nitrite as N	0.013	J	0.050	0.012	0.0031	mg/L		08/10/15 15:45	1

Client Sample ID: FWGWBGmw-006C-0609-GW
Date Collected: 07/22/15 09:31
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-6
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/05/15 13:25	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		08/05/15 13:25	1
Diethyl phthalate	0.96	U	1.9	0.96	0.58	ug/L		08/05/15 13:25	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		08/05/15 13:25	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/05/15 13:25	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		08/05/15 13:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*73*		*50 - 110*	*07/23/15 06:39*	*08/05/15 13:25*	*1*
2-Fluorophenol (Surr)	*68*		*20 - 110*	*07/23/15 06:39*	*08/05/15 13:25*	*1*
Nitrobenzene-d5 (Surr)	*67*		*40 - 110*	*07/23/15 06:39*	*08/05/15 13:25*	*1*
Phenol-d5 (Surr)	*72*		*10 - 115*	*07/23/15 06:39*	*08/05/15 13:25*	*1*
Terphenyl-d14 (Surr)	*91*		*50 - 135*	*07/23/15 06:39*	*08/05/15 13:25*	*1*
2,4,6-Tribromophenol (Surr)	*82*		*40 - 125*	*07/23/15 06:39*	*08/05/15 13:25*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 01:08	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.16	0.052	0.032	ug/L		08/05/15 23:07	1
1,3-Dinitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		08/05/15 23:07	1
2,4,6-Trinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		08/05/15 23:07	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		08/05/15 23:07	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		08/05/15 23:07	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.16	0.10	0.016	ug/L		08/05/15 23:07	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		08/05/15 23:07	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		08/05/15 23:07	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		08/05/15 23:07	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		08/05/15 23:07	1
HMX	**4.3**	**M**	0.16	0.052	0.037	ug/L		08/05/15 23:07	1
RDX	**10**	**M**	0.16	0.052	0.037	ug/L		08/05/15 23:07	1
Nitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		08/05/15 23:07	1
Tetryl	0.10	U	0.16	0.10	0.052	ug/L		08/05/15 23:07	1
Nitroglycerin	0.52	U	0.67	0.52	0.34	ug/L		08/05/15 23:07	1
PETN	0.52	U	0.67	0.52	0.31	ug/L		08/05/15 23:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*97*		*79 - 111*	*07/28/15 11:01*	*08/05/15 23:07*	*1*
3,4-Dinitrotoluene	*110*		*79 - 111*	*07/28/15 11:01*	*08/13/15 06:41*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/11/15 13:00	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGWBGmw-006C-0609-GF
Date Collected: 07/22/15 09:31
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-7
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 14:41	1
Chromium	**1.3**	**J**	7.0	4.0	0.55	ug/L		07/27/15 14:41	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 14:41	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 14:41	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 14:41	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 14:41	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 14:41	1
Barium	**20**	**J**	200	5.0	1.0	ug/L		07/27/15 14:41	1
Calcium	**72000**		5000	1000	260	ug/L		07/27/15 14:41	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 14:41	1
Magnesium	**24000**		5000	300	55	ug/L		07/27/15 14:41	1
Manganese	**53**		15	5.0	0.46	ug/L		07/27/15 14:41	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 14:41	1
Potassium	**890**	**J**	5000	900	70	ug/L		07/27/15 14:41	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 17:05	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 17:05	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 17:05	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 17:05	1
Iron	100	U	150	100	44	ug/L		07/27/15 17:05	1
Sodium	**5800**		1000	400	160	ug/L		07/27/15 17:05	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 17:05	1
Zinc	50	U	50	50	27	ug/L		07/27/15 17:05	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 11:56	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGLL12mw-245C-0601-GW
Date Collected: 07/22/15 12:21
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-8
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/05/15 13:50	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		08/05/15 13:50	1
Diethyl phthalate	0.96	U	1.9	0.96	0.58	ug/L		08/05/15 13:50	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		08/05/15 13:50	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/05/15 13:50	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		08/05/15 13:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*78*		*50 - 110*	*07/23/15 06:39*	*08/05/15 13:50*	*1*
2-Fluorophenol (Surr)	*69*		*20 - 110*	*07/23/15 06:39*	*08/05/15 13:50*	*1*
Nitrobenzene-d5 (Surr)	*70*		*40 - 110*	*07/23/15 06:39*	*08/05/15 13:50*	*1*
Phenol-d5 (Surr)	*75*		*10 - 115*	*07/23/15 06:39*	*08/05/15 13:50*	*1*
Terphenyl-d14 (Surr)	*88*		*50 - 135*	*07/23/15 06:39*	*08/05/15 13:50*	*1*
2,4,6-Tribromophenol (Surr)	*103*		*40 - 125*	*07/23/15 06:39*	*08/05/15 13:50*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 01:26	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.16	0.052	0.032	ug/L		08/05/15 23:51	1
1,3-Dinitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		08/05/15 23:51	1
2,4,6-Trinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		08/05/15 23:51	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		08/05/15 23:51	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		08/05/15 23:51	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.16	0.10	0.016	ug/L		08/05/15 23:51	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		08/05/15 23:51	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		08/05/15 23:51	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		08/05/15 23:51	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		08/05/15 23:51	1
HMX	0.052	U	0.16	0.052	0.037	ug/L		08/05/15 23:51	1
RDX	0.052	U	0.16	0.052	0.037	ug/L		08/05/15 23:51	1
Nitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		08/05/15 23:51	1
Tetryl	0.10	U	0.16	0.10	0.052	ug/L		08/05/15 23:51	1
Nitroglycerin	0.52	U	0.67	0.52	0.34	ug/L		08/05/15 23:51	1
PETN	0.52	U	0.67	0.52	0.31	ug/L		08/05/15 23:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*91*	*M*	*79 - 111*	*07/28/15 11:01*	*08/05/15 23:51*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate Nitrite as N	**0.0060**	**J**	0.050	0.012	0.0031	mg/L		08/10/15 15:51	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/11/15 13:02	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGLL12mw-245C-0601-GF
Date Collected: 07/22/15 12:21
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-9
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 14:53	1
Chromium	**1.8**	**J**	7.0	4.0	0.55	ug/L		07/27/15 14:53	1
Cobalt	**3.6**	**J**	7.0	4.0	0.56	ug/L		07/27/15 14:53	1
Lead	**2.3**	**J**	10	5.0	1.9	ug/L		07/27/15 14:53	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 14:53	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 14:53	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 14:53	1
Barium	**24**	**J**	200	5.0	1.0	ug/L		07/27/15 14:53	1
Calcium	**150000**		5000	1000	260	ug/L		07/27/15 14:53	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 14:53	1
Magnesium	**67000**		5000	300	55	ug/L		07/27/15 14:53	1
Manganese	**330**		15	5.0	0.46	ug/L		07/27/15 14:53	1
Nickel	**2.3**	**J**	40	5.0	0.76	ug/L		07/27/15 14:53	1
Potassium	**3200**	**J**	5000	900	70	ug/L		07/27/15 14:53	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 17:08	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 17:08	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 17:08	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 17:08	1
Iron	**770**		150	100	44	ug/L		07/27/15 17:08	1
Sodium	**23000**		1000	400	160	ug/L		07/27/15 17:08	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 17:08	1
Zinc	50	U	50	50	27	ug/L		07/27/15 17:08	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 11:58	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGLL12mw-DUP4-0620-GW
Date Collected: 07/22/15 13:11
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-10
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/05/15 14:15	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		08/05/15 14:15	1
Diethyl phthalate	0.95	U	1.9	0.95	0.57	ug/L		08/05/15 14:15	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		08/05/15 14:15	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/05/15 14:15	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		08/05/15 14:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*79*		*50 - 110*	*07/23/15 06:39*	*08/05/15 14:15*	*1*
2-Fluorophenol (Surr)	*69*		*20 - 110*	*07/23/15 06:39*	*08/05/15 14:15*	*1*
Nitrobenzene-d5 (Surr)	*69*		*40 - 110*	*07/23/15 06:39*	*08/05/15 14:15*	*1*
Phenol-d5 (Surr)	*74*		*10 - 115*	*07/23/15 06:39*	*08/05/15 14:15*	*1*
Terphenyl-d14 (Surr)	*92*		*50 - 135*	*07/23/15 06:39*	*08/05/15 14:15*	*1*
2,4,6-Tribromophenol (Surr)	*101*		*40 - 125*	*07/23/15 06:39*	*08/05/15 14:15*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate Nitrite as N	**0.0080**	**J**	0.050	0.012	0.0031	mg/L		08/10/15 15:53	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGLL12mw-DUP4-0620-GF
Date Collected: 07/22/15 13:11
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-11
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 14:57	1
Chromium	**1.5**	**J**	7.0	4.0	0.55	ug/L		07/27/15 14:57	1
Cobalt	**3.6**	**J**	7.0	4.0	0.56	ug/L		07/27/15 14:57	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 14:57	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 14:57	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 14:57	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 14:57	1
Barium	**25**	**J**	200	5.0	1.0	ug/L		07/27/15 14:57	1
Calcium	**150000**		5000	1000	260	ug/L		07/27/15 14:57	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 14:57	1
Magnesium	**69000**		5000	300	55	ug/L		07/27/15 14:57	1
Manganese	**320**		15	5.0	0.46	ug/L		07/27/15 14:57	1
Nickel	**2.0**	**J**	40	5.0	0.76	ug/L		07/27/15 14:57	1
Potassium	**3200**	**J**	5000	900	70	ug/L		07/27/15 14:57	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 17:12	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 17:12	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 17:12	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 17:12	1
Iron	**870**		150	100	44	ug/L		07/27/15 17:12	1
Sodium	**23000**		1000	400	160	ug/L		07/27/15 17:12	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 17:12	1
Zinc	50	U	50	50	27	ug/L		07/27/15 17:12	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 12:00	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGRQLmw-009C-0606-GW — **Lab Sample ID: 240-53500-12**
Date Collected: 07/22/15 15:45 — **Matrix: Water**
Date Received: 07/22/15 18:19

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 16:40	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	0.22	ug/L		07/23/15 16:40	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.24	ug/L		07/23/15 16:40	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.30	ug/L		07/23/15 16:40	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.45	ug/L		07/23/15 16:40	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.23	ug/L		07/23/15 16:40	1
1,2-Dichloroethene, Total	1.0	U	2.0	1.0	0.20	ug/L		07/23/15 16:40	1
1,2-Dichloropropane	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 16:40	1
2-Hexanone	2.0	U	10	2.0	0.48	ug/L		07/23/15 16:40	1
Bromochloromethane	1.0	U	1.0	1.0	0.50	ug/L		07/23/15 16:40	1
Acetone	2.0	U	10	2.0	0.94	ug/L		07/23/15 16:40	1
Benzene	1.0	U	1.0	1.0	0.35	ug/L		07/23/15 16:40	1
Bromoform	1.0	U	1.0	1.0	0.56	ug/L		07/23/15 16:40	1
Bromomethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 16:40	1
Carbon disulfide	1.0	U	1.0	1.0	0.38	ug/L		07/23/15 16:40	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.43	ug/L		07/23/15 16:40	1
Chlorobenzene	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 16:40	1
Chloroethane	1.0	U	1.0	1.0	0.32	ug/L		07/23/15 16:40	1
Chloroform	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 16:40	1
Chloromethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 16:40	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	0.26	ug/L		07/23/15 16:40	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.46	ug/L		07/23/15 16:40	1
Bromodichloromethane	1.0	U	1.0	1.0	0.29	ug/L		07/23/15 16:40	1
Ethylbenzene	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 16:40	1
1,2-Dibromoethane	1.0	U	1.0	1.0	0.32	ug/L		07/23/15 16:40	1
m-Xylene & p-Xylene	1.0	U	2.0	1.0	0.24	ug/L		07/23/15 16:40	1
2-Butanone (MEK)	2.0	U	10	2.0	0.53	ug/L		07/23/15 16:40	1
4-Methyl-2-pentanone (MIBK)	2.0	U	10	2.0	0.99	ug/L		07/23/15 16:40	1
Methylene Chloride	1.0	U	1.0	1.0	0.33	ug/L		07/23/15 16:40	1
o-Xylene	0.50	U	1.0	0.50	0.25	ug/L		07/23/15 16:40	1
Styrene	0.50	U	1.0	0.50	0.45	ug/L		07/23/15 16:40	1
Tetrachloroethene	1.0	U	1.0	1.0	0.31	ug/L		07/23/15 16:40	1
Toluene	1.0	U	1.0	1.0	0.23	ug/L		07/23/15 16:40	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	0.30	ug/L		07/23/15 16:40	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.56	ug/L		07/23/15 16:40	1
Trichloroethene	1.0	U	1.0	1.0	0.22	ug/L		07/23/15 16:40	1
Vinyl chloride	1.0	U	1.0	1.0	0.29	ug/L		07/23/15 16:40	1
Xylenes, Total	2.0	U	2.0	2.0	0.52	ug/L		07/23/15 16:40	1
Dibromochloromethane	1.0	U	1.0	1.0	0.43	ug/L		07/23/15 16:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*70 - 120*		*07/23/15 16:40*	*1*
4-Bromofluorobenzene (Surr)	*88*		*75 - 120*		*07/23/15 16:40*	*1*
Toluene-d8 (Surr)	*92*		*85 - 120*		*07/23/15 16:40*	*1*
Dibromofluoromethane (Surr)	*92*		*85 - 115*		*07/23/15 16:40*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.095	U	0.19	0.095	0.042	ug/L		08/05/15 09:35	1
Acenaphthylene	0.095	U	0.19	0.095	0.046	ug/L		08/05/15 09:35	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGRQLmw-009C-0606-GW
Date Collected: 07/22/15 15:45
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-12
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.095	U	0.19	0.095	0.084	ug/L		08/05/15 09:35	1
Benzo[a]anthracene	0.095	U	0.19	0.095	0.028	ug/L		08/05/15 09:35	1
Benzo[a]pyrene	0.095	U	0.19	0.095	0.049	ug/L		08/05/15 09:35	1
Benzo[b]fluoranthene	0.095	U	0.19	0.095	0.038	ug/L		08/05/15 09:35	1
Benzo[g,h,i]perylene	0.095	U	0.19	0.095	0.044	ug/L		08/05/15 09:35	1
Benzoic acid	19	U	24	19	9.5	ug/L		08/05/15 09:35	1
Benzo[k]fluoranthene	0.095	U	0.19	0.095	0.043	ug/L		08/05/15 09:35	1
Benzyl alcohol	0.48	U	4.8	0.48	0.36	ug/L		08/05/15 09:35	1
Bis(2-chloroethoxy)methane	0.48	U	0.95	0.48	0.30	ug/L		08/05/15 09:35	1
Bis(2-chloroethyl)ether	0.095	U	0.95	0.095	0.095	ug/L		08/05/15 09:35	1
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/05/15 09:35	1
4-Bromophenyl phenyl ether	0.48	U	1.9	0.48	0.21	ug/L		08/05/15 09:35	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		08/05/15 09:35	1
Carbazole	0.48	U	0.95	0.48	0.27	ug/L		08/05/15 09:35	1
4-Chloroaniline	0.48	U	1.9	0.48	0.20	ug/L		08/05/15 09:35	1
4-Chloro-3-methylphenol	0.48	U	1.9	0.48	0.20	ug/L		08/05/15 09:35	1
2-Chloronaphthalene	0.48	U	0.95	0.48	0.095	ug/L		08/05/15 09:35	1
2-Chlorophenol	0.48	U	0.95	0.48	0.28	ug/L		08/05/15 09:35	1
4-Chlorophenyl phenyl ether	0.48	U	1.9	0.48	0.29	ug/L		08/05/15 09:35	1
Chrysene	0.095	U	0.19	0.095	0.048	ug/L		08/05/15 09:35	1
Dibenz(a,h)anthracene	0.095	U	0.19	0.095	0.042	ug/L		08/05/15 09:35	1
Dibenzofuran	0.095	U	0.95	0.095	0.019	ug/L		08/05/15 09:35	1
1,2-Dichlorobenzene	0.48	U	0.95	0.48	0.28	ug/L		08/05/15 09:35	1
1,3-Dichlorobenzene	0.48	U	0.95	0.48	0.22	ug/L		08/05/15 09:35	1
1,4-Dichlorobenzene	0.48	U	0.95	0.48	0.32	ug/L		08/05/15 09:35	1
3,3'-Dichlorobenzidine	0.95	U	4.8	0.95	0.35	ug/L		08/05/15 09:35	1
2,4-Dichlorophenol	0.48	U	1.9	0.48	0.18	ug/L		08/05/15 09:35	1
Diethyl phthalate	0.95	U	1.9	0.95	0.57	ug/L		08/05/15 09:35	1
2,4-Dimethylphenol	0.48	U	1.9	0.48	0.24	ug/L		08/05/15 09:35	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		08/05/15 09:35	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/05/15 09:35	1
4,6-Dinitro-2-methylphenol	3.8	U	4.8	3.8	2.3	ug/L		08/05/15 09:35	1
2,4-Dinitrophenol	0.95	U	4.8	0.95	0.30	ug/L		08/05/15 09:35	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		08/05/15 09:35	1
Fluoranthene	0.095	U	0.19	0.095	0.042	ug/L		08/05/15 09:35	1
Fluorene	0.095	U	0.19	0.095	0.039	ug/L		08/05/15 09:35	1
Hexachlorobenzene	0.095	U	0.19	0.095	0.081	ug/L		08/05/15 09:35	1
Hexachlorobutadiene	0.48	U	0.95	0.48	0.26	ug/L		08/05/15 09:35	1
Hexachlorocyclopentadiene	0.48	U	9.5	0.48	0.23	ug/L		08/05/15 09:35	1
Hexachloroethane	0.48	U	0.95	0.48	0.18	ug/L		08/05/15 09:35	1
Indeno[1,2,3-cd]pyrene	0.095	U	0.19	0.095	0.041	ug/L		08/05/15 09:35	1
Isophorone	**0.26**	**J**	0.95	0.48	0.26	ug/L		08/05/15 09:35	1
2-Methylnaphthalene	0.095	U	0.19	0.095	0.086	ug/L		08/05/15 09:35	1
2-Methylphenol	0.48	U	0.95	0.48	0.16	ug/L		08/05/15 09:35	1
3 & 4 Methylphenol	0.95	U	1.9	0.95	0.76	ug/L		08/05/15 09:35	1
Naphthalene	0.095	U	0.19	0.095	0.060	ug/L		08/05/15 09:35	1
2-Nitroaniline	0.48	U	1.9	0.48	0.20	ug/L		08/05/15 09:35	1
3-Nitroaniline	0.48	U	1.9	0.48	0.27	ug/L		08/05/15 09:35	1
4-Nitroaniline	0.48	U	1.9	0.48	0.21	ug/L		08/05/15 09:35	1

Client Sample ID: FWGRQLmw-009C-0606-GW
Date Collected: 07/22/15 15:45
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-12
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Nitrophenol	0.48	U	1.9	0.48	0.27	ug/L		08/05/15 09:35	1
4-Nitrophenol	3.8	U	4.8	3.8	0.28	ug/L		08/05/15 09:35	1
N-Nitrosodi-n-propylamine	0.48	U	0.95	0.48	0.23	ug/L		08/05/15 09:35	1
N-Nitrosodiphenylamine	0.48	U	0.95	0.48	0.30	ug/L		08/05/15 09:35	1
2,2'-oxybis[1-chloropropane]	0.48	U	0.95	0.48	0.38	ug/L		08/05/15 09:35	1
Pentachlorophenol	0.95	U	4.8	0.95	0.26	ug/L		08/05/15 09:35	1
Phenanthrene	0.095	U	0.19	0.095	0.059	ug/L		08/05/15 09:35	1
Phenol	0.95	U	0.95	0.95	0.57	ug/L		08/05/15 09:35	1
Pyrene	0.095	U	0.19	0.095	0.040	ug/L		08/05/15 09:35	1
1,2,4-Trichlorobenzene	0.48	U	0.95	0.48	0.27	ug/L		08/05/15 09:35	1
2,4,5-Trichlorophenol	0.48	U	4.8	0.48	0.29	ug/L		08/05/15 09:35	1
2,4,6-Trichlorophenol	0.48	U	4.8	0.48	0.23	ug/L		08/05/15 09:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*85*		*50 - 110*	*07/23/15 06:39*	*08/05/15 09:35*	*1*
2-Fluorophenol (Surr)	*81*		*20 - 110*	*07/23/15 06:39*	*08/05/15 09:35*	*1*
Nitrobenzene-d5 (Surr)	*76*		*40 - 110*	*07/23/15 06:39*	*08/05/15 09:35*	*1*
Phenol-d5 (Surr)	*84*		*10 - 115*	*07/23/15 06:39*	*08/05/15 09:35*	*1*
Terphenyl-d14 (Surr)	*93*		*50 - 135*	*07/23/15 06:39*	*08/05/15 09:35*	*1*
2,4,6-Tribromophenol (Surr)	*104*		*40 - 125*	*07/23/15 06:39*	*08/05/15 09:35*	*1*

Method: 8081A - Organochlorine Pesticides (GC) - RE

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.048	U Q	0.048	0.048	0.017	ug/L		07/29/15 18:36	1
4,4'-DDE	0.048	U Q	0.048	0.048	0.011	ug/L		07/29/15 18:36	1
4,4'-DDT	0.048	U Q	0.048	0.048	0.016	ug/L		07/29/15 18:36	1
Aldrin	0.048	U Q	0.048	0.048	0.012	ug/L		07/29/15 18:36	1
alpha-BHC	0.048	U Q	0.048	0.048	0.013	ug/L		07/29/15 18:36	1
alpha-Chlordane	0.048	U Q	0.048	0.048	0.011	ug/L		07/29/15 18:36	1
beta-BHC	0.048	U Q	0.048	0.048	0.017	ug/L		07/29/15 18:36	1
delta-BHC	0.048	U Q	0.048	0.048	0.028	ug/L		07/29/15 18:36	1
Dieldrin	0.048	U Q	0.048	0.048	0.012	ug/L		07/29/15 18:36	1
Endosulfan I	0.048	U Q	0.048	0.048	0.015	ug/L		07/29/15 18:36	1
Endosulfan II	0.048	U Q	0.048	0.048	0.014	ug/L		07/29/15 18:36	1
Endosulfan sulfate	0.048	U Q	0.048	0.048	0.014	ug/L		07/29/15 18:36	1
Endrin	0.048	U Q	0.048	0.048	0.012	ug/L		07/29/15 18:36	1
Endrin aldehyde	0.048	U Q	0.048	0.048	0.017	ug/L		07/29/15 18:36	1
Endrin ketone	0.048	U Q	0.048	0.048	0.015	ug/L		07/29/15 18:36	1
gamma-BHC (Lindane)	0.048	U Q	0.048	0.048	0.012	ug/L		07/29/15 18:36	1
gamma-Chlordane	0.048	U Q	0.048	0.048	0.012	ug/L		07/29/15 18:36	1
Heptachlor	0.048	U Q	0.048	0.048	0.013	ug/L		07/29/15 18:36	1
Heptachlor epoxide	0.048	U Q	0.048	0.048	0.014	ug/L		07/29/15 18:36	1
Methoxychlor	0.095	U Q	0.095	0.095	0.012	ug/L		07/29/15 18:36	1
Toxaphene	1.9	U Q	1.9	1.9	0.19	ug/L		07/29/15 18:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*22*	*Q*	*30 - 135*	*07/28/15 11:27*	*07/29/15 18:36*	*1*
DCB Decachlorobiphenyl	*26*	*Q*	*30 - 135*	*07/28/15 11:27*	*07/29/15 18:36*	*1*
Tetrachloro-m-xylene	*55*		*25 - 140*	*07/28/15 11:27*	*07/29/15 18:36*	*1*
Tetrachloro-m-xylene	*66*		*25 - 140*	*07/28/15 11:27*	*07/29/15 18:36*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGRQLmw-009C-0606-GW
Date Collected: 07/22/15 15:45
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-12
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.19	U	0.48	0.19	0.16	ug/L		07/24/15 14:24	1
Aroclor-1221	0.19	U	0.48	0.19	0.12	ug/L		07/24/15 14:24	1
Aroclor-1232	0.19	U	0.48	0.19	0.15	ug/L		07/24/15 14:24	1
Aroclor-1242	0.38	U	0.48	0.38	0.21	ug/L		07/24/15 14:24	1
Aroclor-1248	0.19	U	0.48	0.19	0.095	ug/L		07/24/15 14:24	1
Aroclor-1254	0.19	U	0.48	0.19	0.15	ug/L		07/24/15 14:24	1
Aroclor-1260	0.19	U	0.48	0.19	0.16	ug/L		07/24/15 14:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*10*	*Q*	*40 - 140*	*07/23/15 06:34*	*07/24/15 14:24*	*1*
Tetrachloro-m-xylene	*76*		*40 - 140*	*07/23/15 06:34*	*07/24/15 14:24*	*1*
DCB Decachlorobiphenyl	*3*	*Q*	*40 - 135*	*07/23/15 06:34*	*07/24/15 14:24*	*1*
DCB Decachlorobiphenyl	*42*		*40 - 135*	*07/23/15 06:34*	*07/24/15 14:24*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 01:44	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		08/06/15 02:01	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		08/06/15 02:01	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		08/06/15 02:01	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		08/06/15 02:01	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		08/06/15 02:01	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		08/06/15 02:01	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		08/06/15 02:01	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		08/06/15 02:01	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		08/06/15 02:01	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		08/06/15 02:01	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		08/06/15 02:01	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		08/06/15 02:01	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		08/06/15 02:01	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		08/06/15 02:01	1
Nitroglycerin	0.51	U	0.66	0.51	0.34	ug/L		08/06/15 02:01	1
PETN	0.51	U	0.66	0.51	0.31	ug/L		08/06/15 02:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*93*		*79 - 111*	*07/28/15 11:01*	*08/06/15 02:01*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.010	0.0050	mg/L		08/04/15 09:34	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/11/15 13:04	1

Client Sample ID: FWGRQLmw-009C-0606-GF
Date Collected: 07/22/15 15:45
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-13
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**21**		10	10	2.9	ug/L		07/27/15 15:01	1
Chromium	4.0	U	7.0	4.0	0.55	ug/L		07/27/15 15:01	1
Cobalt	**3.3**	**J**	7.0	4.0	0.56	ug/L		07/27/15 15:01	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 15:01	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 15:01	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 15:01	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 15:01	1
Barium	**33**	**J**	200	5.0	1.0	ug/L		07/27/15 15:01	1
Calcium	**28000**		5000	1000	260	ug/L		07/27/15 15:01	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 15:01	1
Magnesium	**17000**		5000	300	55	ug/L		07/27/15 15:01	1
Manganese	**1000**		15	5.0	0.46	ug/L		07/27/15 15:01	1
Nickel	**3.6**	**J**	40	5.0	0.76	ug/L		07/27/15 15:01	1
Potassium	**3600**	**J**	5000	900	70	ug/L		07/27/15 15:01	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 17:15	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 17:15	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 17:15	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 17:15	1
Iron	**10000**		150	100	44	ug/L		07/27/15 17:15	1
Sodium	**1900**		1000	400	160	ug/L		07/27/15 17:15	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 17:15	1
Zinc	50	U	50	50	27	ug/L		07/27/15 17:15	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 12:02	1

Client Sample ID: FWGWBGmw-009C-0610-GW — **Lab Sample ID: 240-53500-14**
Date Collected: 07/22/15 09:52 — **Matrix: Water**
Date Received: 07/22/15 18:19

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.2	U	5.2	5.2	1.8	ug/L		08/05/15 14:40	1
Butyl benzyl phthalate	0.52	U	5.2	0.52	0.27	ug/L		08/05/15 14:40	1
Diethyl phthalate	1.0	U	2.1	1.0	0.62	ug/L		08/05/15 14:40	1
Dimethyl phthalate	0.52	U	2.1	0.52	0.30	ug/L		08/05/15 14:40	1
Di-n-butyl phthalate	5.2	U	5.2	5.2	1.8	ug/L		08/05/15 14:40	1
Di-n-octyl phthalate	0.52	U	2.1	0.52	0.24	ug/L		08/05/15 14:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*66*		*50 - 110*	*07/23/15 06:39*	*08/05/15 14:40*	*1*
2-Fluorophenol (Surr)	*52*		*20 - 110*	*07/23/15 06:39*	*08/05/15 14:40*	*1*
Nitrobenzene-d5 (Surr)	*55*		*40 - 110*	*07/23/15 06:39*	*08/05/15 14:40*	*1*
Phenol-d5 (Surr)	*57*		*10 - 115*	*07/23/15 06:39*	*08/05/15 14:40*	*1*
Terphenyl-d14 (Surr)	*92*		*50 - 135*	*07/23/15 06:39*	*08/05/15 14:40*	*1*
2,4,6-Tribromophenol (Surr)	*102*		*40 - 125*	*07/23/15 06:39*	*08/05/15 14:40*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 02:02	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.050	U	0.15	0.050	0.031	ug/L		08/06/15 02:45	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.050	ug/L		08/06/15 02:45	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.050	ug/L		08/06/15 02:45	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.050	ug/L		08/06/15 02:45	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.050	ug/L		08/06/15 02:45	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		08/06/15 02:45	1
2-Nitrotoluene	0.10	U	0.50	0.10	0.089	ug/L		08/06/15 02:45	1
3-Nitrotoluene	0.10	U	0.50	0.10	0.057	ug/L		08/06/15 02:45	1
4-Nitrotoluene	0.10	U	0.50	0.10	0.089	ug/L		08/06/15 02:45	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.050	ug/L		08/06/15 02:45	1
HMX	**1.2**	**M**	0.15	0.050	0.036	ug/L		08/06/15 02:45	1
RDX	**2.8**	**M**	0.15	0.050	0.036	ug/L		08/06/15 02:45	1
Nitrobenzene	0.10	U	0.15	0.10	0.050	ug/L		08/06/15 02:45	1
Tetryl	0.10	U	0.15	0.10	0.050	ug/L		08/06/15 02:45	1
Nitroglycerin	0.50	U	0.65	0.50	0.33	ug/L		08/06/15 02:45	1
PETN	0.50	U M	0.65	0.50	0.30	ug/L		08/06/15 02:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*93*		*79 - 111*	*07/28/15 11:01*	*08/06/15 02:45*	*1*
3,4-Dinitrotoluene	*101*		*79 - 111*	*07/28/15 11:01*	*08/13/15 07:48*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/11/15 13:06	1

Client Sample ID: FWGWBGmw-009C-0610-GF
Date Collected: 07/22/15 09:52
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-15
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 15:05	1
Chromium	**0.68**	**J**	7.0	4.0	0.55	ug/L		07/27/15 15:05	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 15:05	1
Lead	**2.1**	**J**	10	5.0	1.9	ug/L		07/27/15 15:05	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 15:05	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 15:05	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 15:05	1
Barium	**8.3**	**J**	200	5.0	1.0	ug/L		07/27/15 15:05	1
Calcium	**33000**		5000	1000	260	ug/L		07/27/15 15:05	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 15:05	1
Magnesium	**9900**		5000	300	55	ug/L		07/27/15 15:05	1
Manganese	**43**		15	5.0	0.46	ug/L		07/27/15 15:05	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 15:05	1
Potassium	**470**	**J**	5000	900	70	ug/L		07/27/15 15:05	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 17:19	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 17:19	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 17:19	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 17:19	1
Iron	100	U	150	100	44	ug/L		07/27/15 17:19	1
Sodium	**3200**		1000	400	160	ug/L		07/27/15 17:19	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 17:19	1
Zinc	50	U	50	50	27	ug/L		07/27/15 17:19	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 12:03	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGWBGmw-020-0611-GW
Date Collected: 07/22/15 10:57
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-16
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.1	U	5.1	5.1	1.7	ug/L		08/05/15 15:05	1
Butyl benzyl phthalate	0.51	U	5.1	0.51	0.27	ug/L		08/05/15 15:05	1
Diethyl phthalate	1.0	U	2.0	1.0	0.61	ug/L		08/05/15 15:05	1
Dimethyl phthalate	0.51	U	2.0	0.51	0.30	ug/L		08/05/15 15:05	1
Di-n-butyl phthalate	5.1	U	5.1	5.1	1.7	ug/L		08/05/15 15:05	1
Di-n-octyl phthalate	0.51	U	2.0	0.51	0.23	ug/L		08/05/15 15:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*77*		*50 - 110*	*07/23/15 06:39*	*08/05/15 15:05*	*1*
2-Fluorophenol (Surr)	*71*		*20 - 110*	*07/23/15 06:39*	*08/05/15 15:05*	*1*
Nitrobenzene-d5 (Surr)	*69*		*40 - 110*	*07/23/15 06:39*	*08/05/15 15:05*	*1*
Phenol-d5 (Surr)	*73*		*10 - 115*	*07/23/15 06:39*	*08/05/15 15:05*	*1*
Terphenyl-d14 (Surr)	*89*		*50 - 135*	*07/23/15 06:39*	*08/05/15 15:05*	*1*
2,4,6-Tribromophenol (Surr)	*91*		*40 - 125*	*07/23/15 06:39*	*08/05/15 15:05*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 02:19	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.16	0.052	0.032	ug/L		08/06/15 03:29	1
1,3-Dinitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		08/06/15 03:29	1
2,4,6-Trinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		08/06/15 03:29	1
2,4-Dinitrotoluene	0.10	U	0.14	0.10	0.052	ug/L		08/06/15 03:29	1
2,6-Dinitrotoluene	0.10	U	0.14	0.10	0.052	ug/L		08/06/15 03:29	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.16	0.10	0.016	ug/L		08/06/15 03:29	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.092	ug/L		08/06/15 03:29	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.060	ug/L		08/06/15 03:29	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.092	ug/L		08/06/15 03:29	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		08/06/15 03:29	1
HMX	0.052	U	0.16	0.052	0.038	ug/L		08/06/15 03:29	1
RDX	0.052	U	0.16	0.052	0.038	ug/L		08/06/15 03:29	1
Nitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		08/06/15 03:29	1
Tetryl	0.10	U	0.16	0.10	0.052	ug/L		08/06/15 03:29	1
Nitroglycerin	0.52	U	0.68	0.52	0.35	ug/L		08/06/15 03:29	1
PETN	0.52	U	0.68	0.52	0.31	ug/L		08/06/15 03:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*95*		*79 - 111*	*07/28/15 11:01*	*08/06/15 03:29*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/11/15 13:08	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGWBGmw-020-0611-GF
Date Collected: 07/22/15 10:57
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-17
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 15:09	1
Chromium	**0.78**	**J**	7.0	4.0	0.55	ug/L		07/27/15 15:09	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 15:09	1
Lead	**2.1**	**J**	10	5.0	1.9	ug/L		07/27/15 15:09	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 15:09	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 15:09	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 15:09	1
Barium	**15**	**J**	200	5.0	1.0	ug/L		07/27/15 15:09	1
Calcium	**30000**		5000	1000	260	ug/L		07/27/15 15:09	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 15:09	1
Magnesium	**10000**		5000	300	55	ug/L		07/27/15 15:09	1
Manganese	**280**		15	5.0	0.46	ug/L		07/27/15 15:09	1
Nickel	**2.3**	**J**	40	5.0	0.76	ug/L		07/27/15 15:09	1
Potassium	**650**	**J**	5000	900	70	ug/L		07/27/15 15:09	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 17:23	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 17:23	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 17:23	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 17:23	1
Iron	**4000**		150	100	44	ug/L		07/27/15 17:23	1
Sodium	**3600**		1000	400	160	ug/L		07/27/15 17:23	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 17:23	1
Zinc	50	U	50	50	27	ug/L		07/27/15 17:23	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 12:06	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGFWGmw-012-0578-GW
Date Collected: 07/22/15 13:32
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-18
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.0	U	5.0	5.0	1.7	ug/L		08/05/15 15:30	1
Butyl benzyl phthalate	0.50	U	5.0	0.50	0.26	ug/L		08/05/15 15:30	1
Diethyl phthalate	1.0	U	2.0	1.0	0.60	ug/L		08/05/15 15:30	1
Dimethyl phthalate	0.50	U	2.0	0.50	0.29	ug/L		08/05/15 15:30	1
Di-n-butyl phthalate	5.0	U	5.0	5.0	1.7	ug/L		08/05/15 15:30	1
Di-n-octyl phthalate	0.50	U	2.0	0.50	0.23	ug/L		08/05/15 15:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*66*		*50 - 110*	*07/23/15 06:39*	*08/05/15 15:30*	*1*
2-Fluorophenol (Surr)	*66*		*20 - 110*	*07/23/15 06:39*	*08/05/15 15:30*	*1*
Nitrobenzene-d5 (Surr)	*64*		*40 - 110*	*07/23/15 06:39*	*08/05/15 15:30*	*1*
Phenol-d5 (Surr)	*70*		*10 - 115*	*07/23/15 06:39*	*08/05/15 15:30*	*1*
Terphenyl-d14 (Surr)	*92*		*50 - 135*	*07/23/15 06:39*	*08/05/15 15:30*	*1*
2,4,6-Tribromophenol (Surr)	*96*		*40 - 125*	*07/23/15 06:39*	*08/05/15 15:30*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 02:37	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.15	0.052	0.032	ug/L		08/06/15 04:12	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.052	ug/L		08/06/15 04:12	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.052	ug/L		08/06/15 04:12	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		08/06/15 04:12	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		08/06/15 04:12	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		08/06/15 04:12	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		08/06/15 04:12	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		08/06/15 04:12	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		08/06/15 04:12	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.052	ug/L		08/06/15 04:12	1
HMX	0.052	U	0.15	0.052	0.037	ug/L		08/06/15 04:12	1
RDX	0.052	U	0.15	0.052	0.037	ug/L		08/06/15 04:12	1
Nitrobenzene	0.10	U	0.15	0.10	0.052	ug/L		08/06/15 04:12	1
Tetryl	0.10	U	0.15	0.10	0.052	ug/L		08/06/15 04:12	1
Nitroglycerin	0.52	U	0.67	0.52	0.34	ug/L		08/06/15 04:12	1
PETN	0.52	U	0.67	0.52	0.31	ug/L		08/06/15 04:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*97*	*M*	*79 - 111*	*07/28/15 11:01*	*08/06/15 04:12*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/11/15 13:10	1

Client Sample Results

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGFWGmw-012-0578-GF
Date Collected: 07/22/15 13:32
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-19
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 15:13	1
Chromium	**1.3**	**J**	7.0	4.0	0.55	ug/L		07/27/15 15:13	1
Cobalt	**1.3**	**J**	7.0	4.0	0.56	ug/L		07/27/15 15:13	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 15:13	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 15:13	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 15:13	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 15:13	1
Barium	**19**	**J**	200	5.0	1.0	ug/L		07/27/15 15:13	1
Calcium	**22000**		5000	1000	260	ug/L		07/27/15 15:13	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 15:13	1
Magnesium	**5000**		5000	300	55	ug/L		07/27/15 15:13	1
Manganese	**85**		15	5.0	0.46	ug/L		07/27/15 15:13	1
Nickel	**1.3**	**J**	40	5.0	0.76	ug/L		07/27/15 15:13	1
Potassium	**1000**	**J**	5000	900	70	ug/L		07/27/15 15:13	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 17:26	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 17:26	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 17:26	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 17:26	1
Iron	**2000**		150	100	44	ug/L		07/27/15 17:26	1
Sodium	**5900**		1000	400	160	ug/L		07/27/15 17:26	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 17:26	1
Zinc	50	U	50	50	27	ug/L		07/27/15 17:26	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 12:07	1

Client Sample ID: FWGFWGmw-011-0577-GW
Date Collected: 07/22/15 15:02
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-20
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/05/15 15:55	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		08/05/15 15:55	1
Diethyl phthalate	0.96	U	1.9	0.96	0.58	ug/L		08/05/15 15:55	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		08/05/15 15:55	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/05/15 15:55	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		08/05/15 15:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*75*		*50 - 110*	*07/23/15 06:39*	*08/05/15 15:55*	*1*
2-Fluorophenol (Surr)	*69*		*20 - 110*	*07/23/15 06:39*	*08/05/15 15:55*	*1*
Nitrobenzene-d5 (Surr)	*67*		*40 - 110*	*07/23/15 06:39*	*08/05/15 15:55*	*1*
Phenol-d5 (Surr)	*73*		*10 - 115*	*07/23/15 06:39*	*08/05/15 15:55*	*1*
Terphenyl-d14 (Surr)	*89*		*50 - 135*	*07/23/15 06:39*	*08/05/15 15:55*	*1*
2,4,6-Tribromophenol (Surr)	*100*		*40 - 125*	*07/23/15 06:39*	*08/05/15 15:55*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 02:55	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		08/06/15 04:56	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		08/06/15 04:56	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		08/06/15 04:56	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		08/06/15 04:56	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		08/06/15 04:56	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		08/06/15 04:56	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.091	ug/L		08/06/15 04:56	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.059	ug/L		08/06/15 04:56	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.091	ug/L		08/06/15 04:56	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		08/06/15 04:56	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		08/06/15 04:56	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		08/06/15 04:56	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		08/06/15 04:56	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		08/06/15 04:56	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		08/06/15 04:56	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		08/06/15 04:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*97*		*79 - 111*	*07/28/15 11:01*	*08/06/15 04:56*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/11/15 13:20	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGFWGmw-011-0577-GF
Date Collected: 07/22/15 15:02
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-21
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 15:17	1
Chromium	**1.3**	**J**	7.0	4.0	0.55	ug/L		07/27/15 15:17	1
Cobalt	**1.0**	**J**	7.0	4.0	0.56	ug/L		07/27/15 15:17	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 15:17	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 15:17	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 15:17	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 15:17	1
Barium	**30**	**J**	200	5.0	1.0	ug/L		07/27/15 15:17	1
Calcium	**55000**		5000	1000	260	ug/L		07/27/15 15:17	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 15:17	1
Magnesium	**12000**		5000	300	55	ug/L		07/27/15 15:17	1
Manganese	**280**		15	5.0	0.46	ug/L		07/27/15 15:17	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 15:17	1
Potassium	**4200**	**J**	5000	900	70	ug/L		07/27/15 15:17	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	**31**	**J**	60	60	20	ug/L		07/27/15 17:30	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 17:30	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 17:30	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 17:30	1
Iron	**5100**		150	100	44	ug/L		07/27/15 17:30	1
Sodium	**6100**		1000	400	160	ug/L		07/27/15 17:30	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 17:30	1
Zinc	50	U	50	50	27	ug/L		07/27/15 17:30	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 12:09	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGTEAMRQL-TRIP
Date Collected: 07/22/15 09:00
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-22
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 17:03	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	0.22	ug/L		07/23/15 17:03	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.24	ug/L		07/23/15 17:03	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.30	ug/L		07/23/15 17:03	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.45	ug/L		07/23/15 17:03	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.23	ug/L		07/23/15 17:03	1
1,2-Dichloroethene, Total	1.0	U	2.0	1.0	0.20	ug/L		07/23/15 17:03	1
1,2-Dichloropropane	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 17:03	1
2-Hexanone	2.0	U	10	2.0	0.48	ug/L		07/23/15 17:03	1
Bromochloromethane	1.0	U	1.0	1.0	0.50	ug/L		07/23/15 17:03	1
Acetone	**2.5**	**J**	10	2.0	0.94	ug/L		07/23/15 17:03	1
Benzene	1.0	U	1.0	1.0	0.35	ug/L		07/23/15 17:03	1
Bromoform	1.0	U	1.0	1.0	0.56	ug/L		07/23/15 17:03	1
Bromomethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 17:03	1
Carbon disulfide	1.0	U	1.0	1.0	0.38	ug/L		07/23/15 17:03	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.43	ug/L		07/23/15 17:03	1
Chlorobenzene	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 17:03	1
Chloroethane	1.0	U	1.0	1.0	0.32	ug/L		07/23/15 17:03	1
Chloroform	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 17:03	1
Chloromethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 17:03	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	0.26	ug/L		07/23/15 17:03	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.46	ug/L		07/23/15 17:03	1
Bromodichloromethane	1.0	U	1.0	1.0	0.29	ug/L		07/23/15 17:03	1
Ethylbenzene	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 17:03	1
1,2-Dibromoethane	1.0	U	1.0	1.0	0.32	ug/L		07/23/15 17:03	1
m-Xylene & p-Xylene	1.0	U	2.0	1.0	0.24	ug/L		07/23/15 17:03	1
2-Butanone (MEK)	2.0	U	10	2.0	0.53	ug/L		07/23/15 17:03	1
4-Methyl-2-pentanone (MIBK)	2.0	U	10	2.0	0.99	ug/L		07/23/15 17:03	1
Methylene Chloride	**0.60**	**J B**	1.0	1.0	0.33	ug/L		07/23/15 17:03	1
o-Xylene	0.50	U	1.0	0.50	0.25	ug/L		07/23/15 17:03	1
Styrene	0.50	U	1.0	0.50	0.45	ug/L		07/23/15 17:03	1
Tetrachloroethene	1.0	U	1.0	1.0	0.31	ug/L		07/23/15 17:03	1
Toluene	1.0	U	1.0	1.0	0.23	ug/L		07/23/15 17:03	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	0.30	ug/L		07/23/15 17:03	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.56	ug/L		07/23/15 17:03	1
Trichloroethene	1.0	U	1.0	1.0	0.22	ug/L		07/23/15 17:03	1
Vinyl chloride	1.0	U	1.0	1.0	0.29	ug/L		07/23/15 17:03	1
Xylenes, Total	2.0	U	2.0	2.0	0.52	ug/L		07/23/15 17:03	1
Dibromochloromethane	1.0	U	1.0	1.0	0.43	ug/L		07/23/15 17:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*70 - 120*		*07/23/15 17:03*	*1*
4-Bromofluorobenzene (Surr)	*89*		*75 - 120*		*07/23/15 17:03*	*1*
Toluene-d8 (Surr)	*95*		*85 - 120*		*07/23/15 17:03*	*1*
Dibromofluoromethane (Surr)	*93*		*85 - 115*		*07/23/15 17:03*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGRQLmw-007C-0604-GW — **Lab Sample ID: 240-53500-23**
Date Collected: 07/22/15 10:14 — **Matrix: Water**
Date Received: 07/22/15 18:19

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 17:26	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	0.22	ug/L		07/23/15 17:26	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.24	ug/L		07/23/15 17:26	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.30	ug/L		07/23/15 17:26	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.45	ug/L		07/23/15 17:26	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.23	ug/L		07/23/15 17:26	1
1,2-Dichloroethene, Total	1.0	U	2.0	1.0	0.20	ug/L		07/23/15 17:26	1
1,2-Dichloropropane	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 17:26	1
2-Hexanone	2.0	U	10	2.0	0.48	ug/L		07/23/15 17:26	1
Bromochloromethane	1.0	U	1.0	1.0	0.50	ug/L		07/23/15 17:26	1
Acetone	2.0	U	10	2.0	0.94	ug/L		07/23/15 17:26	1
Benzene	1.0	U	1.0	1.0	0.35	ug/L		07/23/15 17:26	1
Bromoform	1.0	U	1.0	1.0	0.56	ug/L		07/23/15 17:26	1
Bromomethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 17:26	1
Carbon disulfide	1.0	U	1.0	1.0	0.38	ug/L		07/23/15 17:26	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.43	ug/L		07/23/15 17:26	1
Chlorobenzene	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 17:26	1
Chloroethane	1.0	U	1.0	1.0	0.32	ug/L		07/23/15 17:26	1
Chloroform	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 17:26	1
Chloromethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 17:26	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	0.26	ug/L		07/23/15 17:26	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.46	ug/L		07/23/15 17:26	1
Bromodichloromethane	1.0	U	1.0	1.0	0.29	ug/L		07/23/15 17:26	1
Ethylbenzene	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 17:26	1
1,2-Dibromoethane	1.0	U	1.0	1.0	0.32	ug/L		07/23/15 17:26	1
m-Xylene & p-Xylene	1.0	U	2.0	1.0	0.24	ug/L		07/23/15 17:26	1
2-Butanone (MEK)	2.0	U	10	2.0	0.53	ug/L		07/23/15 17:26	1
4-Methyl-2-pentanone (MIBK)	2.0	U	10	2.0	0.99	ug/L		07/23/15 17:26	1
Methylene Chloride	1.0	U	1.0	1.0	0.33	ug/L		07/23/15 17:26	1
o-Xylene	0.50	U	1.0	0.50	0.25	ug/L		07/23/15 17:26	1
Styrene	0.50	U	1.0	0.50	0.45	ug/L		07/23/15 17:26	1
Tetrachloroethene	1.0	U	1.0	1.0	0.31	ug/L		07/23/15 17:26	1
Toluene	1.0	U	1.0	1.0	0.23	ug/L		07/23/15 17:26	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	0.30	ug/L		07/23/15 17:26	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.56	ug/L		07/23/15 17:26	1
Trichloroethene	1.0	U	1.0	1.0	0.22	ug/L		07/23/15 17:26	1
Vinyl chloride	1.0	U	1.0	1.0	0.29	ug/L		07/23/15 17:26	1
Xylenes, Total	2.0	U	2.0	2.0	0.52	ug/L		07/23/15 17:26	1
Dibromochloromethane	1.0	U	1.0	1.0	0.43	ug/L		07/23/15 17:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*70 - 120*		*07/23/15 17:26*	*1*
4-Bromofluorobenzene (Surr)	*89*		*75 - 120*		*07/23/15 17:26*	*1*
Toluene-d8 (Surr)	*94*		*85 - 120*		*07/23/15 17:26*	*1*
Dibromofluoromethane (Surr)	*92*		*85 - 115*		*07/23/15 17:26*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.098	U	0.20	0.098	0.043	ug/L		08/05/15 10:00	1
Acenaphthylene	0.098	U	0.20	0.098	0.047	ug/L		08/05/15 10:00	1

Client Sample ID: FWGRQLmw-007C-0604-GW — **Lab Sample ID: 240-53500-23**

Date Collected: 07/22/15 10:14 — **Matrix: Water**

Date Received: 07/22/15 18:19

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.098	U	0.20	0.098	0.086	ug/L		08/05/15 10:00	1
Benzo[a]anthracene	0.098	U	0.20	0.098	0.029	ug/L		08/05/15 10:00	1
Benzo[a]pyrene	0.098	U	0.20	0.098	0.050	ug/L		08/05/15 10:00	1
Benzo[b]fluoranthene	0.098	U	0.20	0.098	0.039	ug/L		08/05/15 10:00	1
Benzo[g,h,i]perylene	0.098	U	0.20	0.098	0.045	ug/L		08/05/15 10:00	1
Benzoic acid	20	U	25	20	9.8	ug/L		08/05/15 10:00	1
Benzo[k]fluoranthene	0.098	U	0.20	0.098	0.044	ug/L		08/05/15 10:00	1
Benzyl alcohol	0.49	U	4.9	0.49	0.37	ug/L		08/05/15 10:00	1
Bis(2-chloroethoxy)methane	0.49	U	0.98	0.49	0.31	ug/L		08/05/15 10:00	1
Bis(2-chloroethyl)ether	0.098	U	0.98	0.098	0.098	ug/L		08/05/15 10:00	1
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		08/05/15 10:00	1
4-Bromophenyl phenyl ether	0.49	U	2.0	0.49	0.22	ug/L		08/05/15 10:00	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		08/05/15 10:00	1
Carbazole	0.49	U	0.98	0.49	0.27	ug/L		08/05/15 10:00	1
4-Chloroaniline	0.49	U	2.0	0.49	0.21	ug/L		08/05/15 10:00	1
4-Chloro-3-methylphenol	0.49	U	2.0	0.49	0.21	ug/L		08/05/15 10:00	1
2-Chloronaphthalene	0.49	U	0.98	0.49	0.098	ug/L		08/05/15 10:00	1
2-Chlorophenol	0.49	U	0.98	0.49	0.28	ug/L		08/05/15 10:00	1
4-Chlorophenyl phenyl ether	0.49	U	2.0	0.49	0.29	ug/L		08/05/15 10:00	1
Chrysene	0.098	U	0.20	0.098	0.049	ug/L		08/05/15 10:00	1
Dibenz(a,h)anthracene	0.098	U	0.20	0.098	0.044	ug/L		08/05/15 10:00	1
Dibenzofuran	0.098	U	0.98	0.098	0.020	ug/L		08/05/15 10:00	1
1,2-Dichlorobenzene	0.49	U	0.98	0.49	0.28	ug/L		08/05/15 10:00	1
1,3-Dichlorobenzene	0.49	U	0.98	0.49	0.23	ug/L		08/05/15 10:00	1
1,4-Dichlorobenzene	0.49	U	0.98	0.49	0.33	ug/L		08/05/15 10:00	1
3,3'-Dichlorobenzidine	0.98	U	4.9	0.98	0.36	ug/L		08/05/15 10:00	1
2,4-Dichlorophenol	0.49	U	2.0	0.49	0.19	ug/L		08/05/15 10:00	1
Diethyl phthalate	0.98	U	2.0	0.98	0.59	ug/L		08/05/15 10:00	1
2,4-Dimethylphenol	0.49	U	2.0	0.49	0.25	ug/L		08/05/15 10:00	1
Dimethyl phthalate	0.49	U	2.0	0.49	0.28	ug/L		08/05/15 10:00	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		08/05/15 10:00	1
4,6-Dinitro-2-methylphenol	3.9	U	4.9	3.9	2.4	ug/L		08/05/15 10:00	1
2,4-Dinitrophenol	0.98	U	4.9	0.98	0.31	ug/L		08/05/15 10:00	1
Di-n-octyl phthalate	0.49	U	2.0	0.49	0.23	ug/L		08/05/15 10:00	1
Fluoranthene	0.098	U	0.20	0.098	0.044	ug/L		08/05/15 10:00	1
Fluorene	0.098	U	0.20	0.098	0.040	ug/L		08/05/15 10:00	1
Hexachlorobenzene	0.098	U	0.20	0.098	0.084	ug/L		08/05/15 10:00	1
Hexachlorobutadiene	0.49	U	0.98	0.49	0.26	ug/L		08/05/15 10:00	1
Hexachlorocyclopentadiene	0.49	U	9.8	0.49	0.24	ug/L		08/05/15 10:00	1
Hexachloroethane	0.49	U	0.98	0.49	0.19	ug/L		08/05/15 10:00	1
Indeno[1,2,3-cd]pyrene	0.098	U	0.20	0.098	0.042	ug/L		08/05/15 10:00	1
Isophorone	**0.26**	**J**	0.98	0.49	0.26	ug/L		08/05/15 10:00	1
2-Methylnaphthalene	0.098	U	0.20	0.098	0.089	ug/L		08/05/15 10:00	1
2-Methylphenol	0.49	U	0.98	0.49	0.17	ug/L		08/05/15 10:00	1
3 & 4 Methylphenol	0.98	U	2.0	0.98	0.78	ug/L		08/05/15 10:00	1
Naphthalene	0.098	U	0.20	0.098	0.061	ug/L		08/05/15 10:00	1
2-Nitroaniline	0.49	U	2.0	0.49	0.21	ug/L		08/05/15 10:00	1
3-Nitroaniline	0.49	U	2.0	0.49	0.27	ug/L		08/05/15 10:00	1
4-Nitroaniline	0.49	U	2.0	0.49	0.22	ug/L		08/05/15 10:00	1

Client Sample ID: FWGRQLmw-007C-0604-GW
Date Collected: 07/22/15 10:14
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-23
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Nitrophenol	0.49	U	2.0	0.49	0.27	ug/L		08/05/15 10:00	1
4-Nitrophenol	3.9	U	4.9	3.9	0.28	ug/L		08/05/15 10:00	1
N-Nitrosodi-n-propylamine	0.49	U	0.98	0.49	0.24	ug/L		08/05/15 10:00	1
N-Nitrosodiphenylamine	0.49	U	0.98	0.49	0.30	ug/L		08/05/15 10:00	1
2,2'-oxybis[1-chloropropane]	0.49	U	0.98	0.49	0.39	ug/L		08/05/15 10:00	1
Pentachlorophenol	0.98	U	4.9	0.98	0.26	ug/L		08/05/15 10:00	1
Phenanthrene	0.098	U	0.20	0.098	0.061	ug/L		08/05/15 10:00	1
Phenol	0.98	U	0.98	0.98	0.59	ug/L		08/05/15 10:00	1
Pyrene	0.098	U	0.20	0.098	0.041	ug/L		08/05/15 10:00	1
1,2,4-Trichlorobenzene	0.49	U	0.98	0.49	0.27	ug/L		08/05/15 10:00	1
2,4,5-Trichlorophenol	0.49	U	4.9	0.49	0.29	ug/L		08/05/15 10:00	1
2,4,6-Trichlorophenol	0.49	U	4.9	0.49	0.24	ug/L		08/05/15 10:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*65*		*50 - 110*	*07/23/15 06:39*	*08/05/15 10:00*	*1*
2-Fluorophenol (Surr)	*57*		*20 - 110*	*07/23/15 06:39*	*08/05/15 10:00*	*1*
Nitrobenzene-d5 (Surr)	*56*		*40 - 110*	*07/23/15 06:39*	*08/05/15 10:00*	*1*
Phenol-d5 (Surr)	*63*		*10 - 115*	*07/23/15 06:39*	*08/05/15 10:00*	*1*
Terphenyl-d14 (Surr)	*91*		*50 - 135*	*07/23/15 06:39*	*08/05/15 10:00*	*1*
2,4,6-Tribromophenol (Surr)	*98*		*40 - 125*	*07/23/15 06:39*	*08/05/15 10:00*	*1*

Method: 8081A - Organochlorine Pesticides (GC) - RE

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.049	U Q	0.049	0.049	0.018	ug/L		07/29/15 18:58	1
4,4'-DDE	0.049	U Q	0.049	0.049	0.012	ug/L		07/29/15 18:58	1
4,4'-DDT	0.049	U Q	0.049	0.049	0.017	ug/L		07/29/15 18:58	1
Aldrin	0.049	U Q	0.049	0.049	0.013	ug/L		07/29/15 18:58	1
alpha-BHC	0.049	U Q	0.049	0.049	0.014	ug/L		07/29/15 18:58	1
alpha-Chlordane	0.049	U Q	0.049	0.049	0.012	ug/L		07/29/15 18:58	1
beta-BHC	0.049	U Q	0.049	0.049	0.018	ug/L		07/29/15 18:58	1
delta-BHC	0.049	U	0.049	0.049	0.028	ug/L		07/29/15 18:58	1
Dieldrin	0.049	U Q	0.049	0.049	0.013	ug/L		07/29/15 18:58	1
Endosulfan I	0.049	U Q	0.049	0.049	0.016	ug/L		07/29/15 18:58	1
Endosulfan II	0.049	U Q	0.049	0.049	0.015	ug/L		07/29/15 18:58	1
Endosulfan sulfate	0.049	U Q	0.049	0.049	0.015	ug/L		07/29/15 18:58	1
Endrin	0.049	U Q	0.049	0.049	0.013	ug/L		07/29/15 18:58	1
Endrin aldehyde	0.049	U Q	0.049	0.049	0.018	ug/L		07/29/15 18:58	1
Endrin ketone	0.049	U Q	0.049	0.049	0.016	ug/L		07/29/15 18:58	1
gamma-BHC (Lindane)	0.049	U Q	0.049	0.049	0.013	ug/L		07/29/15 18:58	1
gamma-Chlordane	0.049	U Q	0.049	0.049	0.013	ug/L		07/29/15 18:58	1
Heptachlor	0.049	U Q	0.049	0.049	0.014	ug/L		07/29/15 18:58	1
Heptachlor epoxide	0.049	U Q	0.049	0.049	0.015	ug/L		07/29/15 18:58	1
Methoxychlor	0.098	U Q	0.098	0.098	0.013	ug/L		07/29/15 18:58	1
Toxaphene	2.0	U	2.0	2.0	0.19	ug/L		07/29/15 18:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*32*		*30 - 135*	*07/28/15 11:27*	*07/29/15 18:58*	*1*
DCB Decachlorobiphenyl	*45*		*30 - 135*	*07/28/15 11:27*	*07/29/15 18:58*	*1*
Tetrachloro-m-xylene	*61*		*25 - 140*	*07/28/15 11:27*	*07/29/15 18:58*	*1*
Tetrachloro-m-xylene	*72*		*25 - 140*	*07/28/15 11:27*	*07/29/15 18:58*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGRQLmw-007C-0604-GW — **Lab Sample ID: 240-53500-23**
Date Collected: 07/22/15 10:14 — **Matrix: Water**
Date Received: 07/22/15 18:19

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.20	U Q	0.49	0.20	0.17	ug/L		07/24/15 14:40	1
Aroclor-1221	0.20	U Q	0.49	0.20	0.13	ug/L		07/24/15 14:40	1
Aroclor-1232	0.20	U Q	0.49	0.20	0.16	ug/L		07/24/15 14:40	1
Aroclor-1242	0.39	U Q	0.49	0.39	0.22	ug/L		07/24/15 14:40	1
Aroclor-1248	0.20	U Q	0.49	0.20	0.098	ug/L		07/24/15 14:40	1
Aroclor-1254	0.20	U Q	0.49	0.20	0.16	ug/L		07/24/15 14:40	1
Aroclor-1260	0.20	U Q	0.49	0.20	0.17	ug/L		07/24/15 14:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*45*		*40 - 140*	*07/23/15 06:34*	*07/24/15 14:40*	*1*
Tetrachloro-m-xylene	*71*		*40 - 140*	*07/23/15 06:34*	*07/24/15 14:40*	*1*
DCB Decachlorobiphenyl	*19*	*Q*	*40 - 135*	*07/23/15 06:34*	*07/24/15 14:40*	*1*
DCB Decachlorobiphenyl	*32*	*Q*	*40 - 135*	*07/23/15 06:34*	*07/24/15 14:40*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 03:12	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		08/06/15 05:39	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		08/06/15 05:39	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		08/06/15 05:39	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		08/06/15 05:39	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		08/06/15 05:39	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		08/06/15 05:39	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		08/06/15 05:39	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		08/06/15 05:39	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		08/06/15 05:39	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		08/06/15 05:39	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		08/06/15 05:39	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		08/06/15 05:39	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		08/06/15 05:39	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		08/06/15 05:39	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		08/06/15 05:39	1
PETN	**0.48**	**J**	0.67	0.51	0.31	ug/L		08/06/15 05:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*95*		*79 - 111*	*07/28/15 11:01*	*08/06/15 05:39*	*1*
3,4-Dinitrotoluene	*99*		*79 - 111*	*07/28/15 11:01*	*08/13/15 08:55*	*1*

Method: 8330A - Nitroaromatics and Nitramines - RE

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
PETN	0.51	U H	0.66	0.51	0.31	ug/L		08/18/15 15:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*98*		*79 - 111*	*08/17/15 15:24*	*08/18/15 15:11*	*1*
3,4-Dinitrotoluene	*101*		*79 - 111*	*08/17/15 15:24*	*08/18/15 17:25*	*1*

Client Sample Results

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGRQLmw-007C-0604-GW
Date Collected: 07/22/15 10:14
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-23
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.010		0.010	0.010	0.0050	mg/L		08/04/15 10:01	1
Nitrocellulose	1.0	J	2.0	1.0	0.48	mg/L		08/11/15 13:22	1

Client Sample Results

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGRQLmw-007C-0604-GF
Date Collected: 07/22/15 10:14
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-24
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**68**		10	10	2.9	ug/L		07/27/15 15:21	1
Chromium	**2.0**	**J**	7.0	4.0	0.55	ug/L		07/27/15 15:21	1
Cobalt	**5.0**	**J**	7.0	4.0	0.56	ug/L		07/27/15 15:21	1
Lead	**2.5**	**J**	10	5.0	1.9	ug/L		07/27/15 15:21	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 15:21	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 15:21	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 15:21	1
Barium	**60**	**J**	200	5.0	1.0	ug/L		07/27/15 15:21	1
Calcium	**130000**		5000	1000	260	ug/L		07/27/15 15:21	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 15:21	1
Magnesium	**120000**		5000	300	55	ug/L		07/27/15 15:21	1
Manganese	**1700**		15	5.0	0.46	ug/L		07/27/15 15:21	1
Nickel	**7.3**	**J**	40	5.0	0.76	ug/L		07/27/15 15:21	1
Potassium	**7800**		5000	900	70	ug/L		07/27/15 15:21	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 17:34	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 17:34	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 17:34	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 17:34	1
Iron	**18000**		150	100	44	ug/L		07/27/15 17:34	1
Sodium	**5000**		1000	400	160	ug/L		07/27/15 17:34	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 17:34	1
Zinc	50	U	50	50	27	ug/L		07/27/15 17:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 12:14	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGRQLmw-DUP5-0621-GW
Date Collected: 07/22/15 10:14
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-25
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 17:49	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	0.22	ug/L		07/23/15 17:49	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.24	ug/L		07/23/15 17:49	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.30	ug/L		07/23/15 17:49	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.45	ug/L		07/23/15 17:49	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.23	ug/L		07/23/15 17:49	1
1,2-Dichloroethene, Total	1.0	U	2.0	1.0	0.20	ug/L		07/23/15 17:49	1
1,2-Dichloropropane	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 17:49	1
2-Hexanone	2.0	U	10	2.0	0.48	ug/L		07/23/15 17:49	1
Bromochloromethane	1.0	U	1.0	1.0	0.50	ug/L		07/23/15 17:49	1
Acetone	2.0	U	10	2.0	0.94	ug/L		07/23/15 17:49	1
Benzene	1.0	U	1.0	1.0	0.35	ug/L		07/23/15 17:49	1
Bromoform	1.0	U	1.0	1.0	0.56	ug/L		07/23/15 17:49	1
Bromomethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 17:49	1
Carbon disulfide	1.0	U	1.0	1.0	0.38	ug/L		07/23/15 17:49	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.43	ug/L		07/23/15 17:49	1
Chlorobenzene	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 17:49	1
Chloroethane	1.0	U	1.0	1.0	0.32	ug/L		07/23/15 17:49	1
Chloroform	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 17:49	1
Chloromethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 17:49	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	0.26	ug/L		07/23/15 17:49	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.46	ug/L		07/23/15 17:49	1
Bromodichloromethane	1.0	U	1.0	1.0	0.29	ug/L		07/23/15 17:49	1
Ethylbenzene	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 17:49	1
1,2-Dibromoethane	1.0	U	1.0	1.0	0.32	ug/L		07/23/15 17:49	1
m-Xylene & p-Xylene	1.0	U	2.0	1.0	0.24	ug/L		07/23/15 17:49	1
2-Butanone (MEK)	2.0	U	10	2.0	0.53	ug/L		07/23/15 17:49	1
4-Methyl-2-pentanone (MIBK)	2.0	U	10	2.0	0.99	ug/L		07/23/15 17:49	1
Methylene Chloride	1.0	U	1.0	1.0	0.33	ug/L		07/23/15 17:49	1
o-Xylene	0.50	U	1.0	0.50	0.25	ug/L		07/23/15 17:49	1
Styrene	0.50	U	1.0	0.50	0.45	ug/L		07/23/15 17:49	1
Tetrachloroethene	1.0	U	1.0	1.0	0.31	ug/L		07/23/15 17:49	1
Toluene	1.0	U	1.0	1.0	0.23	ug/L		07/23/15 17:49	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	0.30	ug/L		07/23/15 17:49	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.56	ug/L		07/23/15 17:49	1
Trichloroethene	1.0	U	1.0	1.0	0.22	ug/L		07/23/15 17:49	1
Vinyl chloride	1.0	U	1.0	1.0	0.29	ug/L		07/23/15 17:49	1
Xylenes, Total	2.0	U	2.0	2.0	0.52	ug/L		07/23/15 17:49	1
Dibromochloromethane	1.0	U	1.0	1.0	0.43	ug/L		07/23/15 17:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*70 - 120*		*07/23/15 17:49*	*1*
4-Bromofluorobenzene (Surr)	*89*		*75 - 120*		*07/23/15 17:49*	*1*
Toluene-d8 (Surr)	*96*		*85 - 120*		*07/23/15 17:49*	*1*
Dibromofluoromethane (Surr)	*92*		*85 - 115*		*07/23/15 17:49*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.098	U	0.20	0.098	0.043	ug/L		08/05/15 10:25	1
Acenaphthylene	0.098	U	0.20	0.098	0.047	ug/L		08/05/15 10:25	1

Client Sample ID: FWGRQLmw-DUP5-0621-GW
Date Collected: 07/22/15 10:14
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-25
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.098	U	0.20	0.098	0.086	ug/L		08/05/15 10:25	1
Benzo[a]anthracene	0.098	U	0.20	0.098	0.029	ug/L		08/05/15 10:25	1
Benzo[a]pyrene	0.098	U	0.20	0.098	0.050	ug/L		08/05/15 10:25	1
Benzo[b]fluoranthene	0.098	U	0.20	0.098	0.039	ug/L		08/05/15 10:25	1
Benzo[g,h,i]perylene	0.098	U	0.20	0.098	0.045	ug/L		08/05/15 10:25	1
Benzoic acid	20	U	25	20	9.8	ug/L		08/05/15 10:25	1
Benzo[k]fluoranthene	0.098	U	0.20	0.098	0.044	ug/L		08/05/15 10:25	1
Benzyl alcohol	0.49	U	4.9	0.49	0.37	ug/L		08/05/15 10:25	1
Bis(2-chloroethoxy)methane	0.49	U	0.98	0.49	0.31	ug/L		08/05/15 10:25	1
Bis(2-chloroethyl)ether	0.098	U	0.98	0.098	0.098	ug/L		08/05/15 10:25	1
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		08/05/15 10:25	1
4-Bromophenyl phenyl ether	0.49	U	2.0	0.49	0.22	ug/L		08/05/15 10:25	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		08/05/15 10:25	1
Carbazole	0.49	U	0.98	0.49	0.27	ug/L		08/05/15 10:25	1
4-Chloroaniline	0.49	U	2.0	0.49	0.21	ug/L		08/05/15 10:25	1
4-Chloro-3-methylphenol	0.49	U	2.0	0.49	0.21	ug/L		08/05/15 10:25	1
2-Chloronaphthalene	0.49	U	0.98	0.49	0.098	ug/L		08/05/15 10:25	1
2-Chlorophenol	0.49	U	0.98	0.49	0.28	ug/L		08/05/15 10:25	1
4-Chlorophenyl phenyl ether	0.49	U	2.0	0.49	0.29	ug/L		08/05/15 10:25	1
Chrysene	0.098	U	0.20	0.098	0.049	ug/L		08/05/15 10:25	1
Dibenz(a,h)anthracene	0.098	U	0.20	0.098	0.044	ug/L		08/05/15 10:25	1
Dibenzofuran	0.098	U	0.98	0.098	0.020	ug/L		08/05/15 10:25	1
1,2-Dichlorobenzene	0.49	U	0.98	0.49	0.28	ug/L		08/05/15 10:25	1
1,3-Dichlorobenzene	0.49	U	0.98	0.49	0.23	ug/L		08/05/15 10:25	1
1,4-Dichlorobenzene	0.49	U	0.98	0.49	0.33	ug/L		08/05/15 10:25	1
3,3'-Dichlorobenzidine	0.98	U	4.9	0.98	0.36	ug/L		08/05/15 10:25	1
2,4-Dichlorophenol	0.49	U	2.0	0.49	0.19	ug/L		08/05/15 10:25	1
Diethyl phthalate	0.98	U	2.0	0.98	0.59	ug/L		08/05/15 10:25	1
2,4-Dimethylphenol	0.49	U	2.0	0.49	0.25	ug/L		08/05/15 10:25	1
Dimethyl phthalate	0.49	U	2.0	0.49	0.28	ug/L		08/05/15 10:25	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		08/05/15 10:25	1
4,6-Dinitro-2-methylphenol	3.9	U	4.9	3.9	2.4	ug/L		08/05/15 10:25	1
2,4-Dinitrophenol	0.98	U	4.9	0.98	0.31	ug/L		08/05/15 10:25	1
Di-n-octyl phthalate	0.49	U	2.0	0.49	0.23	ug/L		08/05/15 10:25	1
Fluoranthene	0.098	U	0.20	0.098	0.044	ug/L		08/05/15 10:25	1
Fluorene	0.098	U	0.20	0.098	0.040	ug/L		08/05/15 10:25	1
Hexachlorobenzene	0.098	U	0.20	0.098	0.084	ug/L		08/05/15 10:25	1
Hexachlorobutadiene	0.49	U	0.98	0.49	0.26	ug/L		08/05/15 10:25	1
Hexachlorocyclopentadiene	0.49	U	9.8	0.49	0.24	ug/L		08/05/15 10:25	1
Hexachloroethane	0.49	U	0.98	0.49	0.19	ug/L		08/05/15 10:25	1
Indeno[1,2,3-cd]pyrene	0.098	U	0.20	0.098	0.042	ug/L		08/05/15 10:25	1
Isophorone	**0.33**	**J**	0.98	0.49	0.26	ug/L		08/05/15 10:25	1
2-Methylnaphthalene	0.098	U	0.20	0.098	0.089	ug/L		08/05/15 10:25	1
2-Methylphenol	0.49	U	0.98	0.49	0.17	ug/L		08/05/15 10:25	1
3 & 4 Methylphenol	0.98	U	2.0	0.98	0.78	ug/L		08/05/15 10:25	1
Naphthalene	0.098	U	0.20	0.098	0.061	ug/L		08/05/15 10:25	1
2-Nitroaniline	0.49	U	2.0	0.49	0.21	ug/L		08/05/15 10:25	1
3-Nitroaniline	0.49	U	2.0	0.49	0.27	ug/L		08/05/15 10:25	1
4-Nitroaniline	0.49	U	2.0	0.49	0.22	ug/L		08/05/15 10:25	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGRQLmw-DUP5-0621-GW — **Lab Sample ID: 240-53500-25**
Date Collected: 07/22/15 10:14 — **Matrix: Water**
Date Received: 07/22/15 18:19

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Nitrophenol	0.49	U	2.0	0.49	0.27	ug/L		08/05/15 10:25	1
4-Nitrophenol	3.9	U	4.9	3.9	0.28	ug/L		08/05/15 10:25	1
N-Nitrosodi-n-propylamine	0.49	U	0.98	0.49	0.24	ug/L		08/05/15 10:25	1
N-Nitrosodiphenylamine	0.49	U	0.98	0.49	0.30	ug/L		08/05/15 10:25	1
2,2'-oxybis[1-chloropropane]	0.49	U	0.98	0.49	0.39	ug/L		08/05/15 10:25	1
Pentachlorophenol	0.98	U	4.9	0.98	0.26	ug/L		08/05/15 10:25	1
Phenanthrene	0.098	U	0.20	0.098	0.061	ug/L		08/05/15 10:25	1
Phenol	0.98	U	0.98	0.98	0.59	ug/L		08/05/15 10:25	1
Pyrene	0.098	U	0.20	0.098	0.041	ug/L		08/05/15 10:25	1
1,2,4-Trichlorobenzene	0.49	U	0.98	0.49	0.27	ug/L		08/05/15 10:25	1
2,4,5-Trichlorophenol	0.49	U	4.9	0.49	0.29	ug/L		08/05/15 10:25	1
2,4,6-Trichlorophenol	0.49	U	4.9	0.49	0.24	ug/L		08/05/15 10:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*75*		*50 - 110*	*07/23/15 06:39*	*08/05/15 10:25*	*1*
2-Fluorophenol (Surr)	*67*		*20 - 110*	*07/23/15 06:39*	*08/05/15 10:25*	*1*
Nitrobenzene-d5 (Surr)	*71*		*40 - 110*	*07/23/15 06:39*	*08/05/15 10:25*	*1*
Phenol-d5 (Surr)	*74*		*10 - 115*	*07/23/15 06:39*	*08/05/15 10:25*	*1*
Terphenyl-d14 (Surr)	*91*		*50 - 135*	*07/23/15 06:39*	*08/05/15 10:25*	*1*
2,4,6-Tribromophenol (Surr)	*100*		*40 - 125*	*07/23/15 06:39*	*08/05/15 10:25*	*1*

Method: 8081A - Organochlorine Pesticides (GC) - RE

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.049	U Q	0.049	0.049	0.018	ug/L		07/29/15 19:20	1
4,4'-DDE	0.049	U Q	0.049	0.049	0.012	ug/L		07/29/15 19:20	1
4,4'-DDT	0.049	U Q	0.049	0.049	0.017	ug/L		07/29/15 19:20	1
Aldrin	0.049	U Q	0.049	0.049	0.013	ug/L		07/29/15 19:20	1
alpha-BHC	0.049	U Q	0.049	0.049	0.014	ug/L		07/29/15 19:20	1
alpha-Chlordane	0.049	U Q	0.049	0.049	0.012	ug/L		07/29/15 19:20	1
beta-BHC	0.049	U Q	0.049	0.049	0.018	ug/L		07/29/15 19:20	1
delta-BHC	0.049	U	0.049	0.049	0.028	ug/L		07/29/15 19:20	1
Dieldrin	0.049	U Q	0.049	0.049	0.013	ug/L		07/29/15 19:20	1
Endosulfan I	0.049	U Q	0.049	0.049	0.016	ug/L		07/29/15 19:20	1
Endosulfan II	0.049	U Q	0.049	0.049	0.015	ug/L		07/29/15 19:20	1
Endosulfan sulfate	0.049	U Q	0.049	0.049	0.015	ug/L		07/29/15 19:20	1
Endrin	0.049	U Q	0.049	0.049	0.013	ug/L		07/29/15 19:20	1
Endrin aldehyde	0.049	U Q	0.049	0.049	0.018	ug/L		07/29/15 19:20	1
Endrin ketone	0.049	U Q	0.049	0.049	0.016	ug/L		07/29/15 19:20	1
gamma-BHC (Lindane)	0.049	U Q	0.049	0.049	0.013	ug/L		07/29/15 19:20	1
gamma-Chlordane	0.049	U Q	0.049	0.049	0.013	ug/L		07/29/15 19:20	1
Heptachlor	0.049	U Q	0.049	0.049	0.014	ug/L		07/29/15 19:20	1
Heptachlor epoxide	0.049	U Q	0.049	0.049	0.015	ug/L		07/29/15 19:20	1
Methoxychlor	0.098	U Q	0.098	0.098	0.013	ug/L		07/29/15 19:20	1
Toxaphene	2.0	U	2.0	2.0	0.19	ug/L		07/29/15 19:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*37*		*30 - 135*	*07/28/15 11:27*	*07/29/15 19:20*	*1*
DCB Decachlorobiphenyl	*42*		*30 - 135*	*07/28/15 11:27*	*07/29/15 19:20*	*1*
Tetrachloro-m-xylene	*63*		*25 - 140*	*07/28/15 11:27*	*07/29/15 19:20*	*1*
Tetrachloro-m-xylene	*65*		*25 - 140*	*07/28/15 11:27*	*07/29/15 19:20*	*1*

Client Sample ID: FWGRQLmw-DUP5-0621-GW
Date Collected: 07/22/15 10:14
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-25
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.20	U	0.49	0.20	0.17	ug/L		07/29/15 16:31	1
Aroclor-1221	0.20	U	0.49	0.20	0.13	ug/L		07/29/15 16:31	1
Aroclor-1232	0.20	U	0.49	0.20	0.16	ug/L		07/29/15 16:31	1
Aroclor-1242	0.39	U	0.49	0.39	0.22	ug/L		07/29/15 16:31	1
Aroclor-1248	0.20	U	0.49	0.20	0.098	ug/L		07/29/15 16:31	1
Aroclor-1254	0.20	U	0.49	0.20	0.16	ug/L		07/29/15 16:31	1
Aroclor-1260	0.20	U	0.49	0.20	0.17	ug/L		07/29/15 16:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*55*		*40 - 140*	*07/28/15 05:01*	*07/29/15 16:31*	*1*
Tetrachloro-m-xylene	*75*		*40 - 140*	*07/28/15 05:01*	*07/29/15 16:31*	*1*
DCB Decachlorobiphenyl	*30*	*Q*	*40 - 135*	*07/28/15 05:01*	*07/29/15 16:31*	*1*
DCB Decachlorobiphenyl	*42*		*40 - 135*	*07/28/15 05:01*	*07/29/15 16:31*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 03:30	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.050	U	0.15	0.050	0.031	ug/L		08/06/15 06:23	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.050	ug/L		08/06/15 06:23	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.050	ug/L		08/06/15 06:23	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.050	ug/L		08/06/15 06:23	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.050	ug/L		08/06/15 06:23	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		08/06/15 06:23	1
2-Nitrotoluene	0.10	U	0.50	0.10	0.089	ug/L		08/06/15 06:23	1
3-Nitrotoluene	0.10	U	0.50	0.10	0.058	ug/L		08/06/15 06:23	1
4-Nitrotoluene	0.10	U	0.50	0.10	0.089	ug/L		08/06/15 06:23	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.050	ug/L		08/06/15 06:23	1
HMX	0.050	U	0.15	0.050	0.036	ug/L		08/06/15 06:23	1
RDX	0.050	U	0.15	0.050	0.036	ug/L		08/06/15 06:23	1
Nitrobenzene	0.10	U	0.15	0.10	0.050	ug/L		08/06/15 06:23	1
Tetryl	0.10	U	0.15	0.10	0.050	ug/L		08/06/15 06:23	1
Nitroglycerin	0.50	U	0.66	0.50	0.33	ug/L		08/06/15 06:23	1
PETN	**0.68**		0.66	0.50	0.30	ug/L		08/06/15 06:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*93*	*M*	*79 - 111*	*07/28/15 11:01*	*08/06/15 06:23*	*1*
3,4-Dinitrotoluene	*96*		*79 - 111*	*07/28/15 11:01*	*08/13/15 10:02*	*1*

Method: 8330A - Nitroaromatics and Nitramines - RE

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
PETN	0.53	U H	0.69	0.53	0.32	ug/L		08/18/15 15:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*97*	*M*	*79 - 111*	*08/17/15 15:24*	*08/18/15 15:54*	*1*
3,4-Dinitrotoluene	*98*		*79 - 111*	*08/17/15 15:24*	*08/18/15 18:31*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGRQLmw-DUP5-0621-GW
Date Collected: 07/22/15 10:14
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-25
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.0078	J	0.010	0.010	0.0050	mg/L		08/04/15 09:34	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/11/15 13:24	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66 (OH)

TestAmerica Job ID: 240-53500-1

Client Sample ID: FWGRQLmw-DUP5-0621-GF
Date Collected: 07/22/15 10:14
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-26
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**68**		10	10	2.9	ug/L		07/27/15 15:25	1
Chromium	**1.5**	**J**	7.0	4.0	0.55	ug/L		07/27/15 15:25	1
Cobalt	**5.0**	**J**	7.0	4.0	0.56	ug/L		07/27/15 15:25	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 15:25	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 15:25	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 15:25	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 15:25	1
Barium	**59**	**J**	200	5.0	1.0	ug/L		07/27/15 15:25	1
Calcium	**120000**		5000	1000	260	ug/L		07/27/15 15:25	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 15:25	1
Magnesium	**120000**		5000	300	55	ug/L		07/27/15 15:25	1
Manganese	**1700**		15	5.0	0.46	ug/L		07/27/15 15:25	1
Nickel	**6.9**	**J**	40	5.0	0.76	ug/L		07/27/15 15:25	1
Potassium	**7600**		5000	900	70	ug/L		07/27/15 15:25	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 17:37	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 17:37	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 17:37	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/27/15 17:37	1
Iron	**18000**		150	100	44	ug/L		07/27/15 17:37	1
Sodium	**4800**		1000	400	160	ug/L		07/27/15 17:37	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 17:37	1
Zinc	50	U	50	50	27	ug/L		07/27/15 17:37	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 12:15	1

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Lab Sample ID: 240-53500-27
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 10:14	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	0.22	ug/L		07/23/15 10:14	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.24	ug/L		07/23/15 10:14	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.30	ug/L		07/23/15 10:14	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.45	ug/L		07/23/15 10:14	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.23	ug/L		07/23/15 10:14	1
1,2-Dichloroethene, Total	1.0	U	2.0	1.0	0.20	ug/L		07/23/15 10:14	1
1,2-Dichloropropane	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 10:14	1
2-Hexanone	2.0	U	10	2.0	0.48	ug/L		07/23/15 10:14	1
Bromochloromethane	1.0	U	1.0	1.0	0.50	ug/L		07/23/15 10:14	1
Acetone	**1.5**	**J**	10	2.0	0.94	ug/L		07/23/15 10:14	1
Benzene	1.0	U	1.0	1.0	0.35	ug/L		07/23/15 10:14	1
Bromoform	1.0	U	1.0	1.0	0.56	ug/L		07/23/15 10:14	1
Bromomethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 10:14	1
Carbon disulfide	1.0	U	1.0	1.0	0.38	ug/L		07/23/15 10:14	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.43	ug/L		07/23/15 10:14	1
Chlorobenzene	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 10:14	1
Chloroethane	1.0	U	1.0	1.0	0.32	ug/L		07/23/15 10:14	1
Chloroform	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 10:14	1
Chloromethane	1.0	U	1.0	1.0	0.44	ug/L		07/23/15 10:14	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	0.26	ug/L		07/23/15 10:14	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.46	ug/L		07/23/15 10:14	1
Bromodichloromethane	1.0	U	1.0	1.0	0.29	ug/L		07/23/15 10:14	1
Ethylbenzene	1.0	U	1.0	1.0	0.25	ug/L		07/23/15 10:14	1
1,2-Dibromoethane	1.0	U	1.0	1.0	0.32	ug/L		07/23/15 10:14	1
m-Xylene & p-Xylene	1.0	U	2.0	1.0	0.24	ug/L		07/23/15 10:14	1
2-Butanone (MEK)	2.0	U	10	2.0	0.53	ug/L		07/23/15 10:14	1
4-Methyl-2-pentanone (MIBK)	2.0	U	10	2.0	0.99	ug/L		07/23/15 10:14	1
Methylene Chloride	1.0	U	1.0	1.0	0.33	ug/L		07/23/15 10:14	1
o-Xylene	0.50	U	1.0	0.50	0.25	ug/L		07/23/15 10:14	1
Styrene	0.50	U	1.0	0.50	0.45	ug/L		07/23/15 10:14	1
Tetrachloroethene	1.0	U	1.0	1.0	0.31	ug/L		07/23/15 10:14	1
Toluene	1.0	U	1.0	1.0	0.23	ug/L		07/23/15 10:14	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	0.30	ug/L		07/23/15 10:14	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.56	ug/L		07/23/15 10:14	1
Trichloroethene	1.0	U	1.0	1.0	0.22	ug/L		07/23/15 10:14	1
Vinyl chloride	1.0	U	1.0	1.0	0.29	ug/L		07/23/15 10:14	1
Xylenes, Total	2.0	U	2.0	2.0	0.52	ug/L		07/23/15 10:14	1
Dibromochloromethane	1.0	U	1.0	1.0	0.43	ug/L		07/23/15 10:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*70 - 120*		*07/23/15 10:14*	*1*
4-Bromofluorobenzene (Surr)	*87*		*75 - 120*		*07/23/15 10:14*	*1*
Toluene-d8 (Surr)	*93*		*85 - 120*		*07/23/15 10:14*	*1*
Dibromofluoromethane (Surr)	*92*		*85 - 115*		*07/23/15 10:14*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.11	U	0.21	0.11	0.047	ug/L		08/05/15 10:50	1
Acenaphthylene	0.11	U	0.21	0.11	0.051	ug/L		08/05/15 10:50	1

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Lab Sample ID: 240-53500-27
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.11	U	0.21	0.11	0.093	ug/L		08/05/15 10:50	1
Benzo[a]anthracene	0.11	U	0.21	0.11	0.031	ug/L		08/05/15 10:50	1
Benzo[a]pyrene	0.11	U	0.21	0.11	0.054	ug/L		08/05/15 10:50	1
Benzo[b]fluoranthene	0.11	U	0.21	0.11	0.041	ug/L		08/05/15 10:50	1
Benzo[g,h,i]perylene	0.11	U	0.21	0.11	0.049	ug/L		08/05/15 10:50	1
Benzoic acid	21	U	26	21	11	ug/L		08/05/15 10:50	1
Benzo[k]fluoranthene	0.11	U	0.21	0.11	0.047	ug/L		08/05/15 10:50	1
Benzyl alcohol	0.53	U	5.3	0.53	0.40	ug/L		08/05/15 10:50	1
Bis(2-chloroethoxy)methane	0.53	U	1.1	0.53	0.34	ug/L		08/05/15 10:50	1
Bis(2-chloroethyl)ether	0.11	U	1.1	0.11	0.11	ug/L		08/05/15 10:50	1
Bis(2-ethylhexyl) phthalate	5.3	U	5.3	5.3	1.8	ug/L		08/05/15 10:50	1
4-Bromophenyl phenyl ether	0.53	U	2.1	0.53	0.23	ug/L		08/05/15 10:50	1
Butyl benzyl phthalate	0.53	U	5.3	0.53	0.27	ug/L		08/05/15 10:50	1
Carbazole	0.53	U	1.1	0.53	0.29	ug/L		08/05/15 10:50	1
4-Chloroaniline	0.53	U J	2.1	0.53	0.22	ug/L		08/05/15 10:50	1
4-Chloro-3-methylphenol	0.53	U	2.1	0.53	0.22	ug/L		08/05/15 10:50	1
2-Chloronaphthalene	0.53	U	1.1	0.53	0.11	ug/L		08/05/15 10:50	1
2-Chlorophenol	0.53	U	1.1	0.53	0.31	ug/L		08/05/15 10:50	1
4-Chlorophenyl phenyl ether	0.53	U	2.1	0.53	0.32	ug/L		08/05/15 10:50	1
Chrysene	0.11	U	0.21	0.11	0.053	ug/L		08/05/15 10:50	1
Dibenz(a,h)anthracene	0.11	U	0.21	0.11	0.047	ug/L		08/05/15 10:50	1
Dibenzofuran	0.11	U	1.1	0.11	0.021	ug/L		08/05/15 10:50	1
1,2-Dichlorobenzene	0.53	U	1.1	0.53	0.31	ug/L		08/05/15 10:50	1
1,3-Dichlorobenzene	0.53	U	1.1	0.53	0.24	ug/L		08/05/15 10:50	1
1,4-Dichlorobenzene	0.53	U	1.1	0.53	0.36	ug/L		08/05/15 10:50	1
3,3'-Dichlorobenzidine	1.1	U J	5.3	1.1	0.39	ug/L		08/05/15 10:50	1
2,4-Dichlorophenol	0.53	U	2.1	0.53	0.20	ug/L		08/05/15 10:50	1
Diethyl phthalate	1.1	U	2.1	1.1	0.63	ug/L		08/05/15 10:50	1
2,4-Dimethylphenol	0.53	U	2.1	0.53	0.26	ug/L		08/05/15 10:50	1
Dimethyl phthalate	0.53	U	2.1	0.53	0.31	ug/L		08/05/15 10:50	1
Di-n-butyl phthalate	5.3	U	5.3	5.3	1.8	ug/L		08/05/15 10:50	1
4,6-Dinitro-2-methylphenol	4.2	U	5.3	4.2	2.5	ug/L		08/05/15 10:50	1
2,4-Dinitrophenol	1.1	U	5.3	1.1	0.34	ug/L		08/05/15 10:50	1
Di-n-octyl phthalate	0.53	U	2.1	0.53	0.24	ug/L		08/05/15 10:50	1
Fluoranthene	0.11	U	0.21	0.11	0.047	ug/L		08/05/15 10:50	1
Fluorene	0.11	U	0.21	0.11	0.043	ug/L		08/05/15 10:50	1
Hexachlorobenzene	0.11	U	0.21	0.11	0.090	ug/L		08/05/15 10:50	1
Hexachlorobutadiene	0.53	U	1.1	0.53	0.28	ug/L		08/05/15 10:50	1
Hexachlorocyclopentadiene	0.53	U	11	0.53	0.25	ug/L		08/05/15 10:50	1
Hexachloroethane	0.53	U	1.1	0.53	0.20	ug/L		08/05/15 10:50	1
Indeno[1,2,3-cd]pyrene	0.11	U	0.21	0.11	0.046	ug/L		08/05/15 10:50	1
Isophorone	**0.37**	**J**	1.1	0.53	0.28	ug/L		08/05/15 10:50	1
2-Methylnaphthalene	0.11	U	0.21	0.11	0.095	ug/L		08/05/15 10:50	1
2-Methylphenol	0.53	U	1.1	0.53	0.18	ug/L		08/05/15 10:50	1
3 & 4 Methylphenol	1.1	U	2.1	1.1	0.84	ug/L		08/05/15 10:50	1
Naphthalene	0.11	U	0.21	0.11	0.066	ug/L		08/05/15 10:50	1
2-Nitroaniline	0.53	U	2.1	0.53	0.22	ug/L		08/05/15 10:50	1
3-Nitroaniline	0.53	U	2.1	0.53	0.29	ug/L		08/05/15 10:50	1
4-Nitroaniline	0.53	U	2.1	0.53	0.23	ug/L		08/05/15 10:50	1

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Lab Sample ID: 240-53500-27
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Nitrophenol	0.53	U	2.1	0.53	0.29	ug/L		08/05/15 10:50	1
4-Nitrophenol	4.2	U	5.3	4.2	0.31	ug/L		08/05/15 10:50	1
N-Nitrosodi-n-propylamine	0.53	U	1.1	0.53	0.25	ug/L		08/05/15 10:50	1
N-Nitrosodiphenylamine	0.53	U	1.1	0.53	0.33	ug/L		08/05/15 10:50	1
2,2'-oxybis[1-chloropropane]	0.53	U	1.1	0.53	0.42	ug/L		08/05/15 10:50	1
Pentachlorophenol	1.1	U	5.3	1.1	0.28	ug/L		08/05/15 10:50	1
Phenanthrene	0.11	U	0.21	0.11	0.065	ug/L		08/05/15 10:50	1
Phenol	1.1	U	1.1	1.1	0.63	ug/L		08/05/15 10:50	1
Pyrene	0.11	U	0.21	0.11	0.044	ug/L		08/05/15 10:50	1
1,2,4-Trichlorobenzene	0.53	U	1.1	0.53	0.29	ug/L		08/05/15 10:50	1
2,4,5-Trichlorophenol	0.53	U	5.3	0.53	0.32	ug/L		08/05/15 10:50	1
2,4,6-Trichlorophenol	0.53	U	5.3	0.53	0.25	ug/L		08/05/15 10:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*77*		*50 - 110*	*07/23/15 06:39*	*08/05/15 10:50*	*1*
2-Fluorophenol (Surr)	*67*		*20 - 110*	*07/23/15 06:39*	*08/05/15 10:50*	*1*
Nitrobenzene-d5 (Surr)	*71*		*40 - 110*	*07/23/15 06:39*	*08/05/15 10:50*	*1*
Phenol-d5 (Surr)	*73*		*10 - 115*	*07/23/15 06:39*	*08/05/15 10:50*	*1*
Terphenyl-d14 (Surr)	*85*		*50 - 135*	*07/23/15 06:39*	*08/05/15 10:50*	*1*
2,4,6-Tribromophenol (Surr)	*101*		*40 - 125*	*07/23/15 06:39*	*08/05/15 10:50*	*1*

Method: 8081A - Organochlorine Pesticides (GC) - RE

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.051	U Q	0.051	0.051	0.018	ug/L		07/29/15 19:42	1
4,4'-DDE	0.051	U Q J	0.051	0.051	0.012	ug/L		07/29/15 19:42	1
4,4'-DDT	0.051	U Q	0.051	0.051	0.017	ug/L		07/29/15 19:42	1
Aldrin	0.051	U Q	0.051	0.051	0.013	ug/L		07/29/15 19:42	1
alpha-BHC	0.051	U Q	0.051	0.051	0.014	ug/L		07/29/15 19:42	1
alpha-Chlordane	0.051	U Q	0.051	0.051	0.012	ug/L		07/29/15 19:42	1
beta-BHC	0.051	U Q	0.051	0.051	0.018	ug/L		07/29/15 19:42	1
delta-BHC	0.051	U Q	0.051	0.051	0.030	ug/L		07/29/15 19:42	1
Dieldrin	0.051	U Q	0.051	0.051	0.013	ug/L		07/29/15 19:42	1
Endosulfan I	0.051	U Q	0.051	0.051	0.016	ug/L		07/29/15 19:42	1
Endosulfan II	0.051	U Q	0.051	0.051	0.015	ug/L		07/29/15 19:42	1
Endosulfan sulfate	0.051	U Q	0.051	0.051	0.015	ug/L		07/29/15 19:42	1
Endrin	0.051	U Q	0.051	0.051	0.013	ug/L		07/29/15 19:42	1
Endrin aldehyde	0.051	U Q	0.051	0.051	0.018	ug/L		07/29/15 19:42	1
Endrin ketone	0.051	U Q	0.051	0.051	0.016	ug/L		07/29/15 19:42	1
gamma-BHC (Lindane)	0.051	U Q	0.051	0.051	0.013	ug/L		07/29/15 19:42	1
gamma-Chlordane	0.051	U Q	0.051	0.051	0.013	ug/L		07/29/15 19:42	1
Heptachlor	0.051	U Q	0.051	0.051	0.014	ug/L		07/29/15 19:42	1
Heptachlor epoxide	0.051	U Q	0.051	0.051	0.015	ug/L		07/29/15 19:42	1
Methoxychlor	0.10	U Q	0.10	0.10	0.013	ug/L		07/29/15 19:42	1
Toxaphene	2.0	U Q	2.0	2.0	0.20	ug/L		07/29/15 19:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*27*	*Q*	*30 - 135*	*07/28/15 11:27*	*07/29/15 19:42*	*1*
DCB Decachlorobiphenyl	*29*	*Q*	*30 - 135*	*07/28/15 11:27*	*07/29/15 19:42*	*1*
Tetrachloro-m-xylene	*65*		*25 - 140*	*07/28/15 11:27*	*07/29/15 19:42*	*1*
Tetrachloro-m-xylene	*63*		*25 - 140*	*07/28/15 11:27*	*07/29/15 19:42*	*1*

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Lab Sample ID: 240-53500-27
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.20	U Q J	0.51	0.20	0.17	ug/L		07/29/15 16:47	1
Aroclor-1221	0.20	U Q	0.51	0.20	0.13	ug/L		07/29/15 16:47	1
Aroclor-1232	0.20	U Q	0.51	0.20	0.16	ug/L		07/29/15 16:47	1
Aroclor-1242	0.41	U Q	0.51	0.41	0.22	ug/L		07/29/15 16:47	1
Aroclor-1248	0.20	U Q	0.51	0.20	0.10	ug/L		07/29/15 16:47	1
Aroclor-1254	0.20	U Q	0.51	0.20	0.16	ug/L		07/29/15 16:47	1
Aroclor-1260	0.20	U Q J	0.51	0.20	0.17	ug/L		07/29/15 16:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*47*		*40 - 140*	*07/28/15 05:01*	*07/29/15 16:47*	*1*
Tetrachloro-m-xylene	*79*		*40 - 140*	*07/28/15 05:01*	*07/29/15 16:47*	*1*
DCB Decachlorobiphenyl	*16*	*Q*	*40 - 135*	*07/28/15 05:01*	*07/29/15 16:47*	*1*
DCB Decachlorobiphenyl	*30*	*Q*	*40 - 135*	*07/28/15 05:01*	*07/29/15 16:47*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U J	20	6.0	2.4	ug/L		07/31/15 04:24	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.16	0.052	0.032	ug/L		08/06/15 07:07	1
1,3-Dinitrobenzene	**0.16**	**J M**	0.16	0.10	0.052	ug/L		08/06/15 07:07	1
2,4,6-Trinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		08/06/15 07:07	1
2,4-Dinitrotoluene	0.10	U	0.14	0.10	0.052	ug/L		08/06/15 07:07	1
2,6-Dinitrotoluene	0.10	U	0.14	0.10	0.052	ug/L		08/06/15 07:07	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.16	0.10	0.016	ug/L		08/06/15 07:07	1
2-Nitrotoluene	0.10	U J M	0.52	0.10	0.092	ug/L		08/06/15 07:07	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		08/06/15 07:07	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.092	ug/L		08/06/15 07:07	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		08/06/15 07:07	1
HMX	0.052	U J M	0.16	0.052	0.038	ug/L		08/06/15 07:07	1
RDX	0.052	U	0.16	0.052	0.038	ug/L		08/06/15 07:07	1
Nitrobenzene	0.10	U J M	0.16	0.10	0.052	ug/L		08/06/15 07:07	1
Tetryl	**0.34**	**J M**	0.16	0.10	0.052	ug/L		08/06/15 07:07	1
Nitroglycerin	0.52	U	0.68	0.52	0.34	ug/L		08/06/15 07:07	1
PETN	0.52	U	0.68	0.52	0.31	ug/L		08/06/15 07:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*98*	*M*	*79 - 111*	*07/28/15 11:01*	*08/06/15 07:07*	*1*
3,4-Dinitrotoluene	*97*		*79 - 111*	*07/28/15 11:01*	*08/13/15 11:08*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.010	0.0050	mg/L		08/04/15 09:40	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/11/15 13:26	1

Client Sample ID: FWGRQLmw-008C-0606-GF
Date Collected: 07/22/15 14:38
Date Received: 07/22/15 18:19

Lab Sample ID: 240-53500-28
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**26**		10	10	2.9	ug/L		07/27/15 14:13	1
Chromium	**1.6**	**J**	7.0	4.0	0.55	ug/L		07/27/15 14:13	1
Cobalt	**1.8**	**J**	7.0	4.0	0.56	ug/L		07/27/15 14:13	1
Lead	**2.6**	**J**	10	5.0	1.9	ug/L		07/27/15 14:13	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 14:13	1
Silver	5.0	U J	7.0	5.0	0.92	ug/L		07/27/15 14:13	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 14:13	1
Barium	**99**	**J**	200	5.0	1.0	ug/L		07/27/15 14:13	1
Calcium	**64000**		5000	1000	260	ug/L		07/27/15 14:13	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 14:13	1
Magnesium	**61000**	**J**	5000	300	55	ug/L		07/27/15 14:13	1
Manganese	**540**	**J**	15	5.0	0.46	ug/L		07/27/15 14:13	1
Nickel	**3.4**	**J**	40	5.0	0.76	ug/L		07/27/15 14:13	1
Potassium	**4000**	**J**	5000	900	70	ug/L		07/27/15 14:13	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/27/15 16:32	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/27/15 16:32	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/27/15 16:32	1
Cadmium	**0.62**	**J**	2.0	1.0	0.40	ug/L		07/27/15 16:32	1
Iron	**79000**	**J**	150	100	44	ug/L		07/27/15 16:32	1
Sodium	**5700**		1000	400	160	ug/L		07/27/15 16:32	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/27/15 16:32	1
Zinc	50	U	50	50	27	ug/L		07/27/15 16:32	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/24/15 11:45	1

Attachment 1

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angye Dragotta/October 16, 2015

SDG: 240-53500
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1,
3. Were holding times met?	X				QAPP Table 5-1, J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1,
5. Were all QAPP addendum-specified target analytes reported?	X				QAPP Table 4-5
6. Was the GC/MS system tuned with bromofluorobenzene (BFB) during each 12 hour shift (prior to ICAL and Cal Ver.)?	X				QSM Table F-4
7. Calibration					
7a. Did the initial calibration curve consist of 5 concentration levels?	X			Instrument A3UX16–7/14/15	QSM Table F-4 R
7b. Did the Calibration Check Compounds (CCCs) (see Table 1 below) relative standard deviations (%RSD) ≤ 30%?	X				QSM Table F-4 R
7c. Were the minimum response factors (RFs) for the System Performance Check Compounds (SPCCs) (see Table 2 below) met?	X				QSM Table F-4
7d. Did target analytes with an average calibration type have an RSD ≤ 15%?	X				QSM Table F-4 15% <RSD< 20% = J/UJ
7e. IF the RSD was >15% was a different calibration option used?	X				
7f. If a linear regression curve was used, was the correlation coefficient r>0.995?			X		QSM Table F-4 R<0.995=-J/R
7g. If a non-linear regression was used, was the COD $r^2 \geq 0.99$, with a minimum of 6 points for second order and 7 points for third order?	X				QSM Table F-4 R^2<0.99=-J/R
8. Was a LOD Level Verification performed quarterly for each reported analyte with	X				QSM Table F-4 and section D.1.2.1

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angye Dragotta/October 16, 2015

SDG: 240-53500
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
detected results?					
9. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours?	X			7/23/15 @ 0929, 1812	
10. Were the QC/MRL recoveries 70-130%		X		• The opening MRL analyzed 7/23/15 recovered above control limits of 70-130% for methylene chloride at 176% and below control limits for 2-hexanone at 56%, acetone at 37%, bromomethane at 63%, 2-butanone at 53% and 4-methyl-2-pentanone at 62%. An LOD verification was analyzed following the analytical sequence with detected results for 2-hexanone, acetone and 2-butanone. • The closing MRL analyzed 7/23/15 recovered below control limits of 70-130% for acetone at 63% and above control limits for methylene chloride at 149% and chloroethane at 141 %. The methylene chloride and acetone results for sample FWGTEAMRQL-Trip and the acetone result for sample FWGRQLmw-008c-0605-GW were qualified as estimated, "J". The methylene chloride, acetone, 2-hexanone, bromomethane, 2-butanone and 4-methyl-2-pentanone results for samples FWGRQLmw-007c-0604-GW, FWGRQLmw-009c-0606-GW and FWGRQLmw-DUP5-0621-GW and the methylene chloride, 2-hexanone, bromomethane, 2-butanone and 4-methyl-2-pentanone results for sample FWGRQLmw-008c-0605-GW were qualified as estimated, "UJ/J". No qualifications were made for the chloroethane outlier as there were no detected chloroethane results reported for samples FWGRQLmw-007c-0604-GW, FWGRQLmw-008c-0605-GW, FWGRQLmw-009c-0606-GW, FWGTEAMRQL-Trip or FWGRQLmw-DUP5-0621-GW.	LS
11. Was a second source verification (ICV) analyzed? Did all target analytes have a recovery of 80-120%?	X			7/14/15 @ 1356	QSM Table F-4 J=<80% and >120%
12. Was a CCV run daily prior to analysis and every 12 hours of analysis time?	X			7/23/15 @ 0820	QSM Table F-4
12a. Were the average response factors (RFs) for the (SPCCs) (see Table 2 below) met?	X				QSM Table F-4
12b. Were all target analytes ≤ 20%D?	X				QSM Table F-4 %D <20% = J/UJ
13. Were the internal standards added to	X				QSM Table F-4

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angye Dragotta/October 16, 2015

SDG: 240-53500
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
every sample?					
13a. Was the EICP area between -50% and +100% of the ICAL mid-point standard?	X				QSM Table F-4 R
13b. Were the retention times for all IS compounds within ±30 seconds from the RT of the mid-point standard in the ICAL?	X				QSM Table F-4 J/UJ
14. Were the retention times for target analytes within ±0.06 RRT units from the RT of the mid-point standard in the ICAL or the most recently updated RRT for all samples?	X				QSM Table F-4 J
15. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-4
15a. Were target analytes detected in the method blank?	X			Checked by ADR. Methylene chloride was detected in the method blank at 0.640 µg/L. Sample FWGRQLTEAM-TRIP was qualified, "B" as the reported methylene chloride concentration was less than ten times method blank contamination.	QSM Table F-4 <5/10X =B
16. Was a field blank (equipment and/or trip) collected and analyzed?	X			FWGEQUIPRINSE3-0624-GW (reported in SDG 240-53558) and FWGTEAMRQL-TRIP	
16a. Were target analytes detected in the field blanks?	X			Checked by ADR. FWGRQL-TRIP had methylene chloride detected at 0.6 µg/L and acetone at 2.5 µg/L. FWGEQUIPRINSE3-0624-GW had methylene chloride detected at 0.86 µg/L, chloroform at 0.34 µg/L, 2-butanone at 4.6 µg/L and acetone at 3.5 µg/L. The acetone result for sample FWGRQLmw-008c-0605-GW was qualified, "B " as the reported acetone concentration was less than ten times trip blank and equipment rinse contamination. No qualifications were made for the methylene chloride, chloroform or 2-butanone , as methylene chloride, chloroform or 2-butanone were not reported as detected in the associated field samples.	QSM Table F-4 <5/10X =B
17. Was a LCS prepared and analyzed with each batch?	X				QSM Table F-4
17a. Were the LCS recoveries within limits specified in Table G-5 of the DoD QSM?	X			ADR checked section;	QSM Table F-4, Table G-5, J/UJ
18. Was a MS/MSD prepared with each batch?	X			A matrix spike and spike duplicate were analyzed sample FWGRQLmw-008c-0606-GW.	QSM Table F-4

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angye Dragotta/October 16, 2015

SDG: 240-53500
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
18a. Were the MS/MSD recoveries within limits specified in Table G-4 of the DoD QSM with an RPD <30%?	X				QSM Table F-4, Table G-5 J/UJ Parent sample only
19. Was a field duplicate analyzed?		X		A field duplicate was submitted for sample FWGRQLmw-007c-0604-GW.	QSM Table F-4,
19a. Were the field duplicates RPDs within ±30%?	X				QSM Table F-4, RPD >30=J Parent sample only
20. Were surrogate recoveries within control limits specified in the DOD QSM?	X				QSM Tables F-4 & G-3 >150%=J; 10% -50%=J/UJ; <10%=J/R
21. Were reported sample concentrations within calibration range?	X				

References:

DoD Quality Systems Manual (QSM), version 4.1, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Table1- CCCs

Analyte
1,1-Dichloroethene
Chloroform
1,2-Dichloropropane
Toluene
Ethylbenzene
Vinyl chloride

Table 2- SPCCs

Analyte	Minimum RF
Chloromethane	0.10
1,1-Dichlorethane	0.10
Bromoform	0.10
Chlorobenzene	0.30
1,1,2,2-Tetrachloroethane	0.30

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 28, 2015

SDG: 240-53500
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1,
3. Were holding times met?	X				QAPP Table 5-1, J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1,
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-6
6. Was the GC/MS system tuned each 12 hour shift (prior to ICAL and Cal Ver.)?	X				QSM Table F-4
7. Initial Calibration					
7a. Did the initial calibration curve consist of 5 concentration levels?	X			Instrument A4HP9–7/29/15	QSM Table F-4 R
7b. Did the Calibration Check Compounds (CCCs) (see Table 1 below) relative standard deviations (%RSD) ≤ 30%?	X				QSM Table F-4 R
7c. Were the minimum response factors (RFs) for the System Performance Check Compounds (SPCCs) (see Table 2 below) ≤0.050?	X				QSM Table F-4
7d. Were all other target analytes reported with an avg response have an RSD ≤ 15%?	X				QSM Table F-4 15% <RSD< 20% = J/UJ
7e. IF the RSD was >15% was a different calibration option used?	X				
7f. If a linear regression curve was used, was the correlation coefficient r>0.995?			X		QSM Table F-4 R<0.995=-J/R
7g. If a non-linear regression was used, was the COD r^2≥0.99, with a minimum of 6 points for second order and 7 points for third order?	X			2,4-dinitrophenol, 4,6-dinitro-2-methylphenol and benzidine used a linear fit.	QSM Table F-4 R^2<0.99=-J/R
8. Was a LOD Level Verification performed quarterly for each reported analyte?	X				QSM Table F-4 and section D.1.2.1
9 Was a breakdown check run at the beginning of and every 12 hours with DDT degradation <20% and tailing factors of benzidine and pentachlorophenol ≤2?	X				QSM Table F-4 R
10. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours with recoveries within 70-130%?	X			8/5/15 @0820, 1206 and 1620	Louisville Supplement to the DOD QSM

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 28, 2015

SDG: 240-53500
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
11. Was a second source verification (ICV) analyzed? Were results 80-120%?	X			7/29/15 @ 1307	QSM Table F-4 J=<80% and >120%
12. Was a CCV run daily prior to analysis and every 12 hours of analysis time?	X			8/5/15 @0755	QSM Table F-4
12a. Were the average response factors (RFs) for the System Performance Check Compounds (SPCCs) ≥0.050?	X				QSM Table F-4
12b. Were all target analytes ≤ 20%D?	X			4-nitrophenol had a %D above control limits of 20% at 23%. No qualification of the data was required as there were no detected 4-nitrophenol result reported for the associated field samples.	QSM Table F-4 %D <20% = J/UJ
13. Were the internal standards added to every sample?	X				QSM Table F-4
13a. Was the EICP area between -50% and +100% of the ICAL mid-point standard?	X				QSM Table F-4 R
13b. Were the retention times for all IS compounds within ±30 seconds from the RT of the mid-point standard in the ICAL?	X				QSM Table F-4 J/UJ
14. Were the retention times for target analytes within ±0.06 RRT units from the RT of the mid-point standard in the ICAL or the most recently updated RRT for all samples?	X				QSM Table F-4 J
15. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-4
15a. Were target analytes detected in the method blank >1/2 the MRL, >RL for common contaminants?		X		Checked by ADR.	QSM Table F-4 <5/10X =B
16. Was a field blank (equipment and/or trip) collected and analyzed?	X			FWGEQUIPRINSE3-0624-GW	
16a. Were target analytes detected in the field blank?		X			QSM Table F-4 <5/10X =B
17. Was a LCS prepared and analyzed with each batch?	X				QSM Table F-4
17a. Were the LCS recoveries within limits specified in Table G-6 of the DoD QSM?	X			ADR checked section;	QSM Table F-4, Table G-6, J/UJ
18. Was a MS/MSD prepared with each batch?	X				

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 28, 2015

SDG: 240-53500
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
18a. Were the MS/MSD recoveries within limits specified in Table G-6 of the DoD QSM with an RPD <30%?	X			The MS/MSD analyzed on sample FWGRQLmw-008C-0605-GW did not recover for 3,3'-dichlorobenzidine and the RPD was above control limits of 30% for 4-chloroaniline at 39%. As there were no detected 4-chloroaniline results reported for the field samples, no qualification was required for the RPD outlier. The 3,3'-dichlorobenzidine result for sample FWGRQLmw-008C-0605-GW was qualified as estimated, "UJ" versus unusable, as the 3,3'-dichlorobenzidine was within in control limits in the associated LCS.	QSM Table F-4, Table G-6 J/UJ Parent sample only
19. Was a field duplicate analyzed?	X			A field duplicate was submitted for FWGRQLmw-007C-0604-GW.	
19a. Were the field duplicates RPDs within ±50%?	X			Checked by ADR.	QSM Table F-4, RPD >50=J, Parent sample only
20. Were surrogate recoveries within control limits specified in the DOD QSM?	X				QSM Tables F-4 & G-3 >150%=J; 10% - 50%=J/UJ; <10%=J/R
21. Were reported sample concentrations within calibration range?	X				

References: DoD Quality Systems Manual (QSM), version 4.2, October 2010

- *Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007*
- *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012*
- *Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011*

Additional Comments:

Table 1: CCCs *(All analytes if CCCs not included in standard)*

Base / Neutral Compounds	Acid Compounds
Acenaphthalene	4-Chloro-3-methylphenol
1,4-Dichlorobenzene	2,4-Dichlorophenol
Hexachlorobutadiene	2-Nitrophenol
N-Nitrosodiphehylamine	Phenol
Di-n-octylphthalate	Pentachlorophenol
Fluoroanthene	2,4,6-Trichlorophenol
Benzo(a)pyrene	

Table 2: SPCCs -

N-Nitroso-di-n-propylamine	0.05
Hexachlorocyclopentadiene	0.05
2,4-Dinitrophenol	0.05
4-Nitrophenol	0.05

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta / August 28, 2015

SDG: 240-53500
Analysis: SW846 8081A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?	X			Checked by ADR.	QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a DDT standard analyzed every 12 hours? Was the DDT %breakdown <15%?	X				QSM Table F-2 >15%=J/R
7. Was an endrin standard analyzed every 12 hours? Was the endrin % breakdown <15%?	X				QSM Table F-2 >15%=J/R
8. Initial Calibration					
8a. Does the initial calibration curve consist of 5 concentration levels?	X			A2HP15 on 7/14/15(tox), 7/28/15	QSM Table F-2 R
8a. Were the %RSDs for each analyte $\leq$ 20%? OR was the average %RSD $\geq$20% with the r^2>0.990?	X				QSM Table F-2 RSD>20% or r<0.99=J/R
9. Was a LOD Level Verification performed once per quarter with all target analytes detected?	X				QSM Table F-2 R
10. Was a MRL Verification performed at the beginning and end of the sequence or every 12 hours with results within limits of 70-130%?	X			A2HP15- 7/29/15 @ 1625, 1647, 2258, 2320 8/3/15 @ 1655, 1717, 2055, 2117	QSM Table F-2, G-14 >UL=J; <LL=J/UJ/R
11. Was a second source (ICV) verification analyzed after the ICAL? Were results 80-120%?	X			A2HP15 7/14/15 @1632 (Tox), 7/28/15 @1800	QSM Table F-2 >120%=J;<80%=J/UJ
12. Was a CCV run every 12 hours or at the beginning and end of the analytical run with the %D for all target analytes $\leq$20%?		X		A2HP15 7/29/15 @ 1541, 1603, 2047, 2342 and 7/30/15 @ 0025 8/3/15 @ 1550, 1633, 2139, 8/4/15 @ 0242 The CCVs analyzed 8/3/15 at 1633 and the CCV analyzed 8/4/15 @ 0242 had a %D above control limits of 20% for endosulfan II at 20.8% and 23.0%. No qualification of the data was required as there were no detected endosulfan II results reported for the bracketed method blank.	QSM Table F-2 >120%=J; <80%=J/UJ
13. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-2
14. Were target analytes detected?		X		Checked by ADR.	QSM Table F-2 <5x=B
15. Was a field blank collected and analyzed?	X				

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta / August 28, 2015

SDG: 240-53500
Analysis: SW846 8081A

<table>
<tr><th>Review Questions:</th><th>Yes</th><th>No</th><th>N/A</th><th>Comments</th><th>Qual/Criteria</th></tr>
<tr><td>16. Were target analytes detected in the field blank analyses >1/2 the MRL?</td><td></td><td>X</td><td></td><td></td><td>QSM Table F-2
<5x=B</td></tr>
<tr><td>17. Was an LCS prepared and analyzed with each batch?</td><td>X</td><td></td><td></td><td></td><td>QSM Table F-2</td></tr>
<tr><td>18. Were the LCS recoveries within limits specified in QSM Table G-14?</td><td></td><td>X</td><td></td><td>Checked by ADR. The LCS recovered above control limits as follows:
<table><tr><th>Compound</th><th>LCS %R</th><th>%R Limits</th></tr><tr><td>4,4'-DDD</td><td>194</td><td>25.00-150.00</td></tr><tr><td>4,4'-DDE</td><td>194</td><td>35.00-140.00</td></tr><tr><td>4,4'-DDT</td><td>189</td><td>45.00-140.00</td></tr><tr><td>ALDRIN</td><td>175</td><td>25.00-140.00</td></tr><tr><td>ALPHA-BHC</td><td>176</td><td>60.00-130.00</td></tr><tr><td>ALPHA-CHLORDANE</td><td>182</td><td>65.00-125.00</td></tr><tr><td>BETA-BHC</td><td>170</td><td>65.00-125.00</td></tr><tr><td>DIELDRIN</td><td>184</td><td>60.00-130.00</td></tr><tr><td>ENDOSULFAN I</td><td>154</td><td>50.00-110.00</td></tr><tr><td>ENDOSULFAN II</td><td>148</td><td>30.00-130.00</td></tr><tr><td>ENDOSULFAN SULFATE</td><td>174</td><td>55.00-135.00</td></tr><tr><td>ENDRIN</td><td>182</td><td>55.00-135.00</td></tr><tr><td>ENDRIN ALDEHYDE</td><td>174</td><td>55.00-135.00</td></tr><tr><td>ENDRIN KETONE</td><td>171</td><td>75.00-125.00</td></tr><tr><td>gamma-BHC (Lindane)</td><td>173</td><td>25.00-135.00</td></tr><tr><td>GAMMA-CHLORDANE</td><td>182</td><td>60.00-125.00</td></tr><tr><td>HEPTACHLOR</td><td>176</td><td>40.00-130.00</td></tr><tr><td>HEPTACHLOR EPOXIDE</td><td>175</td><td>60.00-130.00</td></tr><tr><td>METHOXYCHLOR</td><td>157</td><td>55.00-150.00</td></tr></table>No qualification of the data was made as a result of the LCS outliers as there were no detected concentrations reported for the associated field samples.</td><td>QSM Table G-14
>UL=J; <LL=J/UJ/R</td></tr>
<tr><td>19. Was a MS/MSD pair prepared with each batch?</td><td>X</td><td></td><td></td><td></td><td>QSM Table F-2</td></tr>
<tr><td>20. Was the MS/MSD parent a Ravenna sample?</td><td>X</td><td></td><td></td><td></td><td></td></tr>
<tr><td>21. Were MS/MSD recoveries and RPD within limits specified in QSM Table G-14?</td><td></td><td>X</td><td></td><td>The matrix spike analyzed on sample FWGRQLmw-008c-0605-GW recovered outside control limits for the following analytes.
<table><tr><th>Compound</th><th>MS %R</th><th>MSD %R</th><th>%R Limits</th></tr><tr><td>ALPHA-CHLORDANE</td><td>127</td><td>128</td><td>65.00-125.00</td></tr><tr><td>DIELDRIN</td><td>133</td><td>136</td><td>60.00-130.00</td></tr><tr><td>ENDOSULFAN I</td><td>-</td><td>113</td><td>50.00-110.00</td></tr><tr><td>ENDRIN</td><td>143</td><td>145</td><td>55.00-135.00</td></tr><tr><td>GAMMA-CHLORDANE</td><td>128</td><td>130</td><td>60.00-125.00</td></tr><tr><td>HEPTACHLOR EPOXIDE</td><td>-</td><td>131</td><td>60.00-130.00</td></tr><tr><td>TOXAPHENE</td><td>55</td><td>54</td><td>70.00-130.00</td></tr></table>No qualification was made for the alpha-chlordane, dieldrin, endosulfan I,</td><td>QSM Table F-2
Pj with >UL=J; <LL=J/UJ/R</td></tr>
</table>

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta / August 28, 2015

SDG: 240-53500
Analysis: SW846 8081A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
				endrin, gamma-chlordane or heptachlor epoxide matrix spike recoveries as all outliers recovered above control limits and there were no detected alpha-chlordane, dieldrin, endosulfan I, endrin, gamma-chlordane or heptachlor epoxide concentrations reported for FWGRQLmw-008c-0605-GW. The toxaphene result for sample FWGRQLmw-008c-0605-GW was qualified as estimated, "UJ".	
22. Were surrogate recoveries as specified in QSM table G-3?		X		Checked by ADR. The surrogate DCB recovered below control limits of 30-135% for sample FWGRQLmw-008c-0605-GW at 27% and sample FWGRQLmw-009c-0606-GW at 22%. The sample results for FWGRQLmw-008c-0605-GW and FWGRQLmw-009c-0606-GW were qualified as estimated, "UJ".	QSM Table F-2 >LL=J; <LL=UJ/J/R
23. Was a field duplicate analyzed? Were the RPDs ≤50%?	X			Checked by ADR. A field duplicate was submitted for sample FWGRQLmw-007c-0604-GW (FWGRQLmw-DUP5-0621- GW).	RPD >50=J parent sample only
24. Were all positive results verified by a second column confirmation? Were the RPD's ≤ 40 for results greater than the LOQ?			X	No detected concentrations were reported that required second column confirmation.	QSM Table F-2 >40 RPD=J

References: DoD Quality Systems Manual (QSM), version 4.1, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 28, 2015

SDG: 240-53500
Analysis: SW846 8082

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Calibration					
6a. Does the initial calibration curve consist of 5 concentration levels of Aroclors 1016 and 1260?	X			Instrument A2HP4 7/22/15 Stds = 0.05, 0.1, 0.2, 0.5, 1.0, 2.0	QSM Table F-2 R
6b. Was the % RSD ≤ 20%? or Were the r^2s >0.990?	X				QSM Table F-2 RSD>20% or r<0.99= J/R
7. Was a LOD Verification performed once per quarter? Were all target analytes detected?	X				QSM Table F-2 R
8. Was an MRL Level Verification performed at the beginning and end of the sequence or every 12 hours? Were recoveries 70-130%?	X			7/24/15 @ 1408, 1902 7/29/15 @ 1542, 1825	LCG Table 3 >UCL=J; <LCL=J/UJ/R;
9. Was a second source (ICV) verification performed after the ICAL? Were the avg of all peaks for each aroclor 80-120%?	X			7/22/15	QSM Table F-2 >120%=J; <80%=J/ UJ/R
10. Were single standards of the other five Aroclors run to aid in pattern recognition and to determine a single point calibration factor?		X		All aroclors had a multi-point calibration.	Method 8082 Section 5.6.2
11. Was a CCV run every 12 hours?	X			7/24/15@1229, 1246, 1302, 1318, 1335, 1618, 1845 7/29/15 @ 1404, 1420, 1436, 1453, 1509	QSM Table F-2
12. Was the % D ≤ 20 % for each analyte?	X				QSM Table F-2 D>20%(neg)=J/R D>20% (pos) =J
13. Was a method blank prepared and analyzed with each batch?	X			Section checked by ADR.	QSM Table F-2
14. Were target analytes <1/2 the MRL?	X				QSM Table F-2, <5x = B

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 28, 2015

SDG: 240-53500
Analysis: SW846 8082

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
15. Was an equipment blank collected and analyzed?	X				
16. Were target analytes in the field blank analyses (equipment) <1/2 the MRL?		X		Section checked by ADR.	QSM Table F-2 <5x = B
17. Was an LCS prepared and analyzed with each batch?	X				QSM Table F-2
18. Were the LCS recoveries within limits specified in LCG Appendix C?	X			Section checked by ADR.	QSM Table F-2, Table G-16, >UL=J; <LCL%=J/R/UJ;
19. Was a MS/MSD pair prepared with each batch?	X				LCG Table 3
20. Was the MS/MSD parent a Ravenna sample?	X			FWGRQLmw-008c-0605-GW	
21. Were MS/MSD recoveries and RPD within limits specified in the DOD QSM Table G-16?		X		The MS/MSD %RPD was above control limits of 30% for aroclor 1016 at 50% and for aroclor 1260 at 59%. No qualification of the data was required as there were no detected aroclor concentrations reported for sample FWGRQLmw-008c-0605-GW.	QSM Table F-2, Table G-16, >UL=J; <LCL%=J/R/UJ;
22. Was the surrogate spiked into all samples?	X				
23. Were surrogate recoveries As specified in table G-3 of the DoD QSM?		X		Checked by ADR. The surrogate DCB recovered below control limits of 30-135% for sample FWGRQLmw-007c-0604-GW at 32% and sample FWGRQLmw-008c-0605-GW at 30%. The sample results for FWGRQLmw-008c-0605-GW and FWGRQLmw-007c-0604-GW were qualified as estimated, "UJ".	QSM Table F-2, Table G-3 >UCL=J; <LCL=J/UJ/R
24. Was a field duplicate analyzed? Were the RPDs <50%?	X			Checked by ADR. FWGRQLmw-007c-0604-GW	QSM Table F-2, RPD >50=J
25. Were all positive results verified by a second dissimilar column confirmation? Was the RPD ≤ 40?			X	No detected concentrations were reported that required confirmation.	QSM Table F-2, RPD>40=J

References:
DoD Quality Systems Manual (QSM), version 4.2, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 28, 2015

SDG: 240-53500
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?	X				QAPP Table *5-1* J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table *5-1*
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Was a LOD Verification performed once per quarter with all target analytes detected?	X				DoD QSM Table F-8
7. Tuning (ICP MS Only)					
7a. Was a tune performed daily prior to calibration	X				DoD QSM Table F-8 R
7b. Mass Calibration <0.1 amu from true value	X				
7c. Resolution <0.9 amu full width at 10 % peak height	X				
7d. RSD <%5 for a minimum of four replicate analyses	X				
8.Calibration	X				
8a. Was the ICAL performed daily with at least	X			ICP(7/27/15, 7/28/15), Hg (7/24/15) and ICPMS-(7/27/15, 7/29/15)	DoD QSM Tables F-8 and F-7
1high standard and a blank for ICP & ICPMS	X				
5 standards and a blank for Hg	X				
8b. Was the correlation coefficient r≥0.995 for Hg?	X				DoD QSM Tables F-8 and F-7 r<0.995=J/R
8c. Was the ICV (second source verification) analyzed after the ICAL with results 90-110% of the true value?	X				DoD QSM Tables F-8 and F-7
8d. Was the ICB analyzed after the ICV with detected results <1/2 the MRL?	X			ICP-The ICB analyzed 7/27/15@ 0924 had lead detected at 2.43 µg/L and potassium at 71.5 µg/L. The lead results for samples FWGWBGmw-021-0612-GF, FWGLL12mw-245c-0601-GF, FWGWBGmw-009c-0610-GF, FWGWBGmw-020-0611-GF, FWGRQLmw-007c-0604-GF and FWGRQLmw-008c-0605-GF were qualified, "U" as the reported lead concentrations were less than 5x contamination. No qualification was made for the potassium contamination as all detected potassium concentrations for the associated field samples were greater than 5x blank contamination. ICPMS- The ICB analyzed 7/27/15 at 1204 had cadmium detected at 0.179 µg/L. The cadmium results for samples, FWGLL12mw-187c-0599-GF and FWGRQLmw-008c-0605-	DoD QSM, Tables F-8 and F-7 < 5x = U

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 28, 2015

SDG: 240-53500
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
				GF were qualified, "U" as the reported cadmium concentrations were less than 5x contamination.	
Sample Analysis					
9. Was a MRL Level Verification performed at the beginning of the daily sequence and end of the analytical sequence bracketing samples? Were results 70-130%?	X				LS, DoD QSM, Table G-18, >130%=J; 70-80%=J/UJ; <70%=J/UJ, <65%=R, unless DL check with detected results
10. Were CCVs analyzed every 10 samples and at the end of the analytical sequence with results 90-110% of the true value?	X				DoD QSM, Tables F-8 and F-7 >110%=J, <85%=J/R 90-85%=J/UJ;
11. Were the CCBs run every 10 samples and at the end of the analytical sequence? Were results <1/2 the MRL?		X		ICP The CCBs analyzed 7/27/15 had lead detected at 1.96 µg/L, chromium from 0.620 µg/L to 0.822 µg/L , potassium from 77.6 µg/L to 83.69 µg/L, silver from 0.925 µg/L to 0.948 µg/L. The lead results for samples FWGWBGmw-021-0612-GF, FWGLL12mw-245c-0601-GF, FWGWBGmw-009c-0610-GF, FWGWBGmw-020-0611-GF, FWGRQLmw-007c-0604-GF and FWGRQLmw-008c-0605-GF; and the chromium results for samples FWGWBGmw-021-0612-GF, FWGWBGmw-006c-0609-GF, FWGLL12mw-245c-0601-GF, FWGLL12mw-187c-0599-GF, FWGWBGmw-009c-0610-GF, FWGFWGmw-012-0578-GF, FWGFWGmw-011-0577-GF, FWGWBGmw-020-0611-GF, FWGRQLmw-007c-0604-GF, FWGRQLmw-DUP5-0621-GF and FWGRQLmw-008c-0605-GF were qualified, "U" as the reported lead and chromium concentrations were less than 5x contamination. No qualification was made for the potassium contamination as all detected potassium concentrations for the associated field samples were greater than 5x blank contamination. No qualification was made for the silver contamination as silver was not reported as detected in the bracketed samples. ICPMS The CCBs analyzed 7/27/15 had cadmium detected from 0.182 µg/L to 0.212 µg/L . The cadmium results for samples, FWGLL12mw-187c-0599-GF and FWGRQLmw-008c-0605-GF were qualified, "U" as the reported cadmium concentrations were less than 5x contamination.	DoD QSM Tables F-8 and F-7 <5x = U

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 28, 2015

SDG: 240-53500
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
12. Was an Interelement Check Standard run at the beginning of the analytical sequence and every 12 hours with the ICS recovery within 80 to 120% of true value for each element of interest (ICP and ICPMS only)?	X				DoD QSM Tables F-8 and F-7 >120%=J; 50-79%=J/UJ; <50%=Pj/R
13. Was a method blank prepared and analyzed with each batch?	X				DoD QSM Tables F-8 and F-7
14. Were target analytes detected in the method blank?	X			Checked by ADR. ICP- The method blank analyzed 7/27/15 had lead detected at 2.11 µg/L and silver at 1.20 µg/L. The lead results for samples FWGWBGmw-021-0612-GF, FWGLL12mw-245c-0601-GF, FWGWBGmw-009c-0610-GF, FWGWBGmw-020-0611-GF, FWGRQLmw-007c-0604-GF and FWGRQLmw-008c-0605-GF were qualified, "B" as the detected concentrations were less than 5x method blank contamination. No qualification was required for the silver contamination as there were no detected silver concentrations reported less than five times method blank contamination.	DoD QSM Tables F-8 and F-7, <5x = B
15. Was a field blank collected and analyzed?	X				
16. Were target analytes reported in the field blank analyses?	X			ADR checked section. ICP-FWGEQUIPRINSE3-0624-GW had lead detected at 3.2 µg/L, manganese at 1.6 µg/L and potassium at 230 µg/L. The lead results for samples FWGWBGmw-021-0612-GF, FWGLL12mw-245c-0601-GF, FWGWBGmw-009c-0610-GF, FWGWBGmw-020-0611-GF, FWGRQLmw-007c-0604-GF and FWGRQLmw-008c-0605-GF; and the potassium results for samples FWGWBGmw-006c-0609-GF, FWGWBGmw-009c-0610-GF, FWGWBGmw-020-0611-GF, FWGFWGmw-012-0578-GF, were qualified, "B" as the detected concentrations were less than 5x equipment rinse contamination. No qualification was made for the manganese contamination as all detected concentrations were greater than five times the equipment rinse contamination. ICPMS-FWGEQUIPRINSE3-0624-GW had sodium detected at 190 µg/L. No qualification was made for the sodium contamination as all detected concentrations were greater than five times the equipment rinse contamination.	DoD QSM Tables F-8 and F-7 <5x = B
17. Was a LCS prepared and analyzed with each batch?	X				DoD QSM, Tables F-8 and F-7

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 28, 2015

SDG: 240-53500
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
18. Were the LCS recoveries within limits specified in LCG Appendix C?	X			Checked by ADR.	DoD QSM Tables G-18, F-8 and F-7 >120%=J;70-79%=J/UJ; <70%=J/R
19. Was a matrix spike (MS) and lab duplicate sample prepared with each batch?	X				DoD QSM Tables F-8 and F-7
20. Was the MS and Lab Duplicate parent a Ravenna sample?	X			A matrix spike analysis and laboratory duplicate analysis were performed on sample FWGRQLmw-008c-0606-GF.	
21. Were the MS recoveries within 80-120%?		X		Checked by ADR. ICPMS-Iron recovered below control limits of 80-120% at 51%. No qualification of the data was required as the parent concentration was greater than four times the spiking level.	DoD QSM Tables G-18, F-8 and F-7, >120%=J;70-79%=J/UJ; <70%=J/R, All samples in batch
22. Was the lab sample duplicate RPD ≤ 20%, for sample results detected above the LOQ?	X			Checked by ADR. ICP The lab duplicate analyzed on sample FWGRQLmw-008c-0606-GF had an RPD above control limits of 20% for chromium at 30% and cobalt at 24%. No qualification of the data was required as the reported chromium and cobalt concentrations were less than the LOQ.	DoD QSM, Tables F-8 and F-7 >20% = J, All samples in batch
23. Was a serial dilution performed, with the fivefold dilution within ± 10% of the original result?	X				DoD QSM, Tables F-8 and F-7 >20% = J. Only evaluate results above the LOQ. Qualify all samples in batch
24. Was a Post Digestion Spike analyzed as needed? Were results within 75-125%?		X		ICP- The post spike analyzed on sample FWGRQLmw-008c-0606-GF had a recovery of 68% for magnesium and 40% for manganese. No qualification was required as the parent concentrations were greater than 4x the spike value and the serial dilutions recovered with control limits. ICPMS- The post spike analyzed on sample FWGRQLmw-008c-0606-GF had a recovery of 62% for iron. No qualification was required as the parent concentration was greater than 4x the spike value and the serial dilution recovered with control limits.	LCG Table 7, >125%=J; 30-75%=J/UJ; <30%=R
25. Was a field duplicate analyzed? Were the RPDs ± 50% for sample results detected above the LOQ?	X			FWGRQLmw-007c-0604-GW	>30% = J. Qualify parent sample only and only evaluate results above the LOQ
26. Were internal standards added to all ICPMS samples with intensity within 30-120% of the intensity of the ICAL internal standard?	X				DoD QSM Table F-8. >120%=J/R, <20%=J

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 28, 2015

SDG: 240-53500
Analysis: SW846 6010/6020/7470A

References:

- *DoD Quality Systems Manual (QSM), version 4.2, October 2010*
- *Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007*
- *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012*
- *Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011*

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/August 31, 2015

SDG: 240-53500
Analysis: SW846 8330 Explosives

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a LOD Verification analyzed once per quarter with all target analytes detected?	X				DoD QSM Table F-3 R
7.Calibration					
7a. Does the initial calibration curve consist of 5 concentration levels? (6 stds for quadratic curves)	X			LC10 4/28/15 LC9 8/12/15	DoD QSM Table F-3 R
7b. Did all target analytes using avg response have an RSD $\leq$ 15% ?	X				
7c. If a linear regression curve was used, was the correlation coefficient r≥0.995? (0.990 for non-linear).			X		
8. Was a second source verification (ICV) analyzed after the ICAL and all analytes 80-120%?	X			LC10 on 4/28/15 at 2052 LC9 8/13/15 at 0001	DoD QSM Table F-3 >120%=J; <80%= J/UJ;
Sample Analysis					
9. Was a CCV run at the beginning of the analytical sequence, every 10 samples and at the end of the analytical run with targets and surrogates recovering 80-120% of the true value?	X			LC10- 7/27/15 8/5/15 @1508, 8/6/15 @0034, 0917 LC9-8/13/15 @0321, 1215 and 8/18/15 @ 1151, 1938	DoD QSM Table F-3 J/UJ
10. Was a MRL Level verification run at the beginning and end of every daily? Was the %D< 30%?		X		LC10- 7/27/15 @ 2310 and 7/28/15 @ 0753, 1426, 2014 and 8/5/15 @1508, 8/6/15 @0034 LC9-8/13/15 @0428, 1322 and 8/18/15 @ 1258, 2045 The MRL analyzed 8/5/15 @ 1551 on LC10 recovered above control limits of 70-130% for PETN at 141%. No qualification of the data was required as there were no detected PETN concentrations reported for the bracketed field samples.	LCG Table 5 >30%=J
11. Was a method blank prepared and analyzed with each batch?	X			Due to excessive particulates, samples FWGRQLmw-007C-0604-GW, FWGRQLmw-DUP5-0621-GW and FWGRQLmw-008C-0605-GW were filtered prior to extraction. A filter blank was also extracted and analyzed.	DoD QSM Table F-3

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/August 31, 2015

SDG: 240-53500
Analysis: SW846 8330 Explosives

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
12. Were target analytes detected in the method blank?	X			Checked by ADR. The filter blank had PETN detected at 1.06ug/L. As a result of the filter blank contamination, samples FWGRQLmw-007C-0604-GW and FWGRQLmw-DUP5-0621-GW should have been qualified as non-detect, "U", since the PETN results for FWGRQLmw-007C-0604-GW and FWGRQLmw-DUP5-0621-GW were <5x filter blank contamination. Because of the filter blank contamination, samples FWGRQLmw-007C-0604-GW and FWGRQLmw-DUP5-0621-GW were reextracted. The extraction occurred outside 2x hold. The re-extracted samples had comparable PETN results for samples FWGRQLmw-007C-0604-GW and FWGRQLmw-DUP5-0621-GW, but with no detected PETN in the filter blank. Based on the reextract filter blank results, the PETN results from the initial analysis were reported unqualified for samples FWGRQLmw-007C-0604-GW and FWGRQLmw-DUP5-0621-GW.	DoD QSM Table F-3 <5x = B
13. Was a field blank collected and analyzed?	X				
14. Were target analytes detected in the field blank analyses?		X		Checked by ADR.	DoD QSM Table F-3 <5x=B
15. Was a field duplicate analyzed? Were the RPDs ≤30%?	X			Checked by ADR.	RPD >30=J
16. Were all positive results confirmed with a second column confirmation? Were the RPDs ≤ 40%?	X			The second column confirmation for sample FWGRQLmw-008c-0605-GW had an RPD above control limits of 40% for tetryl at 114% and 1,3-dinitrobenzene at 93%. The tetryl and 1,3-dinitrobenzene results for sample FWGRQLmw-008c-0605-GW were qualified as estimated, "J".	DoD QSM Table F-3 RPD>40%=J Only detected results above the LOQ were evaluated
17. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-3
18. Were the LCS recoveries within limits specified in table G-12 of the DoD QSM?	X			Checked by ADR.	DoD QSM Table F-3 <UL=J;30-LL=J/UJ; <30%=J/R
19.Was a MS/MSD or MS and sample duplicate prepared with each batch?	X			FWGRQLmw-008c-0605-GW	DoD QSM Table F-3
20. Were MS/MSD recoveries within limits specified in table G-12 of the DoD QSM with an RPD ≤30%?		X		The MS/MSD RPD recovered above control limits of 30% for nitrobenzene at 34%. No qualification of the data was required as there were no detected nitrobenzene concentrations reported for sample FWGRQLmw-008c-0605-GW.	DoD QSM Table F-3 Pj

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/August 31, 2015

SDG: 240-53500
Analysis: SW846 8330 Explosives

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
21. Were surrogate recoveries within laboratory limits (79-111%)?	X			Checked by ADR.	QSM Tables F-2 >UL=J; <LL =J/UJ

References: DoD Quality Systems Manual (QSM), version 4.2, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/August 28, 2015

SDG: 240-53500
Analysis: SW846 8330M Nitroguanidine

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a LOD Verification analyzed once per quarter with all target analytes detected?	X				DoD QSM Table F-3 R
7.Calibration					
7a. Does the initial calibration curve consist of 5 concentration levels? (6 stds for quadratic curves)	X			PDA-1/ Hydro RP80A 11/19/14 (confirmation) PDA-1/ Luna NH2 6/7/15	DoD QSM Table F-3 R
7b. Did all target analytes using avg response have an RSD $\leq$ 15% ?	X				
7c. If a linear regression curve was used, was the correlation coefficient r$\geq$0.995? (0.990 for Quadratic curve).			X		
7d. Did reanalysis of the low level standard after calibration, recover within 15%?	X			Luna- 6/17/15@ 1206	
8. Was a second source verification (ICV) analyzed after the ICAL and all analytes 80-120%?	X			Luna- 6/17/15@ 1206	DoD QSM Table F-3 >120%=J; <80%= J/UJ;
Sample Analysis					
9. Was a CCV run at the beginning of the analytical sequence, every 10 samples and at the end of the analytical run with targets and surrogates recovering 80-120% of the true value?	X			Luna- 7/30/15@ 2024, 7/31/15 @ 0015, 0348, 0721	DoD QSM Table F-3 J/UJ
10. Was a MRL Level verification run at the beginning and end of every daily sequence or every 12 hours? Was the %D < 30%?	X			Luna- 7/30/15@ 1243, 1651, 2042, 7/31/15 @ 0033, 0406, 0739	LCG Table 5 >30%=J
11. Was a method blank prepared and analyzed with each batch?	X				DoD QSM Table F-3

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/August 28, 2015

SDG: 240-53500
Analysis: SW846 8330M Nitroguanidine

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
12. Were target analytes detected in the method blank?		X		Checked by ADR.	DoD QSM Table F-3 <5x = B
13. Was a field blank collected and analyzed?	X				
14. Were target analytes detected in the field blank analyses?		X		Checked by ADR.	DoD QSM Table F-3 <5x=B
15. Was a field duplicate analyzed? Were the RPDs ≤30%?	X				RPD >30=J
16. Were all positive results confirmed with a second column confirmation? Were the RPDs ≤ 40%?	X				DoD QSM Table F-3 RPD>40%=J
17. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-3
18. Were the LCS recoveries within laboratory limits of 79%-119%?	X			Checked by ADR.	DoD QSM Table F-3 <UL=J; 30-LL=J/UJ; <30%=J/R
19. Was a MS/MSD or MS and sample duplicate prepared with each batch?	X			FWGRQLmw-008C-0605-GW. The matrix spike duplicate recovered above control limits of 73-117% at 118%. No qualification of the data was required as there were no detected nitroguanidine results reported for sample FWGRQLmw-008C-0605-GW.	DoD QSM Table F-3
20. Were MS/MSD recoveries within laboratory limits of 40%-150% with an RPD ≤20%?	X				DoD QSM Table F-3 Pj

References:
DoD Quality Systems Manual (QSM), version 4.2, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments: The laboratory narrative notes that FWGRQLmw-007C-0604-GW, FWGRQLmw-DUP5-0621-GW and FWGRQLmw-008C-0605-GW were filtered prior to extraction due to excessive particulates. Clarification was received from the laboratory that, this comment was not intended for the propellants, only the explosives.

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 31, 2015

SDG: 240-53500
Analysis: TAL SOP WS-WC-0050

Review Questions:	Yes	No	N/A	Comments	Qualifier
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Does the initial calibration curve consist of 5 concentration levels with the low standard near but > MDL?	X				SOP Section 10.2 R
7. Was the correlation coefficient >0.995?	X				SOP Section 10.2
8. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours? Was the %D <30%?	X			8/11/15 @ 1242, 1312, 1334	>30%=J
9. Was a second source verification (ICV) analyzed after the ICAL? Were all analytes 90-110%?	X			8/11/15 @ 1238	>110%=J; 90-85%=J/UJ; <85%=J/R
10. Was the ICB analyzed after the ICV with results <1/2 the MRL?	X				STL SOP Section 9.8, LCG ,< 5x = U
11. Was a CCV run every 10 samples and at the end of the analytical run?	X			8/11/15 @ 1314, 1336	STL SOP Section 10.4
12. Was the ICV and CCV a mid-level standard from the initial calibration curve?	X				STL SOP Section 10.3.1
13. Were all CCV calibration analytes within 90-110%?	X				>110%=J; 85-90%=J/UJ; <85%=J/R
14. Was the ICB analyzed after the ICV with results <1/2 the MRL?	X				QSM, < 5x = U
15. Was a method blank prepared and analyzed with each batch?	X				
16. Were target analytes detected in the method blank?		X		ADR checked section.	LCG, *<5x=B*
17. Was a field blank collected and analyzed?	X				

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 31, 2015

SDG: 240-53500
Analysis: TAL SOP WS-WC-0050

Review Questions:	Yes	No	N/A	Comments	Qualifier
18. Were target analytes detected in the field blank analyses?		X			<5x=B
19. Was a field duplicate analyzed? Were the RPDs ≤30%?	X				QAPP Table 3-2 RPD > 30% = J
20. Was an LCS prepared and analyzed with each batch? Was the LCS recovery within lab's in-house limits% (26-144%)?	X				>UL%=J; 50-LL%=J/UJ; <50%=J/R
21. Was a MS/MSD pair prepared with each batch?	X				
22. Was the MS/MSD parent a Ravenna sample?	X			FWGRQLmw-008-0605-GW	
23. Were MS/MSD recoveries 26-144% and RPD ≤20?	X			Checked by ADR.	Method EPA 353.2 Section 9.4.2 >UL%=J;<LL%=J/UJ; RPD>20%=J/UJ

References:

SOP SAC-WC-0050 "Preparation and Analysis of Nitrocellulose in Aqueous and Soil/Sediment Samples by Colorimetric Autoanalyzer", Jan 2007, rev. 2.0

DoD Quality Systems Manual (QSM)

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/August 31, 2015

SDG: 240-53500
Analysis: EPA 353.2

Review Questions:	Yes	No	N/A	Comments	Qual/Crtieria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				*QAPP Table 5-1, NELAC*
3. Were holding times met?	X				QAPP Table *5-1* J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table *5-1*
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Was the Linear Calibration Range verified using 3 standards and 1 blank?	X				Method EPA 353.2 Section 9.2.2, *J*
7. Were the calibration standards verified by preparation and analysis of a Quality Control Sample? Were results within 10% of the stated values?	X				Method EPA 353.2 Section 9.2.3 Pj
8. Was an Instrument Performance Check Solution (CCV) analyzed immediately following daily calibration, after every 10^{th} sample, and at the end of the analytical sequence?	X				Method EPA 353.2 Section 9.3.4
9. Was the CCV a mid-level standard from the initial calibration curve, with recovery 90-110%?	X				Method EPA 353.2 Section 9.3.4 >110%=J; <85%=J/R 85-90%=J/UJ;
10. Was an MRL check standard analyzed at the beginning and end of each analytical run, with recoveries 70-130%	X				LCG >130%=J; <70%=J/UJ;
11.Was a method blank and calibration blanks prepared and analyzed with each batch?	X				Method EPA 353.2 Section 9.3.1, 9.3.4
12. Were target analytes detected in the method blank or calibration blank >1/2 the MRL?	X			ADR checked section;	<5x = B(method blank) U (calibration blank)
13. Was a field blank (trip or equipment) collected and analyzed?	X				

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/August 31, 2015

SDG: 240-53500
Analysis: EPA 353.2

Review Questions:	Yes	No	N/A	Comments	Qual/Crtieria
14. Were target analytes detected in the field blank analyses (trip or equipment) >1/2 the MRL?	X			FWGEQUIPRINSE3-0624-GW had nitrate/nitrite detected at 0.006mg/L. The nitrate/nitrite results for samples FWGLL12mw-247-0602-GW, FWGLL12mw-245-0601-GW and FWGLL12mw-DUP4-0620-GW were qualified, "B, as the detected results were <5x rinse blank contamination.	<5x=B
15. Was a field duplicate analyzed? Were the RPDs acceptable?	X				
16. Was an LCS prepared and analyzed with each batch? Was the LCS recovery within 90-110%?	X				Method EPA 353.2 Section 9.3.3 J/UJ; <50%= R
17. Was a MS/MSD pair prepared with each batch?	X				Method EPA 353.2 Section 9.4.1
18. Was the MS/MSD parent a Ravenna sample?	X			FWGLL12mw-0247c-0602-GW	
19. Were MS/MSD recoveries and RPD within acceptance criteria?	X			Checked by ADR.	Method EPA 353.2 Section 9.4.2 Pj

References:

DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 31, 2015

SDG: 240-53500
Analysis: SW846 9012A

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table *5-1* J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table *5-1*
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Does the initial calibration curve consist of at least 6 standards and one blank, with the correlation coefficient $R \geq 0.995$?	X			8/4/15	*DoD QSM Table F-10* R
7. Were a high and low standard distilled and analyzed with results within $\pm$ 15%?	X				*DoD QSM Table F-10* R
8. Was an LOD Verification performed at least once per quarter with all target analytes detected?	X				LCG Table 10 R
9. Was a MRL Level Verification performed at the beginning and end of the daily sequence? Were results within 70-130%?	X				LCG Table 10, LS >130%=J; 65-70%=J/UJ; <65%=J/R
10. Was a second source verification (ICV) analyzed after the ICAL and all analytes 85-115%?	X				*DoD QSM Table F-10* >115%=J; 80-85%=J/UJ; <80%=J/R
11. Was a method blank prepared and analyzed with each batch?	X				*DoD QSM Table F-10*
12. Were target analytes detected in the method blank?		X		Checked by ADR.	*DoD QSM Table F-10* <5x=B
13. Was a field blank collected and analyzed?	X				
14. Were target analytes in the field blank analyses?		X			*DoD QSM Table F-10* <5x=B
15. Was a field duplicate analyzed? Were the RPDs $\leq$20%?	X			Checked by ADR.	>30% = J
16. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-10

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ August 31, 2015

SDG: 240-53500
Analysis: SW846 9012A

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
17. Were the LCS recoveries 69-118%?	X			Checked by ADR.	*DoD QSM Table F-10* Lab Limits >118%=J; 50-69%=J/UJ; <50%=R
18. Was a MS and duplicate (sample or matrix) prepared once per every 10 samples?	X				DoD QSM Table F-10
19. Was the MS parent a Ravenna sample?	X			FWGRQLmw-008C-0605-GW	
20. Were matrix spike recoveries 42-140%?	X				DoD QSM Table F-10 >140%=J; <42%=J/UJ/R

References:
DoD Quality Systems Manual (QSM), version 4.2, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011
Additional Comments:

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Attachment 2

Data Qualifier Summary

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: GENCHEM

Method: 353.2 **Matrix: AQ**

Sample ID: FWGLL12mw-0247-0602-GW **Collected:** 7/22/2015 4:06:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate-Nitrite	0.013	J	0.0031	MDL	0.050	LOQ	mg/L	B	Eb

Sample ID: FWGLL12mw-245C-0601-GW **Collected:** 7/22/2015 12:21:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate-Nitrite	0.0060	J	0.0031	MDL	0.050	LOQ	mg/L	B	Eb

Sample ID: FWGLL12mw-DUP4-0620-GW **Collected:** 7/22/2015 1:11:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate-Nitrite	0.0080	J	0.0031	MDL	0.050	LOQ	mg/L	B	Eb

Method Category: GENCHEM

Method: 9012A **Matrix: AQ**

Sample ID: FWGRQLmw-DUP5-0621-GW **Collected:** 7/22/2015 10:14:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.0078	J	0.0050	MDL	0.010	LOQ	mg/L	J	RI

Method Category: GENCHEM

Method: WS-WC-0050 **Matrix: AQ**

Sample ID: FWGLL12mw-0187C-0599-GW **Collected:** 7/22/2015 12:38:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	0.77	J	0.48	MDL	2.0	LOQ	mg/L	J	RI

Sample ID: FWGRQLmw-007C-0604-GW **Collected:** 7/22/2015 10:14:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	1.0	J	0.48	MDL	2.0	LOQ	mg/L	J	RI

* denotes a non-reportable result

Project Name and Number: W912QR-04-D-0036 - USACE Project: USACE Project: USACE Project: RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: METALS

Method: 6010B **Matrix:** AQ

Sample ID: FWGFWGmw-011-0577-GF **Collected:** 7/22/2015 3:02:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	30	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.3	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
COBALT	1.0	J	0.56	MDL	7.0	LOQ	ug/L	J	RI
POTASSIUM	4200	J	70	MDL	5000	LOQ	ug/L	J	RI

Sample ID: FWGFWGmw-012-0578-GF **Collected:** 7/22/2015 1:32:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	19	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.3	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
COBALT	1.3	J	0.56	MDL	7.0	LOQ	ug/L	J	RI
NICKEL	1.3	J	0.76	MDL	40	LOQ	ug/L	J	RI
POTASSIUM	1000	J	70	MDL	5000	LOQ	ug/L	B	Eb

Sample ID: FWGLL12mw-0187C-0599-GF **Collected:** 7/22/2015 12:38:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	3.5	J	2.9	MDL	10	LOQ	ug/L	J	RI
CHROMIUM	1.4	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
NICKEL	20	J	0.76	MDL	40	LOQ	ug/L	J	RI

Sample ID: FWGLL12mw-245C-0601-GF **Collected:** 7/22/2015 12:21:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	24	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.8	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
COBALT	3.6	J	0.56	MDL	7.0	LOQ	ug/L	J	RI
LEAD	2.3	J	1.9	MDL	10	LOQ	ug/L	U	Mb, Cb, Eb
NICKEL	2.3	J	0.76	MDL	40	LOQ	ug/L	J	RI
POTASSIUM	3200	J	70	MDL	5000	LOQ	ug/L	J	RI

Sample ID: FWGLL12mw-DUP4-0620-GF **Collected:** 7/22/2015 1:11:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	25	J	1.0	MDL	200	LOQ	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: W912QR-04-D-0036 - USACE Project: USACE Project: USACE Project: RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: **METALS**

Method: **6010B** ***Matrix:*** **AQ**

Sample ID: FWGLL12mw-DUP4-0620-GF ***Collected:*** 7/22/2015 1:11:00 PM ***Analysis Type:*** RES/TOT ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	1.5	J	0.55	MDL	7.0	LOQ	ug/L	J	RI
COBALT	3.6	J	0.56	MDL	7.0	LOQ	ug/L	J	RI
NICKEL	2.0	J	0.76	MDL	40	LOQ	ug/L	J	RI
POTASSIUM	3200	J	70	MDL	5000	LOQ	ug/L	J	RI

Sample ID: FWGRQLmw-007C-0604-GF ***Collected:*** 7/22/2015 10:14:00 AM ***Analysis Type:*** RES/TOT ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	60	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	2.0	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
COBALT	5.0	J	0.56	MDL	7.0	LOQ	ug/L	J	RI
LEAD	2.5	J	1.9	MDL	10	LOQ	ug/L	U	Mb, Cb, Eb
NICKEL	7.3	J	0.76	MDL	40	LOQ	ug/L	J	RI

Sample ID: FWGRQLmw-008C-0606-GF ***Collected:*** 7/22/2015 2:38:00 PM ***Analysis Type:*** RES/TOT ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	99	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.6	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
COBALT	1.8	J	0.56	MDL	7.0	LOQ	ug/L	J	RI
LEAD	2.6	J	1.9	MDL	10	LOQ	ug/L	U	Mb, Cb, Eb
NICKEL	3.4	J	0.76	MDL	40	LOQ	ug/L	J	RI
POTASSIUM	4000	J	70	MDL	5000	LOQ	ug/L	J	RI

Sample ID: FWGRQLmw-009C-0606-GF ***Collected:*** 7/22/2015 3:45:00 PM ***Analysis Type:*** RES/TOT ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	33	J	1.0	MDL	200	LOQ	ug/L	J	RI
COBALT	3.3	J	0.56	MDL	7.0	LOQ	ug/L	J	RI
NICKEL	3.6	J	0.76	MDL	40	LOQ	ug/L	J	RI
POTASSIUM	3600	J	70	MDL	5000	LOQ	ug/L	J	RI

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: METALS

Method: 6010B **Matrix:** AQ

Sample ID: FWGRQLmw-DUP5-0621-GF **Collected:** 7/22/2015 10:14:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	59	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.5	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
COBALT	5.0	J	0.56	MDL	7.0	LOQ	ug/L	J	RI
NICKEL	6.9	J	0.76	MDL	40	LOQ	ug/L	J	RI

Sample ID: FWGWBGmw-006C-0609-GF **Collected:** 7/22/2015 9:31:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	20	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.3	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
POTASSIUM	890	J	70	MDL	5000	LOQ	ug/L	B	Eb

Sample ID: FWGWBGmw-009C-0610-GF **Collected:** 7/22/2015 9:52:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	8.3	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	0.68	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
LEAD	2.1	J	1.9	MDL	10	LOQ	ug/L	U	Mb, Cb, Eb
POTASSIUM	470	J	70	MDL	5000	LOQ	ug/L	B	Eb

Sample ID: FWGWBGmw-020-0611-GF **Collected:** 7/22/2015 10:57:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	15	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	0.78	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
LEAD	2.1	J	1.9	MDL	10	LOQ	ug/L	U	Mb, Cb, Eb
NICKEL	2.3	J	0.76	MDL	40	LOQ	ug/L	J	RI
POTASSIUM	650	J	70	MDL	5000	LOQ	ug/L	B	Eb

Sample ID: FWGWBGmw-021-0612-GF **Collected:** 7/22/2015 10:23:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	4.6	J	2.9	MDL	10	LOQ	ug/L	J	RI
BARIUM	55	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	0.84	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb

* denotes a non-reportable result

Project Name and Number: W912QR-04-D-0036 - USACE Project: USACE Project: USACE Project: RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: FWGWBGmw-021-0612-GF **Collected:** 7/22/2015 10:23:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	3.2	J	1.9	MDL	10	LOQ	ug/L	U	Mb, Cb, Eb
POTASSIUM	1300	J	70	MDL	5000	LOQ	ug/L	J	RI

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: FWGFWGmw-011-0577-GF **Collected:** 7/22/2015 3:02:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	31	J	20	MDL	60	LOQ	ug/L	J	RI

Sample ID: FWGLL12mw-0187C-0599-GF **Collected:** 7/22/2015 12:38:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CADMIUM	0.56	J	0.40	MDL	2.0	LOQ	ug/L	U	Cb

Sample ID: FWGRQLmw-008C-0606-GF **Collected:** 7/22/2015 2:38:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CADMIUM	0.62	J	0.40	MDL	2.0	LOQ	ug/L	U	Cb

Method Category: SVOA

Method: 8081A **Matrix: AQ**

Sample ID: FWGRQLmw-008C-0605-GW **Collected:** 7/22/2015 2:38:00 PM **Analysis Type:** RE **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDD	0.051	U Q	0.018	MDL	0.051	LOQ	ug/L	UJ	Surr
4,4'-DDE	0.051	U Q J	0.012	MDL	0.051	LOQ	ug/L	UJ	Surr
4,4'-DDT	0.051	U Q	0.017	MDL	0.051	LOQ	ug/L	UJ	Surr
ALDRIN	0.051	U Q	0.013	MDL	0.051	LOQ	ug/L	UJ	Surr
ALPHA-BHC	0.051	U Q	0.014	MDL	0.051	LOQ	ug/L	UJ	Surr
ALPHA-CHLORDANE	0.051	U Q	0.012	MDL	0.051	LOQ	ug/L	UJ	Surr
BETA-BHC	0.051	U Q	0.018	MDL	0.051	LOQ	ug/L	UJ	Surr
DELTA-BHC	0.051	U Q	0.030	MDL	0.051	LOQ	ug/L	UJ	Surr

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: **SVOA**

Method: **8081A** ***Matrix:*** **AQ**

Sample ID: **FWGRQLmw-008C-0605-GW** ***Collected:*** **7/22/2015 2:38:00 PM** ***Analysis Type:*** **RE** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
DIELDRIN	0.051	U Q	0.013	MDL	0.051	LOQ	ug/L	UJ	Surr
ENDOSULFAN I	0.051	U Q	0.016	MDL	0.051	LOQ	ug/L	UJ	Surr
ENDOSULFAN II	0.051	U Q	0.015	MDL	0.051	LOQ	ug/L	UJ	Surr
ENDOSULFAN SULFATE	0.051	U Q	0.015	MDL	0.051	LOQ	ug/L	UJ	Surr
ENDRIN	0.051	U Q	0.013	MDL	0.051	LOQ	ug/L	UJ	Surr
ENDRIN ALDEHYDE	0.051	U Q	0.018	MDL	0.051	LOQ	ug/L	UJ	Surr
ENDRIN KETONE	0.051	U Q	0.016	MDL	0.051	LOQ	ug/L	UJ	Surr
gamma-BHC (Lindane)	0.051	U Q	0.013	MDL	0.051	LOQ	ug/L	UJ	Surr
GAMMA-CHLORDANE	0.051	U Q	0.013	MDL	0.051	LOQ	ug/L	UJ	Surr
HEPTACHLOR	0.051	U Q	0.014	MDL	0.051	LOQ	ug/L	UJ	Surr
HEPTACHLOR EPOXIDE	0.051	U Q	0.015	MDL	0.051	LOQ	ug/L	UJ	Surr
METHOXYCHLOR	0.10	U Q	0.013	MDL	0.10	LOQ	ug/L	UJ	Surr
TOXAPHENE	2.0	U Q	0.20	MDL	2.0	LOQ	ug/L	UJ	Ms, Surr

Sample ID: **FWGRQLmw-009C-0606-GW** ***Collected:*** **7/22/2015 3:45:00 PM** ***Analysis Type:*** **RE** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDD	0.048	U Q	0.017	MDL	0.048	LOQ	ug/L	UJ	Surr
4,4'-DDE	0.048	U Q	0.011	MDL	0.048	LOQ	ug/L	UJ	Surr
4,4'-DDT	0.048	U Q	0.016	MDL	0.048	LOQ	ug/L	UJ	Surr
ALDRIN	0.048	U Q	0.012	MDL	0.048	LOQ	ug/L	UJ	Surr
ALPHA-BHC	0.048	U Q	0.013	MDL	0.048	LOQ	ug/L	UJ	Surr
ALPHA-CHLORDANE	0.048	U Q	0.011	MDL	0.048	LOQ	ug/L	UJ	Surr
BETA-BHC	0.048	U Q	0.017	MDL	0.048	LOQ	ug/L	UJ	Surr
DELTA-BHC	0.048	U Q	0.028	MDL	0.048	LOQ	ug/L	UJ	Surr
DIELDRIN	0.048	U Q	0.012	MDL	0.048	LOQ	ug/L	UJ	Surr
ENDOSULFAN I	0.048	U Q	0.015	MDL	0.048	LOQ	ug/L	UJ	Surr
ENDOSULFAN II	0.048	U Q	0.014	MDL	0.048	LOQ	ug/L	UJ	Surr
ENDOSULFAN SULFATE	0.048	U Q	0.014	MDL	0.048	LOQ	ug/L	UJ	Surr
ENDRIN	0.048	U Q	0.012	MDL	0.048	LOQ	ug/L	UJ	Surr
ENDRIN ALDEHYDE	0.048	U Q	0.017	MDL	0.048	LOQ	ug/L	UJ	Surr
ENDRIN KETONE	0.048	U Q	0.015	MDL	0.048	LOQ	ug/L	UJ	Surr
gamma-BHC (Lindane)	0.048	U Q	0.012	MDL	0.048	LOQ	ug/L	UJ	Surr
GAMMA-CHLORDANE	0.048	U Q	0.012	MDL	0.048	LOQ	ug/L	UJ	Surr

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: SVOA
Method: 8081A **Matrix:** AQ

Sample ID: FWGRQLmw-009C-0606-GW **Collected:** 7/22/2015 3:45:00 PM **Analysis Type:** RE **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEPTACHLOR	0.048	U Q	0.013	MDL	0.048	LOQ	ug/L	UJ	Surr
HEPTACHLOR EPOXIDE	0.048	U Q	0.014	MDL	0.048	LOQ	ug/L	UJ	Surr
METHOXYCHLOR	0.095	U Q	0.012	MDL	0.095	LOQ	ug/L	UJ	Surr
TOXAPHENE	1.9	U Q	0.19	MDL	1.9	LOQ	ug/L	UJ	Surr

Method Category: SVOA
Method: 8082 **Matrix:** AQ

Sample ID: FWGRQLmw-007C-0604-GW **Collected:** 7/22/2015 10:14:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1016	0.49	U Q	0.17	MDL	0.49	LOQ	ug/L	UJ	Surr
AROCLOR 1221	0.49	U Q	0.13	MDL	0.49	LOQ	ug/L	UJ	Surr
AROCLOR 1232	0.49	U Q	0.16	MDL	0.49	LOQ	ug/L	UJ	Surr
AROCLOR 1242	0.49	U Q	0.22	MDL	0.49	LOQ	ug/L	UJ	Surr
AROCLOR 1248	0.49	U Q	0.098	MDL	0.49	LOQ	ug/L	UJ	Surr
AROCLOR 1254	0.49	U Q	0.16	MDL	0.49	LOQ	ug/L	UJ	Surr
AROCLOR 1260	0.49	U Q	0.17	MDL	0.49	LOQ	ug/L	UJ	Surr

Sample ID: FWGRQLmw-008C-0605-GW **Collected:** 7/22/2015 2:38:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1016	0.51	U Q J	0.17	MDL	0.51	LOQ	ug/L	UJ	Surr
AROCLOR 1221	0.51	U Q	0.13	MDL	0.51	LOQ	ug/L	UJ	Surr
AROCLOR 1232	0.51	U Q	0.16	MDL	0.51	LOQ	ug/L	UJ	Surr
AROCLOR 1242	0.51	U Q	0.22	MDL	0.51	LOQ	ug/L	UJ	Surr
AROCLOR 1248	0.51	U Q	0.10	MDL	0.51	LOQ	ug/L	UJ	Surr
AROCLOR 1254	0.51	U Q	0.16	MDL	0.51	LOQ	ug/L	UJ	Surr
AROCLOR 1260	0.51	U Q J	0.17	MDL	0.51	LOQ	ug/L	UJ	Surr

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: SVOA

Method: 8270C-SVOC4 **Matrix: AQ**

Sample ID: FWGRQLmw-007C-0604-GW **Collected:** 7/22/2015 10:14:00 AM **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ISOPHORONE	0.26	J	0.26	MDL	0.98	LOQ	ug/L	J	RI

Sample ID: FWGRQLmw-008C-0605-GW **Collected:** 7/22/2015 2:38:00 PM **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,3'-DICHLOROBENZIDINE	5.3	U J	0.39	MDL	5.3	LOQ	ug/L	UJ	Ms
ISOPHORONE	0.37	J	0.28	MDL	1.1	LOQ	ug/L	J	RI

Sample ID: FWGRQLmw-009C-0606-GW **Collected:** 7/22/2015 3:45:00 PM **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ISOPHORONE	0.26	J	0.26	MDL	0.95	LOQ	ug/L	J	RI

Sample ID: FWGRQLmw-DUP5-0621-GW **Collected:** 7/22/2015 10:14:00 AM **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ISOPHORONE	0.33	J	0.26	MDL	0.98	LOQ	ug/L	J	RI

Method Category: SVOA

Method: 8330 **Matrix: AQ**

Sample ID: FWGRQLmw-007C-0604-GW **Collected:** 7/22/2015 10:14:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Pentaerythritol Tetranitrate (PETN)	0.48	J	0.31	MDL	0.67	LOQ	ug/L	J	RI

Sample ID: FWGRQLmw-008C-0605-GW **Collected:** 7/22/2015 2:38:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.16	J M	0.052	MDL	0.16	LOQ	ug/L	J	ProfJudg
Methyl-2,4,6-Trinitrophenylnitramine (Tetryl)	0.34	J M	0.052	MDL	0.16	LOQ	ug/L	J	ProfJudg

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: VOA

Method: 8260B **Matrix:** AQ

Sample ID: FWGRQLmw-007C-0604-GW **Collected:** 7/22/2015 10:14:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	10	U	0.53	MDL	10	LOQ	ug/L	UJ	ProfJudg
2-HEXANONE	10	U	0.48	MDL	10	LOQ	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	10	U	0.99	MDL	10	LOQ	ug/L	UJ	ProfJudg
ACETONE	10	U	0.94	MDL	10	LOQ	ug/L	UJ	ProfJudg
BROMOMETHANE	1.0	U	0.44	MDL	1.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: FWGRQLmw-008C-0605-GW **Collected:** 7/22/2015 2:38:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	10	U	0.53	MDL	10	LOQ	ug/L	UJ	ProfJudg
2-HEXANONE	10	U	0.48	MDL	10	LOQ	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	10	U	0.99	MDL	10	LOQ	ug/L	UJ	ProfJudg
ACETONE	1.5	J	0.94	MDL	10	LOQ	ug/L	JB	Tb, ProfJudg, Eb
BROMOMETHANE	1.0	U	0.44	MDL	1.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: FWGRQLmw-009C-0606-GW **Collected:** 7/22/2015 3:45:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	10	U	0.53	MDL	10	LOQ	ug/L	UJ	ProfJudg
2-HEXANONE	10	U	0.48	MDL	10	LOQ	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	10	U	0.99	MDL	10	LOQ	ug/L	UJ	ProfJudg
ACETONE	10	U	0.94	MDL	10	LOQ	ug/L	UJ	ProfJudg
BROMOMETHANE	1.0	U	0.44	MDL	1.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: FWGRQLmw-DUP5-0621-GW **Collected:** 7/22/2015 10:14:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	10	U	0.53	MDL	10	LOQ	ug/L	UJ	ProfJudg
2-HEXANONE	10	U	0.48	MDL	10	LOQ	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	10	U	0.99	MDL	10	LOQ	ug/L	UJ	ProfJudg
ACETONE	10	U	0.94	MDL	10	LOQ	ug/L	UJ	ProfJudg
BROMOMETHANE	1.0	U	0.44	MDL	1.0	LOQ	ug/L	UJ	ProfJudg

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

Sample ID: **FWGTEAMRQL-TRIP** ***Collected:*** **7/22/2015 9:00:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
2-BUTANONE	10	U	0.53	MDL	10	LOQ	ug/L	UJ	ProfJudg
2-HEXANONE	10	U	0.48	MDL	10	LOQ	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	10	U	0.99	MDL	10	LOQ	ug/L	UJ	ProfJudg
ACETONE	2.5	J	0.94	MDL	10	LOQ	ug/L	J	RI, ProfJudg
BROMOMETHANE	1.0	U	0.44	MDL	1.0	LOQ	ug/L	UJ	ProfJudg
METHYLENE CHLORIDE	0.60	J B	0.33	MDL	1.0	LOQ	ug/L	JB	Mb, ProfJudg

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Reason Code Legend

Reason Code	*Description*
Cb	Calibration Blank Contamination
Eb	Equipment Blank Contamination
Lcs	Laboratory Control Spike Lower Estimation
Lcs	Laboratory Control Spike Upper Estimation
Ld	Laboratory Duplicate Precision
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Precision
Ms	Matrix Spike Upper Estimation
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value
Surr	Surrogate/Tracer Recovery Lower Estimation
Tb	Trip Blank Contamination

* denotes a non-reportable result

Data Review Summary

Lab Reporting Batch ID: 240-53500-1
EDD Filename: 240-53500-1a

Laboratory: TA CAN
eQAPP Name: RVAAP 66-rev March 2015

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	SR
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	SR
Laboratory Replicates	N
Laboratory Control Samples	SR
Compound Quantitation	SR
Field Duplicates	A
Field Triplicates	N
Field Blanks	SR

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Trip Blank Outlier Report

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: 240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method: **8260B**
Matrix: **AQ**

Trip Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FWGTEAMRQL-TRIP(RES)	7/22/2015 9:00:00 AM	ACETONE METHYLENE CHLORIDE	2.5 ug/L 0.6 ug/L	FWGRQLmw-007C-0604-GF FWGRQLmw-007C-0604-GW FWGRQLmw-008C-0605-GW FWGRQLmw-008C-0606-GF FWGRQLmw-009C-0606-GF FWGRQLmw-009C-0606-GW FWGRQLmw-DUP5-0621-GF FWGRQLmw-DUP5-0621-GW

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FWGRQLmw-008C-0605-GW(RES)	ACETONE	1.5 ug/L	1.5U ug/L

Surrogate Outlier Report

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: 240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method: 8081A
Matrix: AQ

Sample ID (Analysis Type)	Surrogate	Sample % Recovery	% Recovery Limits	Affected Compounds	Flag
FWGRQLmw-008C-0605-GW (RE)	DECACHLOROBIPHENYL	27	30.00-135.00	All Target Analytes	J(all detects) UJ(all non-detects)
FWGRQLmw-009C-0606-GW (RE)	DECACHLOROBIPHENYL	22	30.00-135.00	All Target Analytes	J(all detects) UJ(all non-detects)

Method: 8082
Matrix: AQ

Sample ID (Analysis Type)	Surrogate	Sample % Recovery	% Recovery Limits	Affected Compounds	Flag
FWGRQLmw-007C-0604-GW	DECACHLOROBIPHENYL	32	40.00-135.00	All Target Analytes	J (all detects) UJ (all non-detects)
FWGRQLmw-008C-0605-GW	DECACHLOROBIPHENYL	30	40.00-135.00	All Target Analytes	J(all detects) UJ(all non-detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: 240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method: 353.2

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGLL12mw-0247-0602-GW	Nitrate-Nitrite	J	0.013	0.050	LOQ	mg/L	J (all detects)
FWGLL12mw-245C-0601-GW	Nitrate-Nitrite	J	0.0060	0.050	LOQ	mg/L	J (all detects)
FWGLL12mw-DUP4-0620-GW	Nitrate-Nitrite	J	0.0080	0.050	LOQ	mg/L	J (all detects)

Method: 6010B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGFWGmw-011-0577-GF	BARIUM	J	30	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	1.3	7.0	LOQ	ug/L	
	COBALT	J	1.0	7.0	LOQ	ug/L	
	POTASSIUM	J	4200	5000	LOQ	ug/L	
FWGFWGmw-012-0578-GF	BARIUM	J	19	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	1.3	7.0	LOQ	ug/L	
	COBALT	J	1.3	7.0	LOQ	ug/L	
	NICKEL	J	1.3	40	LOQ	ug/L	
	POTASSIUM	J	1000	5000	LOQ	ug/L	
FWGLL12mw-0187C-0599-GF	ARSENIC	J	3.5	10	LOQ	ug/L	J (all detects)
	CHROMIUM	J	1.4	7.0	LOQ	ug/L	
	NICKEL	J	20	40	LOQ	ug/L	
FWGLL12mw-245C-0601-GF	BARIUM	J	24	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	1.8	7.0	LOQ	ug/L	
	COBALT	J	3.6	7.0	LOQ	ug/L	
	LEAD	J	2.3	10	LOQ	ug/L	
	NICKEL	J	2.3	40	LOQ	ug/L	
	POTASSIUM	J	3200	5000	LOQ	ug/L	
FWGLL12mw-DUP4-0620-GF	BARIUM	J	25	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	1.5	7.0	LOQ	ug/L	
	COBALT	J	3.6	7.0	LOQ	ug/L	
	NICKEL	J	2.0	40	LOQ	ug/L	
	POTASSIUM	J	3200	5000	LOQ	ug/L	
FWGRQLmw-007C-0604-GF	BARIUM	J	60	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	2.0	7.0	LOQ	ug/L	
	COBALT	J	5.0	7.0	LOQ	ug/L	
	LEAD	J	2.5	10	LOQ	ug/L	
	NICKEL	J	7.3	40	LOQ	ug/L	
FWGRQLmw-008C-0606-GF	BARIUM	J	99	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	1.6	7.0	LOQ	ug/L	
	COBALT	J	1.8	7.0	LOQ	ug/L	
	LEAD	J	2.6	10	LOQ	ug/L	
	NICKEL	J	3.4	40	LOQ	ug/L	
	POTASSIUM	J	4000	5000	LOQ	ug/L	
FWGRQLmw-009C-0606-GF	BARIUM	J	33	200	LOQ	ug/L	J (all detects)
	COBALT	J	3.3	7.0	LOQ	ug/L	
	NICKEL	J	3.6	40	LOQ	ug/L	
	POTASSIUM	J	3600	5000	LOQ	ug/L	

Project Name and Number: W912QR-04-D-0036 - RVAAP 66 (OH)

Reporting Limit Outliers

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: 240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method: 6010B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGRQLmw-DUP5-0621-GF	BARIUM	J	59	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	1.5	7.0	LOQ	ug/L	
	COBALT	J	5.0	7.0	LOQ	ug/L	
	NICKEL	J	6.9	40	LOQ	ug/L	
FWGWBGmw-006C-0609-GF	BARIUM	J	20	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	1.3	7.0	LOQ	ug/L	
	POTASSIUM	J	890	5000	LOQ	ug/L	
FWGWBGmw-009C-0610-GF	BARIUM	J	8.3	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	0.68	7.0	LOQ	ug/L	
	LEAD	J	2.1	10	LOQ	ug/L	
	POTASSIUM	J	470	5000	LOQ	ug/L	
FWGWBGmw-020-0611-GF	BARIUM	J	15	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	0.78	7.0	LOQ	ug/L	
	LEAD	J	2.1	10	LOQ	ug/L	
	NICKEL	J	2.3	40	LOQ	ug/L	
	POTASSIUM	J	650	5000	LOQ	ug/L	
FWGWBGmw-021-0612-GF	ARSENIC	J	4.6	10	LOQ	ug/L	J (all detects)
	BARIUM	J	55	200	LOQ	ug/L	
	CHROMIUM	J	0.84	7.0	LOQ	ug/L	
	LEAD	J	3.2	10	LOQ	ug/L	
	POTASSIUM	J	1300	5000	LOQ	ug/L	

Method: 6020

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGFWGmw-011-0577-GF	ALUMINUM	J	31	60	LOQ	ug/L	J (all detects)
FWGLL12mw-0187C-0599-GF	CADMIUM	J	0.56	2.0	LOQ	ug/L	J (all detects)
FWGRQLmw-008C-0606-GF	CADMIUM	J	0.62	2.0	LOQ	ug/L	J (all detects)

Method: 8260B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGRQLmw-008C-0605-GW	ACETONE	J	1.5	10	LOQ	ug/L	J (all detects)
FWGTEAMRQL-TRIP	ACETONE	J	2.5	10	LOQ	ug/L	J (all detects)
	METHYLENE CHLORIDE	J B	0.60	1.0	LOQ	ug/L	

Reporting Limit Outliers

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: 240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method: 8270C-SVOC4

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGRQLmw-007C-0604-GW	ISOPHORONE	J	0.26	0.98	LOQ	ug/L	J (all detects)
FWGRQLmw-008C-0605-GW	ISOPHORONE	J	0.37	1.1	LOQ	ug/L	J (all detects)
FWGRQLmw-009C-0606-GW	ISOPHORONE	J	0.26	0.95	LOQ	ug/L	J (all detects)
FWGRQLmw-DUP5-0621-GW	ISOPHORONE	J	0.33	0.98	LOQ	ug/L	J (all detects)

Method: 8330

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGRQLmw-007C-0604-GW	Pentaerythritol Tetranitrate (PETN)	J	0.48	0.67	LOQ	ug/L	J (all detects)

Method: 9012A

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGRQLmw-DUP5-0621-GW	CYANIDE	J	0.0078	0.010	LOQ	mg/L	J (all detects)

Method: WS-WC-0050

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGLL12mw-0187C-0599-GW	Nitrocellulose	J	0.77	2.0	LOQ	mg/L	J (all detects)
FWGRQLmw-007C-0604-GW	Nitrocellulose	J	1.0	2.0	LOQ	mg/L	J (all detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: 240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method: 6010B
Matrix: AQ

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 240-190339/1-A	7/27/2015 2:05:00 PM	LEAD SILVER	2.11 ug/L 1.20 ug/L	FWGFWGmw-011-0577-GF FWGFWGmw-012-0578-GF FWGLL12mw-0187C-0599-GF FWGLL12mw-245C-0601-GF FWGLL12mw-DUP4-0620-GF FWGRQLmw-007C-0604-GF FWGRQLmw-008C-0606-GF FWGRQLmw-009C-0606-GF FWGRQLmw-DUP5-0621-GF FWGWBGmw-006C-0609-GF FWGWBGmw-009C-0610-GF FWGWBGmw-020-0611-GF FWGWBGmw-021-0612-GF

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FWGLL12mw-245C-0601-GF(RES/TOT)	LEAD	2.3 ug/L	2.3U ug/L
FWGRQLmw-007C-0604-GF(RES/TOT)	LEAD	2.5 ug/L	2.5U ug/L
FWGRQLmw-008C-0606-GF(RES/TOT)	LEAD	2.6 ug/L	2.6U ug/L
FWGWBGmw-009C-0610-GF(RES/TOT)	LEAD	2.1 ug/L	2.1U ug/L
FWGWBGmw-020-0611-GF(RES/TOT)	LEAD	2.1 ug/L	2.1U ug/L
FWGWBGmw-021-0612-GF(RES/TOT)	LEAD	3.2 ug/L	3.2U ug/L

Method: 8260B
Matrix: AQ

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 240-190310/6	7/23/2015 9:52:00 AM	METHYLENE CHLORIDE	0.640 ug/L	FWGRQLmw-007C-0604-GW FWGRQLmw-008C-0605-GW FWGRQLmw-009C-0606-GW FWGRQLmw-DUP5-0621-GW FWGTEAMRQL-TRIP

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FWGTEAMRQL-TRIP(RES)	METHYLENE CHLORIDE	0.60 ug/L	0.60U ug/L

Method Blank Outlier Report

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: 240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method: **8330**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
PB 320-81071/2-A	8/5/2015 6:02:00 PM	Pentaerythritol Tetranitrate (PETN)	1.06 ug/L	FWGFWGmw-011-0577-GW FWGFWGmw-012-0578-GW FWGLL12mw-0187C-0599-GW FWGLL12mw-245C-0601-GW FWGRQLmw-007C-0604-GW FWGRQLmw-008C-0605-GW FWGRQLmw-009C-0606-GW FWGRQLmw-DUP5-0621-GW FWGWBGmw-006C-0609-GW FWGWBGmw-009C-0610-GW FWGWBGmw-020-0611-GW FWGWBGmw-021-0612-GW

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FWGRQLmw-007C-0604-GW(RES)	Pentaerythritol Tetranitrate (PETN)	0.48 ug/L	0.48U ug/L
FWGRQLmw-DUP5-0621-GW(RES)	Pentaerythritol Tetranitrate (PETN)	0.68 ug/L	0.68U ug/L

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: 240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method: 8270C-SVOC4
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FWGRQLmw-008C-0605-GWMSD (FWGRQLmw-008C-0605-GW)	4-CHLOROANILINE	-	-	15.00-110.00	39 (30.00)	4-CHLOROANILINE	J (all detects)
FWGRQLmw-008C-0605-GWMS FWGRQLmw-008C-0605-GWMSD (FWGRQLmw-008C-0605-GW)	3,3'-DICHLOROBENZIDINE	0	0	20.00-110.00	-	3,3'-DICHLOROBENZIDINE	J(all detects) UJ(all non-detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FWGRQLmw-008C-0606-GFMS (TOT) (FWGFWGmw-011-0577-GF FWGFWGmw-012-0578-GF FWGLL12mw-0187C-0599-GF FWGLL12mw-245C-0601-GF FWGLL12mw-DUP4-0620-GF FWGRQLmw-007C-0604-GF FWGRQLmw-008C-0606-GF FWGRQLmw-009C-0606-GF FWGRQLmw-DUP5-0621-GF FWGWBGmw-006C-0609-GF FWGWBGmw-009C-0610-GF FWGWBGmw-020-0611-GF FWGWBGmw-021-0612-GF)	IRON	51	-	80.00-120.00	-	IRON	J(all detects) UJ(all non-detects)

Method: 8082
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FWGRQLmw-008C-0605-GWMSD (FWGRQLmw-008C-0605-GW)	AROCLOR 1016	-	-	25.00-145.00	50 (30.00)	AROCLOR 1016	J(all detects)
	AROCLOR 1260	-	-	30.00-145.00	59 (30.00)	AROCLOR 1260	

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: 240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method: 8081A
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FWGRQLmw-008C-0605-GWMS FWGRQLmw-008C-0605-GWMSD (FWGRQLmw-008C-0605-GW)	ALPHA-CHLORDANE DIELDRIN ENDOSULFAN I ENDRIN GAMMA-CHLORDANE HEPTACHLOR EPOXIDE	127 133 - 143 128 -	128 136 113 145 130 131	65.00-125.00 60.00-130.00 50.00-110.00 55.00-135.00 60.00-125.00 60.00-130.00	- - - - - -	ALPHA-CHLORDANE DIELDRIN ENDOSULFAN I ENDRIN GAMMA-CHLORDANE HEPTACHLOR EPOXIDE	J(all detects)
FWGRQLmw-008C-0605-GWMS FWGRQLmw-008C-0605-GWMSD (FWGRQLmw-008C-0605-GW)	TOXAPHENE	55	54	70.00-130.00	-	TOXAPHENE	J(all detects) UJ(all non-detects)

Method: 8330
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FWGRQLmw-008C-0605-GWMSD (FWGRQLmw-008C-0605-GW)	NITROBENZENE	-	-	50.00-140.00	34 (30.00)	NITROBENZENE	J(all detects)

Lab Duplicate Outlier Report

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: 240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method: 6010B
Matrix: AQ

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
FWGRQLmw-008C-0606-GFDUP (TOT) (FWGFWGmw-011-0577-GF FWGFWGmw-012-0578-GF FWGLL12mw-0187C-0599-GF FWGLL12mw-245C-0601-GF FWGLL12mw-DUP4-0620-GF FWGRQLmw-007C-0604-GF FWGRQLmw-008C-0606-GF FWGRQLmw-009C-0606-GF FWGRQLmw-DUP5-0621-GF FWGWBGmw-006C-0609-GF FWGWBGmw-009C-0610-GF FWGWBGmw-020-0611-GF FWGWBGmw-021-0612-GF)	CHROMIUM COBALT	30 24	20.00 20.00	J (all detects) UJ (all non-detects)

Project Name and Number: W912QR-04-D-0036 - RVAAP 66 (OH)

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: 240-53500-1 | **Laboratory: TA CAN**

EDD Filename: 240-53500-1a | **eQAPP Name: RVAAP 66-rev March 2015**

Method: 8081A
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
LCS 240-190983/11-A (FWGRQLmw-007C-0604-GW FWGRQLmw-008C-0605-GW FWGRQLmw-009C-0606-GW FWGRQLmw-DUP5-0621-GW)	4,4'-DDD	194	-	25.00-150.00	-	4,4'-DDD	J (all detects)
	4,4'-DDE	194	-	35.00-140.00	-	4,4'-DDE	
	4,4'-DDT	189	-	45.00-140.00	-	4,4'-DDT	
	ALDRIN	175	-	25.00-140.00	-	ALDRIN	
	ALPHA-BHC	176	-	60.00-130.00	-	ALPHA-BHC	
	ALPHA-CHLORDANE	182	-	65.00-125.00	-	ALPHA-CHLORDANE	
	BETA-BHC	170	-	65.00-125.00	-	BETA-BHC	
	DIELDRIN	184	-	60.00-130.00	-	DIELDRIN	
	ENDOSULFAN I	154	-	50.00-110.00	-	ENDOSULFAN I	
	ENDOSULFAN II	148	-	30.00-130.00	-	ENDOSULFAN II	
	ENDOSULFAN SULFATE	174	-	55.00-135.00	-	ENDOSULFAN SULFATE	
	ENDRIN	182	-	55.00-135.00	-	ENDRIN	
	ENDRIN ALDEHYDE	174	-	55.00-135.00	-	ENDRIN ALDEHYDE	
	ENDRIN KETONE	171	-	75.00-125.00	-	ENDRIN KETONE	
	gamma-BHC (Lindane)	173	-	25.00-135.00	-	gamma-BHC (Lindane)	
	GAMMA-CHLORDANE	182	-	60.00-125.00	-	GAMMA-CHLORDANE	
	HEPTACHLOR	176	-	40.00-130.00	-	HEPTACHLOR	
	HEPTACHLOR EPOXIDE	175	-	60.00-130.00	-	HEPTACHLOR EPOXIDE	
	METHOXYCHLOR	157	-	55.00-150.00	-	METHOXYCHLOR	

Method: 9012A
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
LCS 240-191771/2-A (FWGRQLmw-007C-0604-GW FWGRQLmw-008C-0605-GW FWGRQLmw-009C-0606-GW FWGRQLmw-DUP5-0621-GW)	CYANIDE	74	-	80.01-118.00	-	CYANIDE	J(all detects) UJ(all non-detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: 240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method: 353.2
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	FWGLL12mw-245C-0601-GW	FWGLL12mw-DUP4-0620-GW			
Nitrate-Nitrite	0.0060	0.0080	29	30.00	No Qualifiers Applied

Method: 6010B
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	FWGLL12mw-245C-0601-GF (TOT)	FWGLL12mw-DUP4-0620-GF (TOT)			
BARIUM	24	25	4	50.00	No Qualifiers Applied
CALCIUM	150000	150000	0	50.00	
CHROMIUM	1.8	1.5	18	50.00	
COBALT	3.6	3.6	0	50.00	
LEAD	2.3	10 U	200	50.00	
MAGNESIUM	67000	69000	3	50.00	
MANGANESE	330	320	3	50.00	
NICKEL	2.3	2.0	14	50.00	
POTASSIUM	3200	3200	0	50.00	

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	FWGRQLmw-007C-0604-GF (TOT)	FWGRQLmw-DUP5-0621-GF (TOT)			
ARSENIC	68	68	0	50.00	No Qualifiers Applied
BARIUM	60	59	2	50.00	
CALCIUM	130000	120000	8	50.00	
CHROMIUM	2.0	1.5	29	50.00	
COBALT	5.0	5.0	0	50.00	
LEAD	2.5	10 U	200	50.00	
MAGNESIUM	120000	120000	0	50.00	
MANGANESE	1700	1700	0	50.00	
NICKEL	7.3	6.9	6	50.00	
POTASSIUM	7800	7600	3	50.00	

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	FWGLL12mw-245C-0601-GF (TOT)	FWGLL12mw-DUP4-0620-GF (TOT)			
IRON	770	870	12	50.00	No Qualifiers Applied
SODIUM	23000	23000	0	50.00	

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	FWGRQLmw-007C-0604-GF (TOT)	FWGRQLmw-DUP5-0621-GF (TOT)			
IRON	18000	18000	0	50.00	No Qualifiers Applied
SODIUM	5000	4800	4	50.00	

Field Duplicate RPD Report

Lab Reporting Batch ID: 240-53500-1 **Laboratory: TA CAN**

EDD Filename: 240-53500-1a **eQAPP Name: RVAAP 66-rev March 2015**

Method: 8270C-SVOC4
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	FWGRQLmw-007C-060 4-GW	FWGRQLmw-DUP5-0621-GW			
ISOPHORONE	0.26	0.33	24	50.00	No Qualifiers Applied

Method: 8330
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	FWGRQLmw-007C-060 4-GW	FWGRQLmw-DUP5-0621-GW			
Pentaerythritol Tetranitrate (PETN)	0.48	0.68	34	50.00	No Qualifiers Applied

Method: 9012A
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	FWGRQLmw-007C-060 4-GW	FWGRQLmw-DUP5-0621-GW			
CYANIDE	0.010	0.0078	25	20.00	No Qualifiers Applied

Method: WS-WC-0050
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	FWGRQLmw-007C-060 4-GW	FWGRQLmw-DUP5-0621-GW			
Nitrocellulose	1.0	2.0 U	200	50.00	No Qualifiers Applied

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53500-1										
353.2	FWGLL12mw-0247-0602-GW	AQ	N							
				Nitrate-Nitrite	0.050	0.013J		B	mg/L	Eb
353.2	FWGLL12mw-245C-0601-GW	AQ	N							
				Nitrate-Nitrite	0.050	0.0060J		B	mg/L	Eb
353.2	FWGLL12mw-DUP4-0620-GW	AQ	FD							
				Nitrate-Nitrite	0.050	0.0080J		B	mg/L	Eb
6010B	FWGFWGmw-011-0577-GF	AQ	N							
				BARIUM	200	30J		J	ug/L	RI
				CHROMIUM	7.0	1.3J		U	ug/L	Cb
				COBALT	7.0	1.0J		J	ug/L	RI
				POTASSIUM	5000	4200J		J	ug/L	RI
6010B	FWGFWGmw-012-0578-GF	AQ	N							
				BARIUM	200	19J		J	ug/L	RI
				CHROMIUM	7.0	1.3J		U	ug/L	Cb
				COBALT	7.0	1.3J		J	ug/L	RI
				NICKEL	40	1.3J		J	ug/L	RI
				POTASSIUM	5000	1000J		B	ug/L	Eb
6010B	FWGLL12mw-0187C-0599-GF	AQ	N							
				ARSENIC	10	3.5J		J	ug/L	RI
				CHROMIUM	7.0	1.4J		U	ug/L	Cb
				NICKEL	40	20J		J	ug/L	RI

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53500-1										
6010B	FWGLL12mw-245C-0601-GF	AQ	N							
				BARIUM	200	24J		J	ug/L	RI
				CHROMIUM	7.0	1.8J		U	ug/L	Cb
				COBALT	7.0	3.6J		J	ug/L	RI
				LEAD	10	2.3J		U	ug/L	Mb, Eb, C
				NICKEL	40	2.3J		J	ug/L	RI
				POTASSIUM	5000	3200J		J	ug/L	RI
6010B	FWGLL12mw-DUP4-0620-GF	AQ	FD							
				BARIUM	200	25J		J	ug/L	RI
				CHROMIUM	7.0	1.5J		J	ug/L	RI
				COBALT	7.0	3.6J		J	ug/L	RI
				NICKEL	40	2.0J		J	ug/L	RI
				POTASSIUM	5000	3200J		J	ug/L	RI
6010B	FWGRQLmw-007C-0604-GF	AQ	N							
				BARIUM	200	60J		J	ug/L	RI
				CHROMIUM	7.0	2.0J		U	ug/L	Cb
				COBALT	7.0	5.0J		J	ug/L	RI
				LEAD	10	2.5J		U	ug/L	Mb, Eb, C
				NICKEL	40	7.3J		J	ug/L	RI
6010B	FWGRQLmw-008C-0606-GF	AQ	N							
				BARIUM	200	99J		J	ug/L	RI
				CHROMIUM	7.0	1.6J		U	ug/L	Cb
				COBALT	7.0	1.8J		J	ug/L	RI
				LEAD	10	2.6J		U	ug/L	Mb, Eb, C
				NICKEL	40	3.4J		J	ug/L	RI
				POTASSIUM	5000	4000J		J	ug/L	RI

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53500-1										
6010B	FWGRQLmw-009C-0606-GF	AQ	N							
				BARIUM	200	33J		J	ug/L	RI
				COBALT	7.0	3.3J		J	ug/L	RI
				NICKEL	40	3.6J		J	ug/L	RI
				POTASSIUM	5000	3600J		J	ug/L	RI
6010B	FWGRQLmw-DUP5-0621-GF	AQ	FD							
				BARIUM	200	59J		J	ug/L	RI
				CHROMIUM	7.0	1.5J		U	ug/L	Cb
				COBALT	7.0	5.0J		J	ug/L	RI
				NICKEL	40	6.9J		J	ug/L	RI
6010B	FWGWBGmw-006C-0609-GF	AQ	N							
				BARIUM	200	20J		J	ug/L	RI
				CHROMIUM	7.0	1.3J		U	ug/L	Cb
				POTASSIUM	5000	890J		B	ug/L	Eb
6010B	FWGWBGmw-009C-0610-GF	AQ	N							
				BARIUM	200	8.3J		J	ug/L	RI
				CHROMIUM	7.0	0.68J		U	ug/L	Cb
				LEAD	10	2.1J		U	ug/L	Mb, Eb, C
				POTASSIUM	5000	470J		B	ug/L	Eb
6010B	FWGWBGmw-020-0611-GF	AQ	N							
				BARIUM	200	15J		J	ug/L	RI
				CHROMIUM	7.0	0.78J		U	ug/L	Cb
				LEAD	10	2.1J		U	ug/L	Mb, Eb, C
				NICKEL	40	2.3J		J	ug/L	RI
				POTASSIUM	5000	650J		B	ug/L	Eb

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Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53500-1										
6010B	FWGWBGmw-021-0612-GF	AQ	N							
				ARSENIC	10	4.6J		J	ug/L	RI
				BARIUM	200	55J		J	ug/L	RI
				CHROMIUM	7.0	0.84J		U	ug/L	Cb
				LEAD	10	3.2J		U	ug/L	Mb, Eb, C
				POTASSIUM	5000	1300J		J	ug/L	RI
6020	FWGFWGmw-011-0577-GF	AQ	N							
				ALUMINUM	60	31J		J	ug/L	RI
6020	FWGLL12mw-0187C-0599-GF	AQ	N							
				CADMIUM	2.0	0.56J		U	ug/L	Cb
6020	FWGRQLmw-008C-0606-GF	AQ	N							
				CADMIUM	2.0	0.62J		U	ug/L	Cb

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53500-1										
8081A	FWGRQLmw-008C-0605-GW	AQ	N							
				4,4'-DDD	0.051	0.051U Q		UJ	ug/L	Surr
				4,4'-DDE	0.051	0.051U Q J		UJ	ug/L	Surr
				4,4'-DDT	0.051	0.051U Q		UJ	ug/L	Surr
				ALDRIN	0.051	0.051U Q		UJ	ug/L	Surr
				ALPHA-BHC	0.051	0.051U Q		UJ	ug/L	Surr
				ALPHA-CHLORDANE	0.051	0.051U Q		UJ	ug/L	Surr
				BETA-BHC	0.051	0.051U Q		UJ	ug/L	Surr
				DELTA-BHC	0.051	0.051U Q		UJ	ug/L	Surr
				DIELDRIN	0.051	0.051U Q		UJ	ug/L	Surr
				ENDOSULFAN I	0.051	0.051U Q		UJ	ug/L	Surr
				ENDOSULFAN II	0.051	0.051U Q		UJ	ug/L	Surr
				ENDOSULFAN SULFATE	0.051	0.051U Q		UJ	ug/L	Surr
				ENDRIN	0.051	0.051U Q		UJ	ug/L	Surr
				ENDRIN ALDEHYDE	0.051	0.051U Q		UJ	ug/L	Surr
				ENDRIN KETONE	0.051	0.051U Q		UJ	ug/L	Surr
				gamma-BHC (Lindane)	0.051	0.051U Q		UJ	ug/L	Surr
				GAMMA-CHLORDANE	0.051	0.051U Q		UJ	ug/L	Surr
				HEPTACHLOR	0.051	0.051U Q		UJ	ug/L	Surr

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53500-1										
				HEPTACHLOR EPOXIDE	0.051	0.051U Q		UJ	ug/L	Surr
				METHOXYCHLOR	0.10	0.10U Q		UJ	ug/L	Surr
				TOXAPHENE	2.0	2.0U Q		UJ	ug/L	Surr, Ms

N = Normal Sample *TB = Trip Blank*
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Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53500-1										
8081A	FWGRQLmw-009C-0606-GW	AQ	N							
				4,4'-DDD	0.048	0.048U Q		UJ	ug/L	Surr
				4,4'-DDE	0.048	0.048U Q		UJ	ug/L	Surr
				4,4'-DDT	0.048	0.048U Q		UJ	ug/L	Surr
				ALDRIN	0.048	0.048U Q		UJ	ug/L	Surr
				ALPHA-BHC	0.048	0.048U Q		UJ	ug/L	Surr
				ALPHA-CHLORDANE	0.048	0.048U Q		UJ	ug/L	Surr
				BETA-BHC	0.048	0.048U Q		UJ	ug/L	Surr
				DELTA-BHC	0.048	0.048U Q		UJ	ug/L	Surr
				DIELDRIN	0.048	0.048U Q		UJ	ug/L	Surr
				ENDOSULFAN I	0.048	0.048U Q		UJ	ug/L	Surr
				ENDOSULFAN II	0.048	0.048U Q		UJ	ug/L	Surr
				ENDOSULFAN SULFATE	0.048	0.048U Q		UJ	ug/L	Surr
				ENDRIN	0.048	0.048U Q		UJ	ug/L	Surr
				ENDRIN ALDEHYDE	0.048	0.048U Q		UJ	ug/L	Surr
				ENDRIN KETONE	0.048	0.048U Q		UJ	ug/L	Surr
				gamma-BHC (Lindane)	0.048	0.048U Q		UJ	ug/L	Surr
				GAMMA-CHLORDANE	0.048	0.048U Q		UJ	ug/L	Surr
				HEPTACHLOR	0.048	0.048U Q		UJ	ug/L	Surr

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53500-1										
				HEPTACHLOR EPOXIDE	0.048	0.048U Q		UJ	ug/L	Surr
				METHOXYCHLOR	0.095	0.095U Q		UJ	ug/L	Surr
				TOXAPHENE	1.9	1.9U Q		UJ	ug/L	Surr
8082	FWGRQLmw-007C-0604-GW	AQ	N							
				AROCLOR 1016	0.49	0.49U Q		UJ	ug/L	Surr
				AROCLOR 1221	0.49	0.49U Q		UJ	ug/L	Surr
				AROCLOR 1232	0.49	0.49U Q		UJ	ug/L	Surr
				AROCLOR 1242	0.49	0.49U Q		UJ	ug/L	Surr
				AROCLOR 1248	0.49	0.49U Q		UJ	ug/L	Surr
				AROCLOR 1254	0.49	0.49U Q		UJ	ug/L	Surr
				AROCLOR 1260	0.49	0.49U Q		UJ	ug/L	Surr
8082	FWGRQLmw-008C-0605-GW	AQ	N							
				AROCLOR 1016	0.51	0.51U Q J		UJ	ug/L	Surr
				AROCLOR 1221	0.51	0.51U Q		UJ	ug/L	Surr
				AROCLOR 1232	0.51	0.51U Q		UJ	ug/L	Surr
				AROCLOR 1242	0.51	0.51U Q		UJ	ug/L	Surr
				AROCLOR 1248	0.51	0.51U Q		UJ	ug/L	Surr
				AROCLOR 1254	0.51	0.51U Q		UJ	ug/L	Surr
				AROCLOR 1260	0.51	0.51U Q J		UJ	ug/L	Surr
8260B	FWGRQLmw-007C-0604-GW	AQ	N							
				2-BUTANONE	10	10U		UJ	ug/L	ProfJudg
				2-HEXANONE	10	10U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	10	10U		UJ	ug/L	ProfJudg
				ACETONE	10	10U		UJ	ug/L	ProfJudg
				BROMOMETHANE	1.0	1.0U		UJ	ug/L	ProfJudg

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53500-1										
8260B	FWGRQLmw-008C-0605-GW	AQ	N							
				2-BUTANONE	10	10U		UJ	ug/L	ProfJudg
				2-HEXANONE	10	10U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	10	10U		UJ	ug/L	ProfJudg
				ACETONE	10	1.5J		JB	ug/L	Tb, Eb, Pr
				BROMOMETHANE	1.0	1.0U		UJ	ug/L	ProfJudg
8260B	FWGRQLmw-009C-0606-GW	AQ	N							
				2-BUTANONE	10	10U		UJ	ug/L	ProfJudg
				2-HEXANONE	10	10U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	10	10U		UJ	ug/L	ProfJudg
				ACETONE	10	10U		UJ	ug/L	ProfJudg
				BROMOMETHANE	1.0	1.0U		UJ	ug/L	ProfJudg
8260B	FWGRQLmw-DUP5-0621-GW	AQ	FD							
				2-BUTANONE	10	10U		UJ	ug/L	ProfJudg
				2-HEXANONE	10	10U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	10	10U		UJ	ug/L	ProfJudg
				ACETONE	10	10U		UJ	ug/L	ProfJudg
				BROMOMETHANE	1.0	1.0U		UJ	ug/L	ProfJudg
8260B	FWGTEAMRQL-TRIP	AQ	TB							
				2-BUTANONE	10	10U		UJ	ug/L	ProfJudg
				2-HEXANONE	10	10U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	10	10U		UJ	ug/L	ProfJudg
				ACETONE	10	2.5J		J	ug/L	RI, ProfJu
				BROMOMETHANE	1.0	1.0U		UJ	ug/L	ProfJudg
				METHYLENE CHLORIDE	1.0	0.60J B		JB	ug/L	Mb, ProfJu
8270C-SVOC4	FWGRQLmw-007C-0604-GW	AQ	N							
				ISOPHORONE	0.98	0.26J		J	ug/L	RI

N = Normal Sample *TB = Trip Blank*
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Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53500-1										
8270C-SVOC4	FWGRQLmw-008C-0605-GW	AQ	N							
				3,3'-DICHLOROBENZIDINE	5.3	5.3U J		UJ	ug/L	Ms
				ISOPHORONE	1.1	0.37J		J	ug/L	RI
8270C-SVOC4	FWGRQLmw-009C-0606-GW	AQ	N							
				ISOPHORONE	0.95	0.26J		J	ug/L	RI
8270C-SVOC4	FWGRQLmw-DUP5-0621-GW	AQ	FD							
				ISOPHORONE	0.98	0.33J		J	ug/L	RI
8330	FWGRQLmw-007C-0604-GW	AQ	N							
				Pentaerythritol Tetranitrate (PETN)	0.67	0.48J		J	ug/L	RI
8330	FWGRQLmw-008C-0605-GW	AQ	N							
				1,3-DINITROBENZENE	0.16	0.16J M		J	ug/L	ProfJudg
				Methyl-2,4,6-Trinitrophenylnitramine (Tetryl)	0.16	0.34J M		J	ug/L	ProfJudg
9012A	FWGRQLmw-DUP5-0621-GW	AQ	FD							
				CYANIDE	0.010	0.0078J		J	mg/L	RI
WS-WC-0050	FWGLL12mw-0187C-0599-GW	AQ	N							
				Nitrocellulose	2.0	0.77J		J	mg/L	RI
WS-WC-0050	FWGRQLmw-007C-0604-GW	AQ	N							
				Nitrocellulose	2.0	1.0J		J	mg/L	RI

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Data Verification Summary

Site: Ravenna Army Ammunition Plant
Sampling Event: July 2015
Sample Delivery Group: 240-53558

Date: October 16, 2015
Revision: 1

Data Reviewer: Angela Dragotta /Environmental Quality Management, Inc. (EQM, Inc.)

QA/QC Summary

On July 22nd and 23rd, 2015 the following samples were collected from groundwater-monitoring wells at the former Ravenna Army Ammunition Plant and analyzed as part of SDG 240-53558. Sample analysis was performed by Test America. Test America-North Canton performed all analyses with the exception of the analytical for methods 8330, M8330, TALSOPWS-WC-0050 and 6860. Methods 8330, M8330 and TALSOPWS-WC-0050 were performed by Test America, West Sacramento.

Sample ID	VOC by SW846 8260	SVOC 4 by SW846 8270	SVOC 1 and 3 by SW846 8270	SVOC 1 by SW846 8270	Pesticides by SW846 8081	PCBs/ SW846 8082	Explosives/Propellants by SW846 8330, Mod. 8330 and TALSOP WS-WC-0050	Cyanide SW846 9012	Perchlorate by SW846 6860	NO2/NO3, EPA 353.2	Metals		
											SW846 6010B	SW846 6020	Mercury by SW846 7470A
FWGDETmw-004C-0573-GW/GF	X	X			X	X	X	X			X	X	X
FWGDA2mw-115-0571- GW/GF			X				X				X	X	X
FWGDETmw-003C-0572- GW/GF	X	X			X	X	X	X			X	X	X
FWGDA2mw-DUP1-0617- GW/GF			X				X				X	X	X
FWGEQUIPRINSE3-0624-GW	X	X			X	X	X	X			X	X	X
FWGLL1mw-065C-0582- GW/GF			X				X				X	X	X
FWGFWGmw-016-0580- GW/GF			X				X				X	X	X
FWGFWGmw-015-0579- GW/GF			X				X				X	X	X
FWGFWGmw-004-0575- GW/GF			X				X				X	X	X
FWGLL2mw-267C-0590- GW/GF			X				X				X	X	X
FWGEQUIPRINSE4-0625-GW	X	X			X	X	X	X			X	X	X
FWGLL10mw-003C-0597- GW/GF	X		X*								X	X	X
FWGFWGmw-007-0576- GW/GF			X				X				X	X	X
FWGLL7mw-001-0596- GW/GF	X		X				X				X	X	X

1) All metals samples were field filtered (GF).
2) FWGEQUIPRINSE3-0623-GW was collected on 7/22/15, but after lab pickup. All qualifications as a result of contamination found in FWGEQUIPRINSE3-0623-GW were applied to samples in SDG 240-53500.
3) SVOC1= Phthalates, SVOC4= Full list SVOC, SVOC1*= Phthalates, nitrobenzene, 2,4-ditrotoluene and 2,6-ditrotoluene.
4) EPA 6020 metals include aluminum, antimony, beryllium, cadmium, iron, sodium, and zinc. EPA 6010B metals include arsenic, chromium, cobalt, lead, selenium, silver, vanadium, barium, calcium, copper, magnesium, manganese, nickel and potassium.
5) FWGTEAMDEMO-Trip blank and FWGTEAM3-Trip blank were collected on 7/22/15 and FWGTEAM4-TRIP was collected on 7/23/15. FWGTEAMDEMO-Trip blank, FWGTEAM3-Trip blank and FWGTEAM4-TRIP were submitted to the laboratory for VOC analysis by EPA 8260B on 7/23/15.
6) The volatiles sample for FWGDETmw-004c-0573-GW was collected on 7/22/15 and submitted with the samples on 7/23/15 for VOC analysis by EPA 8260B.

The data presented in this report were evaluated according to the *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the*

Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January, 2012. The following documents were used as needed to supplement the project documentation: The United States Department of Defense (DoD) Quality Services Manual (QSM) for Environmental Laboratories, Version 4.2, and the United States Army Corps of Engineers (USACE), Louisville District Quality Systems Manual Supplement (LS), *EPA National Functional Guidelines (NFG) for Organic Data Review, EPA-540/R-08-01, June 2008, NFG for Inorganic Data Review, EPA-540/R-04-004, October 2004*, Analytical Methods, and Laboratory Standard Operating Procedures. The QC criteria provided in the reference documents represent accuracy and precision performance goals for each analytical method. QC criteria reviewed for each method are listed below, along with any outliers.

All analytical results have been verified against compliance requirements specified in the project QAPP, QSM, LS, associated analytical methods and/or SOPs, as appropriate, and reported by the laboratory as directed by the DoD QSM.

Per the DoD QSM, the laboratory data is reported as follows: Non detected results were reported at the LOD with a "U" flag. Detected results between the DL and LOQ were reported as estimated, qualified with a "J" flag.

LOD - An estimate of the minimum amount of a substance that an analytical process can reliably detect.

LOQ - The lowest concentration that produces a quantitative result within specified limits of precision and bias.

DL- The smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence.

Checklists used in the verification process are in Attachment I and sample results with outliers requiring qualification are in Attachment II.

The completeness objective for the project was 90%. The completeness objective was met for this SDG, at 100%. Limitations, if any, on the data are indicated with qualifiers detailed below.

VOC- 8260

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Tuning criteria
- Initial Calibration Criteria including SPCC and CCC compounds
- ICV/CCV criteria
- Internal standard area counts and retention times
- LOD and MRL verification criteria
- Method /field blank criteria
- Surrogate recoveries
- Field duplicate RPD criteria
- Laboratory Control Sample criteria
- Matrix spike/spike duplicate recovery criteria and RPD

Blanks

Methylene chloride was detected in the method blank analyzed 8/4/15 at 0.364 µg/L. The methylene chloride results for samples FWGEQUIPRINSE3-0624-GW, FWGEQUIPRINSE4-0625-GW, FWGTEAM3-TripBlank, FWGTEAM4-Trip and FWGTEAMDEMO-Trip were qualified, "B" as the reported methylene chloride concentrations were less than ten times method blank contamination.

The laboratory narrative stated FWGTEAM4-TRIP was analyzed with substantial headspace in the sample vial, for the analytical sequence from 8/4/15. The methylene chloride results for FWGTEAM4-TRIP were qualified as "J".

FWGEQUIPRINSE3-0624-GW had methylene chloride detected at 0.86 µg/L, acetone at 3.5 µg/L, chloroform at 0.34 µg/L and 2-butanone at 4.6µg/L. No qualifiers were applied to samples in SDG 240-53558 as a result of the contamination detected in FWGEQUIPRINSE3-0624-GW, as all associated samples were reported and qualified in SDG 240-53500.

- FWGEQUIPRINSE4-0625-GW had methylene chloride detected at 0.84 µg/L, chloroform at 0.4 µg/L, 1,1,2,2-tetrachloroethane at 0.22 µg/L, 2-butanone at 6.8 µg/L and acetone at 6.9 µg/L.
- FWGTEAMDEMO-Trip had acetone detected at 2.9ug/L and methylene chloride at 0.62 µg/L; FWGTEAM3-TRIPBLANK had acetone detected at 2.6 µg/L and methylene chloride at 0.56 µg/L; and FWGTEAM4-TRIP had acetone detected at 2.8 µg/L and methylene chloride at 0.69 µg/L.

The acetone and methylene chloride results for sample FWGEQUIPRINSE3-0624-GW and the acetone result for samples FWGDETmw-004c-0573-GW, were qualified, "B " as the reported concentrations were less than ten times trip blank and equipment rinse contamination. No qualifications were made for the 1,1,2,2-tetrachloroethane, chloroform or 2-butanone, as 1,1,2,2-tetrachloroethane,chloroform and 2-butanone were not reported as detected in the associated field samples.

Field Duplicate RPD
A field duplicate was not submitted with this set of samples.

No additional QC outliers were noted.

SVOCs- 8270C
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Tuning criteria
- Initial Calibration Criteria including SPCC and CCC compounds
- ICV/CCV criteria
- Internal standard area counts and retention times
- LOD and MRL verification criteria
- Method /field blank criteria
- Surrogate recoveries
- Field duplicate RPD criteria
- Laboratory Control Sample criteria
- Matrix Spike Recovery Criteria and RPD

CCV
4,6-dinitro-2-methylphenol had a %D above control limits of 20% at 21%. No qualification of the data was required as there were no detected 4,6-dinitro-2-methylphenol results reported for the associated field samples.

Matrix Spike Recovery and RPD
An MS/MSD was not requested with this set of samples nor was volume provided.

No additional QC outliers were noted.

Pesticides- 8081A
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Initial Calibration criteria
- DDT and Endrin breakdown (PEM) criteria
- Retention time criteria
- ICV criteria
- CCV Criteria

- Method /field blank criteria
- LCS Recoveries
- Field Duplicate Criteria
- LOD and MRL verification criteria
- Matrix Spike Recovery Criteria and RPD
- Surrogate Recoveries
- Second Column confirmation criteria

Hold Time
Due to LCS failure for endosulfan I, samples FWGDETmw-003c-0572-GW, FWGDETmw-004c-0573-GW, FWGEQUIPRINSE3-0624-GW and FWGEQUIPRINSE4-0625-GW were re-extracted. The re-extraction was completed outside the hold time but within two times hold, so the endosulfan I results for samples FWGDETmw-003c-0572-GW, FWGDETmw-004c-0573-GW, FWGEQUIPRINSE3-0624-GW and FWGEQUIPRINSE4-0625-GW were qualified as estimated, "UJ".

PEM Criteria
A PEM was analyzed before and after the samples analyzed on 8/3/15 on instrument A2HP3. The closing endrin % breakdown was above 15% at 18.15%. No qualifiers were applied to the data as a result of the high % breakdown as there were no detected concentrations of endrin, endrin aldehyde or endrin ketone reported from the analytical sequence and the opening PEM passed breakdown requirements. QSM does not require bracketing PEM.

ICV/CCV
The ICV analyzed at 1703 on 7/28/15 (A2HP3) recovered above control limits of 80-120% at 121.8% for alpha-BHC. No qualification of the data was required as only endosulfan I was reported from A2HP3.

The CCV analyzed 8/3/15 @ 1633 had a %D above control limits of 20% for endosulfan II at 22%. Only endosulfan I was being reported from the analytical sequence containing the CCV outlier, so no qualification of the data was required.

Matrix Spike/Spike Duplicate Recovery
Matrix spike analysis was not requested on a sample from this sample set.

Field Duplicate RPD
A field duplicate was not submitted with this set of samples.

Second Column Confirmation
No detected concentrations were reported that required second column confirmation.

No additional QC outliers were noted.

PCB- 8082
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Initial Calibration criteria
- Retention time criteria
- ICV criteria
- CCV Criteria
- Method /field blank criteria
- LCS Recoveries
- Field Duplicate Criteria
- LOD and MRL verification criteria
- Matrix Spike Recovery Criteria and RPD

- Surrogate Recoveries
- Second Column confirmation criteria

CCV
The average %D on the primary column was above control limits of 20% for the closing CCV analyzed 7/27/15. The PCB-1016 CCV had a %D of 21.7% and the PCB-1260 CCV had a %D of 23.3%. No qualification of the data was required as there were no detect PCB concentration reported for the bracketed field samples.

Matrix Spike Recovery Criteria
Matrix spike/spike duplicate were not requested or analyzed with this set of samples.

Field Duplicate RPD
A field duplicate was not submitted with this set of samples.

Second Column Confirmation
No detected concentrations were reported for the field samples that required second column confirmation.

No additional QC outliers were noted.

Metals - 6010B
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method /field blank criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field duplicate RPD criteria
- Post Digestion Spike Criteria
- Serial Dilution Criteria

Blanks
The ICB analyzed 7/27/15@ 0924 had lead detected at 2.43 µg/L and potassium at 71.5 µg/L. The lead results for samples FWGDA2mw-115-0571-GF, FWGEQUIPRINSE3-0624-GW, FWGLL1mw-065c-0582-GF, FWGFWGmw-015-0579-GF and FWGLL7mw-001-0596-GF; and the potassium result for sample FWGEQUIPRINSE3-0624-GW were qualified, "U" as the reported lead and potassium concentrations were less than 5x contamination.

The CCBs analyzed 7/27/15 had lead detected from 1.96 µg/L to3.10 µg/L , chromium from 0.620 µg/L to 0.643 µg/L, potassium from 81.6 µg/L to 103 µg/L, silver from 0.925 µg/L to 1.17 µg/L. The lead results for samples FWGDA2mw-115-0571-GF, FWGEQUIPRINSE3-0624-GW, FWGLL1mw-065c-0582-GF, FWGFWGmw-015-0579-GF, and FWGLL7mw-001-0596-GF; the chromium results for samples FWGLL1mw-065c-0582-GF, FWGFWGmw-016-0580-GF, FWGFWGmw-015-0579-GF, FWGFWGmw-004-0575-GF, FWGLL2mw-267c-0590-GF, FWGLL10mw-003c-0597-GF, FWGFWGmw-007-0576-GF and FWGLL7mw-001-0596-GF; the potassium result for sample FWGEQUIPRINSE3-0624-GW; and the silver results for samples FWGFWGmw-015-0579-GF and FWGLL2mw-267c-0590-GF were qualified, "U" as the reported concentrations were less than 5x contamination.

The method blank analyzed 7/27/15 had lead detected at 2.71 µg/L and manganese at 0.646 µg/L. The lead results for samples FWGDA2mw-115-0571-GF, FWGEQUIPRINSE3-0624-GW, FWGLL1mw-065c-0582-GF, FWGFWGmw-015-0579-GF and FWGLL7mw-001-0596-GF; and the manganese results for samples

FWGEQUIPRINSE3-0624-GW and FWGEQUIPRINSE4-0625-GW were qualified, "B" as the detected concentrations were less than 5x method blank contamination.

FWGEQUIPRINSE3-0624-GW had lead detected at 3.2 µg/L, manganese at 1.6 µg/L and potassium at 230 µg/L. No qualification was made for the detected contamination from FWGEQUIPRINSE3-0624-GW as all associated samples were reported and qualified in SDG 240-53550.

FWGEQUIPRINSE4-0625-GW had vanadium detected at 2.9 µg/L and manganese at 0.48 µg/L . No qualification was made for the contamination reported for FWGEQUIPRINSE4-0625-GW as vanadium was not detected in the associated field samples and all detected concentrations of manganese were greater than five times the equipment rinse contamination.

Post Spike Recovery
The post spike analyzed on sample FWGDA2mw-DUP1-0617-GF had a recovery of 77% for magnesium and 74% for silver. No qualification was required for the magnesium post spike outlier as the parent concentration was greater than 4x the spike value and the serial dilution recovered with control limits. The silver results for samples FWGDETmw-004c-0573-GF, FWGDA2mw-115-0571-GF, FWGDA2mw-DUP1-0617-GF, FWGEQUIPRINSE3-0624-GW, FWGDETmw-003c-0572-GF, FWGLL1mw-065c-0582-GF, FWGFWGmw-016-0580-GF, FWGFWGmw-015-0579-GF, FWGFWGmw-004-0575-GF, FWGLL2mw-267c-0590-GF, FWGEQUIPRINSE4-0625-GW FWGLL10mw-003c-0597-GF, FWGFWGmw-007-0576-GF and FWGLL7mw-001-0596-GF were qualified as estimated, "J/UJ".

No additional QC outliers were noted.

Metals - 6020
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Tuning Criteria
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method /field blank criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field Duplicate RPD Criteria
- Post Digestion Spike Criteria
- Serial Dilution Criteria

Blanks
The ICB analyzed 7/29/15 at 0951 had cadmium detected at 0.162 µg/L. The cadmium result for sample FWGDA2mw-DUP1-0617-GF was qualified, "U" as the reported cadmium concentration was less than 5x contamination.

The CCBs analyzed 7/29/15 had cadmium detected from 0.216 µg/L to 0.387 µg/L, beryllium from 0.06 µg/L to 0.204 µg/L and thallium at 0.0820 µg/L. The cadmium result for sample FWGDA2mw-DUP1-0617-GF was qualified, "U" as the reported cadmium concentration was less than 5x contamination. No qualification was required for the beryllium or thallium contamination as beryllium and thallium were not reported as detected in the bracketed field samples.

Site: Ravenna Army Ammunition Plant
Sampling Event: July 2015
Sample Delivery Group: 240-53558

Date: October 16, 2015
Revision: 1

Post Spike Recovery
The post spike analyzed on sample FWGDA2mw-DUP1-0617-GF had a post spike recovery of 122% for zinc. The zinc results for sample FWGLL7mw-001-0596-GF was qualified as estimated, "J".

No additional QC outliers were noted.

Mercury - 7470A
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method /field blank criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field duplicate RPD criteria

Blanks
The CCB analyzed 7/29/15 at 1604 had mercury detected at 0.110 µg/L. No qualification was required for the mercury contamination as mercury was not reported as detected in the bracketed field samples.

No additional QC outliers were noted.

Explosives- 8330
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Initial Calibration Criteria
- ICV and CCV criteria
- Retention time criteria
- LOD and MRL verification criteria
- Surrogate recovery criteria
- Method /field blank criteria
- LCS/LCD Recovery and RPD Criteria
- Matrix spike/spike duplicate recovery criteria and RPD
- Second column confirmation RPD
- Field Duplicate RPD

Blanks
FWGEQUIPRINSE4-0625-GW had 2,4-dinitrotoluene detected at 0.054 µg/L. The 2,4-dinitrotoluene result for sample FWGLL2mw-267c-0590-GW was qualified, "B" as the reported concentration was < 5x blank contamination.

MS/MSD Recovery and RPD
A matrix and spike duplicate was not requested on a sample from this SDG.

No additional QC outliers were noted.

Site: Ravenna Army Ammunition Plant
Sampling Event: July 2015
Sample Delivery Group: 240-53558

Date: October 16, 2015
Revision: 1

Nitroguanidine- 8330M

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- Retention time criteria
- LOD and MRL verification criteria
- ICV and CCV criteria
- Method /field blank criteria
- LCS/LCSD percent recoveries and RPD value criteria
- Matrix spike recovery criteria
- Second column confirmation
- Field Duplicate RPD

No QC outliers were noted.

Nitrocellulose – WS-WC-0050

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Sample preparation criteria
- Initial Calibration criteria
- ICV and CCV criteria
- Method /field blank/ ICB/CCBs were free from contamination
- LOD and MRL verification criteria
- LCS/LCSD percent recoveries and RPD value criteria
- MS/MSD percent recoveries and RPD
- Field Duplicate RPD

No QC outliers were noted.

Nitrate/Nitrite- EPA 353.2

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Sample preparation criteria
- Initial Calibration criteria
- ICV and CCV criteria
- Method /field blank/ ICB/CCBs were free from contamination
- LOD and MRL verification criteria
- LCS/LCSD percent recoveries and RPD value criteria
- MS/MSD percent recoveries and RPD
- Field Duplicate RPD

Blanks

FWGEQUIPRINSE3-0624-GW had nitrate/nitrite detected at 0.006mg/L. No qualification was made for the samples in SDG 240-53558 as FWGEQUIPRINSE3-0624-GW was associated with the samples from 240-53500.

Field Duplicate RPD

A field duplicate was not submitted with this set of samples.

No additional QC outliers were noted.

Data Verification Summary

Site: Ravenna Army Ammunition Plant
Sampling Event: July 2015
Sample Delivery Group: 240-53558

Date: October 16, 2015
Revision: 1

Cyanide- 9012

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation and sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- Method /field blank/ ICB/CCBs were free from contamination
- LOD and MRL verification criteria
- High and Low Distilled Standard
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field duplicate RPD criteria

Field Duplicate RPD

A field duplicate was not submitted with this set of samples.

LCS/MS/MSD Recovery

The ADR outlier reports associated with the LCS, MS and MSD show recovery outliers. The ADR library used to evaluate the LCS MS/MSD recovery had limits of 80-118% for the LCS 69-118% for the MS/MSD. The lab limits have been updated to 69-118% for the LCS and 42-140% for the MS/MSD. No update was made to the ADR library. Since the recoveries were within the updated limits, no qualification of the data was required.

No additional QC outliers were noted.

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Sample Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53558-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-53558-1	FWGTEAMDEMO-TRIPBLANK	Water	07/22/15 17:05	07/23/15 18:20
240-53558-2	FWGDETmw-004C-0573-GW	Water	07/22/15 17:15	07/23/15 18:20
240-53558-3	FWGDETmw-004C-0573-GW	Water	07/23/15 09:00	07/23/15 18:20
240-53558-4	FWGDETmw-004C-0573-GF	Water	07/23/15 09:00	07/23/15 18:20
240-53558-5	FWGDA2mw-115-0571-GW	Water	07/23/15 10:22	07/23/15 18:20
240-53558-6	FWGDA2mw-115-0571-GF	Water	07/23/15 10:22	07/23/15 18:20
240-53558-7	FWGDETmw-003C-0572-GW	Water	07/23/15 11:18	07/23/15 18:20
240-53558-8	FWGDETmw-003C-0572-GF	Water	07/23/15 11:18	07/23/15 18:20
240-53558-9	FWGDA2mw-DUP1-0617-GW	Water	07/23/15 11:22	07/23/15 18:20
240-53558-10	FWGDA2mw-DUP1-0617-GF	Water	07/23/15 11:22	07/23/15 18:20
240-53558-11	FWGEQUIPRINSE3-0624-GW	Water	07/22/15 17:00	07/23/15 18:20
240-53558-12	FWGTEAM3-TRIPBLANK	Water	07/22/15 17:00	07/23/15 18:20
240-53558-13	FWGLL1mw-065C-0582-GW	Water	07/23/15 09:33	07/23/15 18:20
240-53558-14	FWGLL1mw-065C-0582-GF	Water	07/23/15 09:33	07/23/15 18:20
240-53558-15	FWGFWGmw-016-0580-GW	Water	07/23/15 11:43	07/23/15 18:20
240-53558-16	FWGFWGmw-016-0580-GF	Water	07/23/15 11:43	07/23/15 18:20
240-53558-17	FWGFWGmw-015-0579-GW	Water	07/23/15 12:49	07/23/15 18:20
240-53558-18	FWGFWGmw-015-0579-GF	Water	07/23/15 12:49	07/23/15 18:20
240-53558-19	FWGFWGmw-004-0575-GW	Water	07/23/15 14:23	07/23/15 18:20
240-53558-20	FWGFWGmw-004-0575-GF	Water	07/23/15 14:23	07/23/15 18:20
240-53558-21	FWGLL2mw-267C-0590-GW	Water	07/23/15 11:11	07/23/15 18:20
240-53558-22	FWGLL2mw-267C-0590-GF	Water	07/23/15 11:11	07/23/15 18:20
240-53558-23	FWGEQUIPRINSE4-0625-GW	Water	07/23/15 12:35	07/23/15 18:20
240-53558-24	FWGLL10mw-003C-0597-GW	Water	07/23/15 14:51	07/23/15 18:20
240-53558-25	FWGLL10mw-003C-0597-GF	Water	07/23/15 14:51	07/23/15 18:20
240-53558-26	FWGFWGmw-007-0576-GW	Water	07/23/15 10:24	07/23/15 18:20
240-53558-27	FWGFWGmw-007-0576-GF	Water	07/23/15 10:24	07/23/15 18:20
240-53558-28	FWGLL7mw-001-0596-GW	Water	07/23/15 13:54	07/23/15 18:20
240-53558-29	FWGLL7mw-001-0596-GF	Water	07/23/15 13:54	07/23/15 18:20
240-53558-30	FWGTEAM4-TRIP	Water	07/23/15 08:00	07/23/15 18:20

Method Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53558-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CAN
8081A	Organochlorine Pesticides (GC)	SW846	TAL CAN
8082	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CAN
8330 Modified	Nitroguanidine (HPLC)	SW846	TAL SAC
8330A	Nitroaromatics and Nitramines	SW846	TAL SAC
6010B	Metals (ICP)	SW846	TAL CAN
6020	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL CAN
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAC
9012A	Cyanide, Total and/or Amenable	SW846	TAL CAN
WS-WC-0050	Nitrocellulose	TAL-SAC	TAL SAC

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-SAC = TestAmerica Laboratories, West Sacramento, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

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TestAmerica Laboratories, Inc.

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AND
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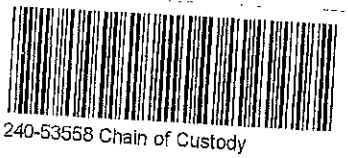

4101 Shuffel Street, N.W. North Canton, OH 44720 **tel** 330.497.9396 **fax** 330.497.0772 **www.testamericainc.com**

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Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Regulatory Program: ☐ DW ☐ NPDES ☒ RCRA ☐ Other:

7-23-15

Client Contact	Project Manager: John Miller	Site Contact: E Corbin	Date: 7-22-15	COC No: CAL22#23
Company Name: EQM	Tel/Fax: 5138257500 X7330	Lab Contact: M. Laeb	Carrier: LAB PICKUP	1 of 1 COCs
Address: 1800 Carillon Blvd	Analysis Turnaround Time			Sampler: Coleen
City/State/Zip: Cincinnati OH 45240	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 5138257500	TAT if different from Below _____			Walk-in Client:
Fax: 513 825 7495	☒ 2 weeks			Lab Sampling:
Project Name: RVAAP-66	☐ 1 week			
Site: Ravenna, Ohio	☐ 2 days			Job / SDG No.:
PO#	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	VOC 8260D	SVOC 8270D	SVOC 8270D SIM	Pesticides 8081B	PCB 8082A	Explosives 8330B	Propellants 8330B	Cyanide 9012B	Metals 6010D/7470A	Sample Specific Notes:
FWG Team Demo-Trip blank	7-22-15	1705		W	2	N	N	X									M-31
FWGDETmw-004C-0573-GW	7-22-15	1715	G	GW	3	N	N	X									M-31
FWGDETmw-004C-0573-GW	7-23-15	0900	G	GW	10	N	N		X		X	X	X	X	X		13
FWGDETmw-004C-0573-GF	⊥	0900	G	GW	1	Y	N									X	13
FWGDA2mw-115-0571-GW	7-23-15	1022	G	GW	5	N	N		X				X	X			#15
FWGDA2mw-115-0571-GF	⊥	⊥	G	GW	1	Y	N									X	#15
FWGDETmw-003C-0572-GW	7-23-15	1118	G	GW	13	N	N		X		X	X	X	X	X		M-31
FWGDETmw-003C-0572-GF	⊥	⊥	G	GW	1	Y	N									X	M-31
FWGDA2mw-DUP1-0617-GW	7-23-15	1122	G	GW	5	N	N		X				X	X			12
FWGDA2mw-DUP1-0617-GF	⊥	⊥	G	GW	1	Y	N									X	12

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:
Temps may not meet requirements if sample time is ~~not~~ close to pick up time. All VOAs in M-31

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd:	Corr'd:	Therm ID No.:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	EQM	7/23/15 1700	[signature]	TestAmerica	7-23-15 1715
Relinquished by: [signature]	Company: TestAm	Date/Time: 7/23/15 1820	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature]	Company: TA Canton	Date/Time: 7/23/15 18:20

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Chain of Custody Record

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Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Client Contact	Project Manager: John Miller	Site Contact: E. Cordon	Date: 7/23/15	COC No: AD 072215A
Company Name: EQM	Tel/Fax:	Lab Contact: Mark Kelly	Carrier: Lab Pickup	1 of 1 COCs
Address: 1800 Carillon Blvd	Analysis Turnaround Time			Sampler:
City/State/Zip: Cincinnati, Ohio 45240	☒ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 513-825-7500	TAT if different from Below 21			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: RVAAP	☐ 1 week			
Site:	☐ 2 days			Job / SDG No.:
PO#	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	VOC 8260	SVOC 8270	SVOC - 8270	Pest - 8081	PCB - 8082	Explosive / Propellants	Nitrate / Nitrite	Cyanide 9012	Metals - 6010/7470	Sample Specific Notes:
FWGEQUIPRINSE3-0624-GW	7/22/15	1700	G	W	15	N	N	X	X		X	X	X	X	X	X	CL1
FWGTeam3-Tripblank	↓	1700	↓	↓	2	N		X								X AD 7/23/15	CL1
FWGLL1MW-0105-0582-GW	7/23/15	0933	G	W	5	N				X			X				#12
FWGLL1MW-0105-0582-GF	↓	↓	↓	↓	1	Y										X	#12
FWGFWGMW-016-0580-GW	7/23/15	1143	G	W	5	N				X			X				AD41
FWGFWGMW-016-0580-GF	↓	↓	↓	↓	1	Y										X	↓
FWGFWGMW-015-0579-GW	7/23/15	1249	G	W	5	N				X			X				PH12
FWGFWGMW-015-0579-GF	↓	↓	↓	↓	1	Y										X	↓
FWGFWGMW-004-0575-GW	7/23/15	1423	G	W	5	N				X			X				AD42
FWGFWGMW-004-0575-GF	↓	↓	↓	↓	1	Y										X	↓
																	AD 7/23/15

Preservation Used: 1=Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

								12	1	1	1	1	1	1,3	1,5	1,4

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: All Metals except rinse field filtered.

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd:	Corr'd:	Therm ID No.:
Relinquished by:	Company: EQM	Date/Time: 7/23/15 1720	Received by:	Company:	Date/Time: 7-23-15 1715
Relinquished by: RC Fedex	Company: Test Am 7/23/15	Date/Time: 1820	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company: TA (Canton)	Date/Time: 7/23/15 1820

TestAmerica Canton
4101 Shuffel Street, N. N.

North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497.0772

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other:

Client Contact	Project Manager: John Miller	Site Contact: Eric Corbin	Date: 7/23/15	COC No: EC072315
Company Name: EQM	Tel/Fax:	Lab Contact: Mark Loeb	Carrier: Lab pickup	1 of 1 COCs
Address: 1800 Carillon Blvd.	Analysis Turnaround Time			Sampler:
City/State/Zip: Cincinnati, OH 45240	☒ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 513-825-7500	TAT if different from Below 3 weeks			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: RVAAP 66	☐ 1 week			
Site: Ohio	☐ 2 days			Job / SDG No.:
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	SVOC 8270	Explosives 8330	Propellants	Metals 6010B/7470	VOC 8260	SVOC 8270	Pest 8081	PCB 8082	Cyanide 9012	SVOC* 8270	Cooler ID / Sample Specific Notes:
FWGLL2mw-267C-0590-GW	7/23/15	11:11	G	GW	5	N	N	X	X	X								EC1
FWGLL2mw-267C-0590-GF	7/23/15	11:11	G	GW	1	Y	N				X							EC1
FWGEQUIPRinse4-0025-GW	7/23/15	12:35	G	W	14	N	N		X	X	X	X	X	X	X	X		185; VOC in M31
FWGLL10mw-003C-0597-GW	7/23/15	14:51	G	GW	5	N	N					X					X	E0037; VOC in M31
FWGLL10mw-003C-0597-GF	7/23/15	14:51	G	GW	1	Y	N				X							E0037

7/23/15

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

	1	1	1	1,4,2	1	1	1	1,5						

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Metals are field filtered. (*SVOC) *for sample LL10mw-003 to include 2,4-Dinitrotoluene, 2,6-Dinitrotoluene and Nitrobenzene
Temps may not meet requirements if sample collection is close to lab pickup time.

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.:	

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	EQM	7/23/15 1700	[signature]	TestAmerica	7-23-15 1715
Relinquished by: [signature]	Company: TestAm 7/23/15	Date/Time: 1820	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature]	Company: TA Canton	Date/Time: 7/23/15 1820

All VOCs in M31

TestAmerica Canton

4101 Shuffel Street, N. U.

North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497. 2

Chain of Custody Record

083259

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: JOHN MILLER	Site Contact: ERIK CARBIN	Date: 072315	COC No: SAS072315
Company Name: EQM	Tel/Fax: (513) 825-7500 FAX 7495	Lab Contact: MARK LOEB	Carrier: LAB PICKUP	1 of ____ COCs
Address: 1800 CARILLON BLVD.	Analysis Turnaround Time			Sampler:
City/State/Zip: CINCINNATI, OH 45240	☐ CALENDAR DAYS ☒ WORKING DAYS			For Lab Use Only:
Phone: (513) 825-7500	TAT if different from Below ____			Walk-in Client:
Fax: (513) 825-7495	☒ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day (PER SOW)			Lab Sampling:
Project Name: RVAAP 66 (OH)				Job / SDG No.:
Site:				
PO# 30174.0016.001.10.1				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8270D SVOC 1			8330 EXPLO PROPELLANTS			6010B/6020 7470 METALS		8260 VOC								Cooler ID / Sample-Specific Notes:
FW6FW6mw-007-0576-GW	072315	1024	G	GW	5	N	N	2			1	2												112
FW6FW6mw-007-0576-GF	072315	1024	G	GW	1	Y	N							1										112
FW6LL7mw-001-0596-GW	072315	1354	G	GW	8	N	N	2			1	2				3								514
FW6LL7mw-001-0596-GF	072315	1354	G	GW	1	Y	N							1										514
		RAR	072315																					
FW6TEAM4-TRIP	072315	0800	G	L	1	N	N									1								514
		RAR	072315																					
Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Other ____								1			1	1		4		2								

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments: ALL METALS, PERCHLORATE SAMPLES ARE FIELD FILTERED. ALL VOAs IN COOLER ____

TEMPS MAY NOT MEET REQUIREMENTS IF SAMPLE COLLECTION IS CLOSE TO LAB PICKUP TIME.

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	EQM	7/23/15 1700	[signature]	TestAmerica	7-23-15 1715
Relinquished by: [signature]	Company: TestAm 7/23/15	Date/Time: 1820	Received by: [signature]	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature]	Company: TA Canton	Date/Time: 7/23/15 1820

TestAmerica Canton Sample Receipt Form/Narrative **Login # : 53558**
Canton Facility

Client E&M Site Name

Cooler unpacked by:

Cooler Received on 7.23.15 Opened on 7.23.15

FedEx: 1st Grd Exp UPS FAS Stetson Client Drop Off TestAmerica Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

TestAmerica Cooler # Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt
   - IR GUN# A (CF +1.0 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
   - ~~IR GUN# 4 (CF +0.5 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C~~
   - ~~IR GUN# 5 (CF +0.4 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C~~
   - IR GUN# 8 (CF -1.5 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C

   ☑ See Multiple Cooler Form

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1 4 Yes No
   - -Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA
   - -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Were sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC432654
12. Were VOAs on the COC? Yes No
13. Were air bubbles >6 mm in any VOA vials? Yes No NA
14. Was a trip blank present in the cooler(s)? Trip Blank Lot # Yes No

Contacted PM Date by via Verbal Voice Mail Other
Concerning

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

15. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container.
Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory.
Time preserved: Preservative(s) added/Lot number(s):

TestAmerica Multiple Cooler Receipt Form/Narrative — Login #:
Canton Facility

Cooler #	IR Gun #	Observed Temp °C	Corrected Temp °C	Coolant
514	A	3.2	4.2	wet FC
M-31		2.6	3.6	
112		3.4	4.4	
EC1		2.6	3.6	
185		4.6	5.6	
13		2.8	3.8	
15		4.2	5.2	
12		3.6	4.6	
AD41		4.0	5.0	
EC057		3.4	4.4	
CL1		3.2	4.2	
AD41		2.6	3.6	
PH12		~~RH12~~ 0.6	1.6	
AD42		0.8	1.8	

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
FWGDETMW-004C-0573-GW	240-53558-A-3	Plastic 250ml - with Sodium Hydrox	>12		
FWGDETMW-004C-0573-GF	240-53558-A-4	Plastic 500ml - with Nitric Acid	<2		
FWGDA2MW-115-0571-GF	240-53558-A-6	Plastic 500ml - with Nitric Acid	<2		
FWGDETMW-003C-0572-GW	240-53558-D-7	Plastic 250ml - with Sodium Hydrox	>12		
FWGDETMW-003C-0572-GF	240-53558-A-8	Plastic 500ml - with Nitric Acid	<2		
FWGDAZMW-DUP1-0617-GF	240-53558-A-10	Plastic 500ml - with Nitric Acid	<2		
FWGEQUIPRINSE3-0624-GW	240-53558-D-11	Plastic 250ml - with Sulfuric Acid	<2		
FWGEQUIPRINSE3-0624-GW	240-53558-E-11	Plastic 250ml - with Sodium Hydrox	>12		
FWGEQUIPRINSE3-0624-GW	240-53558-F-11	Plastic 500ml - with Nitric Acid	<2		
FWGLL1MW-065C-0582-GF	240-53558-A-14	Plastic 500ml - with Nitric Acid	<2		
FWGFWGMW-016-0580-GF	240-53558-A-16	Plastic 500ml - with Nitric Acid	<2		
FWGFWGMW-015-0579-GF	240-53558-A-18	Plastic 500ml - with Nitric Acid	<2		
FWGFWGMW-004-0575-GF	240-53558-A-20	Plastic 500ml - with Nitric Acid	<2		
FWGLL2MW-267C-0590-GF	240-53558-A-22	Plastic 500ml - with Nitric Acid	<2		
FWGEQUIPRINSE4-0625-GW	240-53558-D-23	Plastic 250ml - with Sodium Hydrox			
FWGEQUIPRINSE4-0625-GW	240-53558-E-23	Plastic 500ml - with Nitric Acid			
FWGLL10MW-003C-0597-GF	240-53558-A-25	Plastic 500ml - with Nitric Acid	<2		
FWGFWGMW-007-0576-GF	240-53558-A-27	Plastic 500ml - with Nitric Acid	<2		
FWGLL7MW-001-0596-GF	240-53558-A-29	Plastic 500ml - with Nitric Acid	<2		

Job ID: 240-53558-1

Laboratory: TestAmerica Canton

Narrative

4

CASE NARRATIVE
REVISED

Client: Environmental Quality Mgt., Inc.

Project: RVAAP (OH)

Report Number: 240-53558-1

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

The 353.2 Nitrate-Nitrite as Nitrogen, 353.2 Nitrocellulose, 8330_Ngu Nitroguanidine, and 8330A Explosives analyses were performed at the TestAmerica Sacramento Laboratory.

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

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

TestAmerica utilizes USEPA approved methods and DOD QSM, where applicable, in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

All parameters for which TestAmerica North Canton has certification were evaluated to the limit of detection (LOD) and include qualified results where applicable. Parameters not certified under QSM, if any, were evaluated to the detection limit (DL) and include qualified results where applicable.

REVISION 1: The narrative has been revised to further explain the use of a VOC vial that had headspace for sample FWGTEAM4-TRIP (240-53558-30).

The sample(s) that contain constituents flagged with U are undetected. The result associated with this flag is the limit of detection (LOD).

RECEIPT

The samples were received on 7/23/2015 6:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 14 coolers at receipt time were 1.6° C, 1.8° C, 3.6° C, 3.6° C, 3.6° C, 3.8° C, 4.2° C, 4.2° C, 4.4° C, 4.4° C, 4.6° C, 5.0° C, 5.2° C and 5.6° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Job ID: 240-53558-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

Samples FWGTEAMDEMO-TRIPBLANK (240-53558-1), FWGDETmw-004C-0573-GW (240-53558-2), FWGDETmw-003C-0572-GW (240-53558-7), FWGEQUIPRINSE3-0624-GW (240-53558-11), FWGTEAM3-TRIPBLANK (240-53558-12), FWGEQUIPRINSE4-0625-GW (240-53558-23), FWGLL10mw-003C-0597-GW (240-53558-24), FWGLL7mw-001-0596-GW (240-53558-28) and FWGTEAM4-TRIP (240-53558-30) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B DoD. The samples were analyzed on 08/03/2015 and 08/04/2015.

Methylene Chloride was detected in method blank MB 240-191868/6 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batches 240-191673 and 240-191868.

The samples in this job were initially analyzed in batch 240-191673. Methylene chloride failed in both the opening and closing QCMRL standards tor that batch. The samples associated were all reanalyzed for only Methylene chloride in batch 240-190466. The following volatile sample was received with only one vial and therefore was reanalyzed with substantial headspace in the sample vial: FWGTEAM4-TRIP (240-53558-30).

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

SEMIVOLATILE ORGANIC COMPOUNDS (GCMS)

Samples FWGDETmw-004C-0573-GW (240-53558-3), FWGDA2mw-115-0571-GW (240-53558-5), FWGDETmw-003C-0572-GW (240-53558-7), FWGDA2mw-DUP1-0617-GW (240-53558-9), FWGEQUIPRINSE3-0624-GW (240-53558-11), FWGLL1mw-065C-0582-GW (240-53558-13), FWGFWGmw-016-0580-GW (240-53558-15), FWGFWGmw-015-0579-GW (240-53558-17), FWGFWGmw-004-0575-GW (240-53558-19), FWGLL2mw-267C-0590-GW (240-53558-21), FWGEQUIPRINSE4-0625-GW (240-53558-23), FWGLL10mw-003C-0597-GW (240-53558-24), FWGFWGmw-007-0576-GW (240-53558-26) and FWGLL7mw-001-0596-GW (240-53558-28) were analyzed for semivolatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8270C. The samples were prepared on 07/24/2015 and analyzed on 08/10/2015.

Surrogates are added during the extraction process prior to dilution. When the sample is diluted, surrogate recoveries are diluted out and no corrective action is required.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 240-190460.

The continuing calibration verification (CCV) associated with analytical batch 192502 recovered above the upper control limit for 4,6-dinitro-2-methylphenol. The samples associated with this CCV were non-detect for this analyte; therefore, the data have been reported. The following samples are impacted: FWGDETmw-004C-0573-GW (240-53558-3), FWGDA2mw-115-0571-GW (240-53558-5), FWGDETmw-003C-0572-GW (240-53558-7), FWGDA2mw-DUP1-0617-GW (240-53558-9), FWGEQUIPRINSE3-0624-GW (240-53558-11), FWGLL1mw-065C-0582-GW (240-53558-13), FWGFWGmw-016-0580-GW (240-53558-15), FWGFWGmw-015-0579-GW (240-53558-17), FWGFWGmw-004-0575-GW (240-53558-19), FWGLL2mw-267C-0590-GW (240-53558-21), FWGEQUIPRINSE4-0625-GW (240-53558-23), FWGLL10mw-003C-0597-GW (240-53558-24), FWGFWGmw-007-0576-GW (240-53558-26), FWGLL7mw-001-0596-GW (240-53558-28), and (MB 240-190460/15-A).

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

NITROGUANIDINE (HPLC)

Samples FWGDETmw-004C-0573-GW (240-53558-3), FWGDA2mw-115-0571-GW (240-53558-5), FWGDETmw-003C-0572-GW (240-53558-7), FWGDA2mw-DUP1-0617-GW (240-53558-9), FWGEQUIPRINSE3-0624-GW (240-53558-11), FWGLL1mw-065C-0582-GW (240-53558-13), FWGFWGmw-016-0580-GW (240-53558-15), FWGFWGmw-015-0579-GW (240-53558-17), FWGFWGmw-004-0575-GW (240-53558-19), FWGLL2mw-267C-0590-GW (240-53558-21), FWGEQUIPRINSE4-0625-GW (240-53558-23), FWGFWGmw-007-0576-GW (240-53558-26) and FWGLL7mw-001-0596-GW (240-53558-28) were analyzed for Nitroguanidine (HPLC) in accordance with EPA SW-846 Method 8330_Ngu. The samples were prepared on 07/29/2015 and analyzed on 07/31/2015.

Job ID: 240-53558-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 320-81251.

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

CHLORINATED PESTICIDES

Samples FWGDETmw-004C-0573-GW (240-53558-3), FWGDETmw-003C-0572-GW (240-53558-7), FWGEQUIPRINSE3-0624-GW (240-53558-11) and FWGEQUIPRINSE4-0625-GW (240-53558-23) were analyzed for chlorinated pesticides in accordance with EPA SW-846 Method 8081A DoD. The samples were prepared on 07/24/2015 and 07/31/2015 and analyzed on 07/29/2015 and 08/03/2015.

Endosulfan I failed the recovery criteria low for LCS 240-190462/7-A. Refer to the QC report for details.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batches 240-190462 and 240-191429.

Re-extraction completed outside the seven day hold time. Only Endosulfan I is reported from the re-extraction batch due to an LCS failure in the inital extraction. All other analytes reported from the original extraction batch: FWGDETmw-004C-0573-GW (240-53558-3), FWGDETmw-003C-0572-GW (240-53558-7), FWGEQUIPRINSE3-0624-GW (240-53558-11), and FWGEQUIPRINSE4-0625-GW (240-53558-23).

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

POLYCHLORINATED BIPHENYLS (PCBS)

Samples FWGDETmw-004C-0573-GW (240-53558-3), FWGDETmw-003C-0572-GW (240-53558-7), FWGEQUIPRINSE3-0624-GW (240-53558-11) and FWGEQUIPRINSE4-0625-GW (240-53558-23) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082 DoD. The samples were prepared on 07/24/2015 and analyzed on 07/27/2015.

Surrogates are added during the extraction process prior to dilution. When the sample dilution is 5X or greater, surrogate recoveries are diluted out and no corrective action is required. All of the samples in this data set analyzed for PCBs were subjected to the sulfuric acid cleanup procedure before instrumental analysis, per EPA Method 3665A.

The continuing calibration verification (CCV) associated with batch 190835 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: FWGDETmw-004C-0573-GW (240-53558-3), FWGDETmw-003C-0572-GW (240-53558-7), FWGEQUIPRINSE3-0624-GW (240-53558-11), and FWGEQUIPRINSE4-0625-GW (240-53558-23).

The continuing calibration verification (CCV) associated with batch 190835 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported: (CCV 240-190835/17), (CCV 240-190835/4), and (CCV 240-190835/3).

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

EXPLOSIVES

Samples FWGDETmw-004C-0573-GW (240-53558-3), FWGDA2mw-115-0571-GW (240-53558-5), FWGDETmw-003C-0572-GW (240-53558-7), FWGDA2mw-DUP1-0617-GW (240-53558-9), FWGEQUIPRINSE3-0624-GW (240-53558-11), FWGLL1mw-065C-0582-GW (240-53558-13), FWGFWGmw-016-0580-GW (240-53558-15), FWGFWGmw-015-0579-GW (240-53558-17), FWGFWGmw-004-0575-GW (240-53558-19), FWGLL2mw-267C-0590-GW (240-53558-21), FWGEQUIPRINSE4-0625-GW (240-53558-23), FWGFWGmw-007-0576-GW (240-53558-26) and FWGLL7mw-001-0596-GW (240-53558-28) were analyzed for explosives in accordance with EPA SW-846 Method 8330A. The samples were prepared on 07/29/2015 and analyzed on 07/31/2015, 08/01/2015, 08/04/2015 and 08/05/2015.

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

TOTAL RECOVERABLE METALS (ICP)

Samples FWGDETmw-004C-0573-GF (240-53558-4), FWGDA2mw-115-0571-GF (240-53558-6), FWGDETmw-003C-0572-GF (240-53558-8), FWGDA2mw-DUP1-0617-GF (240-53558-10), FWGEQUIPRINSE3-0624-GW (240-53558-11), FWGLL1mw-065C-0582-GF

Job ID: 240-53558-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

(240-53558-14), FWGFWGmw-016-0580-GF (240-53558-16), FWGFWGmw-015-0579-GF (240-53558-18), FWGFWGmw-004-0575-GF (240-53558-20), FWGLL2mw-267C-0590-GF (240-53558-22), FWGEQUIPRINSE4-0625-GW (240-53558-23), FWGLL10mw-003C-0597-GF (240-53558-25), FWGFWGmw-007-0576-GF (240-53558-27) and FWGLL7mw-001-0596-GF (240-53558-29) were analyzed for total recoverable metals (ICP) in accordance with EPA SW-846 Method 6010B DoD. The samples were prepared on 07/24/2015 and analyzed on 07/27/2015.

ICB, CCB, and ICSA samples are evaluated using the lowest LOD and DL criteria in LIMS. Using this criteria, an individual element may occasionally be flagged as out of control. If the element has a higher LOD or DL, the data is evaluated to the higher limit and determined to be acceptable.

Lead and Manganese were detected in method blank MB 240-190517/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Chromium exceeded the RPD limit for the duplicate of sample FWGDA2mw-DUP1-0617-GFDU (240-53558-10). Refer to the QC report for details.

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

TOTAL RECOVERABLE METALS (ICPMS)

Samples FWGDETmw-004C-0573-GF (240-53558-4), FWGDA2mw-115-0571-GF (240-53558-6), FWGDETmw-003C-0572-GF (240-53558-8), FWGDA2mw-DUP1-0617-GF (240-53558-10), FWGEQUIPRINSE3-0624-GW (240-53558-11), FWGLL1mw-065C-0582-GF (240-53558-14), FWGFWGmw-016-0580-GF (240-53558-16), FWGFWGmw-015-0579-GF (240-53558-18), FWGFWGmw-004-0575-GF (240-53558-20), FWGLL2mw-267C-0590-GF (240-53558-22), FWGEQUIPRINSE4-0625-GW (240-53558-23), FWGLL10mw-003C-0597-GF (240-53558-25), FWGFWGmw-007-0576-GF (240-53558-27) and FWGLL7mw-001-0596-GF (240-53558-29) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020 DoD. The samples were prepared on 07/24/2015 and analyzed on 07/29/2015.

ICB, CCB, and ICSA samples are evaluated using the lowest LOD and DL criteria in LIMS. Using this criteria, an individual element may occasionally be flagged as out of control. If the element has a higher LOD or DL, the data is evaluated to the higher limit and determined to be acceptable.

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

TOTAL MERCURY

Samples FWGDETmw-004C-0573-GF (240-53558-4), FWGDA2mw-115-0571-GF (240-53558-6), FWGDETmw-003C-0572-GF (240-53558-8), FWGDA2mw-DUP1-0617-GF (240-53558-10), FWGEQUIPRINSE3-0624-GW (240-53558-11), FWGLL1mw-065C-0582-GF (240-53558-14), FWGFWGmw-016-0580-GF (240-53558-16), FWGFWGmw-015-0579-GF (240-53558-18), FWGFWGmw-004-0575-GF (240-53558-20), FWGLL2mw-267C-0590-GF (240-53558-22), FWGEQUIPRINSE4-0625-GW (240-53558-23), FWGLL10mw-003C-0597-GF (240-53558-25), FWGFWGmw-007-0576-GF (240-53558-27) and FWGLL7mw-001-0596-GF (240-53558-29) were analyzed for total mercury in accordance with EPA SW-846 Method 7470A. The samples were prepared on 07/24/2015 and analyzed on 07/29/2015.

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

NITRATE-NITRITE AS NITROGEN

Sample FWGEQUIPRINSE3-0624-GW (240-53558-11) was analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The sample was analyzed on 08/10/2015.

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

NITROCELLULOSE

Samples FWGDETmw-004C-0573-GW (240-53558-3), FWGDA2mw-115-0571-GW (240-53558-5), FWGDETmw-003C-0572-GW (240-53558-7), FWGDA2mw-DUP1-0617-GW (240-53558-9), FWGEQUIPRINSE3-0624-GW (240-53558-11), FWGLL1mw-065C-0582-GW (240-53558-13), FWGFWGmw-016-0580-GW (240-53558-15), FWGFWGmw-015-0579-GW (240-53558-17),

Job ID: 240-53558-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

FWGFWGmw-004-0575-GW (240-53558-19), FWGLL2mw-267C-0590-GW (240-53558-21), FWGEQUIPRINSE4-0625-GW (240-53558-23), FWGFWGmw-007-0576-GW (240-53558-26) and FWGLL7mw-001-0596-GW (240-53558-28) were analyzed for Nitrocellulose in accordance with EPA Method 353.2. The samples were prepared on 08/12/2015 and analyzed on 08/13/2015.

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

TOTAL CYANIDE

Samples FWGDETmw-004C-0573-GW (240-53558-3), FWGDETmw-003C-0572-GW (240-53558-7), FWGEQUIPRINSE3-0624-GW (240-53558-11) and FWGEQUIPRINSE4-0625-GW (240-53558-23) were analyzed for total cyanide in accordance with EPA SW-846 Method 9012A DoD. The samples were prepared and analyzed on 08/04/2015 and 08/05/2015.

Cyanide, Total exceeded the RPD limit for the MSD of sample FWGDETmw-003C-0572-GWMSD (240-53558-7) in batch 240-192044.

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

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53558-1

Client Sample ID: FWGTEAMDEMO-TRIPBLANK — **Lab Sample ID: 240-53558-1**
Date Collected: 07/22/15 17:05 — **Matrix: Water**
Date Received: 07/23/15 18:20

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 14:51	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	0.22	ug/L		08/03/15 14:51	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.24	ug/L		08/03/15 14:51	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.30	ug/L		08/03/15 14:51	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.45	ug/L		08/03/15 14:51	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.23	ug/L		08/03/15 14:51	1
1,2-Dichloroethene, Total	1.0	U	2.0	1.0	0.20	ug/L		08/03/15 14:51	1
1,2-Dichloropropane	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 14:51	1
2-Hexanone	2.0	U	10	2.0	0.48	ug/L		08/03/15 14:51	1
Bromochloromethane	1.0	U	1.0	1.0	0.50	ug/L		08/03/15 14:51	1
Acetone	**2.9**	**J**	10	2.0	0.94	ug/L		08/03/15 14:51	1
Benzene	1.0	U	1.0	1.0	0.35	ug/L		08/03/15 14:51	1
Bromoform	1.0	U	1.0	1.0	0.56	ug/L		08/03/15 14:51	1
Bromomethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 14:51	1
Carbon disulfide	1.0	U	1.0	1.0	0.38	ug/L		08/03/15 14:51	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.43	ug/L		08/03/15 14:51	1
Chlorobenzene	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 14:51	1
Chloroethane	1.0	U	1.0	1.0	0.32	ug/L		08/03/15 14:51	1
Chloroform	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 14:51	1
Chloromethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 14:51	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	0.26	ug/L		08/03/15 14:51	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.46	ug/L		08/03/15 14:51	1
Bromodichloromethane	1.0	U	1.0	1.0	0.29	ug/L		08/03/15 14:51	1
Ethylbenzene	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 14:51	1
1,2-Dibromoethane	1.0	U	1.0	1.0	0.32	ug/L		08/03/15 14:51	1
m-Xylene & p-Xylene	1.0	U	2.0	1.0	0.24	ug/L		08/03/15 14:51	1
2-Butanone (MEK)	2.0	U	10	2.0	0.53	ug/L		08/03/15 14:51	1
4-Methyl-2-pentanone (MIBK)	2.0	U	10	2.0	0.99	ug/L		08/03/15 14:51	1
Methylene Chloride	**0.62**	**J**	1.0	1.0	0.33	ug/L		08/04/15 15:26	1
o-Xylene	0.50	U	1.0	0.50	0.25	ug/L		08/03/15 14:51	1
Styrene	0.50	U	1.0	0.50	0.45	ug/L		08/03/15 14:51	1
Tetrachloroethene	1.0	U	1.0	1.0	0.31	ug/L		08/03/15 14:51	1
Toluene	1.0	U	1.0	1.0	0.23	ug/L		08/03/15 14:51	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	0.30	ug/L		08/03/15 14:51	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.56	ug/L		08/03/15 14:51	1
Trichloroethene	1.0	U	1.0	1.0	0.22	ug/L		08/03/15 14:51	1
Vinyl chloride	1.0	U	1.0	1.0	0.29	ug/L		08/03/15 14:51	1
Xylenes, Total	2.0	U	2.0	2.0	0.52	ug/L		08/03/15 14:51	1
Dibromochloromethane	1.0	U	1.0	1.0	0.43	ug/L		08/03/15 14:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*84*		*70 - 120*		*08/03/15 14:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 120*		*08/04/15 15:26*	*1*
4-Bromofluorobenzene (Surr)	*93*		*75 - 120*		*08/03/15 14:51*	*1*
4-Bromofluorobenzene (Surr)	*88*		*75 - 120*		*08/04/15 15:26*	*1*
Toluene-d8 (Surr)	*89*		*85 - 120*		*08/03/15 14:51*	*1*
Toluene-d8 (Surr)	*94*		*85 - 120*		*08/04/15 15:26*	*1*
Dibromofluoromethane (Surr)	*87*		*85 - 115*		*08/03/15 14:51*	*1*
Dibromofluoromethane (Surr)	*95*		*85 - 115*		*08/04/15 15:26*	*1*

Client Sample ID: FWGDETmw-004C-0573-GW

Date Collected: 07/22/15 17:15
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-2

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 15:13	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	0.22	ug/L		08/03/15 15:13	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.24	ug/L		08/03/15 15:13	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.30	ug/L		08/03/15 15:13	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.45	ug/L		08/03/15 15:13	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.23	ug/L		08/03/15 15:13	1
1,2-Dichloroethene, Total	1.0	U	2.0	1.0	0.20	ug/L		08/03/15 15:13	1
1,2-Dichloropropane	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 15:13	1
2-Hexanone	2.0	U	10	2.0	0.48	ug/L		08/03/15 15:13	1
Bromochloromethane	1.0	U	1.0	1.0	0.50	ug/L		08/03/15 15:13	1
Acetone	**2.5**	**J**	10	2.0	0.94	ug/L		08/03/15 15:13	1
Benzene	1.0	U	1.0	1.0	0.35	ug/L		08/03/15 15:13	1
Bromoform	1.0	U	1.0	1.0	0.56	ug/L		08/03/15 15:13	1
Bromomethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 15:13	1
Carbon disulfide	1.0	U	1.0	1.0	0.38	ug/L		08/03/15 15:13	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.43	ug/L		08/03/15 15:13	1
Chlorobenzene	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 15:13	1
Chloroethane	1.0	U	1.0	1.0	0.32	ug/L		08/03/15 15:13	1
Chloroform	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 15:13	1
Chloromethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 15:13	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	0.26	ug/L		08/03/15 15:13	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.46	ug/L		08/03/15 15:13	1
Bromodichloromethane	1.0	U	1.0	1.0	0.29	ug/L		08/03/15 15:13	1
Ethylbenzene	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 15:13	1
1,2-Dibromoethane	1.0	U	1.0	1.0	0.32	ug/L		08/03/15 15:13	1
m-Xylene & p-Xylene	1.0	U	2.0	1.0	0.24	ug/L		08/03/15 15:13	1
2-Butanone (MEK)	2.0	U	10	2.0	0.53	ug/L		08/03/15 15:13	1
4-Methyl-2-pentanone (MIBK)	2.0	U	10	2.0	0.99	ug/L		08/03/15 15:13	1
Methylene Chloride	1.0	U	1.0	1.0	0.33	ug/L		08/04/15 15:49	1
o-Xylene	0.50	U	1.0	0.50	0.25	ug/L		08/03/15 15:13	1
Styrene	0.50	U	1.0	0.50	0.45	ug/L		08/03/15 15:13	1
Tetrachloroethene	1.0	U	1.0	1.0	0.31	ug/L		08/03/15 15:13	1
Toluene	1.0	U	1.0	1.0	0.23	ug/L		08/03/15 15:13	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	0.30	ug/L		08/03/15 15:13	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.56	ug/L		08/03/15 15:13	1
Trichloroethene	1.0	U	1.0	1.0	0.22	ug/L		08/03/15 15:13	1
Vinyl chloride	1.0	U	1.0	1.0	0.29	ug/L		08/03/15 15:13	1
Xylenes, Total	2.0	U	2.0	2.0	0.52	ug/L		08/03/15 15:13	1
Dibromochloromethane	1.0	U	1.0	1.0	0.43	ug/L		08/03/15 15:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*70 - 120*		*08/03/15 15:13*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 120*		*08/04/15 15:49*	*1*
4-Bromofluorobenzene (Surr)	*93*		*75 - 120*		*08/03/15 15:13*	*1*
4-Bromofluorobenzene (Surr)	*88*		*75 - 120*		*08/04/15 15:49*	*1*
Toluene-d8 (Surr)	*90*		*85 - 120*		*08/03/15 15:13*	*1*
Toluene-d8 (Surr)	*93*		*85 - 120*		*08/04/15 15:49*	*1*
Dibromofluoromethane (Surr)	*87*		*85 - 115*		*08/03/15 15:13*	*1*
Dibromofluoromethane (Surr)	*92*		*85 - 115*		*08/04/15 15:49*	*1*

Client Sample ID: FWGDETmw-004C-0573-GW

Date Collected: 07/23/15 09:00
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-3

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.11	U	0.22	0.11	0.048	ug/L		08/10/15 10:21	1
Acenaphthylene	0.11	U	0.22	0.11	0.052	ug/L		08/10/15 10:21	1
Anthracene	0.11	U	0.22	0.11	0.096	ug/L		08/10/15 10:21	1
Benzo[a]anthracene	0.11	U	0.22	0.11	0.032	ug/L		08/10/15 10:21	1
Benzo[a]pyrene	0.11	U	0.22	0.11	0.056	ug/L		08/10/15 10:21	1
Benzo[b]fluoranthene	0.11	U	0.22	0.11	0.043	ug/L		08/10/15 10:21	1
Benzo[g,h,i]perylene	0.11	U	0.22	0.11	0.050	ug/L		08/10/15 10:21	1
Benzoic acid	22	U M	27	22	11	ug/L		08/10/15 10:21	1
Benzo[k]fluoranthene	0.11	U	0.22	0.11	0.049	ug/L		08/10/15 10:21	1
Benzyl alcohol	0.54	U	5.4	0.54	0.41	ug/L		08/10/15 10:21	1
Bis(2-chloroethoxy)methane	0.54	U	1.1	0.54	0.35	ug/L		08/10/15 10:21	1
Bis(2-chloroethyl)ether	0.11	U	1.1	0.11	0.11	ug/L		08/10/15 10:21	1
Bis(2-ethylhexyl) phthalate	5.4	U	5.4	5.4	1.8	ug/L		08/10/15 10:21	1
4-Bromophenyl phenyl ether	0.54	U	2.2	0.54	0.24	ug/L		08/10/15 10:21	1
Butyl benzyl phthalate	0.54	U	5.4	0.54	0.28	ug/L		08/10/15 10:21	1
Carbazole	0.54	U	1.1	0.54	0.30	ug/L		08/10/15 10:21	1
4-Chloroaniline	0.54	U	2.2	0.54	0.23	ug/L		08/10/15 10:21	1
4-Chloro-3-methylphenol	0.54	U	2.2	0.54	0.23	ug/L		08/10/15 10:21	1
2-Chloronaphthalene	0.54	U	1.1	0.54	0.11	ug/L		08/10/15 10:21	1
2-Chlorophenol	0.54	U	1.1	0.54	0.32	ug/L		08/10/15 10:21	1
4-Chlorophenyl phenyl ether	0.54	U	2.2	0.54	0.33	ug/L		08/10/15 10:21	1
Chrysene	0.11	U	0.22	0.11	0.055	ug/L		08/10/15 10:21	1
Dibenz(a,h)anthracene	0.11	U	0.22	0.11	0.048	ug/L		08/10/15 10:21	1
Dibenzofuran	0.11	U	1.1	0.11	0.022	ug/L		08/10/15 10:21	1
1,2-Dichlorobenzene	0.54	U	1.1	0.54	0.32	ug/L		08/10/15 10:21	1
1,3-Dichlorobenzene	0.54	U	1.1	0.54	0.25	ug/L		08/10/15 10:21	1
1,4-Dichlorobenzene	0.54	U	1.1	0.54	0.37	ug/L		08/10/15 10:21	1
3,3'-Dichlorobenzidine	1.1	U	5.4	1.1	0.40	ug/L		08/10/15 10:21	1
2,4-Dichlorophenol	0.54	U	2.2	0.54	0.21	ug/L		08/10/15 10:21	1
Diethyl phthalate	1.1	U	2.2	1.1	0.65	ug/L		08/10/15 10:21	1
2,4-Dimethylphenol	0.54	U	2.2	0.54	0.27	ug/L		08/10/15 10:21	1
Dimethyl phthalate	0.54	U	2.2	0.54	0.32	ug/L		08/10/15 10:21	1
Di-n-butyl phthalate	5.4	U	5.4	5.4	1.8	ug/L		08/10/15 10:21	1
4,6-Dinitro-2-methylphenol	4.3	U	5.4	4.3	2.6	ug/L		08/10/15 10:21	1
2,4-Dinitrophenol	1.1	U	5.4	1.1	0.35	ug/L		08/10/15 10:21	1
Di-n-octyl phthalate	0.54	U	2.2	0.54	0.25	ug/L		08/10/15 10:21	1
Fluoranthene	0.11	U	0.22	0.11	0.048	ug/L		08/10/15 10:21	1
Fluorene	0.11	U	0.22	0.11	0.044	ug/L		08/10/15 10:21	1
Hexachlorobenzene	0.11	U	0.22	0.11	0.093	ug/L		08/10/15 10:21	1
Hexachlorobutadiene	0.54	U	1.1	0.54	0.29	ug/L		08/10/15 10:21	1
Hexachlorocyclopentadiene	0.54	U	11	0.54	0.26	ug/L		08/10/15 10:21	1
Hexachloroethane	0.54	U	1.1	0.54	0.21	ug/L		08/10/15 10:21	1
Indeno[1,2,3-cd]pyrene	0.11	U	0.22	0.11	0.047	ug/L		08/10/15 10:21	1
Isophorone	0.54	U	1.1	0.54	0.29	ug/L		08/10/15 10:21	1
2-Methylnaphthalene	0.11	U	0.22	0.11	0.098	ug/L		08/10/15 10:21	1
2-Methylphenol	0.54	U	1.1	0.54	0.18	ug/L		08/10/15 10:21	1
3 & 4 Methylphenol	1.1	U	2.2	1.1	0.87	ug/L		08/10/15 10:21	1
Naphthalene	0.11	U	0.22	0.11	0.068	ug/L		08/10/15 10:21	1
2-Nitroaniline	0.54	U	2.2	0.54	0.23	ug/L		08/10/15 10:21	1

Client Sample ID: FWGDETmw-004C-0573-GW
Date Collected: 07/23/15 09:00
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-3
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
3-Nitroaniline	0.54	U	2.2	0.54	0.30	ug/L		08/10/15 10:21	1
4-Nitroaniline	0.54	U	2.2	0.54	0.24	ug/L		08/10/15 10:21	1
2-Nitrophenol	0.54	U	2.2	0.54	0.30	ug/L		08/10/15 10:21	1
4-Nitrophenol	4.3	U	5.4	4.3	0.32	ug/L		08/10/15 10:21	1
N-Nitrosodi-n-propylamine	0.54	U	1.1	0.54	0.26	ug/L		08/10/15 10:21	1
N-Nitrosodiphenylamine	0.54	U	1.1	0.54	0.34	ug/L		08/10/15 10:21	1
2,2'-oxybis[1-chloropropane]	0.54	U	1.1	0.54	0.43	ug/L		08/10/15 10:21	1
Pentachlorophenol	1.1	U	5.4	1.1	0.29	ug/L		08/10/15 10:21	1
Phenanthrene	0.11	U	0.22	0.11	0.067	ug/L		08/10/15 10:21	1
Phenol	1.1	U	1.1	1.1	0.65	ug/L		08/10/15 10:21	1
Pyrene	0.11	U	0.22	0.11	0.046	ug/L		08/10/15 10:21	1
1,2,4-Trichlorobenzene	0.54	U	1.1	0.54	0.30	ug/L		08/10/15 10:21	1
2,4,5-Trichlorophenol	0.54	U	5.4	0.54	0.33	ug/L		08/10/15 10:21	1
2,4,6-Trichlorophenol	0.54	U	5.4	0.54	0.26	ug/L		08/10/15 10:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*80*		*50 - 110*	*07/24/15 06:24*	*08/10/15 10:21*	*1*
2-Fluorophenol (Surr)	*77*		*20 - 110*	*07/24/15 06:24*	*08/10/15 10:21*	*1*
Nitrobenzene-d5 (Surr)	*79*		*40 - 110*	*07/24/15 06:24*	*08/10/15 10:21*	*1*
Phenol-d5 (Surr)	*80*		*10 - 115*	*07/24/15 06:24*	*08/10/15 10:21*	*1*
Terphenyl-d14 (Surr)	*84*		*50 - 135*	*07/24/15 06:24*	*08/10/15 10:21*	*1*
2,4,6-Tribromophenol (Surr)	*81*		*40 - 125*	*07/24/15 06:24*	*08/10/15 10:21*	*1*

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.051	U	0.051	0.051	0.018	ug/L		07/29/15 17:06	1
4,4'-DDE	0.051	U	0.051	0.051	0.012	ug/L		07/29/15 17:06	1
4,4'-DDT	0.051	U	0.051	0.051	0.017	ug/L		07/29/15 17:06	1
Aldrin	0.051	U	0.051	0.051	0.013	ug/L		07/29/15 17:06	1
alpha-BHC	0.051	U	0.051	0.051	0.014	ug/L		07/29/15 17:06	1
alpha-Chlordane	0.051	U	0.051	0.051	0.012	ug/L		07/29/15 17:06	1
beta-BHC	0.051	U	0.051	0.051	0.018	ug/L		07/29/15 17:06	1
delta-BHC	0.051	U	0.051	0.051	0.030	ug/L		07/29/15 17:06	1
Dieldrin	0.051	U	0.051	0.051	0.013	ug/L		07/29/15 17:06	1
Endosulfan II	0.051	U	0.051	0.051	0.015	ug/L		07/29/15 17:06	1
Endosulfan sulfate	0.051	U	0.051	0.051	0.015	ug/L		07/29/15 17:06	1
Endrin	0.051	U	0.051	0.051	0.013	ug/L		07/29/15 17:06	1
Endrin aldehyde	0.051	U	0.051	0.051	0.018	ug/L		07/29/15 17:06	1
Endrin ketone	0.051	U	0.051	0.051	0.016	ug/L		07/29/15 17:06	1
gamma-BHC (Lindane)	0.051	U	0.051	0.051	0.013	ug/L		07/29/15 17:06	1
gamma-Chlordane	0.051	U	0.051	0.051	0.013	ug/L		07/29/15 17:06	1
Heptachlor	0.051	U	0.051	0.051	0.014	ug/L		07/29/15 17:06	1
Heptachlor epoxide	0.051	U	0.051	0.051	0.015	ug/L		07/29/15 17:06	1
Methoxychlor	0.10	U	0.10	0.10	0.013	ug/L		07/29/15 17:06	1
Toxaphene	2.0	U	2.0	2.0	0.20	ug/L		07/29/15 17:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*63*		*30 - 135*	*07/24/15 06:27*	*07/29/15 17:06*	*1*
DCB Decachlorobiphenyl	*64*		*30 - 135*	*07/24/15 06:27*	*07/29/15 17:06*	*1*
Tetrachloro-m-xylene	*75*		*25 - 140*	*07/24/15 06:27*	*07/29/15 17:06*	*1*

Client Sample ID: FWGDETmw-004C-0573-GW

Date Collected: 07/23/15 09:00
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-3

Matrix: Water

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*70*		*25 - 140*	*07/24/15 06:27*	*07/29/15 17:06*	*1*

Method: 8081A - Organochlorine Pesticides (GC) - RE

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Endosulfan I	0.053	U H	0.053	0.053	0.017	ug/L		08/03/15 19:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*52*		*30 - 135*	*07/31/15 05:07*	*08/03/15 19:50*	*1*
DCB Decachlorobiphenyl	*57*		*30 - 135*	*07/31/15 05:07*	*08/03/15 19:50*	*1*
Tetrachloro-m-xylene	*60*		*25 - 140*	*07/31/15 05:07*	*08/03/15 19:50*	*1*
Tetrachloro-m-xylene	*67*		*25 - 140*	*07/31/15 05:07*	*08/03/15 19:50*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.20	U Q	0.51	0.20	0.17	ug/L		07/27/15 18:54	1
Aroclor-1221	0.20	U	0.51	0.20	0.13	ug/L		07/27/15 18:54	1
Aroclor-1232	0.20	U	0.51	0.20	0.16	ug/L		07/27/15 18:54	1
Aroclor-1242	0.41	U	0.51	0.41	0.22	ug/L		07/27/15 18:54	1
Aroclor-1248	0.20	U	0.51	0.20	0.10	ug/L		07/27/15 18:54	1
Aroclor-1254	0.20	U	0.51	0.20	0.16	ug/L		07/27/15 18:54	1
Aroclor-1260	0.20	U Q	0.51	0.20	0.17	ug/L		07/27/15 18:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*77*		*40 - 140*	*07/24/15 06:29*	*07/27/15 18:54*	*1*
Tetrachloro-m-xylene	*85*		*40 - 140*	*07/24/15 06:29*	*07/27/15 18:54*	*1*
DCB Decachlorobiphenyl	*80*		*40 - 135*	*07/24/15 06:29*	*07/27/15 18:54*	*1*
DCB Decachlorobiphenyl	*80*		*40 - 135*	*07/24/15 06:29*	*07/27/15 18:54*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 05:52	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.031	ug/L		07/31/15 19:18	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 19:18	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 19:18	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/31/15 19:18	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/31/15 19:18	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		07/31/15 19:18	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.089	ug/L		07/31/15 19:18	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		07/31/15 19:18	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.089	ug/L		07/31/15 19:18	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 19:18	1
HMX	2.8	M	0.15	0.051	0.037	ug/L		07/31/15 19:18	1
RDX	2.5	M	0.15	0.051	0.037	ug/L		07/31/15 19:18	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 19:18	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 19:18	1
Nitroglycerin	0.51	U	0.66	0.51	0.33	ug/L		07/31/15 19:18	1
PETN	0.51	U	0.66	0.51	0.30	ug/L		07/31/15 19:18	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53558-1

Client Sample ID: FWGDETmw-004C-0573-GW
Date Collected: 07/23/15 09:00
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-3
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*95*		*79 - 111*	*07/29/15 14:19*	*07/31/15 19:18*	*1*
3,4-Dinitrotoluene	*109*		*79 - 111*	*07/29/15 14:19*	*08/04/15 19:02*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.010	0.0050	mg/L		08/05/15 11:42	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/13/15 09:04	1

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Client Sample ID: FWGDETmw-004C-0573-GF

Lab Sample ID: 240-53558-4

Date Collected: 07/23/15 09:00
Matrix: Water
Date Received: 07/23/15 18:20

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 16:05	1
Chromium	**1.4**	**J**	7.0	4.0	0.55	ug/L		07/27/15 16:05	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 16:05	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 16:05	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 16:05	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 16:05	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 16:05	1
Barium	**63**	**J**	200	5.0	1.0	ug/L		07/27/15 16:05	1
Calcium	**130000**		5000	1000	260	ug/L		07/27/15 16:05	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 16:05	1
Magnesium	**25000**		5000	300	55	ug/L		07/27/15 16:05	1
Manganese	**4.1**	**J**	15	5.0	0.46	ug/L		07/27/15 16:05	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 16:05	1
Potassium	**1900**	**J**	5000	900	70	ug/L		07/27/15 16:05	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/29/15 11:35	1
Antimony	**0.37**	**J**	2.0	1.0	0.33	ug/L		07/29/15 11:35	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/29/15 11:35	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/29/15 11:35	1
Iron	100	U	150	100	44	ug/L		07/29/15 11:35	1
Sodium	**2400**		1000	400	160	ug/L		07/29/15 11:35	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/29/15 11:35	1
Zinc	50	U	50	50	27	ug/L		07/29/15 11:35	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 16:10	1

Client Sample ID: FWGDA2mw-115-0571-GW

Lab Sample ID: 240-53558-5

Date Collected: 07/23/15 10:22
Matrix: Water
Date Received: 07/23/15 18:20

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.3	U	5.3	5.3	1.8	ug/L		08/10/15 12:30	1
Butyl benzyl phthalate	0.53	U	5.3	0.53	0.27	ug/L		08/10/15 12:30	1
Diethyl phthalate	1.1	U	2.1	1.1	0.63	ug/L		08/10/15 12:30	1
Dimethyl phthalate	0.53	U	2.1	0.53	0.31	ug/L		08/10/15 12:30	1
Di-n-butyl phthalate	5.3	U	5.3	5.3	1.8	ug/L		08/10/15 12:30	1
Di-n-octyl phthalate	0.53	U	2.1	0.53	0.24	ug/L		08/10/15 12:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*67*		*50 - 110*	*07/24/15 06:24*	*08/10/15 12:30*	*1*
2-Fluorophenol (Surr)	*69*		*20 - 110*	*07/24/15 06:24*	*08/10/15 12:30*	*1*
Nitrobenzene-d5 (Surr)	*65*		*40 - 110*	*07/24/15 06:24*	*08/10/15 12:30*	*1*
Phenol-d5 (Surr)	*76*		*10 - 115*	*07/24/15 06:24*	*08/10/15 12:30*	*1*
Terphenyl-d14 (Surr)	*88*		*50 - 135*	*07/24/15 06:24*	*08/10/15 12:30*	*1*
2,4,6-Tribromophenol (Surr)	*81*		*40 - 125*	*07/24/15 06:24*	*08/10/15 12:30*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 06:10	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		07/31/15 20:01	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 20:01	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 20:01	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/31/15 20:01	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/31/15 20:01	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		07/31/15 20:01	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/31/15 20:01	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		07/31/15 20:01	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/31/15 20:01	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 20:01	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		07/31/15 20:01	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		07/31/15 20:01	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 20:01	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 20:01	1
Nitroglycerin	0.51	U	0.66	0.51	0.34	ug/L		07/31/15 20:01	1
PETN	0.51	U	0.66	0.51	0.31	ug/L		07/31/15 20:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*95*		*79 - 111*	*07/29/15 14:19*	*07/31/15 20:01*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/13/15 09:10	1

Client Sample ID: FWGDA2mw-115-0571-GF

Lab Sample ID: 240-53558-6

Date Collected: 07/23/15 10:22
Matrix: Water
Date Received: 07/23/15 18:20

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 16:09	1
Chromium	**1.2**	**J**	7.0	4.0	0.55	ug/L		07/27/15 16:09	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 16:09	1
Lead	**2.7**	**J**	10	5.0	1.9	ug/L		07/27/15 16:09	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 16:09	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 16:09	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 16:09	1
Barium	**18**	**J**	200	5.0	1.0	ug/L		07/27/15 16:09	1
Calcium	**87000**		5000	1000	260	ug/L		07/27/15 16:09	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 16:09	1
Magnesium	**24000**		5000	300	55	ug/L		07/27/15 16:09	1
Manganese	**86**		15	5.0	0.46	ug/L		07/27/15 16:09	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 16:09	1
Potassium	**3000**	**J**	5000	900	70	ug/L		07/27/15 16:09	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/29/15 11:39	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/29/15 11:39	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/29/15 11:39	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/29/15 11:39	1
Iron	**690**		150	100	44	ug/L		07/29/15 11:39	1
Sodium	**11000**		1000	400	160	ug/L		07/29/15 11:39	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/29/15 11:39	1
Zinc	50	U	50	50	27	ug/L		07/29/15 11:39	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 16:08	1

Client Sample ID: FWGDETmw-003C-0572-GW

Lab Sample ID: 240-53558-7

Date Collected: 07/23/15 11:18
Matrix: Water
Date Received: 07/23/15 18:20

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 15:36	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	0.22	ug/L		08/03/15 15:36	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.24	ug/L		08/03/15 15:36	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.30	ug/L		08/03/15 15:36	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.45	ug/L		08/03/15 15:36	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.23	ug/L		08/03/15 15:36	1
1,2-Dichloroethene, Total	1.0	U	2.0	1.0	0.20	ug/L		08/03/15 15:36	1
1,2-Dichloropropane	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 15:36	1
2-Hexanone	2.0	U	10	2.0	0.48	ug/L		08/03/15 15:36	1
Bromochloromethane	1.0	U	1.0	1.0	0.50	ug/L		08/03/15 15:36	1
Acetone	2.0	U	10	2.0	0.94	ug/L		08/03/15 15:36	1
Benzene	1.0	U	1.0	1.0	0.35	ug/L		08/03/15 15:36	1
Bromoform	1.0	U	1.0	1.0	0.56	ug/L		08/03/15 15:36	1
Bromomethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 15:36	1
Carbon disulfide	1.0	U	1.0	1.0	0.38	ug/L		08/03/15 15:36	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.43	ug/L		08/03/15 15:36	1
Chlorobenzene	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 15:36	1
Chloroethane	1.0	U	1.0	1.0	0.32	ug/L		08/03/15 15:36	1
Chloroform	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 15:36	1
Chloromethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 15:36	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	0.26	ug/L		08/03/15 15:36	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.46	ug/L		08/03/15 15:36	1
Bromodichloromethane	1.0	U	1.0	1.0	0.29	ug/L		08/03/15 15:36	1
Ethylbenzene	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 15:36	1
1,2-Dibromoethane	1.0	U	1.0	1.0	0.32	ug/L		08/03/15 15:36	1
m-Xylene & p-Xylene	1.0	U	2.0	1.0	0.24	ug/L		08/03/15 15:36	1
2-Butanone (MEK)	2.0	U	10	2.0	0.53	ug/L		08/03/15 15:36	1
4-Methyl-2-pentanone (MIBK)	2.0	U	10	2.0	0.99	ug/L		08/03/15 15:36	1
Methylene Chloride	1.0	U	1.0	1.0	0.33	ug/L		08/04/15 16:12	1
o-Xylene	0.50	U	1.0	0.50	0.25	ug/L		08/03/15 15:36	1
Styrene	0.50	U	1.0	0.50	0.45	ug/L		08/03/15 15:36	1
Tetrachloroethene	1.0	U	1.0	1.0	0.31	ug/L		08/03/15 15:36	1
Toluene	1.0	U	1.0	1.0	0.23	ug/L		08/03/15 15:36	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	0.30	ug/L		08/03/15 15:36	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.56	ug/L		08/03/15 15:36	1
Trichloroethene	1.0	U	1.0	1.0	0.22	ug/L		08/03/15 15:36	1
Vinyl chloride	1.0	U	1.0	1.0	0.29	ug/L		08/03/15 15:36	1
Xylenes, Total	2.0	U	2.0	2.0	0.52	ug/L		08/03/15 15:36	1
Dibromochloromethane	1.0	U	1.0	1.0	0.43	ug/L		08/03/15 15:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*70 - 120*		*08/03/15 15:36*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 120*		*08/04/15 16:12*	*1*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*		*08/03/15 15:36*	*1*
4-Bromofluorobenzene (Surr)	*87*		*75 - 120*		*08/04/15 16:12*	*1*
Toluene-d8 (Surr)	*89*		*85 - 120*		*08/03/15 15:36*	*1*
Toluene-d8 (Surr)	*94*		*85 - 120*		*08/04/15 16:12*	*1*
Dibromofluoromethane (Surr)	*88*		*85 - 115*		*08/03/15 15:36*	*1*
Dibromofluoromethane (Surr)	*95*		*85 - 115*		*08/04/15 16:12*	*1*

Client Sample ID: FWGDETmw-003C-0572-GW
Date Collected: 07/23/15 11:18
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-7
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.097	U	0.19	0.097	0.043	ug/L		08/10/15 10:47	1
Acenaphthylene	0.097	U	0.19	0.097	0.047	ug/L		08/10/15 10:47	1
Anthracene	0.097	U	0.19	0.097	0.085	ug/L		08/10/15 10:47	1
Benzo[a]anthracene	0.097	U	0.19	0.097	0.029	ug/L		08/10/15 10:47	1
Benzo[a]pyrene	0.097	U	0.19	0.097	0.050	ug/L		08/10/15 10:47	1
Benzo[b]fluoranthene	0.097	U	0.19	0.097	0.038	ug/L		08/10/15 10:47	1
Benzo[g,h,i]perylene	0.097	U	0.19	0.097	0.045	ug/L		08/10/15 10:47	1
Benzoic acid	19	U	24	19	9.7	ug/L		08/10/15 10:47	1
Benzo[k]fluoranthene	0.097	U	0.19	0.097	0.043	ug/L		08/10/15 10:47	1
Benzyl alcohol	0.49	U	4.9	0.49	0.37	ug/L		08/10/15 10:47	1
Bis(2-chloroethoxy)methane	0.49	U	0.97	0.49	0.31	ug/L		08/10/15 10:47	1
Bis(2-chloroethyl)ether	0.097	U	0.97	0.097	0.097	ug/L		08/10/15 10:47	1
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		08/10/15 10:47	1
4-Bromophenyl phenyl ether	0.49	U	1.9	0.49	0.21	ug/L		08/10/15 10:47	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		08/10/15 10:47	1
Carbazole	0.49	U	0.97	0.49	0.27	ug/L		08/10/15 10:47	1
4-Chloroaniline	0.49	U	1.9	0.49	0.20	ug/L		08/10/15 10:47	1
4-Chloro-3-methylphenol	0.49	U	1.9	0.49	0.20	ug/L		08/10/15 10:47	1
2-Chloronaphthalene	0.49	U	0.97	0.49	0.097	ug/L		08/10/15 10:47	1
2-Chlorophenol	0.49	U	0.97	0.49	0.28	ug/L		08/10/15 10:47	1
4-Chlorophenyl phenyl ether	0.49	U	1.9	0.49	0.29	ug/L		08/10/15 10:47	1
Chrysene	0.097	U	0.19	0.097	0.049	ug/L		08/10/15 10:47	1
Dibenz(a,h)anthracene	0.097	U	0.19	0.097	0.043	ug/L		08/10/15 10:47	1
Dibenzofuran	0.097	U	0.97	0.097	0.019	ug/L		08/10/15 10:47	1
1,2-Dichlorobenzene	0.49	U	0.97	0.49	0.28	ug/L		08/10/15 10:47	1
1,3-Dichlorobenzene	0.49	U	0.97	0.49	0.22	ug/L		08/10/15 10:47	1
1,4-Dichlorobenzene	0.49	U	0.97	0.49	0.33	ug/L		08/10/15 10:47	1
3,3'-Dichlorobenzidine	0.97	U	4.9	0.97	0.36	ug/L		08/10/15 10:47	1
2,4-Dichlorophenol	0.49	U	1.9	0.49	0.18	ug/L		08/10/15 10:47	1
Diethyl phthalate	0.97	U	1.9	0.97	0.58	ug/L		08/10/15 10:47	1
2,4-Dimethylphenol	0.49	U	1.9	0.49	0.24	ug/L		08/10/15 10:47	1
Dimethyl phthalate	0.49	U	1.9	0.49	0.28	ug/L		08/10/15 10:47	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		08/10/15 10:47	1
4,6-Dinitro-2-methylphenol	3.9	U	4.9	3.9	2.3	ug/L		08/10/15 10:47	1
2,4-Dinitrophenol	0.97	U	4.9	0.97	0.31	ug/L		08/10/15 10:47	1
Di-n-octyl phthalate	0.49	U	1.9	0.49	0.22	ug/L		08/10/15 10:47	1
Fluoranthene	0.097	U	0.19	0.097	0.043	ug/L		08/10/15 10:47	1
Fluorene	0.097	U	0.19	0.097	0.039	ug/L		08/10/15 10:47	1
Hexachlorobenzene	0.097	U	0.19	0.097	0.083	ug/L		08/10/15 10:47	1
Hexachlorobutadiene	0.49	U	0.97	0.49	0.26	ug/L		08/10/15 10:47	1
Hexachlorocyclopentadiene	0.49	U	9.7	0.49	0.23	ug/L		08/10/15 10:47	1
Hexachloroethane	0.49	U	0.97	0.49	0.18	ug/L		08/10/15 10:47	1
Indeno[1,2,3-cd]pyrene	0.097	U	0.19	0.097	0.042	ug/L		08/10/15 10:47	1
Isophorone	0.49	U	0.97	0.49	0.26	ug/L		08/10/15 10:47	1
2-Methylnaphthalene	0.097	U	0.19	0.097	0.088	ug/L		08/10/15 10:47	1
2-Methylphenol	0.49	U	0.97	0.49	0.17	ug/L		08/10/15 10:47	1
3 & 4 Methylphenol	0.97	U	1.9	0.97	0.78	ug/L		08/10/15 10:47	1
Naphthalene	0.097	U	0.19	0.097	0.061	ug/L		08/10/15 10:47	1
2-Nitroaniline	0.49	U	1.9	0.49	0.20	ug/L		08/10/15 10:47	1

Client Sample ID: FWGDETmw-003C-0572-GW — **Lab Sample ID: 240-53558-7**
Date Collected: 07/23/15 11:18 — **Matrix: Water**
Date Received: 07/23/15 18:20

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
3-Nitroaniline	0.49	U	1.9	0.49	0.27	ug/L		08/10/15 10:47	1
4-Nitroaniline	0.49	U	1.9	0.49	0.21	ug/L		08/10/15 10:47	1
2-Nitrophenol	0.49	U	1.9	0.49	0.27	ug/L		08/10/15 10:47	1
4-Nitrophenol	3.9	U	4.9	3.9	0.28	ug/L		08/10/15 10:47	1
N-Nitrosodi-n-propylamine	0.49	U	0.97	0.49	0.23	ug/L		08/10/15 10:47	1
N-Nitrosodiphenylamine	0.49	U	0.97	0.49	0.30	ug/L		08/10/15 10:47	1
2,2'-oxybis[1-chloropropane]	0.49	U	0.97	0.49	0.39	ug/L		08/10/15 10:47	1
Pentachlorophenol	0.97	U	4.9	0.97	0.26	ug/L		08/10/15 10:47	1
Phenanthrene	0.097	U	0.19	0.097	0.060	ug/L		08/10/15 10:47	1
Phenol	0.97	U	0.97	0.97	0.58	ug/L		08/10/15 10:47	1
Pyrene	0.097	U	0.19	0.097	0.041	ug/L		08/10/15 10:47	1
1,2,4-Trichlorobenzene	0.49	U	0.97	0.49	0.27	ug/L		08/10/15 10:47	1
2,4,5-Trichlorophenol	0.49	U	4.9	0.49	0.29	ug/L		08/10/15 10:47	1
2,4,6-Trichlorophenol	0.49	U	4.9	0.49	0.23	ug/L		08/10/15 10:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*79*		*50 - 110*	*07/24/15 06:24*	*08/10/15 10:47*	*1*
2-Fluorophenol (Surr)	*78*		*20 - 110*	*07/24/15 06:24*	*08/10/15 10:47*	*1*
Nitrobenzene-d5 (Surr)	*78*		*40 - 110*	*07/24/15 06:24*	*08/10/15 10:47*	*1*
Phenol-d5 (Surr)	*85*		*10 - 115*	*07/24/15 06:24*	*08/10/15 10:47*	*1*
Terphenyl-d14 (Surr)	*92*		*50 - 135*	*07/24/15 06:24*	*08/10/15 10:47*	*1*
2,4,6-Tribromophenol (Surr)	*85*		*40 - 125*	*07/24/15 06:24*	*08/10/15 10:47*	*1*

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.048	U	0.048	0.048	0.017	ug/L		07/29/15 17:28	1
4,4'-DDE	0.048	U	0.048	0.048	0.011	ug/L		07/29/15 17:28	1
4,4'-DDT	0.048	U	0.048	0.048	0.016	ug/L		07/29/15 17:28	1
Aldrin	0.048	U	0.048	0.048	0.012	ug/L		07/29/15 17:28	1
alpha-BHC	0.048	U	0.048	0.048	0.013	ug/L		07/29/15 17:28	1
alpha-Chlordane	0.048	U	0.048	0.048	0.011	ug/L		07/29/15 17:28	1
beta-BHC	0.048	U	0.048	0.048	0.017	ug/L		07/29/15 17:28	1
delta-BHC	0.048	U	0.048	0.048	0.028	ug/L		07/29/15 17:28	1
Dieldrin	0.048	U	0.048	0.048	0.012	ug/L		07/29/15 17:28	1
Endosulfan II	0.048	U	0.048	0.048	0.014	ug/L		07/29/15 17:28	1
Endosulfan sulfate	0.048	U	0.048	0.048	0.014	ug/L		07/29/15 17:28	1
Endrin	0.048	U	0.048	0.048	0.012	ug/L		07/29/15 17:28	1
Endrin aldehyde	0.048	U	0.048	0.048	0.017	ug/L		07/29/15 17:28	1
Endrin ketone	0.048	U	0.048	0.048	0.015	ug/L		07/29/15 17:28	1
gamma-BHC (Lindane)	0.048	U	0.048	0.048	0.012	ug/L		07/29/15 17:28	1
gamma-Chlordane	0.048	U	0.048	0.048	0.012	ug/L		07/29/15 17:28	1
Heptachlor	0.048	U	0.048	0.048	0.013	ug/L		07/29/15 17:28	1
Heptachlor epoxide	0.048	U	0.048	0.048	0.014	ug/L		07/29/15 17:28	1
Methoxychlor	0.095	U	0.095	0.095	0.012	ug/L		07/29/15 17:28	1
Toxaphene	1.9	U	1.9	1.9	0.19	ug/L		07/29/15 17:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*39*		*30 - 135*	*07/24/15 06:27*	*07/29/15 17:28*	*1*
DCB Decachlorobiphenyl	*39*		*30 - 135*	*07/24/15 06:27*	*07/29/15 17:28*	*1*
Tetrachloro-m-xylene	*71*		*25 - 140*	*07/24/15 06:27*	*07/29/15 17:28*	*1*

Client Sample ID: FWGDETmw-003C-0572-GW

Date Collected: 07/23/15 11:18
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-7
Matrix: Water

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*74*		*25 - 140*	*07/24/15 06:27*	*07/29/15 17:28*	*1*

Method: 8081A - Organochlorine Pesticides (GC) - RE

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Endosulfan I	0.053	U H	0.053	0.053	0.017	ug/L		08/03/15 20:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*59*		*30 - 135*	*07/31/15 05:07*	*08/03/15 20:12*	*1*
DCB Decachlorobiphenyl	*62*		*30 - 135*	*07/31/15 05:07*	*08/03/15 20:12*	*1*
Tetrachloro-m-xylene	*67*		*25 - 140*	*07/31/15 05:07*	*08/03/15 20:12*	*1*
Tetrachloro-m-xylene	*69*		*25 - 140*	*07/31/15 05:07*	*08/03/15 20:12*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.19	U Q	0.48	0.19	0.16	ug/L		07/27/15 19:10	1
Aroclor-1221	0.19	U	0.48	0.19	0.12	ug/L		07/27/15 19:10	1
Aroclor-1232	0.19	U	0.48	0.19	0.15	ug/L		07/27/15 19:10	1
Aroclor-1242	0.38	U	0.48	0.38	0.21	ug/L		07/27/15 19:10	1
Aroclor-1248	0.19	U	0.48	0.19	0.095	ug/L		07/27/15 19:10	1
Aroclor-1254	0.19	U	0.48	0.19	0.15	ug/L		07/27/15 19:10	1
Aroclor-1260	0.19	U Q	0.48	0.19	0.16	ug/L		07/27/15 19:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*88*		*40 - 140*	*07/24/15 06:29*	*07/27/15 19:10*	*1*
Tetrachloro-m-xylene	*91*		*40 - 140*	*07/24/15 06:29*	*07/27/15 19:10*	*1*
DCB Decachlorobiphenyl	*50*		*40 - 135*	*07/24/15 06:29*	*07/27/15 19:10*	*1*
DCB Decachlorobiphenyl	*51*		*40 - 135*	*07/24/15 06:29*	*07/27/15 19:10*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 06:28	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		07/31/15 20:45	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 20:45	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 20:45	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/31/15 20:45	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/31/15 20:45	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		07/31/15 20:45	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/31/15 20:45	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.059	ug/L		07/31/15 20:45	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/31/15 20:45	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 20:45	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		07/31/15 20:45	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		07/31/15 20:45	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 20:45	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 20:45	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		07/31/15 20:45	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		07/31/15 20:45	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53558-1

Client Sample ID: FWGDETmw-003C-0572-GW
Date Collected: 07/23/15 11:18
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-7
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*97*		*79 - 111*	*07/29/15 14:19*	*07/31/15 20:45*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.010	U J	0.010	0.010	0.0050	mg/L		08/05/15 11:47	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/13/15 09:12	1

8

Client Sample ID: FWGDETmw-003C-0572-GF

Lab Sample ID: 240-53558-8

Date Collected: 07/23/15 11:18
Matrix: Water
Date Received: 07/23/15 18:20

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**10**		10	10	2.9	ug/L		07/27/15 16:13	1
Chromium	**1.1**	**J**	7.0	4.0	0.55	ug/L		07/27/15 16:13	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 16:13	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 16:13	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 16:13	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 16:13	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 16:13	1
Barium	**44**	**J**	200	5.0	1.0	ug/L		07/27/15 16:13	1
Calcium	**86000**		5000	1000	260	ug/L		07/27/15 16:13	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 16:13	1
Magnesium	**31000**		5000	300	55	ug/L		07/27/15 16:13	1
Manganese	**220**		15	5.0	0.46	ug/L		07/27/15 16:13	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 16:13	1
Potassium	**1900**	**J**	5000	900	70	ug/L		07/27/15 16:13	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/29/15 11:50	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/29/15 11:50	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/29/15 11:50	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/29/15 11:50	1
Iron	**1800**		150	100	44	ug/L		07/29/15 11:50	1
Sodium	**12000**		1000	400	160	ug/L		07/29/15 11:50	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/29/15 11:50	1
Zinc	50	U	50	50	27	ug/L		07/29/15 11:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 15:48	1

Client Sample ID: FWGDA2mw-DUP1-0617-GW

Lab Sample ID: 240-53558-9

Date Collected: 07/23/15 11:22
Matrix: Water
Date Received: 07/23/15 18:20

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.2	U	5.2	5.2	1.8	ug/L		08/10/15 13:22	1
Butyl benzyl phthalate	0.52	U	5.2	0.52	0.27	ug/L		08/10/15 13:22	1
Diethyl phthalate	1.0	U	2.1	1.0	0.62	ug/L		08/10/15 13:22	1
Dimethyl phthalate	0.52	U	2.1	0.52	0.30	ug/L		08/10/15 13:22	1
Di-n-butyl phthalate	5.2	U	5.2	5.2	1.8	ug/L		08/10/15 13:22	1
Di-n-octyl phthalate	0.52	U	2.1	0.52	0.24	ug/L		08/10/15 13:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*75*		*50 - 110*	*07/24/15 06:24*	*08/10/15 13:22*	*1*
2-Fluorophenol (Surr)	*70*		*20 - 110*	*07/24/15 06:24*	*08/10/15 13:22*	*1*
Nitrobenzene-d5 (Surr)	*71*		*40 - 110*	*07/24/15 06:24*	*08/10/15 13:22*	*1*
Phenol-d5 (Surr)	*76*		*10 - 115*	*07/24/15 06:24*	*08/10/15 13:22*	*1*
Terphenyl-d14 (Surr)	*92*		*50 - 135*	*07/24/15 06:24*	*08/10/15 13:22*	*1*
2,4,6-Tribromophenol (Surr)	*89*		*40 - 125*	*07/24/15 06:24*	*08/10/15 13:22*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 06:45	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		07/31/15 22:56	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 22:56	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 22:56	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/31/15 22:56	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/31/15 22:56	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		07/31/15 22:56	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/31/15 22:56	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		07/31/15 22:56	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		07/31/15 22:56	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 22:56	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		07/31/15 22:56	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		07/31/15 22:56	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 22:56	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 22:56	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		07/31/15 22:56	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		07/31/15 22:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*94*		*79 - 111*	*07/29/15 14:19*	*07/31/15 22:56*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/13/15 09:14	1

Client Sample ID: FWGDA2mw-DUP1-0617-GF

Lab Sample ID: 240-53558-10

Date Collected: 07/23/15 11:22
Matrix: Water
Date Received: 07/23/15 18:20

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**3.5**	J	10	10	2.9	ug/L		07/27/15 15:45	1
Chromium	**0.97**	J	7.0	4.0	0.55	ug/L		07/27/15 15:45	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 15:45	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 15:45	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 15:45	1
Silver	5.0	U J	7.0	5.0	0.92	ug/L		07/27/15 15:45	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 15:45	1
Barium	**20**	J	200	5.0	1.0	ug/L		07/27/15 15:45	1
Calcium	**89000**		5000	1000	260	ug/L		07/27/15 15:45	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 15:45	1
Magnesium	**25000**	J	5000	300	55	ug/L		07/27/15 15:45	1
Manganese	**89**		15	5.0	0.46	ug/L		07/27/15 15:45	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 15:45	1
Potassium	**3200**	J	5000	900	70	ug/L		07/27/15 15:45	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/29/15 11:17	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/29/15 11:17	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/29/15 11:17	1
Cadmium	**0.44**	J	2.0	1.0	0.40	ug/L		07/29/15 11:17	1
Iron	**690**		150	100	44	ug/L		07/29/15 11:17	1
Sodium	**10000**		1000	400	160	ug/L		07/29/15 11:17	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/29/15 11:17	1
Zinc	50	U J	50	50	27	ug/L		07/29/15 11:17	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 15:40	1

Client Sample ID: FWGEQUIPRINSE3-0624-GW

Date Collected: 07/22/15 17:00
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-11

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 15:58	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	0.22	ug/L		08/03/15 15:58	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.24	ug/L		08/03/15 15:58	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.30	ug/L		08/03/15 15:58	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.45	ug/L		08/03/15 15:58	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.23	ug/L		08/03/15 15:58	1
1,2-Dichloroethene, Total	1.0	U	2.0	1.0	0.20	ug/L		08/03/15 15:58	1
1,2-Dichloropropane	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 15:58	1
2-Hexanone	2.0	U	10	2.0	0.48	ug/L		08/03/15 15:58	1
Bromochloromethane	1.0	U	1.0	1.0	0.50	ug/L		08/03/15 15:58	1
Acetone	**3.5**	**J**	10	2.0	0.94	ug/L		08/03/15 15:58	1
Benzene	1.0	U	1.0	1.0	0.35	ug/L		08/03/15 15:58	1
Bromoform	1.0	U	1.0	1.0	0.56	ug/L		08/03/15 15:58	1
Bromomethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 15:58	1
Carbon disulfide	1.0	U	1.0	1.0	0.38	ug/L		08/03/15 15:58	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.43	ug/L		08/03/15 15:58	1
Chlorobenzene	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 15:58	1
Chloroethane	1.0	U	1.0	1.0	0.32	ug/L		08/03/15 15:58	1
Chloroform	**0.34**	**J**	1.0	1.0	0.25	ug/L		08/03/15 15:58	1
Chloromethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 15:58	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	0.26	ug/L		08/03/15 15:58	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.46	ug/L		08/03/15 15:58	1
Bromodichloromethane	1.0	U	1.0	1.0	0.29	ug/L		08/03/15 15:58	1
Ethylbenzene	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 15:58	1
1,2-Dibromoethane	1.0	U	1.0	1.0	0.32	ug/L		08/03/15 15:58	1
m-Xylene & p-Xylene	1.0	U	2.0	1.0	0.24	ug/L		08/03/15 15:58	1
2-Butanone (MEK)	**4.6**	**J**	10	2.0	0.53	ug/L		08/03/15 15:58	1
4-Methyl-2-pentanone (MIBK)	2.0	U	10	2.0	0.99	ug/L		08/03/15 15:58	1
Methylene Chloride	**0.86**	**J**	1.0	1.0	0.33	ug/L		08/04/15 16:35	1
o-Xylene	0.50	U	1.0	0.50	0.25	ug/L		08/03/15 15:58	1
Styrene	0.50	U	1.0	0.50	0.45	ug/L		08/03/15 15:58	1
Tetrachloroethene	1.0	U	1.0	1.0	0.31	ug/L		08/03/15 15:58	1
Toluene	1.0	U	1.0	1.0	0.23	ug/L		08/03/15 15:58	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	0.30	ug/L		08/03/15 15:58	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.56	ug/L		08/03/15 15:58	1
Trichloroethene	1.0	U	1.0	1.0	0.22	ug/L		08/03/15 15:58	1
Vinyl chloride	1.0	U	1.0	1.0	0.29	ug/L		08/03/15 15:58	1
Xylenes, Total	2.0	U	2.0	2.0	0.52	ug/L		08/03/15 15:58	1
Dibromochloromethane	1.0	U	1.0	1.0	0.43	ug/L		08/03/15 15:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*70 - 120*		*08/03/15 15:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 120*		*08/04/15 16:35*	*1*
4-Bromofluorobenzene (Surr)	*93*		*75 - 120*		*08/03/15 15:58*	*1*
4-Bromofluorobenzene (Surr)	*87*		*75 - 120*		*08/04/15 16:35*	*1*
Toluene-d8 (Surr)	*89*		*85 - 120*		*08/03/15 15:58*	*1*
Toluene-d8 (Surr)	*90*		*85 - 120*		*08/04/15 16:35*	*1*
Dibromofluoromethane (Surr)	*88*		*85 - 115*		*08/03/15 15:58*	*1*
Dibromofluoromethane (Surr)	*93*		*85 - 115*		*08/04/15 16:35*	*1*

Client Sample ID: FWGEQUIPRINSE3-0624-GW
Date Collected: 07/22/15 17:00
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-11
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.096	U	0.19	0.096	0.043	ug/L		08/10/15 11:13	1
Acenaphthylene	0.096	U	0.19	0.096	0.046	ug/L		08/10/15 11:13	1
Anthracene	0.096	U	0.19	0.096	0.085	ug/L		08/10/15 11:13	1
Benzo[a]anthracene	0.096	U	0.19	0.096	0.028	ug/L		08/10/15 11:13	1
Benzo[a]pyrene	0.096	U	0.19	0.096	0.049	ug/L		08/10/15 11:13	1
Benzo[b]fluoranthene	0.096	U	0.19	0.096	0.038	ug/L		08/10/15 11:13	1
Benzo[g,h,i]perylene	0.096	U	0.19	0.096	0.045	ug/L		08/10/15 11:13	1
Benzoic acid	19	U	24	19	9.6	ug/L		08/10/15 11:13	1
Benzo[k]fluoranthene	0.096	U	0.19	0.096	0.043	ug/L		08/10/15 11:13	1
Benzyl alcohol	0.48	U	4.8	0.48	0.37	ug/L		08/10/15 11:13	1
Bis(2-chloroethoxy)methane	0.48	U	0.96	0.48	0.31	ug/L		08/10/15 11:13	1
Bis(2-chloroethyl)ether	0.096	U	0.96	0.096	0.096	ug/L		08/10/15 11:13	1
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/10/15 11:13	1
4-Bromophenyl phenyl ether	0.48	U	1.9	0.48	0.21	ug/L		08/10/15 11:13	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		08/10/15 11:13	1
Carbazole	0.48	U	0.96	0.48	0.27	ug/L		08/10/15 11:13	1
4-Chloroaniline	0.48	U	1.9	0.48	0.20	ug/L		08/10/15 11:13	1
4-Chloro-3-methylphenol	0.48	U	1.9	0.48	0.20	ug/L		08/10/15 11:13	1
2-Chloronaphthalene	0.48	U	0.96	0.48	0.096	ug/L		08/10/15 11:13	1
2-Chlorophenol	0.48	U	0.96	0.48	0.28	ug/L		08/10/15 11:13	1
4-Chlorophenyl phenyl ether	0.48	U	1.9	0.48	0.29	ug/L		08/10/15 11:13	1
Chrysene	0.096	U	0.19	0.096	0.048	ug/L		08/10/15 11:13	1
Dibenz(a,h)anthracene	0.096	U	0.19	0.096	0.043	ug/L		08/10/15 11:13	1
Dibenzofuran	0.096	U	0.96	0.096	0.019	ug/L		08/10/15 11:13	1
1,2-Dichlorobenzene	0.48	U	0.96	0.48	0.28	ug/L		08/10/15 11:13	1
1,3-Dichlorobenzene	0.48	U	0.96	0.48	0.22	ug/L		08/10/15 11:13	1
1,4-Dichlorobenzene	0.48	U	0.96	0.48	0.33	ug/L		08/10/15 11:13	1
3,3'-Dichlorobenzidine	0.96	U	4.8	0.96	0.36	ug/L		08/10/15 11:13	1
2,4-Dichlorophenol	0.48	U	1.9	0.48	0.18	ug/L		08/10/15 11:13	1
Diethyl phthalate	0.96	U	1.9	0.96	0.58	ug/L		08/10/15 11:13	1
2,4-Dimethylphenol	0.48	U	1.9	0.48	0.24	ug/L		08/10/15 11:13	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		08/10/15 11:13	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/10/15 11:13	1
4,6-Dinitro-2-methylphenol	3.8	U	4.8	3.8	2.3	ug/L		08/10/15 11:13	1
2,4-Dinitrophenol	0.96	U	4.8	0.96	0.31	ug/L		08/10/15 11:13	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		08/10/15 11:13	1
Fluoranthene	0.096	U	0.19	0.096	0.043	ug/L		08/10/15 11:13	1
Fluorene	0.096	U	0.19	0.096	0.039	ug/L		08/10/15 11:13	1
Hexachlorobenzene	0.096	U	0.19	0.096	0.082	ug/L		08/10/15 11:13	1
Hexachlorobutadiene	0.48	U	0.96	0.48	0.26	ug/L		08/10/15 11:13	1
Hexachlorocyclopentadiene	0.48	U	9.6	0.48	0.23	ug/L		08/10/15 11:13	1
Hexachloroethane	0.48	U	0.96	0.48	0.18	ug/L		08/10/15 11:13	1
Indeno[1,2,3-cd]pyrene	0.096	U	0.19	0.096	0.042	ug/L		08/10/15 11:13	1
Isophorone	0.48	U	0.96	0.48	0.26	ug/L		08/10/15 11:13	1
2-Methylnaphthalene	0.096	U	0.19	0.096	0.087	ug/L		08/10/15 11:13	1
2-Methylphenol	0.48	U	0.96	0.48	0.16	ug/L		08/10/15 11:13	1
3 & 4 Methylphenol	0.96	U	1.9	0.96	0.77	ug/L		08/10/15 11:13	1
Naphthalene	0.096	U	0.19	0.096	0.060	ug/L		08/10/15 11:13	1
2-Nitroaniline	0.48	U	1.9	0.48	0.20	ug/L		08/10/15 11:13	1

Client Sample ID: FWGEQUIPRINSE3-0624-GW

Date Collected: 07/22/15 17:00
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-11

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
3-Nitroaniline	0.48	U	1.9	0.48	0.27	ug/L		08/10/15 11:13	1
4-Nitroaniline	0.48	U	1.9	0.48	0.21	ug/L		08/10/15 11:13	1
2-Nitrophenol	0.48	U	1.9	0.48	0.27	ug/L		08/10/15 11:13	1
4-Nitrophenol	3.8	U	4.8	3.8	0.28	ug/L		08/10/15 11:13	1
N-Nitrosodi-n-propylamine	0.48	U	0.96	0.48	0.23	ug/L		08/10/15 11:13	1
N-Nitrosodiphenylamine	0.48	U	0.96	0.48	0.30	ug/L		08/10/15 11:13	1
2,2'-oxybis[1-chloropropane]	0.48	U	0.96	0.48	0.38	ug/L		08/10/15 11:13	1
Pentachlorophenol	0.96	U	4.8	0.96	0.26	ug/L		08/10/15 11:13	1
Phenanthrene	0.096	U	0.19	0.096	0.060	ug/L		08/10/15 11:13	1
Phenol	0.96	U	0.96	0.96	0.58	ug/L		08/10/15 11:13	1
Pyrene	0.096	U	0.19	0.096	0.040	ug/L		08/10/15 11:13	1
1,2,4-Trichlorobenzene	0.48	U	0.96	0.48	0.27	ug/L		08/10/15 11:13	1
2,4,5-Trichlorophenol	0.48	U	4.8	0.48	0.29	ug/L		08/10/15 11:13	1
2,4,6-Trichlorophenol	0.48	U	4.8	0.48	0.23	ug/L		08/10/15 11:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*70*		*50 - 110*	*07/24/15 06:24*	*08/10/15 11:13*	*1*
2-Fluorophenol (Surr)	*63*		*20 - 110*	*07/24/15 06:24*	*08/10/15 11:13*	*1*
Nitrobenzene-d5 (Surr)	*65*		*40 - 110*	*07/24/15 06:24*	*08/10/15 11:13*	*1*
Phenol-d5 (Surr)	*69*		*10 - 115*	*07/24/15 06:24*	*08/10/15 11:13*	*1*
Terphenyl-d14 (Surr)	*88*		*50 - 135*	*07/24/15 06:24*	*08/10/15 11:13*	*1*
2,4,6-Tribromophenol (Surr)	*85*		*40 - 125*	*07/24/15 06:24*	*08/10/15 11:13*	*1*

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.048	U	0.048	0.048	0.017	ug/L		07/29/15 17:49	1
4,4'-DDE	0.048	U	0.048	0.048	0.011	ug/L		07/29/15 17:49	1
4,4'-DDT	0.048	U	0.048	0.048	0.016	ug/L		07/29/15 17:49	1
Aldrin	0.048	U	0.048	0.048	0.012	ug/L		07/29/15 17:49	1
alpha-BHC	0.048	U	0.048	0.048	0.013	ug/L		07/29/15 17:49	1
alpha-Chlordane	0.048	U	0.048	0.048	0.011	ug/L		07/29/15 17:49	1
beta-BHC	0.048	U	0.048	0.048	0.017	ug/L		07/29/15 17:49	1
delta-BHC	0.048	U	0.048	0.048	0.028	ug/L		07/29/15 17:49	1
Dieldrin	0.048	U	0.048	0.048	0.012	ug/L		07/29/15 17:49	1
Endosulfan II	0.048	U	0.048	0.048	0.014	ug/L		07/29/15 17:49	1
Endosulfan sulfate	0.048	U	0.048	0.048	0.014	ug/L		07/29/15 17:49	1
Endrin	0.048	U	0.048	0.048	0.012	ug/L		07/29/15 17:49	1
Endrin aldehyde	0.048	U	0.048	0.048	0.017	ug/L		07/29/15 17:49	1
Endrin ketone	0.048	U	0.048	0.048	0.015	ug/L		07/29/15 17:49	1
gamma-BHC (Lindane)	0.048	U	0.048	0.048	0.012	ug/L		07/29/15 17:49	1
gamma-Chlordane	0.048	U	0.048	0.048	0.012	ug/L		07/29/15 17:49	1
Heptachlor	0.048	U	0.048	0.048	0.013	ug/L		07/29/15 17:49	1
Heptachlor epoxide	0.048	U	0.048	0.048	0.014	ug/L		07/29/15 17:49	1
Methoxychlor	0.095	U	0.095	0.095	0.012	ug/L		07/29/15 17:49	1
Toxaphene	1.9	U	1.9	1.9	0.19	ug/L		07/29/15 17:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*62*		*30 - 135*	*07/24/15 06:27*	*07/29/15 17:49*	*1*
DCB Decachlorobiphenyl	*62*		*30 - 135*	*07/24/15 06:27*	*07/29/15 17:49*	*1*
Tetrachloro-m-xylene	*64*		*25 - 140*	*07/24/15 06:27*	*07/29/15 17:49*	*1*

Client Sample ID: FWGEQUIPRINSE3-0624-GW

Date Collected: 07/22/15 17:00
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-11
Matrix: Water

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*64*		*25 - 140*	*07/24/15 06:27*	*07/29/15 17:49*	*1*

Method: 8081A - Organochlorine Pesticides (GC) - RE

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Endosulfan I	0.050	U H	0.050	0.050	0.016	ug/L		08/03/15 19:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*68*		*30 - 135*	*07/31/15 05:07*	*08/03/15 19:28*	*1*
DCB Decachlorobiphenyl	*71*		*30 - 135*	*07/31/15 05:07*	*08/03/15 19:28*	*1*
Tetrachloro-m-xylene	*69*		*25 - 140*	*07/31/15 05:07*	*08/03/15 19:28*	*1*
Tetrachloro-m-xylene	*67*		*25 - 140*	*07/31/15 05:07*	*08/03/15 19:28*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.19	U Q	0.48	0.19	0.16	ug/L		07/27/15 19:26	1
Aroclor-1221	0.19	U	0.48	0.19	0.12	ug/L		07/27/15 19:26	1
Aroclor-1232	0.19	U	0.48	0.19	0.15	ug/L		07/27/15 19:26	1
Aroclor-1242	0.38	U	0.48	0.38	0.21	ug/L		07/27/15 19:26	1
Aroclor-1248	0.19	U	0.48	0.19	0.095	ug/L		07/27/15 19:26	1
Aroclor-1254	0.19	U	0.48	0.19	0.15	ug/L		07/27/15 19:26	1
Aroclor-1260	0.19	U Q	0.48	0.19	0.16	ug/L		07/27/15 19:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*74*		*40 - 140*	*07/24/15 06:29*	*07/27/15 19:26*	*1*
Tetrachloro-m-xylene	*79*		*40 - 140*	*07/24/15 06:29*	*07/27/15 19:26*	*1*
DCB Decachlorobiphenyl	*78*		*40 - 135*	*07/24/15 06:29*	*07/27/15 19:26*	*1*
DCB Decachlorobiphenyl	*78*		*40 - 135*	*07/24/15 06:29*	*07/27/15 19:26*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 07:03	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		07/31/15 23:39	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 23:39	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 23:39	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/31/15 23:39	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		07/31/15 23:39	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		07/31/15 23:39	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.089	ug/L		07/31/15 23:39	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		07/31/15 23:39	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.089	ug/L		07/31/15 23:39	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 23:39	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		07/31/15 23:39	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		07/31/15 23:39	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 23:39	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		07/31/15 23:39	1
Nitroglycerin	0.51	U	0.66	0.51	0.34	ug/L		07/31/15 23:39	1
PETN	0.51	U	0.66	0.51	0.30	ug/L		07/31/15 23:39	1

Client Sample ID: FWGEQUIPRINSE3-0624-GW

Date Collected: 07/22/15 17:00
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-11

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*95*		*79 - 111*	*07/29/15 14:19*	*07/31/15 23:39*	*1*
3,4-Dinitrotoluene	*103*		*79 - 111*	*07/29/15 14:19*	*08/04/15 20:08*	*1*

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 16:17	1
Chromium	4.0	U	7.0	4.0	0.55	ug/L		07/27/15 16:17	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 16:17	1
Lead	**3.2**	**J**	10	5.0	1.9	ug/L		07/27/15 16:17	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 16:17	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 16:17	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 16:17	1
Barium	5.0	U	200	5.0	1.0	ug/L		07/27/15 16:17	1
Calcium	1000	U	5000	1000	260	ug/L		07/27/15 16:17	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 16:17	1
Magnesium	300	U	5000	300	55	ug/L		07/27/15 16:17	1
Manganese	**1.6**	**J**	15	5.0	0.46	ug/L		07/27/15 16:17	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 16:17	1
Potassium	**230**	**J**	5000	900	70	ug/L		07/27/15 16:17	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/29/15 11:53	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/29/15 11:53	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/29/15 11:53	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/29/15 11:53	1
Iron	100	U	150	100	44	ug/L		07/29/15 11:53	1
Sodium	**190**	**J**	1000	400	160	ug/L		07/29/15 11:53	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/29/15 11:53	1
Zinc	50	U	50	50	27	ug/L		07/29/15 11:53	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 15:50	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate Nitrite as N	**0.0060**	**J**	0.050	0.012	0.0031	mg/L		08/10/15 15:55	1
Cyanide, Total	0.010	U	0.010	0.010	0.0050	mg/L		08/04/15 09:40	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/13/15 09:16	1

Client Sample ID: FWGTEAM3-TRIPBLANK

Lab Sample ID: 240-53558-12

Date Collected: 07/22/15 17:00
Matrix: Water
Date Received: 07/23/15 18:20

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 16:20	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	0.22	ug/L		08/03/15 16:20	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.24	ug/L		08/03/15 16:20	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.30	ug/L		08/03/15 16:20	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.45	ug/L		08/03/15 16:20	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.23	ug/L		08/03/15 16:20	1
1,2-Dichloroethene, Total	1.0	U	2.0	1.0	0.20	ug/L		08/03/15 16:20	1
1,2-Dichloropropane	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 16:20	1
2-Hexanone	2.0	U	10	2.0	0.48	ug/L		08/03/15 16:20	1
Bromochloromethane	1.0	U	1.0	1.0	0.50	ug/L		08/03/15 16:20	1
Acetone	**2.6**	**J**	10	2.0	0.94	ug/L		08/03/15 16:20	1
Benzene	1.0	U	1.0	1.0	0.35	ug/L		08/03/15 16:20	1
Bromoform	1.0	U	1.0	1.0	0.56	ug/L		08/03/15 16:20	1
Bromomethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 16:20	1
Carbon disulfide	1.0	U	1.0	1.0	0.38	ug/L		08/03/15 16:20	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.43	ug/L		08/03/15 16:20	1
Chlorobenzene	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 16:20	1
Chloroethane	1.0	U	1.0	1.0	0.32	ug/L		08/03/15 16:20	1
Chloroform	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 16:20	1
Chloromethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 16:20	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	0.26	ug/L		08/03/15 16:20	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.46	ug/L		08/03/15 16:20	1
Bromodichloromethane	1.0	U	1.0	1.0	0.29	ug/L		08/03/15 16:20	1
Ethylbenzene	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 16:20	1
1,2-Dibromoethane	1.0	U	1.0	1.0	0.32	ug/L		08/03/15 16:20	1
m-Xylene & p-Xylene	1.0	U	2.0	1.0	0.24	ug/L		08/03/15 16:20	1
2-Butanone (MEK)	2.0	U	10	2.0	0.53	ug/L		08/03/15 16:20	1
4-Methyl-2-pentanone (MIBK)	2.0	U	10	2.0	0.99	ug/L		08/03/15 16:20	1
Methylene Chloride	**0.56**	**J**	1.0	1.0	0.33	ug/L		08/04/15 16:58	1
o-Xylene	0.50	U	1.0	0.50	0.25	ug/L		08/03/15 16:20	1
Styrene	0.50	U	1.0	0.50	0.45	ug/L		08/03/15 16:20	1
Tetrachloroethene	1.0	U	1.0	1.0	0.31	ug/L		08/03/15 16:20	1
Toluene	1.0	U	1.0	1.0	0.23	ug/L		08/03/15 16:20	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	0.30	ug/L		08/03/15 16:20	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.56	ug/L		08/03/15 16:20	1
Trichloroethene	1.0	U	1.0	1.0	0.22	ug/L		08/03/15 16:20	1
Vinyl chloride	1.0	U	1.0	1.0	0.29	ug/L		08/03/15 16:20	1
Xylenes, Total	2.0	U	2.0	2.0	0.52	ug/L		08/03/15 16:20	1
Dibromochloromethane	1.0	U	1.0	1.0	0.43	ug/L		08/03/15 16:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*84*		*70 - 120*		*08/03/15 16:20*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 120*		*08/04/15 16:58*	*1*
4-Bromofluorobenzene (Surr)	*92*		*75 - 120*		*08/03/15 16:20*	*1*
4-Bromofluorobenzene (Surr)	*87*		*75 - 120*		*08/04/15 16:58*	*1*
Toluene-d8 (Surr)	*90*		*85 - 120*		*08/03/15 16:20*	*1*
Toluene-d8 (Surr)	*92*		*85 - 120*		*08/04/15 16:58*	*1*
Dibromofluoromethane (Surr)	*87*		*85 - 115*		*08/03/15 16:20*	*1*
Dibromofluoromethane (Surr)	*94*		*85 - 115*		*08/04/15 16:58*	*1*

Client Sample ID: FWGLL1mw-065C-0582-GW

Lab Sample ID: 240-53558-13

Date Collected: 07/23/15 09:33
Matrix: Water
Date Received: 07/23/15 18:20

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/10/15 13:48	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		08/10/15 13:48	1
Diethyl phthalate	0.95	U	1.9	0.95	0.57	ug/L		08/10/15 13:48	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		08/10/15 13:48	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/10/15 13:48	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		08/10/15 13:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*79*		*50 - 110*	*07/24/15 06:24*	*08/10/15 13:48*	*1*
2-Fluorophenol (Surr)	*75*		*20 - 110*	*07/24/15 06:24*	*08/10/15 13:48*	*1*
Nitrobenzene-d5 (Surr)	*77*		*40 - 110*	*07/24/15 06:24*	*08/10/15 13:48*	*1*
Phenol-d5 (Surr)	*85*		*10 - 115*	*07/24/15 06:24*	*08/10/15 13:48*	*1*
Terphenyl-d14 (Surr)	*95*		*50 - 135*	*07/24/15 06:24*	*08/10/15 13:48*	*1*
2,4,6-Tribromophenol (Surr)	*91*		*40 - 125*	*07/24/15 06:24*	*08/10/15 13:48*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 07:56	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.050	U	0.15	0.050	0.031	ug/L		08/01/15 00:23	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.050	ug/L		08/01/15 00:23	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.050	ug/L		08/01/15 00:23	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.050	ug/L		08/01/15 00:23	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.050	ug/L		08/01/15 00:23	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		08/01/15 00:23	1
2-Nitrotoluene	0.10	U	0.50	0.10	0.089	ug/L		08/01/15 00:23	1
3-Nitrotoluene	0.10	U	0.50	0.10	0.057	ug/L		08/01/15 00:23	1
4-Nitrotoluene	0.10	U	0.50	0.10	0.089	ug/L		08/01/15 00:23	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.050	ug/L		08/01/15 00:23	1
HMX	0.050	U	0.15	0.050	0.036	ug/L		08/01/15 00:23	1
RDX	0.050	U	0.15	0.050	0.036	ug/L		08/01/15 00:23	1
Nitrobenzene	0.10	U	0.15	0.10	0.050	ug/L		08/01/15 00:23	1
Tetryl	0.10	U	0.15	0.10	0.050	ug/L		08/01/15 00:23	1
Nitroglycerin	0.50	U	0.65	0.50	0.33	ug/L		08/01/15 00:23	1
PETN	0.50	U	0.65	0.50	0.30	ug/L		08/01/15 00:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*94*		*79 - 111*	*07/29/15 14:19*	*08/01/15 00:23*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/13/15 09:18	1

Client Sample ID: FWGLL1mw-065C-0582-GF
Date Collected: 07/23/15 09:33
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-14
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 16:29	1
Chromium	**1.2**	**J**	7.0	4.0	0.55	ug/L		07/27/15 16:29	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 16:29	1
Lead	**2.8**	**J**	10	5.0	1.9	ug/L		07/27/15 16:29	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 16:29	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 16:29	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 16:29	1
Barium	**46**	**J**	200	5.0	1.0	ug/L		07/27/15 16:29	1
Calcium	**76000**		5000	1000	260	ug/L		07/27/15 16:29	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 16:29	1
Magnesium	**21000**		5000	300	55	ug/L		07/27/15 16:29	1
Manganese	**190**		15	5.0	0.46	ug/L		07/27/15 16:29	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 16:29	1
Potassium	**1100**	**J**	5000	900	70	ug/L		07/27/15 16:29	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/29/15 11:57	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/29/15 11:57	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/29/15 11:57	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/29/15 11:57	1
Iron	**82**	**J**	150	100	44	ug/L		07/29/15 11:57	1
Sodium	**13000**		1000	400	160	ug/L		07/29/15 11:57	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/29/15 11:57	1
Zinc	50	U	50	50	27	ug/L		07/29/15 11:57	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 15:53	1

Client Sample ID: FWGFWGmw-016-0580-GW
Date Collected: 07/23/15 11:43
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-15
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/10/15 14:14	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		08/10/15 14:14	1
Diethyl phthalate	0.95	U	1.9	0.95	0.57	ug/L		08/10/15 14:14	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		08/10/15 14:14	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/10/15 14:14	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		08/10/15 14:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*79*		*50 - 110*	*07/24/15 06:24*	*08/10/15 14:14*	*1*
2-Fluorophenol (Surr)	*76*		*20 - 110*	*07/24/15 06:24*	*08/10/15 14:14*	*1*
Nitrobenzene-d5 (Surr)	*77*		*40 - 110*	*07/24/15 06:24*	*08/10/15 14:14*	*1*
Phenol-d5 (Surr)	*82*		*10 - 115*	*07/24/15 06:24*	*08/10/15 14:14*	*1*
Terphenyl-d14 (Surr)	*94*		*50 - 135*	*07/24/15 06:24*	*08/10/15 14:14*	*1*
2,4,6-Tribromophenol (Surr)	*85*		*40 - 125*	*07/24/15 06:24*	*08/10/15 14:14*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 08:49	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.050	U	0.15	0.050	0.031	ug/L		08/01/15 01:06	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.050	ug/L		08/01/15 01:06	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.050	ug/L		08/01/15 01:06	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.050	ug/L		08/01/15 01:06	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.050	ug/L		08/01/15 01:06	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		08/01/15 01:06	1
2-Nitrotoluene	0.10	U	0.50	0.10	0.088	ug/L		08/01/15 01:06	1
3-Nitrotoluene	0.10	U	0.50	0.10	0.057	ug/L		08/01/15 01:06	1
4-Nitrotoluene	0.10	U	0.50	0.10	0.088	ug/L		08/01/15 01:06	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.050	ug/L		08/01/15 01:06	1
HMX	0.050	U	0.15	0.050	0.036	ug/L		08/01/15 01:06	1
RDX	0.050	U	0.15	0.050	0.036	ug/L		08/01/15 01:06	1
Nitrobenzene	0.10	U	0.15	0.10	0.050	ug/L		08/01/15 01:06	1
Tetryl	0.10	U	0.15	0.10	0.050	ug/L		08/01/15 01:06	1
Nitroglycerin	0.50	U	0.65	0.50	0.33	ug/L		08/01/15 01:06	1
PETN	0.50	U	0.65	0.50	0.30	ug/L		08/01/15 01:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*95*		*79 - 111*	*07/29/15 14:19*	*08/01/15 01:06*	*1*
3,4-Dinitrotoluene	*101*		*79 - 111*	*07/29/15 14:19*	*08/04/15 21:15*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/13/15 09:28	1

Client Sample ID: FWGFWGmw-016-0580-GF
Date Collected: 07/23/15 11:43
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-16
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**4.7**	**J**	10	10	2.9	ug/L		07/27/15 16:33	1
Chromium	**1.2**	**J**	7.0	4.0	0.55	ug/L		07/27/15 16:33	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 16:33	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 16:33	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 16:33	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 16:33	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 16:33	1
Barium	**50**	**J**	200	5.0	1.0	ug/L		07/27/15 16:33	1
Calcium	**100000**		5000	1000	260	ug/L		07/27/15 16:33	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 16:33	1
Magnesium	**27000**		5000	300	55	ug/L		07/27/15 16:33	1
Manganese	**190**		15	5.0	0.46	ug/L		07/27/15 16:33	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 16:33	1
Potassium	**2100**	**J**	5000	900	70	ug/L		07/27/15 16:33	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/29/15 12:01	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/29/15 12:01	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/29/15 12:01	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/29/15 12:01	1
Iron	**670**		150	100	44	ug/L		07/29/15 12:01	1
Sodium	**11000**		1000	400	160	ug/L		07/29/15 12:01	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/29/15 12:01	1
Zinc	50	U	50	50	27	ug/L		07/29/15 12:01	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 16:00	1

Client Sample ID: FWGFWGmw-015-0579-GW

Date Collected: 07/23/15 12:49
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-17

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/10/15 14:40	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		08/10/15 14:40	1
Diethyl phthalate	0.95	U M	1.9	0.95	0.57	ug/L		08/10/15 14:40	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		08/10/15 14:40	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/10/15 14:40	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		08/10/15 14:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*79*		*50 - 110*	*07/24/15 06:24*	*08/10/15 14:40*	*1*
2-Fluorophenol (Surr)	*74*		*20 - 110*	*07/24/15 06:24*	*08/10/15 14:40*	*1*
Nitrobenzene-d5 (Surr)	*70*		*40 - 110*	*07/24/15 06:24*	*08/10/15 14:40*	*1*
Phenol-d5 (Surr)	*78*		*10 - 115*	*07/24/15 06:24*	*08/10/15 14:40*	*1*
Terphenyl-d14 (Surr)	*90*		*50 - 135*	*07/24/15 06:24*	*08/10/15 14:40*	*1*
2,4,6-Tribromophenol (Surr)	*83*		*40 - 125*	*07/24/15 06:24*	*08/10/15 14:40*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 09:07	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.050	U	0.15	0.050	0.031	ug/L		08/01/15 01:50	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.050	ug/L		08/01/15 01:50	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.050	ug/L		08/01/15 01:50	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.050	ug/L		08/01/15 01:50	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.050	ug/L		08/01/15 01:50	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		08/01/15 01:50	1
2-Nitrotoluene	0.10	U	0.50	0.10	0.089	ug/L		08/01/15 01:50	1
3-Nitrotoluene	0.10	U	0.50	0.10	0.057	ug/L		08/01/15 01:50	1
4-Nitrotoluene	0.10	U	0.50	0.10	0.089	ug/L		08/01/15 01:50	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.050	ug/L		08/01/15 01:50	1
HMX	0.050	U	0.15	0.050	0.036	ug/L		08/01/15 01:50	1
RDX	0.050	U	0.15	0.050	0.036	ug/L		08/01/15 01:50	1
Nitrobenzene	0.10	U	0.15	0.10	0.050	ug/L		08/01/15 01:50	1
Tetryl	0.10	U	0.15	0.10	0.050	ug/L		08/01/15 01:50	1
Nitroglycerin	0.50	U	0.65	0.50	0.33	ug/L		08/01/15 01:50	1
PETN	0.50	U	0.65	0.50	0.30	ug/L		08/01/15 01:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*95*		*79 - 111*	*07/29/15 14:19*	*08/01/15 01:50*	*1*
3,4-Dinitrotoluene	*100*		*79 - 111*	*07/29/15 14:19*	*08/04/15 22:22*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/13/15 09:30	1

Client Sample Results

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53558-1

Client Sample ID: FWGFWGmw-015-0579-GF
Date Collected: 07/23/15 12:49
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-18
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 16:37	1
Chromium	**1.5**	**J**	7.0	4.0	0.55	ug/L		07/27/15 16:37	1
Cobalt	**0.69**	**J**	7.0	4.0	0.56	ug/L		07/27/15 16:37	1
Lead	**2.3**	**J**	10	5.0	1.9	ug/L		07/27/15 16:37	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 16:37	1
Silver	**1.0**	**J**	7.0	5.0	0.92	ug/L		07/27/15 16:37	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 16:37	1
Barium	**8.3**	**J**	200	5.0	1.0	ug/L		07/27/15 16:37	1
Calcium	**260000**		5000	1000	260	ug/L		07/27/15 16:37	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 16:37	1
Magnesium	**260000**		5000	300	55	ug/L		07/27/15 16:37	1
Manganese	**430**		15	5.0	0.46	ug/L		07/27/15 16:37	1
Nickel	**2.6**	**J**	40	5.0	0.76	ug/L		07/27/15 16:37	1
Potassium	**3300**	**J**	5000	900	70	ug/L		07/27/15 16:37	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/29/15 12:04	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/29/15 12:04	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/29/15 12:04	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/29/15 12:04	1
Iron	100	U	150	100	44	ug/L		07/29/15 12:04	1
Sodium	**45000**		1000	400	160	ug/L		07/29/15 12:04	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/29/15 12:04	1
Zinc	50	U	50	50	27	ug/L		07/29/15 12:04	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 16:05	1

Client Sample ID: FWGFWGmw-004-0575-GW

Date Collected: 07/23/15 14:23
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-19

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		08/10/15 15:06	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		08/10/15 15:06	1
Diethyl phthalate	0.97	U	1.9	0.97	0.58	ug/L		08/10/15 15:06	1
Dimethyl phthalate	0.49	U	1.9	0.49	0.28	ug/L		08/10/15 15:06	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		08/10/15 15:06	1
Di-n-octyl phthalate	0.49	U	1.9	0.49	0.22	ug/L		08/10/15 15:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*76*		*50 - 110*	*07/24/15 06:24*	*08/10/15 15:06*	*1*
2-Fluorophenol (Surr)	*78*		*20 - 110*	*07/24/15 06:24*	*08/10/15 15:06*	*1*
Nitrobenzene-d5 (Surr)	*74*		*40 - 110*	*07/24/15 06:24*	*08/10/15 15:06*	*1*
Phenol-d5 (Surr)	*83*		*10 - 115*	*07/24/15 06:24*	*08/10/15 15:06*	*1*
Terphenyl-d14 (Surr)	*95*		*50 - 135*	*07/24/15 06:24*	*08/10/15 15:06*	*1*
2,4,6-Tribromophenol (Surr)	*84*		*40 - 125*	*07/24/15 06:24*	*08/10/15 15:06*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 09:25	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.031	ug/L		08/01/15 02:34	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		08/01/15 02:34	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		08/01/15 02:34	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		08/01/15 02:34	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		08/01/15 02:34	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		08/01/15 02:34	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.089	ug/L		08/01/15 02:34	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		08/01/15 02:34	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.089	ug/L		08/01/15 02:34	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		08/01/15 02:34	1
HMX	0.051	U	0.15	0.051	0.036	ug/L		08/01/15 02:34	1
RDX	0.051	U M	0.15	0.051	0.036	ug/L		08/01/15 02:34	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		08/01/15 02:34	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		08/01/15 02:34	1
Nitroglycerin	0.51	U	0.66	0.51	0.33	ug/L		08/01/15 02:34	1
PETN	0.51	U	0.66	0.51	0.30	ug/L		08/01/15 02:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*95*		*79 - 111*	*07/29/15 14:19*	*08/01/15 02:34*	*1*
3,4-Dinitrotoluene	*99*		*79 - 111*	*07/29/15 14:19*	*08/04/15 23:28*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/13/15 09:32	1

Client Sample ID: FWGFWGmw-004-0575-GF

Lab Sample ID: 240-53558-20

Date Collected: 07/23/15 14:23

Matrix: Water

Date Received: 07/23/15 18:20

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 16:42	1
Chromium	**0.96**	**J**	7.0	4.0	0.55	ug/L		07/27/15 16:42	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 16:42	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 16:42	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 16:42	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 16:42	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 16:42	1
Barium	**20**	**J**	200	5.0	1.0	ug/L		07/27/15 16:42	1
Calcium	**81000**		5000	1000	260	ug/L		07/27/15 16:42	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 16:42	1
Magnesium	**43000**		5000	300	55	ug/L		07/27/15 16:42	1
Manganese	**15**		15	5.0	0.46	ug/L		07/27/15 16:42	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 16:42	1
Potassium	**840**	**J**	5000	900	70	ug/L		07/27/15 16:42	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/29/15 12:08	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/29/15 12:08	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/29/15 12:08	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/29/15 12:08	1
Iron	100	U	150	100	44	ug/L		07/29/15 12:08	1
Sodium	**4400**		1000	400	160	ug/L		07/29/15 12:08	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/29/15 12:08	1
Zinc	50	U	50	50	27	ug/L		07/29/15 12:08	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 16:12	1

Client Sample ID: FWGLL2mw-267C-0590-GW

Lab Sample ID: 240-53558-21

Date Collected: 07/23/15 11:11
Matrix: Water
Date Received: 07/23/15 18:20

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		08/10/15 15:31	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		08/10/15 15:31	1
Diethyl phthalate	0.97	U	1.9	0.97	0.58	ug/L		08/10/15 15:31	1
Dimethyl phthalate	0.49	U	1.9	0.49	0.28	ug/L		08/10/15 15:31	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		08/10/15 15:31	1
Di-n-octyl phthalate	0.49	U	1.9	0.49	0.22	ug/L		08/10/15 15:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*83*		*50 - 110*	*07/24/15 06:24*	*08/10/15 15:31*	*1*
2-Fluorophenol (Surr)	*77*		*20 - 110*	*07/24/15 06:24*	*08/10/15 15:31*	*1*
Nitrobenzene-d5 (Surr)	*77*		*40 - 110*	*07/24/15 06:24*	*08/10/15 15:31*	*1*
Phenol-d5 (Surr)	*83*		*10 - 115*	*07/24/15 06:24*	*08/10/15 15:31*	*1*
Terphenyl-d14 (Surr)	*95*		*50 - 135*	*07/24/15 06:24*	*08/10/15 15:31*	*1*
2,4,6-Tribromophenol (Surr)	*90*		*40 - 125*	*07/24/15 06:24*	*08/10/15 15:31*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 09:43	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U M	0.15	0.051	0.032	ug/L		08/01/15 03:17	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		08/01/15 03:17	1
2,4,6-Trinitrotoluene	**0.35**	**M**	0.15	0.10	0.051	ug/L		08/01/15 03:17	1
2,4-Dinitrotoluene	**0.20**		0.13	0.10	0.051	ug/L		08/01/15 03:17	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		08/01/15 03:17	1
2-Amino-4,6-dinitrotoluene	**1.3**	**M**	0.15	0.10	0.015	ug/L		08/01/15 03:17	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		08/01/15 03:17	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		08/01/15 03:17	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		08/01/15 03:17	1
4-Amino-2,6-dinitrotoluene	**1.2**	**M**	0.15	0.10	0.051	ug/L		08/01/15 03:17	1
HMX	**0.92**	**M**	0.15	0.051	0.037	ug/L		08/01/15 03:17	1
RDX	**1.3**	**M**	0.15	0.051	0.037	ug/L		08/01/15 03:17	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		08/01/15 03:17	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		08/01/15 03:17	1
Nitroglycerin	0.51	U	0.66	0.51	0.34	ug/L		08/01/15 03:17	1
PETN	0.51	U	0.66	0.51	0.31	ug/L		08/01/15 03:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*97*	*M*	*79 - 111*	*07/29/15 14:19*	*08/01/15 03:17*	*1*
3,4-Dinitrotoluene	*100*		*79 - 111*	*07/29/15 14:19*	*08/05/15 00:35*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/13/15 09:34	1

Client Sample ID: FWGLL2mw-267C-0590-GF
Date Collected: 07/23/15 11:11
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-22
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 16:46	1
Chromium	**0.70**	J	7.0	4.0	0.55	ug/L		07/27/15 16:46	1
Cobalt	**1.4**	J	7.0	4.0	0.56	ug/L		07/27/15 16:46	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 16:46	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 16:46	1
Silver	**0.94**	J	7.0	5.0	0.92	ug/L		07/27/15 16:46	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 16:46	1
Barium	**7.9**	J	200	5.0	1.0	ug/L		07/27/15 16:46	1
Calcium	**27000**		5000	1000	260	ug/L		07/27/15 16:46	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 16:46	1
Magnesium	**14000**		5000	300	55	ug/L		07/27/15 16:46	1
Manganese	**460**		15	5.0	0.46	ug/L		07/27/15 16:46	1
Nickel	**2.5**	J	40	5.0	0.76	ug/L		07/27/15 16:46	1
Potassium	**610**	J	5000	900	70	ug/L		07/27/15 16:46	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/29/15 12:12	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/29/15 12:12	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/29/15 12:12	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/29/15 12:12	1
Iron	**340**		150	100	44	ug/L		07/29/15 12:12	1
Sodium	**17000**		1000	400	160	ug/L		07/29/15 12:12	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/29/15 12:12	1
Zinc	50	U	50	50	27	ug/L		07/29/15 12:12	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 15:52	1

Client Sample ID: FWGEQUIPRINSE4-0625-GW

Lab Sample ID: 240-53558-23

Date Collected: 07/23/15 12:35
Matrix: Water
Date Received: 07/23/15 18:20

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 16:43	1
1,1,2,2-Tetrachloroethane	**0.22**	**J**	1.0	0.50	0.22	ug/L		08/03/15 16:43	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.24	ug/L		08/03/15 16:43	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.30	ug/L		08/03/15 16:43	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.45	ug/L		08/03/15 16:43	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.23	ug/L		08/03/15 16:43	1
1,2-Dichloroethene, Total	1.0	U	2.0	1.0	0.20	ug/L		08/03/15 16:43	1
1,2-Dichloropropane	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 16:43	1
2-Hexanone	2.0	U	10	2.0	0.48	ug/L		08/03/15 16:43	1
Bromochloromethane	1.0	U	1.0	1.0	0.50	ug/L		08/03/15 16:43	1
Acetone	**6.9**	**J**	10	2.0	0.94	ug/L		08/03/15 16:43	1
Benzene	1.0	U	1.0	1.0	0.35	ug/L		08/03/15 16:43	1
Bromoform	1.0	U	1.0	1.0	0.56	ug/L		08/03/15 16:43	1
Bromomethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 16:43	1
Carbon disulfide	1.0	U	1.0	1.0	0.38	ug/L		08/03/15 16:43	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.43	ug/L		08/03/15 16:43	1
Chlorobenzene	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 16:43	1
Chloroethane	1.0	U	1.0	1.0	0.32	ug/L		08/03/15 16:43	1
Chloroform	**0.40**	**J**	1.0	1.0	0.25	ug/L		08/03/15 16:43	1
Chloromethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 16:43	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	0.26	ug/L		08/03/15 16:43	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.46	ug/L		08/03/15 16:43	1
Bromodichloromethane	1.0	U	1.0	1.0	0.29	ug/L		08/03/15 16:43	1
Ethylbenzene	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 16:43	1
1,2-Dibromoethane	1.0	U	1.0	1.0	0.32	ug/L		08/03/15 16:43	1
m-Xylene & p-Xylene	1.0	U	2.0	1.0	0.24	ug/L		08/03/15 16:43	1
2-Butanone (MEK)	**6.8**	**J**	10	2.0	0.53	ug/L		08/03/15 16:43	1
4-Methyl-2-pentanone (MIBK)	2.0	U	10	2.0	0.99	ug/L		08/03/15 16:43	1
Methylene Chloride	**0.84**	**J**	1.0	1.0	0.33	ug/L		08/04/15 17:21	1
o-Xylene	0.50	U	1.0	0.50	0.25	ug/L		08/03/15 16:43	1
Styrene	0.50	U	1.0	0.50	0.45	ug/L		08/03/15 16:43	1
Tetrachloroethene	1.0	U	1.0	1.0	0.31	ug/L		08/03/15 16:43	1
Toluene	1.0	U	1.0	1.0	0.23	ug/L		08/03/15 16:43	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	0.30	ug/L		08/03/15 16:43	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.56	ug/L		08/03/15 16:43	1
Trichloroethene	1.0	U	1.0	1.0	0.22	ug/L		08/03/15 16:43	1
Vinyl chloride	1.0	U	1.0	1.0	0.29	ug/L		08/03/15 16:43	1
Xylenes, Total	2.0	U	2.0	2.0	0.52	ug/L		08/03/15 16:43	1
Dibromochloromethane	1.0	U	1.0	1.0	0.43	ug/L		08/03/15 16:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*70 - 120*		*08/03/15 16:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 120*		*08/04/15 17:21*	*1*
4-Bromofluorobenzene (Surr)	*92*		*75 - 120*		*08/03/15 16:43*	*1*
4-Bromofluorobenzene (Surr)	*88*		*75 - 120*		*08/04/15 17:21*	*1*
Toluene-d8 (Surr)	*90*		*85 - 120*		*08/03/15 16:43*	*1*
Toluene-d8 (Surr)	*91*		*85 - 120*		*08/04/15 17:21*	*1*
Dibromofluoromethane (Surr)	*88*		*85 - 115*		*08/03/15 16:43*	*1*
Dibromofluoromethane (Surr)	*95*		*85 - 115*		*08/04/15 17:21*	*1*

Client Sample ID: FWGEQUIPRINSE4-0625-GW

Lab Sample ID: 240-53558-23

Date Collected: 07/23/15 12:35
Matrix: Water
Date Received: 07/23/15 18:20

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.096	U	0.19	0.096	0.043	ug/L		08/10/15 11:39	1
Acenaphthylene	0.096	U	0.19	0.096	0.046	ug/L		08/10/15 11:39	1
Anthracene	0.096	U	0.19	0.096	0.085	ug/L		08/10/15 11:39	1
Benzo[a]anthracene	0.096	U	0.19	0.096	0.028	ug/L		08/10/15 11:39	1
Benzo[a]pyrene	0.096	U	0.19	0.096	0.049	ug/L		08/10/15 11:39	1
Benzo[b]fluoranthene	0.096	U	0.19	0.096	0.038	ug/L		08/10/15 11:39	1
Benzo[g,h,i]perylene	0.096	U	0.19	0.096	0.045	ug/L		08/10/15 11:39	1
Benzoic acid	19	U	24	19	9.6	ug/L		08/10/15 11:39	1
Benzo[k]fluoranthene	0.096	U	0.19	0.096	0.043	ug/L		08/10/15 11:39	1
Benzyl alcohol	0.48	U	4.8	0.48	0.37	ug/L		08/10/15 11:39	1
Bis(2-chloroethoxy)methane	0.48	U	0.96	0.48	0.31	ug/L		08/10/15 11:39	1
Bis(2-chloroethyl)ether	0.096	U	0.96	0.096	0.096	ug/L		08/10/15 11:39	1
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/10/15 11:39	1
4-Bromophenyl phenyl ether	0.48	U	1.9	0.48	0.21	ug/L		08/10/15 11:39	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		08/10/15 11:39	1
Carbazole	0.48	U	0.96	0.48	0.27	ug/L		08/10/15 11:39	1
4-Chloroaniline	0.48	U	1.9	0.48	0.20	ug/L		08/10/15 11:39	1
4-Chloro-3-methylphenol	0.48	U	1.9	0.48	0.20	ug/L		08/10/15 11:39	1
2-Chloronaphthalene	0.48	U	0.96	0.48	0.096	ug/L		08/10/15 11:39	1
2-Chlorophenol	0.48	U	0.96	0.48	0.28	ug/L		08/10/15 11:39	1
4-Chlorophenyl phenyl ether	0.48	U	1.9	0.48	0.29	ug/L		08/10/15 11:39	1
Chrysene	0.096	U	0.19	0.096	0.048	ug/L		08/10/15 11:39	1
Dibenz(a,h)anthracene	0.096	U	0.19	0.096	0.043	ug/L		08/10/15 11:39	1
Dibenzofuran	0.096	U	0.96	0.096	0.019	ug/L		08/10/15 11:39	1
1,2-Dichlorobenzene	0.48	U	0.96	0.48	0.28	ug/L		08/10/15 11:39	1
1,3-Dichlorobenzene	0.48	U	0.96	0.48	0.22	ug/L		08/10/15 11:39	1
1,4-Dichlorobenzene	0.48	U	0.96	0.48	0.33	ug/L		08/10/15 11:39	1
3,3'-Dichlorobenzidine	0.96	U	4.8	0.96	0.36	ug/L		08/10/15 11:39	1
2,4-Dichlorophenol	0.48	U	1.9	0.48	0.18	ug/L		08/10/15 11:39	1
Diethyl phthalate	0.96	U	1.9	0.96	0.58	ug/L		08/10/15 11:39	1
2,4-Dimethylphenol	0.48	U	1.9	0.48	0.24	ug/L		08/10/15 11:39	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		08/10/15 11:39	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/10/15 11:39	1
4,6-Dinitro-2-methylphenol	3.8	U	4.8	3.8	2.3	ug/L		08/10/15 11:39	1
2,4-Dinitrophenol	0.96	U	4.8	0.96	0.31	ug/L		08/10/15 11:39	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		08/10/15 11:39	1
Fluoranthene	0.096	U	0.19	0.096	0.043	ug/L		08/10/15 11:39	1
Fluorene	0.096	U	0.19	0.096	0.039	ug/L		08/10/15 11:39	1
Hexachlorobenzene	0.096	U	0.19	0.096	0.082	ug/L		08/10/15 11:39	1
Hexachlorobutadiene	0.48	U	0.96	0.48	0.26	ug/L		08/10/15 11:39	1
Hexachlorocyclopentadiene	0.48	U	9.6	0.48	0.23	ug/L		08/10/15 11:39	1
Hexachloroethane	0.48	U	0.96	0.48	0.18	ug/L		08/10/15 11:39	1
Indeno[1,2,3-cd]pyrene	0.096	U	0.19	0.096	0.042	ug/L		08/10/15 11:39	1
Isophorone	0.48	U	0.96	0.48	0.26	ug/L		08/10/15 11:39	1
2-Methylnaphthalene	0.096	U	0.19	0.096	0.087	ug/L		08/10/15 11:39	1
2-Methylphenol	0.48	U	0.96	0.48	0.16	ug/L		08/10/15 11:39	1
3 & 4 Methylphenol	0.96	U	1.9	0.96	0.77	ug/L		08/10/15 11:39	1
Naphthalene	0.096	U	0.19	0.096	0.060	ug/L		08/10/15 11:39	1
2-Nitroaniline	0.48	U	1.9	0.48	0.20	ug/L		08/10/15 11:39	1

Client Sample ID: FWGEQUIPRINSE4-0625-GW

Date Collected: 07/23/15 12:35
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-23

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
3-Nitroaniline	0.48	U	1.9	0.48	0.27	ug/L		08/10/15 11:39	1
4-Nitroaniline	0.48	U	1.9	0.48	0.21	ug/L		08/10/15 11:39	1
2-Nitrophenol	0.48	U	1.9	0.48	0.27	ug/L		08/10/15 11:39	1
4-Nitrophenol	3.8	U	4.8	3.8	0.28	ug/L		08/10/15 11:39	1
N-Nitrosodi-n-propylamine	0.48	U	0.96	0.48	0.23	ug/L		08/10/15 11:39	1
N-Nitrosodiphenylamine	0.48	U	0.96	0.48	0.30	ug/L		08/10/15 11:39	1
2,2'-oxybis[1-chloropropane]	0.48	U	0.96	0.48	0.38	ug/L		08/10/15 11:39	1
Pentachlorophenol	0.96	U	4.8	0.96	0.26	ug/L		08/10/15 11:39	1
Phenanthrene	0.096	U	0.19	0.096	0.060	ug/L		08/10/15 11:39	1
Phenol	0.96	U	0.96	0.96	0.58	ug/L		08/10/15 11:39	1
Pyrene	0.096	U	0.19	0.096	0.040	ug/L		08/10/15 11:39	1
1,2,4-Trichlorobenzene	0.48	U	0.96	0.48	0.27	ug/L		08/10/15 11:39	1
2,4,5-Trichlorophenol	0.48	U	4.8	0.48	0.29	ug/L		08/10/15 11:39	1
2,4,6-Trichlorophenol	0.48	U	4.8	0.48	0.23	ug/L		08/10/15 11:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*78*		*50 - 110*	*07/24/15 06:24*	*08/10/15 11:39*	*1*
2-Fluorophenol (Surr)	*75*		*20 - 110*	*07/24/15 06:24*	*08/10/15 11:39*	*1*
Nitrobenzene-d5 (Surr)	*75*		*40 - 110*	*07/24/15 06:24*	*08/10/15 11:39*	*1*
Phenol-d5 (Surr)	*79*		*10 - 115*	*07/24/15 06:24*	*08/10/15 11:39*	*1*
Terphenyl-d14 (Surr)	*93*		*50 - 135*	*07/24/15 06:24*	*08/10/15 11:39*	*1*
2,4,6-Tribromophenol (Surr)	*80*		*40 - 125*	*07/24/15 06:24*	*08/10/15 11:39*	*1*

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.048	U	0.048	0.048	0.017	ug/L		07/29/15 18:11	1
4,4'-DDE	0.048	U	0.048	0.048	0.011	ug/L		07/29/15 18:11	1
4,4'-DDT	0.048	U	0.048	0.048	0.016	ug/L		07/29/15 18:11	1
Aldrin	0.048	U	0.048	0.048	0.012	ug/L		07/29/15 18:11	1
alpha-BHC	0.048	U	0.048	0.048	0.013	ug/L		07/29/15 18:11	1
alpha-Chlordane	0.048	U	0.048	0.048	0.011	ug/L		07/29/15 18:11	1
beta-BHC	0.048	U	0.048	0.048	0.017	ug/L		07/29/15 18:11	1
delta-BHC	0.048	U	0.048	0.048	0.028	ug/L		07/29/15 18:11	1
Dieldrin	0.048	U	0.048	0.048	0.012	ug/L		07/29/15 18:11	1
Endosulfan II	0.048	U	0.048	0.048	0.014	ug/L		07/29/15 18:11	1
Endosulfan sulfate	0.048	U	0.048	0.048	0.014	ug/L		07/29/15 18:11	1
Endrin	0.048	U	0.048	0.048	0.012	ug/L		07/29/15 18:11	1
Endrin aldehyde	0.048	U	0.048	0.048	0.017	ug/L		07/29/15 18:11	1
Endrin ketone	0.048	U	0.048	0.048	0.015	ug/L		07/29/15 18:11	1
gamma-BHC (Lindane)	0.048	U	0.048	0.048	0.012	ug/L		07/29/15 18:11	1
gamma-Chlordane	0.048	U	0.048	0.048	0.012	ug/L		07/29/15 18:11	1
Heptachlor	0.048	U	0.048	0.048	0.013	ug/L		07/29/15 18:11	1
Heptachlor epoxide	0.048	U	0.048	0.048	0.014	ug/L		07/29/15 18:11	1
Methoxychlor	0.095	U	0.095	0.095	0.012	ug/L		07/29/15 18:11	1
Toxaphene	1.9	U	1.9	1.9	0.19	ug/L		07/29/15 18:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*60*		*30 - 135*	*07/24/15 06:27*	*07/29/15 18:11*	*1*
DCB Decachlorobiphenyl	*59*		*30 - 135*	*07/24/15 06:27*	*07/29/15 18:11*	*1*
Tetrachloro-m-xylene	*76*		*25 - 140*	*07/24/15 06:27*	*07/29/15 18:11*	*1*

Client Sample ID: FWGEQUIPRINSE4-0625-GW

Date Collected: 07/23/15 12:35
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-23

Matrix: Water

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*76*		*25 - 140*	*07/24/15 06:27*	*07/29/15 18:11*	*1*

Method: 8081A - Organochlorine Pesticides (GC) - RE

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Endosulfan I	0.048	U H	0.048	0.048	0.015	ug/L		08/03/15 20:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*56*		*30 - 135*	*07/31/15 05:07*	*08/03/15 20:33*	*1*
DCB Decachlorobiphenyl	*57*		*30 - 135*	*07/31/15 05:07*	*08/03/15 20:33*	*1*
Tetrachloro-m-xylene	*66*		*25 - 140*	*07/31/15 05:07*	*08/03/15 20:33*	*1*
Tetrachloro-m-xylene	*65*		*25 - 140*	*07/31/15 05:07*	*08/03/15 20:33*	*1*

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.19	U Q	0.48	0.19	0.16	ug/L		07/27/15 19:43	1
Aroclor-1221	0.19	U	0.48	0.19	0.12	ug/L		07/27/15 19:43	1
Aroclor-1232	0.19	U	0.48	0.19	0.15	ug/L		07/27/15 19:43	1
Aroclor-1242	0.38	U	0.48	0.38	0.21	ug/L		07/27/15 19:43	1
Aroclor-1248	0.19	U	0.48	0.19	0.095	ug/L		07/27/15 19:43	1
Aroclor-1254	0.19	U	0.48	0.19	0.15	ug/L		07/27/15 19:43	1
Aroclor-1260	0.19	U Q	0.48	0.19	0.16	ug/L		07/27/15 19:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*84*		*40 - 140*	*07/24/15 06:29*	*07/27/15 19:43*	*1*
Tetrachloro-m-xylene	*89*		*40 - 140*	*07/24/15 06:29*	*07/27/15 19:43*	*1*
DCB Decachlorobiphenyl	*70*		*40 - 135*	*07/24/15 06:29*	*07/27/15 19:43*	*1*
DCB Decachlorobiphenyl	*69*		*40 - 135*	*07/24/15 06:29*	*07/27/15 19:43*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 10:00	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.050	U	0.15	0.050	0.031	ug/L		08/01/15 04:01	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.050	ug/L		08/01/15 04:01	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.050	ug/L		08/01/15 04:01	1
2,4-Dinitrotoluene	**0.054**	**J**	0.13	0.10	0.050	ug/L		08/01/15 04:01	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.050	ug/L		08/01/15 04:01	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		08/01/15 04:01	1
2-Nitrotoluene	0.10	U	0.50	0.10	0.089	ug/L		08/01/15 04:01	1
3-Nitrotoluene	0.10	U	0.50	0.10	0.057	ug/L		08/01/15 04:01	1
4-Nitrotoluene	0.10	U	0.50	0.10	0.089	ug/L		08/01/15 04:01	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.050	ug/L		08/01/15 04:01	1
HMX	0.050	U	0.15	0.050	0.036	ug/L		08/01/15 04:01	1
RDX	0.050	U	0.15	0.050	0.036	ug/L		08/01/15 04:01	1
Nitrobenzene	0.10	U	0.15	0.10	0.050	ug/L		08/01/15 04:01	1
Tetryl	0.10	U	0.15	0.10	0.050	ug/L		08/01/15 04:01	1
Nitroglycerin	0.50	U	0.66	0.50	0.33	ug/L		08/01/15 04:01	1
PETN	0.50	U	0.66	0.50	0.30	ug/L		08/01/15 04:01	1

Client Sample ID: FWGEQUIPRINSE4-0625-GW

Lab Sample ID: 240-53558-23

Date Collected: 07/23/15 12:35
Matrix: Water
Date Received: 07/23/15 18:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*98*		*79 - 111*	*07/29/15 14:19*	*08/01/15 04:01*	*1*
3,4-Dinitrotoluene	*105*		*79 - 111*	*07/29/15 14:19*	*08/05/15 01:42*	*1*

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 16:50	1
Chromium	4.0	U	7.0	4.0	0.55	ug/L		07/27/15 16:50	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 16:50	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 16:50	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 16:50	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 16:50	1
Vanadium	**2.9**	**J**	7.0	4.0	2.4	ug/L		07/27/15 16:50	1
Barium	5.0	U	200	5.0	1.0	ug/L		07/27/15 16:50	1
Calcium	1000	U	5000	1000	260	ug/L		07/27/15 16:50	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 16:50	1
Magnesium	300	U	5000	300	55	ug/L		07/27/15 16:50	1
Manganese	**0.48**	**J**	15	5.0	0.46	ug/L		07/27/15 16:50	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 16:50	1
Potassium	900	U	5000	900	70	ug/L		07/27/15 16:50	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/29/15 12:15	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/29/15 12:15	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/29/15 12:15	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/29/15 12:15	1
Iron	100	U	150	100	44	ug/L		07/29/15 12:15	1
Sodium	400	U	1000	400	160	ug/L		07/29/15 12:15	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/29/15 12:15	1
Zinc	50	U	50	50	27	ug/L		07/29/15 12:15	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 15:55	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.010	0.0050	mg/L		08/05/15 11:42	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/13/15 09:36	1

Client Sample ID: FWGLL10mw-003C-0597-GW
Date Collected: 07/23/15 14:51
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-24
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 17:05	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	0.22	ug/L		08/03/15 17:05	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.24	ug/L		08/03/15 17:05	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.30	ug/L		08/03/15 17:05	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.45	ug/L		08/03/15 17:05	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.23	ug/L		08/03/15 17:05	1
1,2-Dichloroethene, Total	1.0	U	2.0	1.0	0.20	ug/L		08/03/15 17:05	1
1,2-Dichloropropane	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 17:05	1
2-Hexanone	2.0	U	10	2.0	0.48	ug/L		08/03/15 17:05	1
Bromochloromethane	1.0	U	1.0	1.0	0.50	ug/L		08/03/15 17:05	1
Acetone	2.0	U	10	2.0	0.94	ug/L		08/03/15 17:05	1
Benzene	1.0	U	1.0	1.0	0.35	ug/L		08/03/15 17:05	1
Bromoform	1.0	U	1.0	1.0	0.56	ug/L		08/03/15 17:05	1
Bromomethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 17:05	1
Carbon disulfide	1.0	U	1.0	1.0	0.38	ug/L		08/03/15 17:05	1
Carbon tetrachloride	**1.3**		1.0	1.0	0.43	ug/L		08/03/15 17:05	1
Chlorobenzene	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 17:05	1
Chloroethane	1.0	U	1.0	1.0	0.32	ug/L		08/03/15 17:05	1
Chloroform	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 17:05	1
Chloromethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 17:05	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	0.26	ug/L		08/03/15 17:05	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.46	ug/L		08/03/15 17:05	1
Bromodichloromethane	1.0	U	1.0	1.0	0.29	ug/L		08/03/15 17:05	1
Ethylbenzene	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 17:05	1
1,2-Dibromoethane	1.0	U	1.0	1.0	0.32	ug/L		08/03/15 17:05	1
m-Xylene & p-Xylene	1.0	U	2.0	1.0	0.24	ug/L		08/03/15 17:05	1
2-Butanone (MEK)	2.0	U	10	2.0	0.53	ug/L		08/03/15 17:05	1
4-Methyl-2-pentanone (MIBK)	2.0	U	10	2.0	0.99	ug/L		08/03/15 17:05	1
Methylene Chloride	1.0	U	1.0	1.0	0.33	ug/L		08/04/15 17:44	1
o-Xylene	0.50	U	1.0	0.50	0.25	ug/L		08/03/15 17:05	1
Styrene	0.50	U	1.0	0.50	0.45	ug/L		08/03/15 17:05	1
Tetrachloroethene	1.0	U	1.0	1.0	0.31	ug/L		08/03/15 17:05	1
Toluene	1.0	U	1.0	1.0	0.23	ug/L		08/03/15 17:05	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	0.30	ug/L		08/03/15 17:05	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.56	ug/L		08/03/15 17:05	1
Trichloroethene	1.0	U	1.0	1.0	0.22	ug/L		08/03/15 17:05	1
Vinyl chloride	1.0	U	1.0	1.0	0.29	ug/L		08/03/15 17:05	1
Xylenes, Total	2.0	U	2.0	2.0	0.52	ug/L		08/03/15 17:05	1
Dibromochloromethane	1.0	U	1.0	1.0	0.43	ug/L		08/03/15 17:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*70 - 120*		*08/03/15 17:05*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 120*		*08/04/15 17:44*	*1*
4-Bromofluorobenzene (Surr)	*93*		*75 - 120*		*08/03/15 17:05*	*1*
4-Bromofluorobenzene (Surr)	*87*		*75 - 120*		*08/04/15 17:44*	*1*
Toluene-d8 (Surr)	*88*		*85 - 120*		*08/03/15 17:05*	*1*
Toluene-d8 (Surr)	*94*		*85 - 120*		*08/04/15 17:44*	*1*
Dibromofluoromethane (Surr)	*87*		*85 - 115*		*08/03/15 17:05*	*1*
Dibromofluoromethane (Surr)	*93*		*85 - 115*		*08/04/15 17:44*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-53558-1

Client Sample ID: FWGLL10mw-003C-0597-GW
Date Collected: 07/23/15 14:51
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-24
Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/10/15 15:57	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		08/10/15 15:57	1
Diethyl phthalate	0.96	U	1.9	0.96	0.58	ug/L		08/10/15 15:57	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		08/10/15 15:57	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		08/10/15 15:57	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		08/10/15 15:57	1
2,4-Dinitrotoluene	0.48	U	4.8	0.48	0.24	ug/L		08/10/15 15:57	1
Nitrobenzene	0.096	U	0.96	0.096	0.038	ug/L		08/10/15 15:57	1
2,6-Dinitrotoluene	4.8	U	4.8	4.8	1.0	ug/L		08/10/15 15:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*82*		*50 - 110*	*07/24/15 06:24*	*08/10/15 15:57*	*1*
2-Fluorophenol (Surr)	*78*		*20 - 110*	*07/24/15 06:24*	*08/10/15 15:57*	*1*
Nitrobenzene-d5 (Surr)	*78*		*40 - 110*	*07/24/15 06:24*	*08/10/15 15:57*	*1*
Phenol-d5 (Surr)	*83*		*10 - 115*	*07/24/15 06:24*	*08/10/15 15:57*	*1*
Terphenyl-d14 (Surr)	*95*		*50 - 135*	*07/24/15 06:24*	*08/10/15 15:57*	*1*
2,4,6-Tribromophenol (Surr)	*86*		*40 - 125*	*07/24/15 06:24*	*08/10/15 15:57*	*1*

Client Sample ID: FWGLL10mw-003C-0597-GF
Date Collected: 07/23/15 14:51
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-25
Matrix: Water

8

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 16:54	1
Chromium	**0.79**	**J**	7.0	4.0	0.55	ug/L		07/27/15 16:54	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 16:54	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 16:54	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 16:54	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 16:54	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 16:54	1
Barium	**5.4**	**J**	200	5.0	1.0	ug/L		07/27/15 16:54	1
Calcium	**61000**		5000	1000	260	ug/L		07/27/15 16:54	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 16:54	1
Magnesium	**19000**		5000	300	55	ug/L		07/27/15 16:54	1
Manganese	5.0	U	15	5.0	0.46	ug/L		07/27/15 16:54	1
Nickel	5.0	U	40	5.0	0.76	ug/L		07/27/15 16:54	1
Potassium	**700**	**J**	5000	900	70	ug/L		07/27/15 16:54	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/29/15 12:19	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/29/15 12:19	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/29/15 12:19	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/29/15 12:19	1
Iron	100	U	150	100	44	ug/L		07/29/15 12:19	1
Sodium	**9200**		1000	400	160	ug/L		07/29/15 12:19	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/29/15 12:19	1
Zinc	50	U	50	50	27	ug/L		07/29/15 12:19	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 15:57	1

Client Sample ID: FWGFWGmw-007-0576-GW

Date Collected: 07/23/15 10:24
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-26

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.0	U	5.0	5.0	1.7	ug/L		08/10/15 16:23	1
Butyl benzyl phthalate	0.50	U	5.0	0.50	0.26	ug/L		08/10/15 16:23	1
Diethyl phthalate	1.0	U	2.0	1.0	0.60	ug/L		08/10/15 16:23	1
Dimethyl phthalate	0.50	U	2.0	0.50	0.29	ug/L		08/10/15 16:23	1
Di-n-butyl phthalate	5.0	U	5.0	5.0	1.7	ug/L		08/10/15 16:23	1
Di-n-octyl phthalate	0.50	U	2.0	0.50	0.23	ug/L		08/10/15 16:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*79*		*50 - 110*	*07/24/15 06:24*	*08/10/15 16:23*	*1*
2-Fluorophenol (Surr)	*78*		*20 - 110*	*07/24/15 06:24*	*08/10/15 16:23*	*1*
Nitrobenzene-d5 (Surr)	*76*		*40 - 110*	*07/24/15 06:24*	*08/10/15 16:23*	*1*
Phenol-d5 (Surr)	*84*		*10 - 115*	*07/24/15 06:24*	*08/10/15 16:23*	*1*
Terphenyl-d14 (Surr)	*92*		*50 - 135*	*07/24/15 06:24*	*08/10/15 16:23*	*1*
2,4,6-Tribromophenol (Surr)	*87*		*40 - 125*	*07/24/15 06:24*	*08/10/15 16:23*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 10:18	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		08/01/15 04:44	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		08/01/15 04:44	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		08/01/15 04:44	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		08/01/15 04:44	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		08/01/15 04:44	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		08/01/15 04:44	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		08/01/15 04:44	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		08/01/15 04:44	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		08/01/15 04:44	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		08/01/15 04:44	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		08/01/15 04:44	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		08/01/15 04:44	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		08/01/15 04:44	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		08/01/15 04:44	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		08/01/15 04:44	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		08/01/15 04:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*94*	*M*	*79 - 111*	*07/29/15 14:19*	*08/01/15 04:44*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/13/15 09:38	1

Client Sample ID: FWGFWGmw-007-0576-GF
Date Collected: 07/23/15 10:24
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-27
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 16:58	1
Chromium	**1.0**	**J**	7.0	4.0	0.55	ug/L		07/27/15 16:58	1
Cobalt	4.0	U	7.0	4.0	0.56	ug/L		07/27/15 16:58	1
Lead	5.0	U	10	5.0	1.9	ug/L		07/27/15 16:58	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 16:58	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 16:58	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 16:58	1
Barium	**14**	**J**	200	5.0	1.0	ug/L		07/27/15 16:58	1
Calcium	**87000**		5000	1000	260	ug/L		07/27/15 16:58	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 16:58	1
Magnesium	**39000**		5000	300	55	ug/L		07/27/15 16:58	1
Manganese	**45**		15	5.0	0.46	ug/L		07/27/15 16:58	1
Nickel	**0.79**	**J**	40	5.0	0.76	ug/L		07/27/15 16:58	1
Potassium	**1600**	**J**	5000	900	70	ug/L		07/27/15 16:58	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/29/15 12:23	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/29/15 12:23	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/29/15 12:23	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/29/15 12:23	1
Iron	100	U	150	100	44	ug/L		07/29/15 12:23	1
Sodium	**5700**		1000	400	160	ug/L		07/29/15 12:23	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/29/15 12:23	1
Zinc	50	U	50	50	27	ug/L		07/29/15 12:23	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 15:58	1

Client Sample ID: FWGLL7mw-001-0596-GW — **Lab Sample ID: 240-53558-28**
Date Collected: 07/23/15 13:54 — **Matrix: Water**
Date Received: 07/23/15 18:20

8

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	**4.6**		1.0	1.0	0.44	ug/L		08/03/15 17:28	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	0.22	ug/L		08/03/15 17:28	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.24	ug/L		08/03/15 17:28	1
1,1-Dichloroethane	**1.6**		1.0	1.0	0.30	ug/L		08/03/15 17:28	1
1,1-Dichloroethene	**4.3**		1.0	1.0	0.45	ug/L		08/03/15 17:28	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.23	ug/L		08/03/15 17:28	1
1,2-Dichloroethene, Total	1.0	U	2.0	1.0	0.20	ug/L		08/03/15 17:28	1
1,2-Dichloropropane	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 17:28	1
2-Hexanone	2.0	U	10	2.0	0.48	ug/L		08/03/15 17:28	1
Bromochloromethane	1.0	U	1.0	1.0	0.50	ug/L		08/03/15 17:28	1
Acetone	2.0	U	10	2.0	0.94	ug/L		08/03/15 17:28	1
Benzene	1.0	U	1.0	1.0	0.35	ug/L		08/03/15 17:28	1
Bromoform	1.0	U	1.0	1.0	0.56	ug/L		08/03/15 17:28	1
Bromomethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 17:28	1
Carbon disulfide	1.0	U	1.0	1.0	0.38	ug/L		08/03/15 17:28	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.43	ug/L		08/03/15 17:28	1
Chlorobenzene	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 17:28	1
Chloroethane	1.0	U	1.0	1.0	0.32	ug/L		08/03/15 17:28	1
Chloroform	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 17:28	1
Chloromethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 17:28	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	0.26	ug/L		08/03/15 17:28	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.46	ug/L		08/03/15 17:28	1
Bromodichloromethane	1.0	U	1.0	1.0	0.29	ug/L		08/03/15 17:28	1
Ethylbenzene	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 17:28	1
1,2-Dibromoethane	1.0	U	1.0	1.0	0.32	ug/L		08/03/15 17:28	1
m-Xylene & p-Xylene	1.0	U	2.0	1.0	0.24	ug/L		08/03/15 17:28	1
2-Butanone (MEK)	2.0	U	10	2.0	0.53	ug/L		08/03/15 17:28	1
4-Methyl-2-pentanone (MIBK)	2.0	U	10	2.0	0.99	ug/L		08/03/15 17:28	1
Methylene Chloride	1.0	U	1.0	1.0	0.33	ug/L		08/04/15 18:06	1
o-Xylene	0.50	U	1.0	0.50	0.25	ug/L		08/03/15 17:28	1
Styrene	0.50	U	1.0	0.50	0.45	ug/L		08/03/15 17:28	1
Tetrachloroethene	1.0	U	1.0	1.0	0.31	ug/L		08/03/15 17:28	1
Toluene	1.0	U	1.0	1.0	0.23	ug/L		08/03/15 17:28	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	0.30	ug/L		08/03/15 17:28	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.56	ug/L		08/03/15 17:28	1
Trichloroethene	1.0	U	1.0	1.0	0.22	ug/L		08/03/15 17:28	1
Vinyl chloride	1.0	U	1.0	1.0	0.29	ug/L		08/03/15 17:28	1
Xylenes, Total	2.0	U	2.0	2.0	0.52	ug/L		08/03/15 17:28	1
Dibromochloromethane	1.0	U	1.0	1.0	0.43	ug/L		08/03/15 17:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*70 - 120*		*08/03/15 17:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*70 - 120*		*08/04/15 18:06*	*1*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*		*08/03/15 17:28*	*1*
4-Bromofluorobenzene (Surr)	*85*		*75 - 120*		*08/04/15 18:06*	*1*
Toluene-d8 (Surr)	*89*		*85 - 120*		*08/03/15 17:28*	*1*
Toluene-d8 (Surr)	*88*		*85 - 120*		*08/04/15 18:06*	*1*
Dibromofluoromethane (Surr)	*88*		*85 - 115*		*08/03/15 17:28*	*1*
Dibromofluoromethane (Surr)	*96*		*85 - 115*		*08/04/15 18:06*	*1*

Client Sample ID: FWGLL7mw-001-0596-GW

Date Collected: 07/23/15 13:54
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-28

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.0	U	5.0	5.0	1.7	ug/L		08/10/15 16:49	1
Butyl benzyl phthalate	0.50	U	5.0	0.50	0.26	ug/L		08/10/15 16:49	1
Diethyl phthalate	1.0	U	2.0	1.0	0.60	ug/L		08/10/15 16:49	1
Dimethyl phthalate	0.50	U	2.0	0.50	0.29	ug/L		08/10/15 16:49	1
Di-n-butyl phthalate	5.0	U	5.0	5.0	1.7	ug/L		08/10/15 16:49	1
Di-n-octyl phthalate	0.50	U	2.0	0.50	0.23	ug/L		08/10/15 16:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*71*		*50 - 110*	*07/24/15 06:24*	*08/10/15 16:49*	*1*
2-Fluorophenol (Surr)	*63*		*20 - 110*	*07/24/15 06:24*	*08/10/15 16:49*	*1*
Nitrobenzene-d5 (Surr)	*68*		*40 - 110*	*07/24/15 06:24*	*08/10/15 16:49*	*1*
Phenol-d5 (Surr)	*69*		*10 - 115*	*07/24/15 06:24*	*08/10/15 16:49*	*1*
Terphenyl-d14 (Surr)	*80*		*50 - 135*	*07/24/15 06:24*	*08/10/15 16:49*	*1*
2,4,6-Tribromophenol (Surr)	*75*		*40 - 125*	*07/24/15 06:24*	*08/10/15 16:49*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		07/31/15 10:36	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.16	0.052	0.032	ug/L		08/01/15 05:28	1
1,3-Dinitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		08/01/15 05:28	1
2,4,6-Trinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		08/01/15 05:28	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		08/01/15 05:28	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		08/01/15 05:28	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.16	0.10	0.016	ug/L		08/01/15 05:28	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		08/01/15 05:28	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		08/01/15 05:28	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		08/01/15 05:28	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		08/01/15 05:28	1
HMX	0.052	U	0.16	0.052	0.037	ug/L		08/01/15 05:28	1
RDX	0.052	U	0.16	0.052	0.037	ug/L		08/01/15 05:28	1
Nitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		08/01/15 05:28	1
Tetryl	0.10	U	0.16	0.10	0.052	ug/L		08/01/15 05:28	1
Nitroglycerin	0.52	U	0.67	0.52	0.34	ug/L		08/01/15 05:28	1
PETN	0.52	U	0.67	0.52	0.31	ug/L		08/01/15 05:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*95*		*79 - 111*	*07/29/15 14:19*	*08/01/15 05:28*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		08/13/15 09:40	1

Client Sample ID: FWGLL7mw-001-0596-GF

Lab Sample ID: 240-53558-29

Date Collected: 07/23/15 13:54
Matrix: Water
Date Received: 07/23/15 18:20

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	2.9	ug/L		07/27/15 17:02	1
Chromium	**0.69**	**J**	7.0	4.0	0.55	ug/L		07/27/15 17:02	1
Cobalt	**5.6**	**J**	7.0	4.0	0.56	ug/L		07/27/15 17:02	1
Lead	**2.1**	**J**	10	5.0	1.9	ug/L		07/27/15 17:02	1
Selenium	10	U	15	10	4.0	ug/L		07/27/15 17:02	1
Silver	5.0	U	7.0	5.0	0.92	ug/L		07/27/15 17:02	1
Vanadium	4.0	U	7.0	4.0	2.4	ug/L		07/27/15 17:02	1
Barium	**22**	**J**	200	5.0	1.0	ug/L		07/27/15 17:02	1
Calcium	**39000**		5000	1000	260	ug/L		07/27/15 17:02	1
Copper	10	U	25	10	1.9	ug/L		07/27/15 17:02	1
Magnesium	**13000**		5000	300	55	ug/L		07/27/15 17:02	1
Manganese	**420**		15	5.0	0.46	ug/L		07/27/15 17:02	1
Nickel	**7.3**	**J**	40	5.0	0.76	ug/L		07/27/15 17:02	1
Potassium	**1100**	**J**	5000	900	70	ug/L		07/27/15 17:02	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		07/29/15 12:34	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		07/29/15 12:34	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		07/29/15 12:34	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		07/29/15 12:34	1
Iron	**8000**		150	100	44	ug/L		07/29/15 12:34	1
Sodium	**6800**		1000	400	160	ug/L		07/29/15 12:34	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		07/29/15 12:34	1
Zinc	**50**		50	50	27	ug/L		07/29/15 12:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.090	ug/L		07/29/15 16:01	1

Client Sample ID: FWGTEAM4-TRIP

Date Collected: 07/23/15 08:00
Date Received: 07/23/15 18:20

Lab Sample ID: 240-53558-30

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 17:51	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	0.22	ug/L		08/03/15 17:51	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.24	ug/L		08/03/15 17:51	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.30	ug/L		08/03/15 17:51	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.45	ug/L		08/03/15 17:51	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.23	ug/L		08/03/15 17:51	1
1,2-Dichloroethene, Total	1.0	U	2.0	1.0	0.20	ug/L		08/03/15 17:51	1
1,2-Dichloropropane	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 17:51	1
2-Hexanone	2.0	U	10	2.0	0.48	ug/L		08/03/15 17:51	1
Bromochloromethane	1.0	U	1.0	1.0	0.50	ug/L		08/03/15 17:51	1
Acetone	**2.8**	**J**	10	2.0	0.94	ug/L		08/03/15 17:51	1
Benzene	1.0	U	1.0	1.0	0.35	ug/L		08/03/15 17:51	1
Bromoform	1.0	U	1.0	1.0	0.56	ug/L		08/03/15 17:51	1
Bromomethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 17:51	1
Carbon disulfide	1.0	U	1.0	1.0	0.38	ug/L		08/03/15 17:51	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.43	ug/L		08/03/15 17:51	1
Chlorobenzene	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 17:51	1
Chloroethane	1.0	U	1.0	1.0	0.32	ug/L		08/03/15 17:51	1
Chloroform	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 17:51	1
Chloromethane	1.0	U	1.0	1.0	0.44	ug/L		08/03/15 17:51	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	0.26	ug/L		08/03/15 17:51	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.46	ug/L		08/03/15 17:51	1
Bromodichloromethane	1.0	U	1.0	1.0	0.29	ug/L		08/03/15 17:51	1
Ethylbenzene	1.0	U	1.0	1.0	0.25	ug/L		08/03/15 17:51	1
1,2-Dibromoethane	1.0	U	1.0	1.0	0.32	ug/L		08/03/15 17:51	1
m-Xylene & p-Xylene	1.0	U	2.0	1.0	0.24	ug/L		08/03/15 17:51	1
2-Butanone (MEK)	2.0	U	10	2.0	0.53	ug/L		08/03/15 17:51	1
4-Methyl-2-pentanone (MIBK)	2.0	U	10	2.0	0.99	ug/L		08/03/15 17:51	1
Methylene Chloride	**0.69**	**J**	1.0	1.0	0.33	ug/L		08/04/15 18:29	1
o-Xylene	0.50	U	1.0	0.50	0.25	ug/L		08/03/15 17:51	1
Styrene	0.50	U	1.0	0.50	0.45	ug/L		08/03/15 17:51	1
Tetrachloroethene	1.0	U	1.0	1.0	0.31	ug/L		08/03/15 17:51	1
Toluene	1.0	U	1.0	1.0	0.23	ug/L		08/03/15 17:51	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	0.30	ug/L		08/03/15 17:51	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.56	ug/L		08/03/15 17:51	1
Trichloroethene	1.0	U	1.0	1.0	0.22	ug/L		08/03/15 17:51	1
Vinyl chloride	1.0	U	1.0	1.0	0.29	ug/L		08/03/15 17:51	1
Xylenes, Total	2.0	U	2.0	2.0	0.52	ug/L		08/03/15 17:51	1
Dibromochloromethane	1.0	U	1.0	1.0	0.43	ug/L		08/03/15 17:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*70 - 120*		*08/03/15 17:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 120*		*08/04/15 18:29*	*1*
4-Bromofluorobenzene (Surr)	*94*		*75 - 120*		*08/03/15 17:51*	*1*
4-Bromofluorobenzene (Surr)	*86*		*75 - 120*		*08/04/15 18:29*	*1*
Toluene-d8 (Surr)	*89*		*85 - 120*		*08/03/15 17:51*	*1*
Toluene-d8 (Surr)	*94*		*85 - 120*		*08/04/15 18:29*	*1*
Dibromofluoromethane (Surr)	*87*		*85 - 115*		*08/03/15 17:51*	*1*
Dibromofluoromethane (Surr)	*96*		*85 - 115*		*08/04/15 18:29*	*1*

Attachment 1

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angye Dragotta/October 16, 2015

SDG: 240-53558
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1,
3. Were holding times met?	X				QAPP Table 5-1, J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1,
5. Were all QAPP addendum-specified target analytes reported?	X				QAPP Table 4-5
6. Was the GC/MS system tuned with bromofluorobenzene (BFB) during each 12 hour shift (prior to ICAL and Cal Ver.)?	X				QSM Table F-4
7. Calibration					
7a. Did the initial calibration curve consist of 5 concentration levels?	X			Instrument A3UX10–7/24/15, Instrument A3UX16–7/14/15	QSM Table F-4 R
7b. Did the Calibration Check Compounds (CCCs) (see Table 1 below) relative standard deviations (%RSD) ≤ 30%?	X				QSM Table F-4 R
7c. Were the minimum response factors (RFs) for the System Performance Check Compounds (SPCCs) (see Table 2 below) met?	X				QSM Table F-4
7d. Did target analytes with an average calibration type have an RSD ≤ 15%?	X				QSM Table F-4 15% <RSD< 20% = J/UJ
7e. IF the RSD was >15% was a different calibration option used?	X				
7f. If a linear regression curve was used, was the correlation coefficient r>0.995?			X		QSM Table F-4 R<0.995=-J/R
7g. If a non-linear regression was used, was the COD $r^2 \geq 0.99$, with a minimum of 6 points for second order and 7 points for third order?	X				QSM Table F-4 R^2<0.99=-J/R
8. Was a LOD Level Verification performed quarterly for each reported analyte with	X				QSM Table F-4 and section D.1.2.1

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angye Dragotta/October 16, 2015

SDG: 240-53558
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
detected results?					
9. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours?	X			8/3/15 @ 0858 (A3UX10), 8/4/15 @ 1332(A3UX16) Evaluated for $MeCl_2$ only	
10. Were the QC/MRL recoveries 70-130%	X				LS
11. Was a second source verification (ICV) analyzed? Did all target analytes have a recovery of 80-120%?	X			7/24/15 @ 1052 (A3UX10), 7/14/15 @ 1356 (A3UX16)	QSM Table F-4 J=<80% and >120%
12. Was a CCV run daily prior to analysis and every 12 hours of analysis time?	X			8/3/15 @ 0858 (A3UX10), 8/4/15 @ 1332(A3UX16) Evaluated for $MeCl_2$ only	QSM Table F-4
12a. Were the average response factors (RFs) for the (SPCCs) (see Table 2 below) met?	X				QSM Table F-4
12b. Were all target analytes ≤ 20%D?	X				QSM Table F-4 %D <20% = J/UJ
13. Were the internal standards added to every sample?	X				QSM Table F-4
13a. Was the EICP area between -50% and +100% of the ICAL mid-point standard?	X				QSM Table F-4 R
13b. Were the retention times for all IS compounds within ±30 seconds from the RT of the mid-point standard in the ICAL?	X				QSM Table F-4 J/UJ
14. Were the retention times for target analytes within ±0.06 RRT units from the RT of the mid-point standard in the ICAL or the most recently updated RRT for all samples?	X				QSM Table F-4 J
15. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-4
15a. Were target analytes detected in the method blank?	X			Checked by ADR. Methylene chloride was detected in the method blank analyzed 8/4/15 at 0.364 µg/L. The methylene chloride results for samples FWGEQUIPRINSE3-0624-GW, FWGEQUIPRINSE4-0625-GW, FWGTEAM3-TripBlank, FWGTEAM4-Trip and FWGTEAMDEMO-Trip were qualified, "B" as the reported methylene chloride concentrations were less than ten times method blank contamination.	QSM Table F-4 <5/10X =B

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angye Dragotta/October 16, 2015

SDG: 240-53558
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
16. Was a field blank (equipment and/or trip) collected and analyzed?	X			FWGEQUIPRINSE3-0624-GW, FWGEQUIPRINSE4-0625-GW, FWGTEAM3-TripBlank, FWGTEAM4-Trip and FWGTEAMDEMO-Trip	
16a. Were target analytes detected in the field blanks?	X			Checked by ADR. The laboratory narrative stated FWGTEAM4-TRIP was analyzed with substantial headspace in the sample vial, for the analytical sequence from 8/4/15. The methylene chloride results for FWGTEAM4-TRIP were qualified as "J". FWGEQUIPRINSE4-0625-GW had methylene chloride detected at 0.84 µg/L, chloroform at 0.4 µg/L, 1,1,2,2-tetrachloroethane at 0.22 µg/L, 2-butanone at 6.8 µg/L and acetone at 6.9 µg/L. FWGTEAMDEMO-Trip had acetone detected at 2.9ug/L and methylene chloride at 0.62 µg/L; FWGTEAM3-TRIPBLANK had acetone detected at 2.6 µg/L and methylene chloride at 0.56 µg/L; and FWGTEAM4-TRIP had acetone detected at 2.8 µg/L and methylene chloride at 0.69 µg/L . The acetone and methylene chloride results for sample FWGEQUIPRINSE3-0624-GW and the acetone result for sample FWGDETmw-004c-0573-GW, were qualified, "B " as the reported concentrations were less than ten times trip blank and equipment rinse contamination. No qualifications were made for the 1,1,2,2-tetrachloroethane, chloroform or 2-butanone, as 1,1,2,2-tetrachloroethane, chloroform and 2-butanone were not reported as detected in the associated field samples.	QSM Table F-4 <5/10X =B
17. Was a LCS prepared and analyzed with each batch?	X				QSM Table F-4
17a. Were the LCS recoveries within limits specified in Table G-5 of the DoD QSM?	X			ADR checked section;	QSM Table F-4, Table G-5, J/UJ
18. Was a MS/MSD prepared with each batch?		X		MS/MSD was not requested on a sample from this SDG.	QSM Table F-4
18a. Were the MS/MSD recoveries within limits specified in Table G-4 of the DoD QSM with an RPD <30%?			X		QSM Table F-4, Table G-5 J/UJ Parent sample only
19. Was a field duplicate analyzed?	X			A field duplicate was submitted for sample FWGDA2mw-115-0571-GW.	QSM Table F-4,

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angye Dragotta/October 16, 2015

SDG: 240-53558
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
19a. Were the field duplicates RPDs within ±30%?			X	There were no detected volatile concentrations reported for either the parent or field duplicate.	QSM Table F-4, RPD >30=J Parent sample only
20. Were surrogate recoveries within control limits specified in the DOD QSM?	X				QSM Tables F-4 & G-3 >150%=J; 10% -50%=J/UJ; <10%=J/R
21. Were reported sample concentrations within calibration range?	X				

References:

DoD Quality Systems Manual (QSM), version 4.1, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Table1- CCCs

Analyte
1,1-Dichloroethene
Chloroform
1,2-Dichloropropane
Toluene
Ethylbenzene
Vinyl chloride

Table 2- SPCCs

Analyte	Minimum RF
Chloromethane	0.10
1,1-Dichlorethane	0.10
Bromoform	0.10
Chlorobenzene	0.30
1,1,2,2-Tetrachloroethane	0.30

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/September 1, 2015

SDG: 240-53558
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1,
3. Were holding times met?	X				QAPP Table 5-1, J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1,
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-6
6. Was the GC/MS system tuned each 12 hour shift (prior to ICAL and Cal Ver.)?	X				QSM Table F-4
7. Initial Calibration					
7a. Did the initial calibration curve consist of 5 concentration levels?	X			Instrument A4HP9–8/8/15	QSM Table F-4 R
7b. Did the Calibration Check Compounds (CCCs) (see Table 1 below) relative standard deviations (%RSD) ≤ 30%?	X				QSM Table F-4 R
7c. Were the minimum response factors (RFs) for the System Performance Check Compounds (SPCCs) (see Table 2 below) ≤0.050?	X				QSM Table F-4
7d. Were all other target analytes reported with an avg response have an RSD ≤ 15%?	X				QSM Table F-4 15% <RSD< 20% = J/UJ
7e. IF the RSD was >15% was a different calibration option used?	X				
7f. If a linear regression curve was used, was the correlation coefficient r>0.995?			X		QSM Table F-4 R<0.995=-J/R
7g. If a non-linear regression was used, was the COD $r^2 \geq 0.99$, with a minimum of 6 points for second order and 7 points for third order?	X			Benzoic acid, 2,4-dinitrophenol, 4,6-dinitro-2-methylphenol and benzidine used a linear fit.	QSM Table F-4 R^2<0.99=-J/R
8. Was a LOD Level Verification performed quarterly for each reported analyte?	X				QSM Table F-4 and section D.1.2.1
9 Was a breakdown check run at the beginning of and every 12 hours with DDT degradation <20% and tailing factors of benzidine and pentachlorophenol ≤2?	X				QSM Table F-4 R
10. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours with recoveries within 70-130%?	X			8/10/15 @0813, 1204, 1715	Louisville Supplement to the DOD QSM

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/September 1, 2015

SDG: 240-53558
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
11. Was a second source verification (ICV) analyzed? Were results 80-120%?	X			8/8/15 @ 1922	QSM Table F-4 J=<80% and >120%
12. Was a CCV run daily prior to analysis and every 12 hours of analysis time?	X			8/10/15 @0747	QSM Table F-4
12a. Were the average response factors (RFs) for the System Performance Check Compounds (SPCCs) ≥0.050?	X				QSM Table F-4
12b. Were all target analytes ≤ 20%D?	X			4,6-dinitro-2-methylphenol had a %D above control limits of 20% at 21%. No qualification of the data was required as there were no detected 4,6-dinitro-2-methylphenol results reported for the associated field samples.	QSM Table F-4 %D <20% = J/UJ
13. Were the internal standards added to every sample?	X				QSM Table F-4
13a. Was the EICP area between -50% and +100% of the ICAL mid-point standard?	X				QSM Table F-4 R
13b. Were the retention times for all IS compounds within ±30 seconds from the RT of the mid-point standard in the ICAL?	X				QSM Table F-4 J/UJ
14. Were the retention times for target analytes within ±0.06 RRT units from the RT of the mid-point standard in the ICAL or the most recently updated RRT for all samples?	X				QSM Table F-4 J
15. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-4
15a. Were target analytes detected in the method blank >1/2 the MRL, >RL for common contaminants?		X		Checked by ADR.	QSM Table F-4 <5/10X =B
16. Was a field blank (equipment and/or trip) collected and analyzed?	X			FWGEQUIPRINSE3-0624-GW, FWGEQUIPRINSE4-0625-GW	
16a. Were target analytes detected in the field blank?		X			QSM Table F-4 <5/10X =B
17. Was a LCS prepared and analyzed with each batch?	X				QSM Table F-4
17a. Were the LCS recoveries within limits specified in Table G-6 of the DoD QSM?	X			ADR checked section;	QSM Table F-4, Table G-6, J/UJ

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/September 1, 2015

SDG: 240-53558
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
18. Was a MS/MSD prepared with each batch?		X			
18a. Were the MS/MSD recoveries within limits specified in Table G-6 of the DoD QSM with an RPD <30%?			X	An MS/MSD was not requested with this set of samples nor was volume provided.	QSM Table F-4, Table G-6 J/UJ Parent sample only
19. Was a field duplicate analyzed?	X			A field duplicate was submitted for FWGDA2mw-115-0571-GW.	
19a. Were the field duplicates RPDs within ±50%?			X	Checked by ADR. No detected concentrations were reported.	QSM Table F-4, RPD >50=J, Parent sample only
20. Were surrogate recoveries within control limits specified in the DOD QSM?	X				QSM Tables F-4 & G-3 >150%=J; 10% - 50%=J/UJ; <10%=J/R
21. Were reported sample concentrations within calibration range?	X				

References: DoD Quality Systems Manual (QSM), version 4.2, October 2010

- *Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007*
- *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012*
- *Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011*

Additional Comments:

Table 1: CCCs *(All analytes if CCCs not included in standard)*

Base / Neutral Compounds	Acid Compounds
Acenaphthalene	4-Chloro-3-methylphenol
1,4-Dichlorobenzene	2,4-Dichlorophenol
Hexachlorobutadiene	2-Nitrophenol
N-Nitrosodiphehylamine	Phenol
Di-n-octylphthalate	Pentachlorophenol
Fluoroanthene	2,4,6-Trichlorophenol
Benzo(a)pyrene	

Table 2: SPCCs -

N-Nitroso-di-n-propylamine	0.05
Hexachlorocyclopentadiene	0.05
2,4-Dinitrophenol	0.05
4-Nitrophenol	0.05

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta / September 1, 2015

SDG: 240-53558
Analysis: SW846 8081A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?		X		Checked by ADR. Due to LCS failure for endosulfan I, samples FWGDETmw-003c-0572-GW, FWGDETmw-004c-0573-GW, FWGEQUIPRINSE3-0624-GW and FWGEQUIPRINSE4-0625-GW were re-extracted. The re-extraction was completed outside the hold time but within two times hold, so the endosulfan I results for samples FWGDETmw-003c-0572-GW, FWGDETmw-004c-0573-GW, FWGEQUIPRINSE3-0624-GW and FWGEQUIPRINSE4-0625-GW were qualified as estimated, "UJ".	QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a DDT standard analyzed every 12 hours? Was the DDT %breakdown <15%?	X				QSM Table F-2 >15%=J/R
7. Was an endrin standard analyzed every 12 hours? Was the endrin % breakdown <15%?	X			A PEM was analyzed before and after the samples analyzed on 8/3/15 on instrument A2HP3. The closing endrin % breakdown was above 15% at 18.15%. No qualifiers were applied to the data as a result of the high % breakdown as there were no detected concentrations of endrin, endrin aldehyde or endrin ketone reported from the analytical sequence and the opening PEM passed breakdown requirements. QSM does not require bracketing PEM.	QSM Table F-2 >15%=J/R
8. Initial Calibration					
8a. Does the initial calibration curve consist of 5 concentration levels?	X			A2HP15 on 7/14/15(tox), 7/28/15 A2HP3 on 7/16/15, 7/28/15	QSM Table F-2 R
8a. Were the %RSDs for each analyte $\leq$ 20%? OR was the average %RSD $\geq$20% with the r^2 >0.990?	X				QSM Table F-2 RSD>20% or r<0.99=J/R
9. Was a LOD Level Verification performed once per quarter with all target analytes detected?	X				QSM Table F-2 R
10. Was a MRL Verification performed at the beginning and end of the sequence or every 12 hours with results within limits of 70-130%?	X			A2HP15-8/3/15 @ 1655, 1717, 2055, 2117 A2HP3- 7/29/15 @ 1517, 1539, 1834, 1856	QSM Table F-2, G-14 >UL=J; <LL=J/UJ/R

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta / September 1, 2015

SDG: 240-53558
Analysis: SW846 8081A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
11. Was a second source (ICV) verification analyzed after the ICAL? Were results 80-120%?		X		A2HP15 7/14/15 @1632 (Tox), 7/28/15 @1800 A2HP3 7/28/15 @1703, The ICV analyzed at 1703 on 7/28/15 (A2HP3) recovered above control limits of 80-120% at 121.8% for alpha-BHC. No qualification of the data was required as only endosulfan I was reported from A2HP3.	QSM Table F-2 >120%=J;<80%=J/UJ
12. Was a CCV run every 12 hours or at the beginning and end of the analytical run with the %D for all target analytes ≤20%?		X		A2HP15 8/3/15 @ 1550and 2139(tox),1633, 08/4/15 @ 0242 A2HP3 7/29/15 @1434 and 1919 (tox), 1456, 2003 The CCV analyzed 8/3/15 @ 1633 had a %D above control limits of 20% for endosulfan II at 22%. Only endosulfan I was being reported from the analytical sequence containing the CCV outlier, so no qualification of the data was required.	QSM Table F-2 >120%=J; <80%=J/UJ
13. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-2
14. Were target analytes detected?		X		Checked by ADR.	QSM Table F-2 <5x=B
15. Was a field blank collected and analyzed?	X				
16. Were target analytes detected in the field blank analyses >1/2 the MRL?		X			QSM Table F-2 <5x=B
17. Was an LCS prepared and analyzed with each batch?	X				QSM Table F-2
18. Were the LCS recoveries within limits specified in QSM Table G-14?	X			Checked by ADR.	QSM Table G-14 >UL=J; <LL=J/UJ/R
19. Was a MS/MSD pair prepared with each batch?		X		Matrix spike analysis was not requested on a sample from this sample set.	QSM Table F-2
20. Was the MS/MSD parent a Ravenna sample?			X		
21. Were MS/MSD recoveries and RPD within limits specified in QSM Table G-14?			X		QSM Table F-2 Pj with >UL=J; <LL=J/UJ/R
22. Were surrogate recoveries as specified in QSM table G-3?	X			Checked by ADR.	QSM Table F-2 >LL=J; <LL=UJ/J/R
23. Was a field duplicate analyzed? Were the RPDs ≤50%?			X	A field duplicate was not submitted with this set of samples.	RPD >50=J parent sample only
24. Were all positive results verified by a second column confirmation? Were the RPD's ≤ 40 for results greater than the LOQ?			X	No detected pesticide concentrations were reported that required second column confirmation.	QSM Table F-2 >40 RPD=J

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta / September 1, 2015

SDG: 240-53558
Analysis: SW846 8081A

References: DoD Quality Systems Manual (QSM), version 4.2, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ September 1, 2015

SDG: 240-53558
Analysis: SW846 8082

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Calibration					
6a. Does the initial calibration curve consist of 5 concentration levels of Aroclors 1016 and 1260?	X			Instrument A2HP4 7/22/15 Stds = 0.05, 0.1, 0.2, 0.5, 1.0, 2.0	QSM Table F-2 R
6b. Was the % RSD ≤ 20%? or Were the r^2s >0.990?	X				QSM Table F-2 RSD>20% or r<0.99= J/R
7. Was a LOD Verification performed once per quarter? Were all target analytes detected?	X				QSM Table F-2 R
8. Was an MRL Level Verification performed at the beginning and end of the sequence or every 12 hours? Were recoveries 70-130%?	X			7/27/15 @ 1837, 2104	LCG Table 3 >UCL=J; <LCL=J/UJ/R;
9. Was a second source (ICV) verification performed after the ICAL? Were the avg of all peaks for each aroclor 80-120%?	X			7/22/15	QSM Table F-2 >120%=J; <80%=J/ UJ/R
10. Were single standards of the other five Aroclors run to aid in pattern recognition and to determine a single point calibration factor?		X		All aroclors had a multi-point calibration.	Method 8082 Section 5.6.2
11. Was a CCV run every 12 hours?	X			7/27/15@1716, 1732, 1748, 1805, 2048	QSM Table F-2
12. Was the % D ≤ 20 % for each analyte?		X		Only the primary column was evaluated. The avg %D was above control limits of 20% for the closing CCV analyzed 7/27/15. The PCB-1016 CCV had a %D of 21.7% and the PCB-1260 CCV had a %D of 23.3%. No qualification of the data was required as there were no detect PCB concentration reported for the bracketed field samples.	QSM Table F-2 D>20%(neg)=J/R D>20% (pos) =J
13. Was a method blank prepared and analyzed with each batch?	X			Section checked by ADR.	QSM Table F-2

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ September 1, 2015

SDG: 240-53558
Analysis: SW846 8082

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
14. Were target analytes <1/2 the MRL?	X			Section checked by ADR.	QSM Table F-2, <5x = B
15. Was an equipment blank collected and analyzed?	X				
16. Were target analytes in the field blank analyses (equipment) <1/2 the MRL?	X			Section checked by ADR.	QSM Table F-2 <5x = B
17. Was an LCS prepared and analyzed with each batch?	X				QSM Table F-2
18. Were the LCS recoveries within limits specified in LCG Appendix C?	X			Section checked by ADR.	QSM Table F-2, Table G-16, >UL=J; <LCL%=J/R/UJ;
19. Was a MS/MSD pair prepared with each batch?		X		Matrix spike/spike duplicate were not requested or analyzed with this set of samples.	LCG Table 3
20. Was the MS/MSD parent a Ravenna sample?			X		
21. Were MS/MSD recoveries and RPD within limits specified in the DOD QSM Table G-16?			X		QSM Table F-2, Table G-16, >UL=J; <LCL%=J/R/UJ;
22. Was the surrogate spiked into all samples?	X				
23. Were surrogate recoveries As specified in table G-3 of the DoD QSM?	X			Checked by ADR.	QSM Table F-2, Table G-3 >UCL=J; <LCL=J/UJ/R
24. Was a field duplicate analyzed? Were the RPDs <50%?		X		A field duplicate was not submitted with this set of samples.	QSM Table F-2, RPD >50=J
25. Were all positive results verified by a second dissimilar column confirmation? Was the RPD ≤ 40?			X	No detected concentrations were reported that required confirmation.	QSM Table F-2, RPD>40=J

References:
DoD Quality Systems Manual (QSM), version 4.2, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ September 1, 2015

SDG: 240-53558
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?	X				QAPP Table *5-1* J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table *5-1*
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Was a LOD Verification performed once per quarter with all target analytes detected?	X				DoD QSM Table F-8
7. Tuning (ICP MS Only)					
7a. Was a tune performed daily prior to calibration	X				DoD QSM Table F-8 R
7b. Mass Calibration <0.1 amu from true value	X				
7c. Resolution <0.9 amu full width at 10 % peak height	X				
7d. RSD <%5 for a minimum of four replicate analyses	X				
8.Calibration	X				
8a. Was the ICAL performed daily with at least	X			ICP(7/27/15), Hg (7/29/15) and ICPMS-(7/29/15)	DoD QSM Tables F-8 and F-7
1high standard and a blank for ICP & ICPMS	X				
5 standards and a blank for Hg	X				
8b. Was the correlation coefficient r≥0.995 for Hg?	X				DoD QSM Tables F-8 and F-7 r<0.995=J/R
8c. Was the ICV (second source verification) analyzed after the ICAL with results 90-110% of the true value?	X				DoD QSM Tables F-8 and F-7
8d. Was the ICB analyzed after the ICV with detected results <1/2 the MRL?	X			ICP-The ICB analyzed 7/27/15@ 0924 had lead detected at 2.43 µg/L and potassium at 71.5 µg/L. The lead results for samples FWGDA2mw-115-0571-GF, FWGEQUIPRINSE3-0624-GW, FWGLL1mw-065c-0582-GF, FWGFWGmw-015-0579-GF and FWGLL7mw-001-0596-GF; and the potassium result for sample FWGEQUIPRINSE3-0624-GW were qualified, "U" as the reported lead and potassium concentrations were less than 5x contamination. ICPMS- The ICB analyzed 7/29/15 at 0951 had cadmium detected at 0.162 µg/L. The cadmium result for sample FWGDA2mw-DUP1-0617-GF was qualified, "U" as the reported cadmium concentration was less than 5x contamination.	DoD QSM, Tables F-8 and F-7 < 5x = U

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ September 1, 2015

SDG: 240-53558
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
Sample Analysis					
9. Was a MRL Level Verification performed at the beginning of the daily sequence and end of the analytical sequence bracketing samples? Were results 70-130%?	X				LS, DoD QSM, Table G-18, >130%=J; 70-80%=J/UJ; <70%=J/UJ, <65%=R, unless DL check with detected results
10. Were CCVs analyzed every 10 samples and at the end of the analytical sequence with results 90-110% of the true value?	X				DoD QSM, Tables F-8 and F-7 >110%=J, <85%=J/R 90-85%=J/UJ;
11. Were the CCBs run every 10 samples and at the end of the analytical sequence? Were results <1/2 the MRL?		X		ICP The CCBs analyzed 7/27/15 had lead detected from 1.96 µg/L to3.10 µg/L , chromium from 0.620 µg/L to 0.643 µg/L , potassium from 81.6 µg/L to 103 µg/L, silver from 0.925 µg/L to 1.17 µg/L. The lead results for samples FWGDA2mw-115-0571-GF, FWGEQUIPRINSE3-0624-GW, FWGLL1mw-065c-0582-GF, FWGFWGmw-015-0579-GF, and FWGLL7mw-001-0596-GF; the chromium results for samples FWGLL1mw-065c-0582-GF, FWGFWGmw-016-0580-GF, FWGFWGmw-015-0579-GF, FWGFWGmw-004-0575-GF, FWGLL2mw-267c-0590-GF, FWGLL10mw-003c-0597-GF, FWGFWGmw-007-0576-GF and FWGLL7mw-001-0596-GF; the potassium result for sample FWGEQUIPRINSE3-0624-GW; and the silver results for samples FWGFWGmw-015-0579-GF and FWGLL2mw-267c-0590-GF were qualified, "U" as the reported concentrations were less than 5x contamination. ICPMS The CCBs analyzed 7/29/15 had cadmium detected from 0.216 µg/L to 0.387 µg/L, beryllium from 0.06 µg/L to 0.204 µg/L and thallium at 0.0820 µg/L. The cadmium result for sample FWGDA2mw-DUP1-0617-GF was qualified, "U" as the reported cadmium concentration was less than 5x contamination. No qualification was required for the beryllium or thallium contamination as beryllium and thallium were not reported as detected in the bracketed field samples. Hg- The CCB analyzed 7/29/15 at 1604 had mercury detected at 0.110 µg/L. No qualification was required for the mercury contamination as mercury was not reported as detected in the bracketed field samples.	DoD QSM Tables F-8 and F-7 <5x = U

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ September 1, 2015

SDG: 240-53558
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
12. Was an Interelement Check Standard run at the beginning of the analytical sequence and every 12 hours with the ICS recovery within 80 to 120% of true value for each element of interest (ICP and ICPMS only)?	X				DoD QSM Tables F-8 and F-7 >120%=J; 50-79%=J/UJ; <50%=Pj/R
13. Was a method blank prepared and analyzed with each batch?	X				DoD QSM Tables F-8 and F-7
14. Were target analytes detected in the method blank?	X			Checked by ADR. ICP- The method blank analyzed 7/27/15 had lead detected at 2.71 µg/L and manganese at 0.646 µg/L. The lead results for samples FWGDA2mw-115-0571-GF, FWGEQUIPRINSE3-0624-GW, FWGLL1mw-065c-0582-GF, FWGFWGmw-015-0579-GF and FWGLL7mw-001-0596-GF; and the manganese results for samples FWGEQUIPRINSE3-0624-GW and FWGEQUIPRINSE4-0625-GW were qualified, "B" as the detected concentrations were less than 5x method blank contamination.	DoD QSM Tables F-8 and F-7, <5x = B
15. Was a field blank collected and analyzed?	X				
16. Were target analytes reported in the field blank analyses?	X			ADR checked section. ICP-FWGEQUIPRINSE3-0624-GW had lead detected at 3.2 µg/L, manganese at 1.6 µg/L and potassium at 230 µg/L. No qualification was made for the detected contamination from FWGEQUIPRINSE3-0624-GW as all associated samples were reported and qualified in SDG 240-53550. FWGEQUIPRINSE4-0625-GW had vanadium detected at 2.9 µg/L and manganese at 0.48 µg/L . No qualification was made for the contamination reported for FWGEQUIPRINSE4-0625-GW as vanadium was not detected in the associated field samples and all detected concentrations of manganese were greater than five times the equipment rinse contamination.	DoD QSM Tables F-8 and F-7 <5x = B
17. Was a LCS prepared and analyzed with each batch?	X				DoD QSM, Tables F-8 and F-7
18. Were the LCS recoveries within limits specified in LCG Appendix C?	X			Checked by ADR.	DoD QSM Tables G-18, F-8 and F-7 >120%=J;70-79%=J/UJ; <70%=J/R
19. Was a matrix spike (MS) and lab duplicate sample prepared with each batch?	X				DoD QSM Tables F-8 and F-7

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ September 1, 2015

SDG: 240-53558
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
20. Was the MS and Lab Duplicate parent a Ravenna sample?	X			A matrix spike analysis and laboratory duplicate analysis were performed on sample FWGDA2mw-DUP1-0617-GF.	
21. Were the MS recoveries within 80-120%?	X			Checked by ADR.	DoD QSM Tables G-18, F-8 and F-7, >120%=J;70-79%=J/UJ; <70%=J/R, All samples in batch
22. Was the lab sample duplicate RPD ≤ 20%, for sample results detected above the LOQ?	X			Checked by ADR.	DoD QSM, Tables F-8 and F-7 >20% = J, All samples in batch
23. Was a serial dilution performed, with the fivefold dilution within ± 10% of the original result?	X				DoD QSM, Tables F-8 and F-7 >20% = J. Only evaluate results above the LOQ. Qualify all samples in batch
24. Was a Post Digestion Spike analyzed as needed? Were results within 75-125%?		X		ICP- The post spike analyzed on sample FWGDA2mw-DUP1-0617-GF had a recovery of 77% for magnesium and 74% for silver. No qualification was required for the magnesium post spike outlier as the parent concentration was greater than 4x the spike value and the serial dilution recovered with control limits. The silver results for samples FWGDETmw-004c-0573-GF, FWGDA2mw-115-0571-GF, FWGDA2mw-DUP1-0617-GF, FWGEQUIPRINSE3-0624-GW, FWGDETmw-003c-0572-GF, FWGLL1mw-065c-0582-GF, FWGFWGmw-016-0580-GF, FWGFWGmw-015-0579-GF, FWGFWGmw-004-0575-GF, FWGLL2mw-267c-0590-GF, FWGEQUIPRINSE4-0625-GW FWGLL10mw-003c-0597-GF, FWGFWGmw-007-0576-GF and FWGLL7mw-001-0596-GF were qualified as estimated, "J/UJ". ICPMS- The post spike analyzed on sample FWGDA2mw-DUP1-0617-GF had a post spike recovery of 122% for zinc. The zinc results for sample FWGLL7mw-001-0596-GF was qualified as estimated, "J".	LCG Table 7, >125%=J; 30-75%=J/UJ; <30%=R
25. Was a field duplicate analyzed? Were the RPDs ± 50% for sample results detected above the LOQ?	X				>30% = J. Qualify parent sample only and only evaluate results above the LOQ
26. Were internal standards added to all ICPMS samples with intensity within 30-120% of the intensity of the ICAL internal standard?	X				DoD QSM Table F-8. >120%=J/R, <20%=J

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ September 1, 2015

SDG: 240-53558
Analysis: SW846 6010/6020/7470A

References:

- *DoD Quality Systems Manual (QSM), version 4.2, October 2010*
- *Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007*
- *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012*
- *Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011*

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/September 1, 2015

SDG: 240-53558
Analysis: SW846 8330 Explosives

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a LOD Verification analyzed once per quarter with all target analytes detected?	X				DoD QSM Table F-3 R
7.Calibration					
7a. Does the initial calibration curve consist of 5 concentration levels? (6 stds for quadratic curves)	X			LC10 4/28/15 LC9 5/4/15	DoD QSM Table F-3 R
7b. Did all target analytes using avg response have an RSD $\leq$ 15% ?	X				
7c. If a linear regression curve was used, was the correlation coefficient r≥0.995? (0.990 for non-linear).			X		
8. Was a second source verification (ICV) analyzed after the ICAL and all analytes 80-120%?	X			LC10 on 4/28/15 at 2052 LC9 5/5/15 at 0224	DoD QSM Table F-3 >120%=J; <80%= J/UJ;
Sample Analysis					
9. Was a CCV run at the beginning of the analytical sequence, every 10 samples and at the end of the analytical run with targets and surrogates recovering 80-120% of the true value?	X			LC10- 7/31/15 @ 1245, 2129 and 8/1/15 @ 0612 LC9-8/4/15 @ 1541 and 8/5/15 @ 0502	DoD QSM Table F-3 J/UJ
10. Was a MRL Level verification run at the beginning and end of every daily? Was the %D< 30%?	X			LC10- 7/31/15 @ 1329, 2212 and 8/1/15 @ 0655 LC9-8/4/15 @ 1648 and 8/5/15 @ 0609	LCG Table 5 >30%=J
11. Was a method blank prepared and analyzed with each batch?	X				DoD QSM Table F-3
12. Were target analytes detected in the method blank?		X		Checked by ADR.	DoD QSM Table F-3 <5x = B
13. Was a field blank collected and analyzed?	X				

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/September 1, 2015

SDG: 240-53558
Analysis: SW846 8330 Explosives

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
14. Were target analytes detected in the field blank analyses?	X			Checked by ADR. FWGEQUIPRINSE4-0625-GW had 2,4-dinitrotoluene detected at 0.054 µg/L. The 2,4-dinitrotoluene result for sample FWGLL2mw-267c-0590-GW was qualified, "B" as the reported concentration was < 5x blank contamination.	DoD QSM Table F-3 <5x=B
15. Was a field duplicate analyzed? Were the RPDs ≤30%?	X			Checked by ADR.	RPD >30=J
16. Were all positive results confirmed with a second column confirmation? Were the RPDs ≤ 40%?	X				DoD QSM Table F-3 RPD>40%=J Only detected results above the LOQ were evaluated
17. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-3
18. Were the LCS recoveries within limits specified in table G-12 of the DoD QSM?	X			Checked by ADR.	DoD QSM Table F-3 <UL=J;30-LL=J/UJ; <30%=J/R
19.Was a MS/MSD or MS and sample duplicate prepared with each batch?	X			A matrix and spike duplicate was not requested on a sample from this SDG.	DoD QSM Table F-3
20. Were MS/MSD recoveries within limits specified in table G-12 of the DoD QSM with an RPD ≤30%?	X				DoD QSM Table F-3 Pj
21. Were surrogate recoveries within laboratory limits (79-111%)?	X			Checked by ADR.	QSM Tables F-2 >UL=J; <LL =J/UJ

References: DoD Quality Systems Manual (QSM), version 4.2, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/September 1, 2015

SDG: 240-53558
Analysis: SW846 8330M Nitroguanidine

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a LOD Verification analyzed once per quarter with all target analytes detected?	X				DoD QSM Table F-3 R
7.Calibration					
7a. Does the initial calibration curve consist of 5 concentration levels? (6 stds for quadratic curves)	X			PDA-1/ Hydro RP80A 11/19/14 (confirmation) PDA-1/ Luna NH2 6/17/15	DoD QSM Table F-3 R
7b. Did all target analytes using avg response have an RSD ≤ 15% ?	X				
7c. If a linear regression curve was used, was the correlation coefficient r≥0.995? (0.990 for Quadratic curve).			X		
7d. Did reanalysis of the low level standard after calibration, recover within 15%?	X			Luna- 6/17/15@ 1206	
8. Was a second source verification (ICV) analyzed after the ICAL and all analytes 80-120%?	X			Luna- 6/17/15@ 1206	DoD QSM Table F-3 >120%=J; <80%= J/UJ;
Sample Analysis					
9. Was a CCV run at the beginning of the analytical sequence, every 10 samples and at the end of the analytical run with targets and surrogates recovering 80-120% of the true value?	X			Luna- 7/31/15 @ 0348, 0721 and 1054	DoD QSM Table F-3 J/UJ
10. Was a MRL Level verification run at the beginning and end of every daily sequence or every 12 hours? Was the %D < 30%?	X			Luna- 7/31/15 @ 0406, 0739 and 1111	LCG Table 5 >30%=J
11. Was a method blank prepared and analyzed with each batch?	X				DoD QSM Table F-3

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/September 1, 2015

SDG: 240-53558
Analysis: SW846 8330M Nitroguanidine

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
12. Were target analytes detected in the method blank?		X		Checked by ADR.	DoD QSM Table F-3 <5x = B
13. Was a field blank collected and analyzed?	X				
14. Were target analytes detected in the field blank analyses?		X		Checked by ADR.	DoD QSM Table F-3 <5x=B
15. Was a field duplicate analyzed? Were the RPDs ≤30%?	X				RPD >30=J
16. Were all positive results confirmed with a second column confirmation? Were the RPDs ≤ 40%?	X				DoD QSM Table F-3 RPD>40%=J
17. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-3
18. Were the LCS recoveries within laboratory limits of 79%-119%?	X			Checked by ADR.	DoD QSM Table F-3 <UL=J; 30-LL=J/UJ; <30%=J/R
19. Was a MS/MSD or MS and sample duplicate prepared with each batch?	X			FWGLL1mw-065c-0582-GW.	DoD QSM Table F-3
20. Were MS/MSD recoveries within laboratory limits of 40%-150% with an RPD ≤20%?	X				DoD QSM Table F-3 Pj

References:
DoD Quality Systems Manual (QSM), version 4.2, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ September 3, 2015

SDG: 240-53558
Analysis: TAL SOP WS-WC-0050

Review Questions:	Yes	No	N/A	Comments	Qualifier
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Does the initial calibration curve consist of 5 concentration levels with the low standard near but > MDL?	X				SOP Section 10.2 R
7. Was the correlation coefficient >0.995?	X				SOP Section 10.2
8. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours? Was the %D <30%?	X			8/13/15 @ 0850, 0920 and 0946	>30%=J
9. Was a second source verification (ICV) analyzed after the ICAL? Were all analytes 90-110%?	X			8/13/15 @ 0846	>110%=J; 90-85%=J/UJ; <85%=J/R
10. Was the ICB analyzed after the ICV with results <1/2 the MRL?	X				STL SOP Section 9.8, LCG ,< 5x = U
11. Was a CCV run every 10 samples and at the end of the analytical run?	X			8/13/15 @0922, 0948	STL SOP Section 10.4
12. Was the ICV and CCV a mid-level standard from the initial calibration curve?	X				STL SOP Section 10.3.1
13. Were all CCV calibration analytes within 90-110%?	X				>110%=J; 85-90%=J/UJ; <85%=J/R
14. Was the ICB analyzed after the ICV with results <1/2 the MRL?	X				QSM, < 5x = U
15. Was a method blank prepared and analyzed with each batch?	X				
16. Were target analytes detected in the method blank?		X		ADR checked section.	LCG, *<5x=B*
17. Was a field blank collected and analyzed?	X				

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ September 3, 2015

SDG: 240-53558
Analysis: TAL SOP WS-WC-0050

Review Questions:	Yes	No	N/A	Comments	Qualifier
18. Were target analytes detected in the field blank analyses?		X			<5x=B
19. Was a field duplicate analyzed? Were the RPDs ≤30%?	X				QAPP Table 3-2 RPD > 30% = J
20. Was an LCS prepared and analyzed with each batch? Was the LCS recovery within lab's in-house limits% (26-144%)?	X				>UL%=J; 50-LL%=J/UJ; <50%=J/R
21. Was a MS/MSD pair prepared with each batch?	X				
22. Was the MS/MSD parent a Ravenna sample?	X			FWGDETmw-004c-0573-GW	
23. Were MS/MSD recoveries 26-144% and RPD ≤20?	X			Checked by ADR.	Method EPA 353.2 Section 9.4.2 >UL%=J;<LL%=J/UJ; RPD>20%=J/UJ

References:

SOP SAC-WC-0050 "Preparation and Analysis of Nitrocellulose in Aqueous and Soil/Sediment Samples by Colorimetric Autoanalyzer", Jan 2007, rev. 2.0

DoD Quality Systems Manual (QSM)

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/September 1, 2015

SDG: 240-53558
Analysis: EPA 353.2

Review Questions:	Yes	No	N/A	Comments	Qual/Crtieria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				*QAPP Table 5-1, NELAC*
3. Were holding times met?	X				QAPP Table *5-1* J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table *5-1*
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Was the Linear Calibration Range verified using 3 standards and 1 blank?	X				Method EPA 353.2 Section 9.2.2, *J*
7. Were the calibration standards verified by preparation and analysis of a Quality Control Sample? Were results within 10% of the stated values?	X				Method EPA 353.2 Section 9.2.3 **Pj**
8. Was an Instrument Performance Check Solution (CCV) analyzed immediately following daily calibration, after every 10^{th} sample, and at the end of the analytical sequence?	X				Method EPA 353.2 Section 9.3.4
9. Was the CCV a mid-level standard from the initial calibration curve, with recovery 90-110%?	X				Method EPA 353.2 Section 9.3.4 >110%=J; <85%=J/R 85-90%=J/UJ;
10. Was an MRL check standard analyzed at the beginning and end of each analytical run, with recoveries 70-130%	X				LCG >130%=J; <70%=J/UJ;
11.Was a method blank and calibration blanks prepared and analyzed with each batch?	X				Method EPA 353.2 Section 9.3.1, 9.3.4
12. Were target analytes detected in the method blank or calibration blank >1/2 the MRL?	X			ADR checked section;	<5x = B(method blank) U (calibration blank)
13. Was a field blank (trip or equipment) collected and analyzed?	X				

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/September 1, 2015

SDG: 240-53558
Analysis: EPA 353.2

Review Questions:	Yes	No	N/A	Comments	Qual/Crtieria
14. Were target analytes detected in the field blank analyses (trip or equipment) >1/2 the MRL?	X			FWGEQUIPRINSE3-0624-GW had nitrate/nitrite detected at 0.006mg/L. No qualification was made for the samples in SDG 240-53558 as FWGEQUIPRINSE3-0624-GW was associated with the samples from 240-53500.	<5x=B
15. Was a field duplicate analyzed? Were the RPDs acceptable?	X				
16. Was an LCS prepared and analyzed with each batch? Was the LCS recovery within 90-110%?	X				Method EPA 353.2 Section 9.3.3 J/UJ; <50%= R
17. Was a MS/MSD pair prepared with each batch?	X				Method EPA 353.2 Section 9.4.1
18. Was the MS/MSD parent a Ravenna sample?	X				
19. Were MS/MSD recoveries and RPD within acceptance criteria?	X			Checked by ADR.	Method EPA 353.2 Section 9.4.2 Pj

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ October 16, 2015

SDG: 240-53558
Analysis: SW846 9012A

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table *5-1* J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table *5-1*
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Does the initial calibration curve consist of at least 6 standards and one blank, with the correlation coefficient R ≥ 0.995?	X			8/4/15, 8/5/15	*DoD QSM Table F-10* R
7. Were a high and low standard distilled and analyzed with results within ± 15%?	X				*DoD QSM Table F-10* R
8. Was an LOD Verification performed at least once per quarter with all target analytes detected?	X				LCG Table 10 R
9. Was a MRL Level Verification performed at the beginning and end of the daily sequence? Were results within 70-130%?	X				LCG Table 10, LS >130%=J; 65-70%=J/UJ; <65%=J/R
10. Was a second source verification (ICV) analyzed after the ICAL and all analytes 85-115%?	X				*DoD QSM Table F-10* >115%=J; 80-85%=J/UJ; <80%=J/R
11. Was a method blank prepared and analyzed with each batch?	X				*DoD QSM Table F-10*
12. Were target analytes detected in the method blank?		X		Checked by ADR.	*DoD QSM Table F-10* <5x=B
13. Was a field blank collected and analyzed?	X				
14. Were target analytes in the field blank analyses?		X			*DoD QSM Table F-10* <5x=B
15. Was a field duplicate analyzed? Were the RPDs ≤20%?	X			Checked by ADR.	>30% = J
16. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-10

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: July 2015
Data Reviewer/Date: Angela Dragotta/ October 16, 2015

SDG: 240-53558
Analysis: SW846 9012A

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
17. Were the LCS recoveries 69-118%?	X			Checked by ADR.	*DoD QSM Table F-10* Lab Limits >118%=J; 50-69%=J/UJ; <50%=R
18. Was a MS and duplicate (sample or matrix) prepared once per every 10 samples?	X				DoD QSM Table F-10
19. Was the MS parent a Ravenna sample?	X			FWGRQLmw-008C-0605-GW and FWGDETmw-003c-0572-GW	
20. Were matrix spike recoveries 42-140%? With an RPD <20%	X			The matrix spike and spike duplicate analyzed on sample FWGDETmw-003c-0572-GW had a RPD above control limits of 20% at 46%. The cyanide results for samples FWGDETmw-003c-0572-GW, FWGDETmw-004c-0573-GW and FWGEQUIPRINSE4-0625-GW were qualified as estimated, "UJ".	DoD QSM Table F-10 >140%=J; <42%=J/UJ/R

References:
DoD Quality Systems Manual (QSM), version 4.2, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

The ADR outlier reports associated with the LCS, MS and MSD show recovery outliers. The ADR library used to evaluate the LCS MS/MSD recovery had limits of 80-118% for the LCS 69-118% for the MS/MSD. The lab limits have been updated to 69-118% for the LCS and 42-140% for the MS/MSD. No update was made to the ADR library. Since the recoveries were within the updated limits, no qualification of the data was required.

Attachment 2

Data Qualifier Summary

Lab Reporting Batch ID: 240-53558-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53558-1A **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: GENCHEM

Method: 353.2 **Matrix: AQ**

Sample ID: FWGEQUIPRINSE3-0624-GW **Collected:** 7/22/2015 5:00:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate-Nitrite	0.0060	J	0.0031	MDL	0.050	LOQ	mg/L	J	RI

Method Category: GENCHEM

Method: 9012A **Matrix: AQ**

Sample ID: FWGDETmw-003C-0572-GW **Collected:** 7/23/2015 11:18:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.010	U J	0.0050	MDL	0.010	LOQ	mg/L	UJ	Ms, Ms

Sample ID: FWGDETmw-004C-0573-GW **Collected:** 7/23/2015 9:00:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.010	U	0.0050	MDL	0.010	LOQ	mg/L	UJ	Ms, Ms

Sample ID: FWGEQUIPRINSE4-0625-GW **Collected:** 7/23/2015 12:35:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.010	U	0.0050	MDL	0.010	LOQ	mg/L	UJ	Ms, Ms

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: FWGDA2mw-115-0571-GF **Collected:** 7/23/2015 10:22:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	18	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.2	J	0.55	MDL	7.0	LOQ	ug/L	J	RI
LEAD	2.7	J	1.9	MDL	10	LOQ	ug/L	U	Mb, Cb
POTASSIUM	3000	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

* denotes a non-reportable result

Project Name and Number: 30174.0016.0010.1 - USACE Project: RVAAP (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53558-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53558-1A **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: **METALS**

Method: **6010B** ***Matrix:*** **AQ**

Sample ID: **FWGDA2mw-DUP1-0617-GF** ***Collected:*** **7/23/2015 11:22:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	3.5	J	2.9	MDL	10	LOQ	ug/L	J	RI
BARIUM	20	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	0.97	J	0.55	MDL	7.0	LOQ	ug/L	J	RI
POTASSIUM	3200	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U J	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: **FWGDETmw-003C-0572-GF** ***Collected:*** **7/23/2015 11:18:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	44	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.1	J	0.55	MDL	7.0	LOQ	ug/L	J	RI
POTASSIUM	1900	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: **FWGDETmw-004C-0573-GF** ***Collected:*** **7/23/2015 9:00:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	63	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.4	J	0.55	MDL	7.0	LOQ	ug/L	J	RI
MANGANESE	4.1	J	0.46	MDL	15	LOQ	ug/L	J	RI
POTASSIUM	1900	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: **FWGEQUIPRINSE3-0624-GW** ***Collected:*** **7/22/2015 5:00:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	3.2	J	1.9	MDL	10	LOQ	ug/L	U	Mb, Cb
MANGANESE	1.6	J	0.46	MDL	15	LOQ	ug/L	C	Mb
POTASSIUM	230	J	70	MDL	5000	LOQ	ug/L	U	Cb
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: **FWGEQUIPRINSE4-0625-GW** ***Collected:*** **7/23/2015 12:35:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	0.48	J	0.46	MDL	15	LOQ	ug/L	C	Mb

* denotes a non-reportable result

Project Name and Number: 30174.0016.0010.1 - USACE Project: RVAAP (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53558-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53558-1A **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: **METALS**

Method: **6010B** ***Matrix:*** **AQ**

Sample ID: **FWGEQUIPRINSE4-0625-GW** ***Collected:*** **7/23/2015 12:35:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg
VANADIUM	2.9	J	2.4	MDL	7.0	LOQ	ug/L	J	RI

Sample ID: **FWGFWGmw-004-0575-GF** ***Collected:*** **7/23/2015 2:23:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	20	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	0.96	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
POTASSIUM	840	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: **FWGFWGmw-007-0576-GF** ***Collected:*** **7/23/2015 10:24:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	14	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.0	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
NICKEL	0.79	J	0.76	MDL	40	LOQ	ug/L	J	RI
POTASSIUM	1600	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: **FWGFWGmw-015-0579-GF** ***Collected:*** **7/23/2015 12:49:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	8.3	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.5	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
COBALT	0.69	J	0.56	MDL	7.0	LOQ	ug/L	J	RI
LEAD	2.3	J	1.9	MDL	10	LOQ	ug/L	U	Mb, Cb
NICKEL	2.6	J	0.76	MDL	40	LOQ	ug/L	J	RI
POTASSIUM	3300	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	1.0	J	0.92	MDL	7.0	LOQ	ug/L	UJ	Cb, ProfJudg

Sample ID: **FWGFWGmw-016-0580-GF** ***Collected:*** **7/23/2015 11:43:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	4.7	J	2.9	MDL	10	LOQ	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 30174.0016.0010.1 - USACE Project: RVAAP (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53558-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53558-1A **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: **METALS**

Method: **6010B** ***Matrix:*** **AQ**

Sample ID: FWGFWGmw-016-0580-GF ***Collected:*** 7/23/2015 11:43:00 AM ***Analysis Type:*** RES/TOT ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	50	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.2	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
POTASSIUM	2100	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: FWGLL10mw-003C-0597-GF ***Collected:*** 7/23/2015 2:51:00 PM ***Analysis Type:*** RES/TOT ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	5.4	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	0.79	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
POTASSIUM	700	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: FWGLL1mw-065C-0582-GF ***Collected:*** 7/23/2015 9:33:00 AM ***Analysis Type:*** RES/TOT ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	46	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	1.2	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
LEAD	2.8	J	1.9	MDL	10	LOQ	ug/L	U	Mb, Cb
POTASSIUM	1100	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Sample ID: FWGLL2mw-267C-0590-GF ***Collected:*** 7/23/2015 11:11:00 AM ***Analysis Type:*** RES/TOT ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	7.9	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	0.70	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
COBALT	1.4	J	0.56	MDL	7.0	LOQ	ug/L	J	RI
NICKEL	2.5	J	0.76	MDL	40	LOQ	ug/L	J	RI
POTASSIUM	610	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	0.94	J	0.92	MDL	7.0	LOQ	ug/L	UJ	Cb, ProfJudg

* denotes a non-reportable result

Project Name and Number: 30174.0016.0010.1 - USACE Project: RVAAP (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53558-1 Laboratory: TA CAN

EDD Filename: Prep240-53558-1A eQAPP Name: RVAAP 66-rev March 2015

Method Category: METALS **Method:** 6010B **Matrix:** AQ

Sample ID:FWGLL7mw-001-0596-GF Collected:7/23/2015 1:54:00 PM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	22	J	1.0	MDL	200	LOQ	ug/L	J	RI
CHROMIUM	0.69	J	0.55	MDL	7.0	LOQ	ug/L	U	Cb
COBALT	5.6	J	0.56	MDL	7.0	LOQ	ug/L	J	RI
LEAD	2.1	J	1.9	MDL	10	LOQ	ug/L	U	Mb, Cb
NICKEL	7.3	J	0.76	MDL	40	LOQ	ug/L	J	RI
POTASSIUM	1100	J	70	MDL	5000	LOQ	ug/L	J	RI
SILVER	7.0	U	0.92	MDL	7.0	LOQ	ug/L	UJ	ProfJudg

Method Category: METALS **Method:** 6020 **Matrix:** AQ

Sample ID:FWGDA2mw-DUP1-0617-GF Collected:7/23/2015 11:22:00 AM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CADMIUM	0.44	J	0.40	MDL	2.0	LOQ	ug/L	U	Cb

Sample ID:FWGDETmw-004C-0573-GF Collected:7/23/2015 9:00:00 AM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.37	J	0.33	MDL	2.0	LOQ	ug/L	J	RI

Sample ID:FWGEQUIPRINSE3-0624-GW Collected:7/22/2015 5:00:00 PM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SODIUM	190	J	160	MDL	1000	LOQ	ug/L	J	RI

Sample ID:FWGLL1mw-065C-0582-GF Collected:7/23/2015 9:33:00 AM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	82	J	44	MDL	150	LOQ	ug/L	J	RI

Sample ID:FWGLL7mw-001-0596-GF Collected:7/23/2015 1:54:00 PM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	50		27	MDL	50	LOQ	ug/L	J	ProfJudg

* denotes a non-reportable result

Project Name and Number: 30174.0016.0010.1 - USACE Project: RVAAP (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53558-1 Laboratory: TA CAN

EDD Filename: Prep240-53558-1A eQAPP Name: RVAAP 66-rev March 2015

Method Category: METALS
Method: 6020 **Matrix:** AQ

Method Category: SVOA
Method: 8081A **Matrix:** AQ

Sample ID: FWGDETmw-003C-0572-GW **Collected:** 7/23/2015 11:18:00 AM **Analysis Type:** RE **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ENDOSULFAN I	0.053	U H	0.017	MDL	0.053	LOQ	ug/L	UJ	StoE

Sample ID: FWGDETmw-004C-0573-GW **Collected:** 7/23/2015 9:00:00 AM **Analysis Type:** RE **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ENDOSULFAN I	0.053	U H	0.017	MDL	0.053	LOQ	ug/L	UJ	StoE

Sample ID: FWGEQUIPRINSE3-0624-GW **Collected:** 7/22/2015 5:00:00 PM **Analysis Type:** RE **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ENDOSULFAN I	0.050	U H	0.016	MDL	0.050	LOQ	ug/L	UJ	StoE

Sample ID: FWGEQUIPRINSE4-0625-GW **Collected:** 7/23/2015 12:35:00 PM **Analysis Type:** RE **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ENDOSULFAN I	0.048	U H	0.015	MDL	0.048	LOQ	ug/L	UJ	StoE

Method Category: SVOA
Method: 8330 **Matrix:** AQ

Sample ID: FWGEQUIPRINSE4-0625-GW **Collected:** 7/23/2015 12:35:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROTOLUENE	0.054	J	0.050	MDL	0.13	LOQ	ug/L	J	RI

Sample ID: FWGLL2mw-267C-0590-GW **Collected:** 7/23/2015 11:11:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROTOLUENE	0.20		0.051	MDL	0.13	LOQ	ug/L	U	Eb

* denotes a non-reportable result

Project Name and Number: 30174.0016.0010.1 - USACE Project: RVAAP (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53558-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53558-1A **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: VOA

Method: 8260B **Matrix:** AQ

Sample ID: FWGDETmw-004C-0573-GW **Collected:** 7/22/2015 5:15:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	2.5	J	0.94	MDL	10	LOQ	ug/L	C	Eb, Tb

Sample ID: FWGEQUIPRINSE3-0624-GW **Collected:** 7/22/2015 5:00:00 PM **Analysis Type:** RE2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHYLENE CHLORIDE	0.86	J	0.33	MDL	1.0	LOQ	ug/L	C	Mb, Tb

Sample ID: FWGEQUIPRINSE3-0624-GW **Collected:** 7/22/2015 5:00:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	4.6	J	0.53	MDL	10	LOQ	ug/L	J	RI
ACETONE	3.5	J	0.94	MDL	10	LOQ	ug/L	C	Tb
CHLOROFORM	0.34	J	0.25	MDL	1.0	LOQ	ug/L	J	RI

Sample ID: FWGEQUIPRINSE4-0625-GW **Collected:** 7/23/2015 12:35:00 PM **Analysis Type:** RE2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHYLENE CHLORIDE	0.84	J	0.33	MDL	1.0	LOQ	ug/L	C	Mb, Tb

Sample ID: FWGEQUIPRINSE4-0625-GW **Collected:** 7/23/2015 12:35:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,2,2-TETRACHLOROETHANE	0.22	J	0.22	MDL	1.0	LOQ	ug/L	J	RI
2-BUTANONE	6.8	J	0.53	MDL	10	LOQ	ug/L	J	RI
ACETONE	6.9	J	0.94	MDL	10	LOQ	ug/L	C	Tb
CHLOROFORM	0.40	J	0.25	MDL	1.0	LOQ	ug/L	J	RI

Sample ID: FWGTEAM3-TRIPBLANK **Collected:** 7/22/2015 5:00:00 PM **Analysis Type:** RE2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHYLENE CHLORIDE	0.56	J	0.33	MDL	1.0	LOQ	ug/L	C	Mb

Sample ID: FWGTEAM3-TRIPBLANK **Collected:** 7/22/2015 5:00:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	2.6	J	0.94	MDL	10	LOQ	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 30174.0016.0010.1 - USACE Project: RVAAP (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53558-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53558-1A **eQAPP Name: RVAAP 66-rev March 2015**

Method Category: VOA

Method: 8260B ***Matrix:*** AQ

Sample ID: FWGTEAM4-TRIP ***Collected:*** 7/23/2015 8:00:00 AM ***Analysis Type:*** RE2 ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHYLENE CHLORIDE	0.69	J	0.33	MDL	1.0	LOQ	ug/L	KC	Mb, Preservation

Sample ID: FWGTEAM4-TRIP ***Collected:*** 7/23/2015 8:00:00 AM ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	2.8	J	0.94	MDL	10	LOQ	ug/L	J	RI

Sample ID: FWGTEAMDEMO-TRIPBLANK ***Collected:*** 7/22/2015 5:05:00 PM ***Analysis Type:*** RE2 ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHYLENE CHLORIDE	0.62	J	0.33	MDL	1.0	LOQ	ug/L	C	Mb

Sample ID: FWGTEAMDEMO-TRIPBLANK ***Collected:*** 7/22/2015 5:05:00 PM ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	2.9	J	0.94	MDL	10	LOQ	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 30174.0016.0010.1 - USACE Project: RVAAP (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-53558-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53558-1A **eQAPP Name: RVAAP 66-rev March 2015**

Reason Code Legend

Reason Code	*Description*
Cb	Calibration Blank Contamination
Eb	Equipment Blank Contamination
Lcs	Laboratory Control Spike Lower Estimation
Ld	Laboratory Duplicate Precision
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Precision
Preservation	Preservation
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value
StoE	Sampling to Extraction Estimation
Tb	Trip Blank Contamination

* denotes a non-reportable result

Data Review Summary

Lab Reporting Batch ID: 240-53558-1
EDD Filename: Prep240-53558-1A

Laboratory: TA CAN
eQAPP Name: RVAAP 66-rev March 2015

Validation Area	*Note*
Technical Holding Times	SR
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	SR
Laboratory Replicates	N
Laboratory Control Samples	SR
Compound Quantitation	SR
Field Duplicates	A
Field Triplicates	N
Field Blanks	SR

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Trip Blank Outlier Report

Lab Reporting Batch ID: 240-53558-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53558-1A **eQAPP Name: RVAAP 66-rev March 2015**

Method: **8260B**
Matrix: **AQ**

Trip Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FWGTEAMDEMO-TRIPBLANK(RE2)	7/22/2015 5:05:00 PM	METHYLENE CHLORIDE	0.62 ug/L	FWGDETmw-003C-0572-GW FWGDETmw-004C-0573-GW
FWGTEAMDEMO-TRIPBLANK(RES)	7/22/2015 5:05:00 PM	ACETONE	2.9 ug/L	FWGDETmw-003C-0572-GW FWGDETmw-004C-0573-GW

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FWGDETmw-004C-0573-GW(RES)	ACETONE	2.5 ug/L	2.5U ug/L

Reporting Limit Outliers

Lab Reporting Batch ID: 240-53558-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53558-1A **eQAPP Name: RVAAP 66-rev March 2015**

Method: 353.2

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGEQUIPRINSE3-0624-GW	Nitrate-Nitrite	J	0.0060	0.050	LOQ	mg/L	J (all detects)

Method: 6010B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGDA2mw-115-0571-GF	BARIUM	J	18	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	1.2	7.0	LOQ	ug/L	
	LEAD	J	2.7	10	LOQ	ug/L	
	POTASSIUM	J	3000	5000	LOQ	ug/L	
FWGDA2mw-DUP1-0617-GF	ARSENIC	J	3.5	10	LOQ	ug/L	J (all detects)
	BARIUM	J	20	200	LOQ	ug/L	
	CHROMIUM	J	0.97	7.0	LOQ	ug/L	
	POTASSIUM	J	3200	5000	LOQ	ug/L	
FWGDETmw-003C-0572-GF	BARIUM	J	44	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	1.1	7.0	LOQ	ug/L	
	POTASSIUM	J	1900	5000	LOQ	ug/L	
FWGDETmw-004C-0573-GF	BARIUM	J	63	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	1.4	7.0	LOQ	ug/L	
	MANGANESE	J	4.1	15	LOQ	ug/L	
	POTASSIUM	J	1900	5000	LOQ	ug/L	
FWGEQUIPRINSE3-0624-GW	LEAD	J	3.2	10	LOQ	ug/L	J (all detects)
	MANGANESE	J	1.6	15	LOQ	ug/L	
	POTASSIUM	J	230	5000	LOQ	ug/L	
FWGEQUIPRINSE4-0625-GW	MANGANESE	J	0.48	15	LOQ	ug/L	J (all detects)
	VANADIUM	J	2.9	7.0	LOQ	ug/L	
FWGFWGmw-004-0575-GF	BARIUM	J	20	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	0.96	7.0	LOQ	ug/L	
	POTASSIUM	J	840	5000	LOQ	ug/L	
FWGFWGmw-007-0576-GF	BARIUM	J	14	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	1.0	7.0	LOQ	ug/L	
	NICKEL	J	0.79	40	LOQ	ug/L	
	POTASSIUM	J	1600	5000	LOQ	ug/L	
FWGFWGmw-015-0579-GF	BARIUM	J	8.3	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	1.5	7.0	LOQ	ug/L	
	COBALT	J	0.69	7.0	LOQ	ug/L	
	LEAD	J	2.3	10	LOQ	ug/L	
	NICKEL	J	2.6	40	LOQ	ug/L	
	POTASSIUM	J	3300	5000	LOQ	ug/L	
	SILVER	J	1.0	7.0	LOQ	ug/L	
FWGFWGmw-016-0580-GF	ARSENIC	J	4.7	10	LOQ	ug/L	J (all detects)
	BARIUM	J	50	200	LOQ	ug/L	
	CHROMIUM	J	1.2	7.0	LOQ	ug/L	
	POTASSIUM	J	2100	5000	LOQ	ug/L	
FWGLL10mw-003C-0597-GF	BARIUM	J	5.4	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	0.79	7.0	LOQ	ug/L	
	POTASSIUM	J	700	5000	LOQ	ug/L	

Reporting Limit Outliers

Lab Reporting Batch ID: 240-53558-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53558-1A **eQAPP Name: RVAAP 66-rev March 2015**

Method: 6010B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGLL1mw-065C-0582-GF	BARIUM	J	46	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	1.2	7.0	LOQ	ug/L	
	LEAD	J	2.8	10	LOQ	ug/L	
	POTASSIUM	J	1100	5000	LOQ	ug/L	
FWGLL2mw-267C-0590-GF	BARIUM	J	7.9	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	0.70	7.0	LOQ	ug/L	
	COBALT	J	1.4	7.0	LOQ	ug/L	
	NICKEL	J	2.5	40	LOQ	ug/L	
	POTASSIUM	J	610	5000	LOQ	ug/L	
	SILVER	J	0.94	7.0	LOQ	ug/L	
FWGLL7mw-001-0596-GF	BARIUM	J	22	200	LOQ	ug/L	J (all detects)
	CHROMIUM	J	0.69	7.0	LOQ	ug/L	
	COBALT	J	5.6	7.0	LOQ	ug/L	
	LEAD	J	2.1	10	LOQ	ug/L	
	NICKEL	J	7.3	40	LOQ	ug/L	
	POTASSIUM	J	1100	5000	LOQ	ug/L	

Method: 6020

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGDA2mw-DUP1-0617-GF	CADMIUM	J	0.44	2.0	LOQ	ug/L	J (all detects)
FWGDETmw-004C-0573-GF	ANTIMONY	J	0.37	2.0	LOQ	ug/L	J (all detects)
FWGEQUIPRINSE3-0624-GW	SODIUM	J	190	1000	LOQ	ug/L	J (all detects)
FWGLL1mw-065C-0582-GF	IRON	J	82	150	LOQ	ug/L	J (all detects)

Method: 8260B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGDETmw-004C-0573-GW	ACETONE	J	2.5	10	LOQ	ug/L	J (all detects)
FWGEQUIPRINSE3-0624-GW	2-BUTANONE	J	4.6	10	LOQ	ug/L	J (all detects)
	ACETONE	J	3.5	10	LOQ	ug/L	
	CHLOROFORM	J	0.34	1.0	LOQ	ug/L	
	METHYLENE CHLORIDE	J	0.86	1.0	LOQ	ug/L	
FWGEQUIPRINSE4-0625-GW	1,1,2,2-TETRACHLOROETHANE	J	0.22	1.0	LOQ	ug/L	J (all detects)
	2-BUTANONE	J	6.8	10	LOQ	ug/L	
	ACETONE	J	6.9	10	LOQ	ug/L	
	CHLOROFORM	J	0.40	1.0	LOQ	ug/L	
	METHYLENE CHLORIDE	J	0.84	1.0	LOQ	ug/L	

Reporting Limit Outliers

Lab Reporting Batch ID: 240-53558-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53558-1A **eQAPP Name: RVAAP 66-rev March 2015**

Method: 8260B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGTEAM3-TRIPBLANK	ACETONE METHYLENE CHLORIDE	J J	2.6 0.56	10 1.0	LOQ LOQ	ug/L ug/L	J (all detects)
FWGTEAM4-TRIP	ACETONE METHYLENE CHLORIDE	J J	2.8 0.69	10 1.0	LOQ LOQ	ug/L ug/L	J (all detects)
FWGTEAMDEMO-TRIPBLANK	ACETONE METHYLENE CHLORIDE	J J	2.9 0.62	10 1.0	LOQ LOQ	ug/L ug/L	J (all detects)

Method: 8330

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FWGEQUIPRINSE4-0625-GW	2,4-DINITROTOLUENE	J	0.054	0.13	LOQ	ug/L	J (all detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 240-53558-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53558-1A **eQAPP Name: RVAAP 66-rev March 2015**

Method: 6010B
Matrix: AQ

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 240-190517/1-A	7/27/2015 3:29:00 PM	LEAD MANGANESE	2.71 ug/L 0.646 ug/L	FWGDA2mw-115-0571-GF FWGDA2mw-DUP1-0617-GF FWGDETmw-003C-0572-GF FWGDETmw-004C-0573-GF FWGEQUIPRINSE3-0624-GW FWGEQUIPRINSE4-0625-GW FWGFWGmw-004-0575-GF FWGFWGmw-007-0576-GF FWGFWGmw-015-0579-GF FWGFWGmw-016-0580-GF FWGLL10mw-003C-0597-GF FWGLL1mw-065C-0582-GF FWGLL2mw-267C-0590-GF FWGLL7mw-001-0596-GF

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FWGDA2mw-115-0571-GF(RES/TOT)	LEAD	2.7 ug/L	2.7U ug/L
FWGEQUIPRINSE3-0624-GW(RES/TOT)	LEAD	3.2 ug/L	3.2U ug/L
FWGEQUIPRINSE3-0624-GW(RES/TOT)	MANGANESE	1.6 ug/L	1.6U ug/L
FWGEQUIPRINSE4-0625-GW(RES/TOT)	MANGANESE	0.48 ug/L	0.48U ug/L
FWGFWGmw-015-0579-GF(RES/TOT)	LEAD	2.3 ug/L	2.3U ug/L
FWGLL1mw-065C-0582-GF(RES/TOT)	LEAD	2.8 ug/L	2.8U ug/L
FWGLL7mw-001-0596-GF(RES/TOT)	LEAD	2.1 ug/L	2.1U ug/L

Method: 8260B
Matrix: AQ

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 240-191868/6	8/4/2015 3:03:00 PM	METHYLENE CHLORIDE	0.364 ug/L	FWGDETmw-003C-0572-GW FWGDETmw-004C-0573-GW FWGEQUIPRINSE3-0624-GW FWGEQUIPRINSE4-0625-GW FWGLL10mw-003C-0597-GW FWGLL7mw-001-0596-GW FWGTEAM3-TRIPBLANK FWGTEAM4-TRIP FWGTEAMDEMO-TRIPBLANK

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FWGEQUIPRINSE3-0624-GW(RE2)	METHYLENE CHLORIDE	0.86 ug/L	0.86U ug/L
FWGEQUIPRINSE4-0625-GW(RE2)	METHYLENE CHLORIDE	0.84 ug/L	0.84U ug/L
FWGTEAM3-TRIPBLANK(RE2)	METHYLENE CHLORIDE	0.56 ug/L	0.56U ug/L
FWGTEAM4-TRIP(RE2)	METHYLENE CHLORIDE	0.69 ug/L	0.69U ug/L
FWGTEAMDEMO-TRIPBLANK(RE2)	METHYLENE CHLORIDE	0.62 ug/L	0.62U ug/L

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 240-53558-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53558-1A **eQAPP Name: RVAAP 66-rev March 2015**

Method: **9012A**
Matrix: **AQ**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FWGDETmw-003C-0572-GWMSD (FWGDETmw-003C-0572-GW FWGDETmw-004C-0573-GW FWGEQUIPRINSE4-0625-GW)	CYANIDE	-	52	69.00-118.00	46 (20.00)	CYANIDE	J (all detects) UJ (all non-detects)

Lab Duplicate Outlier Report

Lab Reporting Batch ID: 240-53558-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53558-1A **eQAPP Name: RVAAP 66-rev March 2015**

Method: 6010B
Matrix: AQ

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
FWGDA2mw-DUP1-0617-GFDUP (TOT) (FWGDA2mw-115-0571-GF FWGDA2mw-DUP1-0617-GF FWGDETmw-003C-0572-GF FWGDETmw-004C-0573-GF FWGEQUIPRINSE3-0624-GW FWGEQUIPRINSE4-0625-GW FWGFWGmw-004-0575-GF FWGFWGmw-007-0576-GF FWGFWGmw-015-0579-GF FWGFWGmw-016-0580-GF FWGLL10mw-003C-0597-GF FWGLL1mw-065C-0582-GF FWGLL2mw-267C-0590-GF FWGLL7mw-001-0596-GF)	CHROMIUM	43	20.00	J (all detects) UJ (all non-detects)

Project Name and Number: 30174.0016.0010.1 - USACE Project: USACE Project: RVAAP (OH)

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: 240-53558-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53558-1A **eQAPP Name: RVAAP 66-rev March 2015**

Method: 8081A
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
LCS 240-190462/7-A (FWGDETmw-003C-0572-GW FWGDETmw-004C-0573-GW FWGEQUIPRINSE3-0624-GW FWGEQUIPRINSE4-0625-GW)	ENDOSULFAN I	42	-	50.00-110.00	-	ENDOSULFAN I	J (all detects) UJ (all non-detects)

Method: 9012A
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
LCS 240-191771/2-A (FWGEQUIPRINSE3-0624-GW)	CYANIDE	74	-	80.01-118.00	-	CYANIDE	J(all detects) UJ(all non-detects)

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 240-53558-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53558-1A **eQAPP Name: RVAAP 66-rev March 2015**

Method: 8081A **Preparation Method: 3520C**

Matrix: AQ

Sample ID	*Type*	*Actual*	*Criteria*	*Units*	*Flag*
FWGDETmw-003C-0572-GW (RE)	Sampling To Extraction	8.00	7.00	DAYS	J (all detects)
FWGDETmw-004C-0573-GW (RE)		8.00	7.00	DAYS	UJ (all non-detects)
FWGEQUIPRINSE3-0624-GW (RE)		9.00	7.00	DAYS	
FWGEQUIPRINSE4-0625-GW (RE)		8.00	7.00	DAYS	

Field Duplicate RPD Report

Lab Reporting Batch ID: 240-53558-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53558-1A **eQAPP Name: RVAAP 66-rev March 2015**

Method: 6010B
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	FWGDA2mw-115-0571-GF (TOT)	FWGDA2mw-DUP1-0617-GF (TOT)			
ARSENIC	10 U	3.5	200	50.00	No Qualifiers Applied
BARIUM	18	20	11	50.00	
CALCIUM	87000	89000	2	50.00	
CHROMIUM	1.2	0.97	21	50.00	
LEAD	2.7	10 U	200	50.00	
MAGNESIUM	24000	25000	4	50.00	
MANGANESE	86	89	3	50.00	
POTASSIUM	3000	3200	6	50.00	

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	FWGDA2mw-115-0571-GF (TOT)	FWGDA2mw-DUP1-0617-GF (TOT)			
CADMIUM	2.0 U	0.44	200	50.00	No Qualifiers Applied
IRON	690	690	0	50.00	
SODIUM	11000	10000	10	50.00	

Project Name and Number: 30174.0016.0010.1 - USACE Project: USACE Project: RVAAP (OH)

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: 240-53558-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53558-1A **eQAPP Name: RVAAP 66-rev March 2015**

Method: **8260B**
Matrix: **AQ**

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FWGEQUIPRINSE4-0625-GW(RE2)	7/23/2015 12:35:00 PM	METHYLENE CHLORIDE	0.84 ug/L	FWGDA2mw-115-0571-GF FWGDA2mw-115-0571-GW FWGDA2mw-DUP1-0617-GF FWGDA2mw-DUP1-0617-GW FWGDETmw-003C-0572-GF FWGDETmw-003C-0572-GW FWGDETmw-004C-0573-GF FWGDETmw-004C-0573-GW FWGFWGmw-004-0575-GF FWGFWGmw-004-0575-GW FWGFWGmw-007-0576-GF FWGFWGmw-007-0576-GW FWGFWGmw-015-0579-GF FWGFWGmw-015-0579-GW FWGFWGmw-016-0580-GF FWGFWGmw-016-0580-GW FWGLL10mw-003C-0597-GF FWGLL10mw-003C-0597-GW FWGLL1mw-065C-0582-GF FWGLL1mw-065C-0582-GW FWGLL2mw-267C-0590-GF FWGLL2mw-267C-0590-GW FWGLL7mw-001-0596-GF FWGLL7mw-001-0596-GW
FWGEQUIPRINSE4-0625-GW(RES)	7/23/2015 12:35:00 PM	1,1,2,2-TETRACHLOROETHANE 2-BUTANONE ACETONE CHLOROFORM	0.22 ug/L 6.8 ug/L 6.9 ug/L 0.4 ug/L	FWGDA2mw-115-0571-GF FWGDA2mw-115-0571-GW FWGDA2mw-DUP1-0617-GF FWGDA2mw-DUP1-0617-GW FWGDETmw-003C-0572-GF FWGDETmw-003C-0572-GW FWGDETmw-004C-0573-GF FWGDETmw-004C-0573-GW FWGFWGmw-004-0575-GF FWGFWGmw-004-0575-GW FWGFWGmw-007-0576-GF FWGFWGmw-007-0576-GW FWGFWGmw-015-0579-GF FWGFWGmw-015-0579-GW FWGFWGmw-016-0580-GF FWGFWGmw-016-0580-GW FWGLL10mw-003C-0597-GF FWGLL10mw-003C-0597-GW FWGLL1mw-065C-0582-GF FWGLL1mw-065C-0582-GW FWGLL2mw-267C-0590-GF FWGLL2mw-267C-0590-GW FWGLL7mw-001-0596-GF FWGLL7mw-001-0596-GW

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FWGDETmw-004C-0573-GW(RES)	ACETONE	2.5 ug/L	2.5U ug/L

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: 240-53558-1 **Laboratory: TA CAN**

EDD Filename: Prep240-53558-1A **eQAPP Name: RVAAP 66-rev March 2015**

Method: **8330**
Matrix: **AQ**

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FWGEQUIPRINSE4-0625-GW(RES)	7/23/2015 12:35:00 PM	2,4-DINITROTOLUENE	0.054 ug/L	FWGDA2mw-115-0571-GF FWGDA2mw-115-0571-GW FWGDA2mw-DUP1-0617-GF FWGDA2mw-DUP1-0617-GW FWGDETmw-003C-0572-GF FWGDETmw-003C-0572-GW FWGDETmw-004C-0573-GF FWGDETmw-004C-0573-GW FWGFWGmw-004-0575-GF FWGFWGmw-004-0575-GW FWGFWGmw-007-0576-GF FWGFWGmw-007-0576-GW FWGFWGmw-015-0579-GF FWGFWGmw-015-0579-GW FWGFWGmw-016-0580-GF FWGFWGmw-016-0580-GW FWGLL10mw-003C-0597-GF FWGLL10mw-003C-0597-GW FWGLL1mw-065C-0582-GF FWGLL1mw-065C-0582-GW FWGLL2mw-267C-0590-GF FWGLL2mw-267C-0590-GW FWGLL7mw-001-0596-GF FWGLL7mw-001-0596-GW

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FWGLL2mw-267C-0590-GW(RES)	2,4-DINITROTOLUENE	0.20 ug/L	0.20U ug/L

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53558-1										
353.2	FWGEQUIPRINSE3-0624-GW	AQ	N							
				Nitrate-Nitrite	0.050	0.0060J		J	mg/L	RI
6010B	FWGDA2mw-115-0571-GF	AQ	N							
				BARIUM	200	18J		J	ug/L	RI
				CHROMIUM	7.0	1.2J		J	ug/L	RI
				LEAD	10	2.7J		U	ug/L	Mb, Cb
				POTASSIUM	5000	3000J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGDA2mw-DUP1-0617-GF	AQ	FD							
				ARSENIC	10	3.5J		J	ug/L	RI
				BARIUM	200	20J		J	ug/L	RI
				CHROMIUM	7.0	0.97J		J	ug/L	RI
				POTASSIUM	5000	3200J		J	ug/L	RI
				SILVER	7.0	7.0U J		UJ	ug/L	ProfJudg
6010B	FWGDETmw-003C-0572-GF	AQ	N							
				BARIUM	200	44J		J	ug/L	RI
				CHROMIUM	7.0	1.1J		J	ug/L	RI
				POTASSIUM	5000	1900J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGDETmw-004C-0573-GF	AQ	N							
				BARIUM	200	63J		J	ug/L	RI
				CHROMIUM	7.0	1.4J		J	ug/L	RI
				MANGANESE	15	4.1J		J	ug/L	RI
				POTASSIUM	5000	1900J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53558-1										
6010B	FWGEQUIPRINSE3-0624-GW	AQ	N							
				LEAD	10	3.2J		U	ug/L	Mb, Cb
				MANGANESE	15	1.6J		B	ug/L	Mb
				POTASSIUM	5000	230J		U	ug/L	Cb
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGEQUIPRINSE4-0625-GW	AQ	EB							
				MANGANESE	15	0.48J		B	ug/L	Mb
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
				VANADIUM	7.0	2.9J		J	ug/L	RI
6010B	FWGFWGmw-004-0575-GF	AQ	N							
				BARIUM	200	20J		J	ug/L	RI
				CHROMIUM	7.0	0.96J		U	ug/L	Cb
				POTASSIUM	5000	840J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGFWGmw-007-0576-GF	AQ	N							
				BARIUM	200	14J		J	ug/L	RI
				CHROMIUM	7.0	1.0J		U	ug/L	Cb
				NICKEL	40	0.79J		J	ug/L	RI
				POTASSIUM	5000	1600J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGFWGmw-015-0579-GF	AQ	N							
				BARIUM	200	8.3J		J	ug/L	RI
				CHROMIUM	7.0	1.5J		U	ug/L	Cb
				COBALT	7.0	0.69J		J	ug/L	RI
				LEAD	10	2.3J		U	ug/L	Mb, Cb
				NICKEL	40	2.6J		J	ug/L	RI
				POTASSIUM	5000	3300J		J	ug/L	RI
				SILVER	7.0	1.0J		UJ	ug/L	Cb, ProfJu

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53558-1										
6010B	FWGFWGmw-016-0580-GF	AQ	N							
				ARSENIC	10	4.7J		J	ug/L	RI
				BARIUM	200	50J		J	ug/L	RI
				CHROMIUM	7.0	1.2J		U	ug/L	Cb
				POTASSIUM	5000	2100J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGLL10mw-003C-0597-GF	AQ	N							
				BARIUM	200	5.4J		J	ug/L	RI
				CHROMIUM	7.0	0.79J		U	ug/L	Cb
				POTASSIUM	5000	700J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGLL1mw-065C-0582-GF	AQ	N							
				BARIUM	200	46J		J	ug/L	RI
				CHROMIUM	7.0	1.2J		U	ug/L	Cb
				LEAD	10	2.8J		U	ug/L	Mb, Cb
				POTASSIUM	5000	1100J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6010B	FWGLL2mw-267C-0590-GF	AQ	N							
				BARIUM	200	7.9J		J	ug/L	RI
				CHROMIUM	7.0	0.70J		U	ug/L	Cb
				COBALT	7.0	1.4J		J	ug/L	RI
				NICKEL	40	2.5J		J	ug/L	RI
				POTASSIUM	5000	610J		J	ug/L	RI
				SILVER	7.0	0.94J		UJ	ug/L	Cb, ProfJu

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53558-1										
6010B	FWGLL7mw-001-0596-GF	AQ	N							
				BARIUM	200	22J		J	ug/L	RI
				CHROMIUM	7.0	0.69J		U	ug/L	Cb
				COBALT	7.0	5.6J		J	ug/L	RI
				LEAD	10	2.1J		U	ug/L	Mb, Cb
				NICKEL	40	7.3J		J	ug/L	RI
				POTASSIUM	5000	1100J		J	ug/L	RI
				SILVER	7.0	7.0U		UJ	ug/L	ProfJudg
6020	FWGDA2mw-DUP1-0617-GF	AQ	FD							
				CADMIUM	2.0	0.44J		U	ug/L	Cb
6020	FWGDETmw-004C-0573-GF	AQ	N							
				ANTIMONY	2.0	0.37J		J	ug/L	RI
6020	FWGEQUIPRINSE3-0624-GW	AQ	N							
				SODIUM	1000	190J		J	ug/L	RI
6020	FWGLL1mw-065C-0582-GF	AQ	N							
				IRON	150	82J		J	ug/L	RI
6020	FWGLL7mw-001-0596-GF	AQ	N							
				ZINC	50	50		J	ug/L	ProfJudg
8081A	FWGDETmw-003C-0572-GW	AQ	N							
				ENDOSULFAN I	0.053	0.053U H		UJ	ug/L	StoE
8081A	FWGDETmw-004C-0573-GW	AQ	N							
				ENDOSULFAN I	0.053	0.053U H		UJ	ug/L	StoE
8081A	FWGEQUIPRINSE3-0624-GW	AQ	N							
				ENDOSULFAN I	0.050	0.050U H		UJ	ug/L	StoE

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53558-1										
8081A	FWGEQUIPRINSE4-0625-GW	AQ	EB							
				ENDOSULFAN I	0.048	0.048U H		UJ	ug/L	StoE
8260B	FWGDETmw-004C-0573-GW	AQ	N							
				ACETONE	10	2.5J		B	ug/L	Tb, Eb
8260B	FWGEQUIPRINSE3-0624-GW	AQ	N							
				2-BUTANONE	10	4.6J		J	ug/L	RI
				ACETONE	10	3.5J		B	ug/L	Tb
				CHLOROFORM	1.0	0.34J		J	ug/L	RI
				METHYLENE CHLORIDE	1.0	0.86J		B	ug/L	Mb, Tb
8260B	FWGEQUIPRINSE4-0625-GW	AQ	EB							
				1,1,2,2-TETRACHLOROETHANE	1.0	0.22J		J	ug/L	RI
				2-BUTANONE	10	6.8J		J	ug/L	RI
				ACETONE	10	6.9J		B	ug/L	Tb
				CHLOROFORM	1.0	0.40J		J	ug/L	RI
				METHYLENE CHLORIDE	1.0	0.84J		B	ug/L	Mb, Tb
8260B	FWGTEAM3-TRIPBLANK	AQ	TB							
				ACETONE	10	2.6J		J	ug/L	RI
				METHYLENE CHLORIDE	1.0	0.56J		B	ug/L	Mb
8260B	FWGTEAM4-TRIP	AQ	TB							
				ACETONE	10	2.8J		J	ug/L	RI
				METHYLENE CHLORIDE	1.0	0.69J		JB	ug/L	Preservati
8260B	FWGTEAMDEMO-TRIPBLANK	AQ	TB							
				ACETONE	10	2.9J		J	ug/L	RI
				METHYLENE CHLORIDE	1.0	0.62J		B	ug/L	Mb
8330	FWGEQUIPRINSE4-0625-GW	AQ	EB							
				2,4-DINITROTOLUENE	0.13	0.054J		J	ug/L	RI

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-53558-1										
8330	FWGLL2mw-267C-0590-GW	AQ	N							
				2,4-DINITROTOLUENE	0.13	0.20		B	ug/L	Eb
9012A	FWGDETmw-003C-0572-GW	AQ	N							
				CYANIDE	0.010	0.010U J		UJ	mg/L	Ms
9012A	FWGDETmw-004C-0573-GW	AQ	N							
				CYANIDE	0.010	0.010U		UJ	mg/L	Ms
9012A	FWGEQUIPRINSE4-0625-GW	AQ	EB							
				CYANIDE	0.010	0.010U		UJ	mg/L	Ms

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

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APPENDIX D

INVESTIGATION-DERIVED WASTE CHARACTERIZATION AND DISPOSAL PLAN

FINAL

FACILITY-WIDE GROUNDWATER MONITORING PROGRAM
RVAAP-66 FACILITY-WIDE GROUNDWATER

INVESTIGATION-DERIVED WASTE CHARACTERIZATION AND DISPOSAL PLAN
JULY 2015 GROUNDWATER SAMPLING EVENT REPORT

FORMER RAVENNA ARMY AMMUNITION PLANT, PORTAGE AND TRUMBULL COUNTIES, OHIO

August 24, 2015

GSA Contract Number GS-10F-0293K
Delivery Order W912QR-11-F-0266

Prepared for:

U.S. Army Corps of Engineers
600 Martin Luther King Jr. Place
Louisville, Kentucky 40202

Prepared by:

Environmental Quality Management, Inc.
1800 Carillon Boulevard
Cincinnati, Ohio 45240

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B Investigation-Derived Waste Analytical Report

ACRONYMS

AOC	area of concern
ARNG	Army National Guard
CFR	Code of Federal Regulations
EPA	Environmental Protection Agency
EQM	Environmental Quality Management, Inc.
^{o}F	degrees Fahrenheit
FWG	Facility-Wide Groundwater
FWGWMP	Facility-Wide Groundwater Monitoring Program
FWGWMPP	Facility-Wide Groundwater Monitoring Program Plan
FWSAP	Facility-Wide Sampling and Analysis Plan
gal	gallon
IDW	investigation-derived waste
mg/L	milligram per liter
OHARNG	Ohio Army National Guard
RCRA	Resource Conservation and Recovery Act
RVAAP	Ravenna Army Ammunition Plant
SAIC	Science Applications International Corporation
SAP	Sampling and Analysis Plan
S.U.	standard unit
SVOC	semivolatile organic compound
TCLP	Toxicity Characteristic Leaching Procedure
USACE	United States Army Corps of Engineers
VOC	volatile organic compound

1.0 INTRODUCTION

Investigative activities were conducted during the Facility-Wide Groundwater Monitoring Program (FWGWMP) sampling events in July 2015 at the former Ravenna Army Ammunition Plant (RVAAP), Portage and Trumbull Counties, Ohio, resulting in the generation of investigation-derived wastes (IDW). The IDW consists of purge water and equipment decontamination liquid. The IDW purge water was generated in the course of field activities at each well. The IDW decontamination liquid was generated from the cleaning and decontamination of non-dedicated equipment used to sample the wells. The purpose of this report is to characterize and classify the IDW for proper disposal. The report includes:

- A summary of the IDW generated and its origin.
- A review of the analytical results used for waste characterization.
- Classification of the IDW per the *Facility Wide Sampling and Analysis Plan* (FWSAP).
- Recommendations for disposal.

This document follows guidance established by the United States Army Corps of Engineers (USACE), the Ohio Army National Guard (OHARNG), and the Ohio Environmental Protection Agency (EPA) regarding IDW disposition at the former RVAAP.

2.0 OPERATIONAL HISTORY AND WASTE GENERATION

Information regarding the operational history and suspected contaminants for the Facility-Wide Groundwater Monitoring Program Plan (FWGWMPP) is presented in Section 1.2 of the *Final Part 1 - Sampling and Analysis Plan Addendum for the Facility-Wide Groundwater Monitoring Program Plan at the Ravenna Army Ammunition Plant, Ravenna, Ohio* (SAP Addendum; Portage, 2004). Section 4.6 of the FWGWMP SAP Addendum describes procedures used for sampling and managing IDW at the former RVAAP.

Liquid (purged groundwater and decontamination liquid) IDW was generated during the July 2015 sampling event (forty-six wells). The purge water collected from the sampled areas of concern (AOCs) was stored in drums labeled for purge water disposal. Purge water was generated in accordance with the FWSAP, Section 5.4.4.2 (SAIC, 2011) under the micropurging criteria. Decontamination liquid was generated from the washing, rinsing, and decontamination procedures used for all non-dedicated sampling equipment. Per discussions in the field on July 22, 2015, with the Army National Guard (ARNG) and the Ohio EPA, the decontamination liquid was stored in the same drums as the purge water. These decontamination procedures are described in Section 5.4.8 of the FWSAP.

The drum container label, type and size of the drum container used, estimated volume per drum, and the source of the fluid is presented in Table 2-1.

Table 2-1. IDW Inventory of Drums

Drum Label	Drum Type & Size	Contents	Estimated Volume	Location/ Source
EQM 2015-5	55-gal Steel	Purge Water / Decontamination Liquid	~50 gallons	Load Lines 1, 2, 3, 7, 10 and 12 wells; FWG wells; FBQ well, RQL wells; NACA well; WBG wells, SCF wells; OD2 wells, Facility-wide Decontamination Liquid
EQM 2015-6	55-gal Steel	Purge Water / Decontamination Liquid	~50 gallons	Load Lines 1, 2, 3, 7, 10 and 12 wells; FWG wells; FBQ well, RQL wells; NACA well; WBG wells, SCF wells; OD2 wells, Facility-wide Decontamination Liquid
EQM 2015-7	55-gal Steel	Purge Water / Decontamination Liquid	~50 gallons	Load Lines 1, 2, 3, 7, 10 and 12 wells; FWG wells; FBQ well, RQL wells; NACA well; WBG wells, SCF wells; OD2 wells, Facility-wide Decontamination Liquid

3.0 MANAGEMENT OF ENVIRONMENTAL MEDIA

All environmental media were managed in a manner that minimized potential risk to human health and the environment. Based on past sampling and IDW reports for similar groundwater monitoring activities, investigation-derived waste was handled as nonhazardous material pending waste characterization and classification based on analytical results. The FWSAP and the FWGWMPP SAP Addendum describe approved procedures used for containerizing and handling IDW.

All purged groundwater IDW generated from each micropurging event was placed into a 55-gal drum as previously agreed upon by the Army, USACE, and Ohio EPA. The purge water was transferred daily from each well location after sampling via closed-top 5-gal buckets to the appropriately labeled 55-gal drum located and staged on secondary containment inside Building 1036.

During the event all decontamination liquid generated during cleaning of non-dedicated sampling equipment was also placed into a 55-gal drum. The liquid was transferred at the end of each day from individual teams via decontamination tub to the appropriately labeled 55-gal drum located and staged on secondary containment inside Building 1036.

Waste was inspected on a weekly basis by EQM in accordance with Camp Ravenna Waste Management Guidelines dated 30 March 2015. Wastes inspections are included as Attachment A.

4.0 DISCUSSION OF ANALYTICAL RESULTS

As described in Section 8.4 of the FWSAP (IDW Characterization and Classification for Disposal), all IDW were characterized for disposal by taking composite samples collected from each of the segregated waste streams. There was only one waste stream during this sampling event that required characterization (the generated purge water with decontamination liquid). A composite sample was taken of the waste stream using a disposable bailer until a total of approximately 4 liters was withdrawn in equal amounts from all drums. The composite sample was submitted to TestAmerica Laboratories in North Canton, Ohio, for full Toxicity Characteristic Leaching Procedure (TCLP) analysis in accordance with the FWSAP using the following methods:

- TCLP mercury by EPA Method SW-846 1311/7470A.
- TCLP metals (silver, arsenic, barium, cadmium, chromium, lead, and selenium) by EPA Method SW-846 1311/6010B.
- TCLP semivolatile organic compounds (SVOCs) by EPA Method SW-846 1311/8270C.
- TCLP volatile organic compounds (VOCs) by EPA Method SW-846 1311/8260B.
- TCLP pesticides by EPA Method SW-846 1311/8081A
- TCLP herbicides by EPA Method SW-846 1311/8151A
- Total cyanide by EPA Method SW-846 9012A
- Total sulfide by EPA Method SW-846 9034
- Flashpoint by EPA Method SW-846 1010
- pH by EPA Method SW-846 9040B

A trip blank was submitted with the samples and analyzed for VOCs. The IDW analytical results are presented in Attachment B.

5.0 RECOMMENDATIONS FOR DISPOSAL

Table 8-1 in the FWSAP presents the maximum concentrations of contaminants for the toxicity characteristic for hazardous wastes as per 40 CFR 261.24. Analytical results for the IDW generated during the July 2015 groundwater sampling event were compared against these criteria to determine whether the waste streams generated were potentially hazardous or non-hazardous. No volatile organic compounds were identified in the trip blank.

5.1 Liquid IDW

During micro-purging of the monitoring wells, liquid IDW from purged waters and decontamination liquid generated during cleaning of non-dedicated sampling equipment was collected and composited. A composite sample was collected of the liquid IDW. The analytical results for the composite sample were compared to the regulatory levels from Table 8-1 in the FWSAP. The regulatory criteria (TCLP) for Resource Conservation and Recovery Act (RCRA) hazardous waste determinations were not exceeded. Table 5-1 presents the detected results compared to the regulatory characteristics for hazardous wastes as per 40 CFR 261.24.

The drums containing the IDW will be classified as non-hazardous and will be sent offsite for disposal to a permitted water treatment facility in accordance with Section 8.0 of the FWSAP.

5.2 Summary of Disposal Recommendations

All drums will be classified as contaminated but non-hazardous. The liquid drums will be sent offsite to a permitted water treatment facility for disposal. The results for the composite sample show that no chemical was detected at hazardous waste levels. Table 5-2 presents a summary of each drum and the recommended disposal options for the waste streams. Upon review and acceptance of the IDW report, Environmental Quality Management, Inc. (EQM) will proceed with the appropriate waste disposal.

Table 5-1. Detected Analytical Results When Compared to USEPA Regulatory Characteristic Levels (40 CFR 261.20 - 24)

Sample ID	Detected Contaminant	Detected Result, mg/L	Characteristic Levels for Determining Hazardous Waste[1], mg/L	Above Regulatory Yes/No
FWG-IDW-MWPURGEMAR2015	Barium	0.030 JB	100	No
	Cadmium	0.00064 J	1.0	No
	Chromium	0.00077 JB	5.0	No
	Flashpoint	>200°F	>140°F	No
	Cyanide, Total	0.019	See Notes	No
	pH[2]	7.53	<2 or >12.5	No
Trip Blank-IDW-MAR2015	None Detected			

1 = USEPA Regulatory Characteristic Levels (40 CFR 261.20 through 24).
2 = pH measured in Standard Units (S.U.).
J = estimated result. Result is less than reporting limit.
B = blank contamination.
Reactive Cyanide Note: Despite the presence of a low concentration of cyanide, the waste streams are deemed nonhazardous as they do not meet the hazardous waste criteria set forth in OAC 3725-51-23 (i.e., reacts violently with water or produces toxic gases, fumes, or vapors between the pH of 2 and 12.5).

Table 5-2. Summary of Drum Containers, TCLP/Characteristic Waste Criteria, and Disposal Recommendations

Drum Container Label	**Media**	**TCLP Criteria**	**Disposal Recommendation**
EQM 2015-5 Purge Water	Water	Regulatory limits not exceeded.	Offsite disposal as non-hazardous waste.
EQM 2015-6 Purge Water	Water	Regulatory limits not exceeded.	Offsite disposal as non-hazardous waste.
EQM 2015-7 Decon Water	Water	Regulatory limits not exceeded.	Offsite disposal as non-hazardous waste.

6.0 REFERENCES

Science Applications International Corporation (SAIC). February 24, 2011. *Final Facility-Wide Sampling and Analysis Plan for Environmental Investigations, Ravenna Army Ammunition Plant, Ravenna, Ohio.*

Portage Environmental. 2004. *RVAAP Facility Wide Groundwater Monitoring Program Plan*.

ATTACHMENT A

INVESTIGATION-DERIVED WASTE INSPECTION SHEETS

CAMP RAVENNA WEEKLY NON-HAZARDOUS & HAZARDOUS WASTE INSPECTION/INVENTORY SHEET

Contractor: EQM Month: July-Aug Year: 2015 Waste Description: Purge & Decon water
Container Nos. 3

	WEEK 1	WEEK 2	WEEK 3	WEEK 4
	Date: 7-28-15 Time: 1100	Date: Aug 4, 2015 Time: 1050	Date: 8-11-15 Time: 1315	Date: 8-18-15 Time: 1217
Point of Contact (Name / Number)	John Miller 513-602-4065	"	"	"
Project Name:	RVAAP-66 GW	"	RVAAP-66 GW	RVAAP-66 GW
Contracting Agency and POC:	Katie Tait OHARNG	"	"	"
Waste Determination: Pending Analysis, Hazardous, Non-Hazardous, etc.	na non-hazardous	"	Pending analysis	"
*Location of waste on installation:	1036	"	"	"
Date Generated:	July 14 - 24/2015	"	"	"
Projected date of disposal:	10 days aft OEPA approv	"	10 days after IDW report	"
Non-Haz, Satellite, 90 day storage area	na non-hazardous	"	"	"
Waste generation site:	FWG-WMP	"	"	"
Number of Containers (size / type):	3 x 55 gal	"	"	"
Condition of Container:	Good	"	"	"
Containers closed, no loose lids, no loose bungs?	(yes) / no	(yes) / no	(yes) / no	(yes) / no
Waste labeled properly and visible (40 CFR 262.34 (c) (1):	(yes) / no	(yes) / no	(yes) / no	(yes) / no
Secondary containment	(yes) no	(yes) / no	(yes) / no	(yes) / no
Incompatibles stored together?	yes / (no)	yes / (no)	yes / (no)	yes / (no)
Any spills?	yes / (no)	yes / (no)	yes / (no)	yes / (no)
Spill kit available?	(yes) / no	(yes) / no	(yes) / no	(yes) / no
Fire extinguisher present and charged?	(yes) no	(yes) / no	(yes) / no	(yes) no
Containers grounded if ignitables?	yes / no / na na	yes / no / na na	yes / no / na na	yes / no / na na
Emergency notification form/info present?	(yes) / no	(yes) / no	(yes) / no	(yes) / no
Container log binder present?	(yes) / no	(yes) / no	(yes) / no	(yes) no
Signs posted if required?	(yes) / no	(yes) / no	(yes) / no	(yes) no
Photo's submitted	(yes) / no	(yes) no	(yes) no	(yes) no
Printed Name:	Stephen Stugeon	Stephen Stugeon	Stephen Stugeon	Stephen Stugeon
Signature:	S. Stugeon	S. Stugeon	S. Stugeon	S. Stugeon

This form is required for Non-Hazardous and Hazardous waste including PCB and special waste.

CONTRACTORS ARE REQUIRED TO SUBMIT THIS FORM WEEKLY TO THE CAMP RAVENNA ENV OFFFICE WHEN WASTE IS STORED ON SITE.

CONTRACTORS ARE ENCOURAGED TO INCLUDE PHOTOS WITH EACH WEEKLY INSPECTION SHEET WHEN WASTE IS STORED ON SITE.

*Draw detailed map showing location of waste within the site.

CAMP RAVENNA WEEKLY NON-HAZARDOUS & HAZARDOUS WASTE INSPECTION/INVENTORY SHEET

Contractor: EQM Month: Aug Year: 2015 Waste Description: Purged/Decon water

Container Nos. 3

	WEEK 1	WEEK 2	WEEK 3	WEEK 4
	Date: 8-24-15 Time: 1310	Date: Time:	Date: Time:	Date: Time:
Point of Contact (Name / Number)	John Miller 513-673-4665			
Project Name:	RVAAP-66 GW			
Contracting Agency and POC:	Katie Tait OHARNG			
*Location on installation:	1036			
Date Generated:	July 14-24/2015			
Projected date of disposal:	90 days after TDW Rpt			
Satellite or 90 day storage are:	90 non-hazardous			
Waste generation site:	FWB-WMP			
Number of Containers (size / type):	3 X 55 gals			
Condition of Container:	Good			
Containers closed, no loose lids, no loose bungs?	yes / no	yes / no	yes / no	yes / no
Waste labeled properly and visible (40 CFR 262.34 (c) (1):	yes / no	yes / no	yes / no	yes / no
Secondary containment	yes / no	yes / no	yes / no	yes / no
Incompatibles stored together?	yes / no	yes / no	yes / no	yes / no
Any spills?	yes / no	yes / no	yes / no	yes / no
Spill kit available?	yes / no	yes / no	yes / no	yes / no
Fire extinguisher present and chanrged?	yes / no	yes / no	yes / no	yes / no
Containers grounded if ignitables?	yes / no n/a	yes / no	yes / no	yes / no
Emergency notification form/info present?	yes / no	yes / no	yes / no	yes / no
Container log binder present?	yes / no	yes / no	yes / no	yes / no
Signs posted if required?	yes / no	yes / no	yes / no	yes / no
Photo's submitted	yes / no	yes / no	yes / no	yes / no
Printed Name:	Stephen Sturgeon			
Signature:				

This form is required for Non-Hazardous and Hazardous waste including PCB and special waste.

CONTRACTORS ARE REQUIRED TO SUBMIT THIS FORM WEEKLY TO THE CAMP RAVENNA ENV OFFFICE WHEN WASTE IS STORED ON SITE.

CONTRACTORS ARE ENCOURAGED TO INCLUDE PHOTOS WITH EACH WEEKLY INSPECTION SHEET WHEN WASTE IS STORED ON SITE.

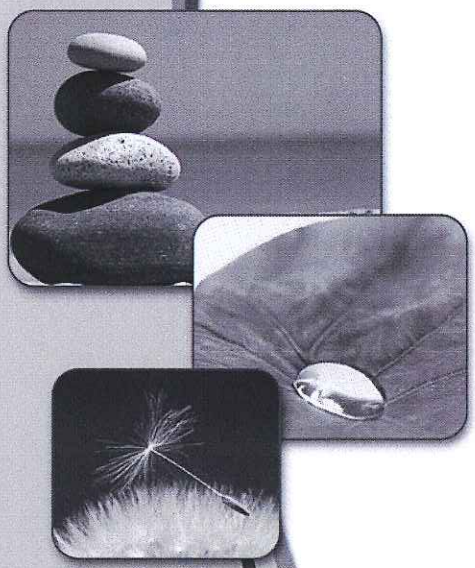
*Draw detailed map showing location of waste within the site.

ATTACHMENT B

INVESTIGATION-DERIVED WASTE ANALYTICAL REPORT

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

TestAmerica Job ID: 240-53580-1
Client Project/Site: RVAAP 66

For:
Environmental Quality Mgt., Inc.
1800 Carillon Blvd
Cincinnati, Ohio 45240

Attn: Mr. Erik Corbin

Authorized for release by:
8/5/2015 9:23:13 PM

Mark Loeb, Project Manager II
(330)966-9387
mark.loeb@testamericainc.com

LINKS

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

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

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Qualifiers

GC/MS VOA

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

GC/MS Semi VOA

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

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66

TestAmerica Job ID: 240-53580-1

Job ID: 240-53580-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: Environmental Quality Mgt., Inc.

Project: RVAAP 66

Report Number: 240-53580-1

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

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

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

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

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

RECEIPT
The samples were received on 7/24/2015 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.0° C.

TCLP VOLATILE ORGANIC COMPOUNDS (GCMS)
Sample FWG-IDW-MW PURGE JULY 2015 (240-53580-1) was analyzed for TCLP volatile organic compounds (GCMS) in accordance with EPA SW846 Methods 1311/8260B. The sample was leached on 07/29/2015 and analyzed on 07/31/2015.

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

VOLATILE ORGANIC COMPOUNDS (GCMS)
Sample FWG-IDW MW PURGE JULY 2015-TRIP (240-53580-2) was analyzed for volatile organic compounds (GCMS) in accordance with EPA SW846 Method 8260B. The sample was analyzed on 07/30/2015.

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

TCLP SEMIVOLATILE ORGANIC COMPOUNDS (GCMS)
Sample FWG-IDW-MW PURGE JULY 2015 (240-53580-1) was analyzed for TCLP semivolatile organic compounds (GCMS) in accordance with EPA SW 846 Methods 1311/8270C. The sample was leached on 07/28/2015, prepared on 07/29/2015 and analyzed on 07/31/2015.

Job ID: 240-53580-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

Surrogates are added during the extraction process prior to dilution. When the sample is diluted, surrogate recoveries are diluted out and no corrective action is required.

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

TCLP CHLORINATED PESTICIDES
Sample FWG-IDWMW PURGE JULY 2015 (240-53580-1) was analyzed for TCLP chlorinated pesticides in accordance with EPA SW 846 Methods 1311/8081A. The sample was leached on 07/28/2015, prepared on 07/29/2015 and analyzed on 08/04/2015.

DCB Decachlorobiphenyl failed the surrogate recovery criteria low for FWG-IDWMW PURGE JULY 2015 (240-53580-1). Refer to the QC report for details.

Two surrogates are used for this analysis. The laboratory's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following sample contained an allowable number of surrogate compounds outside limits: FWG-IDWMW PURGE JULY 2015 (240-53580-1). These results have been reported and qualified.

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

TCLP CHLORINATED HERBICIDES
Sample FWG-IDW-MW PURGE JULY 2015 (240-53580-1) was analyzed for TCLP chlorinated herbicides in accordance with EPA SW-846 Methods 1311/8151A. The sample was leached on 07/28/2015, prepared on 07/29/2015 and analyzed on 07/31/2015.

Surrogates are added during the extraction process prior to dilution. When the sample dilution is 5X or greater, surrogate recoveries are diluted out and no corrective action is required.

The continuing calibration verification (CCV) associated with batch 240-191509 recovered above the upper control limit for 2,4-D. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The following samples are impacted: FWG-IDWMW PURGE JULY 2015 (240-53580-1) and (240-53480-G-1-F).

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

TCLP METALS (ICP)
Sample FWG-IDW MW PURGE JULY 2015 (240-53580-1) was analyzed for TCLP metals (ICP) in accordance with EPA SW 846 Methods 1311/6010B. The sample was leached on 07/28/2015, prepared on 07/29/2015 and analyzed on 07/30/2015.

Arsenic, Barium and Chromium were detected in method blank LB 240-191055/1-B at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

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

TCLP MERCURY
Sample FWG-IDW-MW PURGE JULY 2015 (240-53580-1) was analyzed for TCLP mercury in accordance with EPA SW-846 Methods 1311/7470A. The sample was leached on 07/28/2015, prepared on 07/29/2015 and analyzed on 07/30/2015.

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

FLASHPOINT
Sample FWG-IDW MW PURGE JULY 2015 (240-53580-1) was analyzed for flashpoint in accordance with EPA SW 846 Method 1010. The sample was analyzed on 07/28/2015.

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

TOTAL CYANIDE
Sample FWG-IDWMW PURGE JULY 2015 (240-53580-1) was analyzed for total cyanide in accordance with EPA SW 846 Method 9012A.

Job ID: 240-53580-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

The sample was prepared and analyzed on 07/30/2015.

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

SULFIDE
Sample FWG-IDW-MW PURGE JULY 2015 (240-53580-1) was analyzed for sulfide in accordance with EPA SW-846 Method 9034. The sample was prepared and analyzed on 07/28/2015.

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

PH
Sample FWG-IDWMW PURGE JULY 2015 (240-53580-1) was analyzed for pH in accordance with EPA SW846 Method 9040B. The sample was analyzed on 07/25/2015.

The following sample was received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: FWG-IDW MW PURGE JULY 2015 (240-53580-1).

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

Method Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66

TestAmerica Job ID: 240-53580-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CAN
8081A	Organochlorine Pesticides (GC)	SW846	TAL CAN
8151A	Herbicides (GC)	SW846	TAL CAN
6010B	Metals (ICP)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL CAN
1010	Ignitability, Pensky-Martens Closed-Cup Method	SW846	TAL CAN
9012A	Cyanide, Total and/or Amenable	SW846	TAL CAN
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CAN
9040B	pH	SW846	TAL CAN

Protocol References:

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

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Sample Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66

TestAmerica Job ID: 240-53580-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-53580-1	FWG-DW-M W PURGEJULY 2015	Water	07/24/15 08:00	07/24/15 09:30
240-53580-2	FWG-IDWMW PURGE JULY 2015-TRIP	Water	07/24/15 08:00	07/24/15 09:30

Detection Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66

TestAmerica Job ID: 240-53580-1

Client Sample ID: FWG-IDW-MW PURGE JULY 2015

Lab Sample ID: 240-53580-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.030	J B	10	0.0010	mg/L	1		6010B	TCLP
Cadmium	0.00064	J	0.10	0.00014	mg/L			6010B	TCLP
Chromium	0.00077	J B	0.50	0.00055	mg/L			6010B	TCLP
Flashpoint	>200		1.00	1.00	Degrees F			1010	Total/NA
Cyanide, Total	0.019		0.010	0.0050	mg/L			9012A	Total/NA
pH	7.53	H	0.100	0.100	SU			9040B	Total/NA

Client Sample ID: FWG-IDW-MW PURGE JULY 2015-TRIP

Lab Sample ID: 240-53580-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: FWG-IDW-MW PURGE JULY 2015
Date Collected: 07/24/15 08:00
Date Received: 07/24/15 09:30

Lab Sample ID: 240-53580-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.025	U	0.025	0.0095	mg/L			07/31/15 17:56	1
1,2-Dichloroethane	0.025	U	0.025	0.011	mg/L			07/31/15 17:56	
2-Butanone (MEK)	0.25	U	0.25	0.029	mg/L			07/31/15 17:56	
Benzene	0.025	U	0.025	0.0065	mg/L			07/31/15 17:56	
Carbon tetrachloride	0.025	U	0.025	0.0065	mg/L			07/31/15 17:56	
Chlorobenzene	0.025	U	0.025	0.0075	mg/L			07/31/15 17:56	
Chloroform	0.025	U	0.025	0.0080	mg/L			07/31/15 17:56	
Tetrachloroethene	0.025	U	0.025	0.015	mg/L			07/31/15 17:56	
Trichloroethene	0.025	U	0.025	0.0085	mg/L			07/31/15 17:56	
Vinyl chloride	0.025	U	0.025	0.011	mg/L			07/31/15 17:56	

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*80 - 121*		*07/31/15 17:56*	*1*
4-Bromofluorobenzene (Surr)	*105*		*70 - 124*		*07/31/15 17:56*	
Toluene-d8 (Surr)	*109*		*80 - 120*		*07/31/15 17:56*	
Dibromofluoromethane (Surr)	*93*		*80 - 128*		*07/31/15 17:56*	

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.0040	U	0.0040	0.00034	mg/L		07/29/15 09:51	07/31/15 19:50	1
2,4,5-Trichlorophenol	0.0040	U	0.0040	0.00030	mg/L		07/29/15 09:51	07/31/15 19:50	1
2,4,6-Trichlorophenol	0.0040	U	0.0040	0.00024	mg/L		07/29/15 09:51	07/31/15 19:50	
2,4-Dinitrotoluene	0.0040	U	0.0040	0.00025	mg/L		07/29/15 09:51	07/31/15 19:50	
Hexachlorobenzene	0.00080	U	0.00080	0.000085	mg/L		07/29/15 09:51	07/31/15 19:50	
Hexachlorobutadiene	0.0040	U	0.0040	0.00027	mg/L		07/29/15 09:51	07/31/15 19:50	
Hexachloroethane	0.0040	U	0.0040	0.00019	mg/L		07/29/15 09:51	07/31/15 19:50	
3 & 4 Methylphenol	0.0040	U	0.0040	0.00080	mg/L		07/29/15 09:51	07/31/15 19:50	
2-Methylphenol	0.0040	U	0.0040	0.00017	mg/L		07/29/15 09:51	07/31/15 19:50	
Nitrobenzene	0.0040	U	0.0040	0.000040	mg/L		07/29/15 09:51	07/31/15 19:50	
Pentachlorophenol	0.0040	U	0.0040	0.00027	mg/L		07/29/15 09:51	07/31/15 19:50	
Pyridine	0.0040	U	0.0040	0.00035	mg/L		07/29/15 09:51	07/31/15 19:50	

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*54*		*30 - 110*	*07/29/15 09:51*	*07/31/15 19:50*	*1*
2-Fluorophenol (Surr)	*44*		*20 - 110*	*07/29/15 09:51*	*07/31/15 19:50*	
2,4,6 Tribromophenol (Surr)	*72*		*23 - 110*	*07/29/15 09:51*	*07/31/15 19:50*	
Nitrobenzene-d5 (Surr)	*56*		*28 - 110*	*07/29/15 09:51*	*07/31/15 19:50*	
Phenol-d5 (Surr)	*38*		*21 - 110*	*07/29/15 09:51*	*07/31/15 19:50*	
Terphenyl-d14 (Surr)	*74*		*48 - 110*	*07/29/15 09:51*	*07/31/15 19:50*	

Method: 8081A - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	0.0050	U	0.0050	0.00014	mg/L		07/29/15 09:53	08/04/15 03:53	1
Endrin	0.00050	U	0.00050	0.000013	mg/L		07/29/15 09:53	08/04/15 03:53	
Heptachlor	0.00050	U	0.00050	0.000014	mg/L		07/29/15 09:53	08/04/15 03:53	
Heptachlor epoxide	0.00050	U	0.00050	0.000015	mg/L		07/29/15 09:53	08/04/15 03:53	
gamma-BHC (Lindane)	0.00050	U	0.00050	0.000013	mg/L		07/29/15 09:53	08/04/15 03:53	
Methoxychlor	0.0010	U	0.0010	0.000013	mg/L		07/29/15 09:53	08/04/15 03:53	
Toxaphene	0.020	U	0.020	0.00020	mg/L		07/29/15 09:53	08/04/15 03:53	

Client Sample ID: FWG-IDW-MW PURGE JULY 2015
Date Collected: 07/24/15 08:00
Date Received: 07/24/15 09:30

Lab Sample ID: 240-53580-1
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-mxylene	*66*		*40 - 129*	*07/29/15 09:53*	*08/04/15 03:53*	*1*
Tetrachloro m xylene	*53*		*40 - 129*	*07/29/15 09:53*	*08/04/15 03:53*	
DCB Decachlorobiphenyl	*19*	*X*	*40 - 152*	*07/29/15 09:53*	*08/04/15 03:53*	
DCB Decachlorobiphenyl	*19*	*X*	*40 - 152*	*07/29/15 09:53*	*08/04/15 03:53*	

Method: 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	0.0040	U	0.0040	0.0019	mg/L		07/29/15 09:55	07/31/15 23:32	1
Silvex (2,4,5-TP)	0.0010	U	0.0010	0.00027	mg/L		07/29/15 09:55	07/31/15 23:32	

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*106*		*56 - 120*	*07/29/15 09:55*	*07/31/15 23:32*	*1*
2,4-Dichlorophenylacetic acid	*99*		*56 - 120*	*07/29/15 09:55*	*07/31/15 23:32*	

Method: 6010B - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.50	U	0.50	0.0029	mg/L		07/29/15 10:11	07/30/15 14:47	1
Barium	**0.030**	**J B**	10	0.0010	mg/L		07/29/15 10:11	07/30/15 14:47	
Cadmium	**0.00064**	**J**	0.10	0.00014	mg/L		07/29/15 10:11	07/30/15 14:47	
Chromium	**0.00077**	**J B**	0.50	0.00055	mg/L		07/29/15 10:11	07/30/15 14:47	
Lead	0.50	U	0.50	0.0019	mg/L		07/29/15 10:11	07/30/15 14:47	
Selenium	0.25	U	0.25	0.0040	mg/L		07/29/15 10:11	07/30/15 14:47	
Silver	0.50	U	0.50	0.00092	mg/L		07/29/15 10:11	07/30/15 14:47	

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0020	U	0.0020	0.000090	mg/L		07/29/15 14:00	07/30/15 11:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	**>200**		1.00	1.00	Degrees F			07/28/15 11:07	1
Cyanide, Total	**0.019**		0.010	0.0050	mg/L		07/30/15 08:27	07/30/15 10:39	
Sulfide	3.0	U	3.0	0.94	mg/L		07/28/15 08:05	07/28/15 11:25	
pH	**7.53**	**H**	0.100	0.100				07/25/15 10:34	

Client Sample ID: FWG-IDW-MW PURGE JULY 2015-TRIP

Lab Sample ID: 240-53580-2

Date Collected: 07/24/15 08:00
Matrix: Water
Date Received: 07/24/15 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.45	ug/L			07/30/15 16:06	1
1,2-Dichloroethane	1.0	U	1.0	0.23	ug/L			07/30/15 16:06	
Benzene	1.0	U	1.0	0.35	ug/L			07/30/15 16:06	
Carbon tetrachloride	1.0	U	1.0	0.43	ug/L			07/30/15 16:06	
Chlorobenzene	1.0	U	1.0	0.25	ug/L			07/30/15 16:06	
Chloroform	1.0	U	1.0	0.25	ug/L			07/30/15 16:06	
2-Butanone (MEK)	10	U	10	0.53	ug/L			07/30/15 16:06	
Tetrachloroethene	1.0	U	1.0	0.31	ug/L			07/30/15 16:06	
Trichloroethene	1.0	U	1.0	0.22	ug/L			07/30/15 16:06	
Vinyl chloride	1.0	U	1.0	0.29	ug/L			07/30/15 16:06	

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane d4 (Surr)	*92*		*78 - 125*		*07/30/15 16:06*	*1*
4-Bromofluorobenzene (Surr)	*86*		*61 - 120*		*07/30/15 16:06*	
Toluene-d8 (Surr)	*93*		*80 - 120*		*07/30/15 16:06*	
Dibromofluoromethane (Surr)	*93*		*79 - 120*		*07/30/15 16:06*	

Surrogate Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66

TestAmerica Job ID: 240-53580-1

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	TOL	DBFM
Lab Sample ID	**Client Sample ID**	**(78-125)**	**(61-120)**	**(80-120)**	**(79-120)**
240-53580-2	FWG-IDW MW PURGE JULY 2(	92	86	93	93
LCS 240-191336/4	Lab Control Sample	96	90	95	94
MB 240-191336/6	Method Blank	94	87	95	90

Surrogate Legend

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

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

Matrix: Water

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	TOL	DBFM
Lab Sample ID	**Client Sample ID**	**(80-121)**	**(70-124)**	**(80-120)**	**(80-128)**
LCS 240-191272/6	Lab Control Sample	89	100	104	91

Surrogate Legend

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

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

Matrix: Water

Prep Type: TCLP

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	TOL	DBFM
Lab Sample ID	**Client Sample ID**	**(80-121)**	**(70-124)**	**(80-120)**	**(80-128)**
240-53580-1	FWG-IDW MW PURGE JULY 2(	87	105	109	93
LB 240-191140/1 A MB	Method Blank	93	104	106	95

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	TBP	NBZ	PHL	TPH
Lab Sample ID	**Client Sample ID**	**(30-110)**	**(20-110)**	**(23-110)**	**(28-110)**	**(21-110)**	**(48-110)**
LCS 240-191151/8A	Lab Control Sample	77	59	94	70	44	90
MB 240-191151/7A	Method Blank	72	64	80	70	52	81

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)

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

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

Matrix: Water — **Prep Type: TCLP**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	TBP	NBZ	PHL	TPH
Lab Sample ID	Client Sample ID	(30-110)	(20-110)	(23-110)	(28-110)	(21-110)	(48-110)
240-53580-1	FWG-IDWMW PURGE JULY 2(	54	44	72	56	38	74

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

Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TCX1	TCX2	DCB1	DCB2
Lab Sample ID	Client Sample ID	(40-129)	(40-129)	(40-152)	(40-152)
LCS 240-191152/8-A	Lab Control Sample	115	112	108	107
MB 240-191152/7A	Method Blank	61	60	60	62

Surrogate Legend
TCX = Tetrachloro-mxylene
DCB = DCB Decachlorobiphenyl

Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Water — **Prep Type: TCLP**

		Percent Surrogate Recovery (Acceptance Limits)			
		TCX1	TCX2	DCB1	DCB2
Lab Sample ID	Client Sample ID	(40-129)	(40-129)	(40-152)	(40-152)
240-53580-1	FWG-IDW MW PURGE JULY 2(	66	53	19 X	19 X

Surrogate Legend
TCX = Tetrachloro-m xylene
DCB = DCB Decachlorobiphenyl

Method: 8151A - Herbicides (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCPA1	DCPA2
Lab Sample ID	Client Sample ID	(56-120)	(56-120)
LCS 240-191154/8A	Lab Control Sample	88	81
MB 240-191154/7A	Method Blank	94	95

Surrogate Legend
DCPA = 2,4-Dichlorophenylacetic acid

Surrogate Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66

TestAmerica Job ID: 240-53580-1

Method: 8151A - Herbicides (GC)

Matrix: Water

		Percent Surrogate Recovery (Acceptance Limits)	
		DCPA1	DCPA2
Lab Sample ID	**Client Sample ID**	**(56-120)**	**(56-120)**
240-53580-1	FWG-IDWMW PURGE JULY 2(	106	99

Surrogate Legend

DCPA – 2,4-Dichlorophenylacetic acid

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

Lab Sample ID: LCS 240-191272/6
Matrix: Water
Analysis Batch: 191272

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	1.00	1.10		mg/L		110	71 - 133
1,2-Dichloroethane	1.00	0.984		mg/L		98	80 - 120
Benzene	1.00	1.10		mg/L		110	80 - 120
2-Butanone (MEK)	2.00	2.23		mg/L		112	49 - 120
Carbon tetrachloride	1.00	1.05		mg/L		105	54 - 122
Chlorobenzene	1.00	1.03		mg/L		103	80 - 120
Chloroform	1.00	1.05		mg/L		105	80 - 123
Tetrachloroethene	1.00	0.993		mg/L		99	79 - 134
Trichloroethene	1.00	0.985		mg/L		99	78 - 130
Vinyl chloride	1.00	1.04		mg/L		104	56 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 121*
4-Bromofluorobenzene (Surr)	*100*		*70 - 124*
Toluene-d8 (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*91*		*80 - 128*

Lab Sample ID: MB 240-191336/6
Matrix: Water
Analysis Batch: 191336

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.45	ug/L			07/30/15 15:16	1
1,2-Dichloroethane	1.0	U	1.0	0.23	ug/L			07/30/15 15:16	
Benzene	1.0	U	1.0	0.35	ug/L			07/30/15 15:16	
2-Butanone (MEK)	10	U	10	0.53	ug/L			07/30/15 15:16	
Carbon tetrachloride	1.0	U	1.0	0.43	ug/L			07/30/15 15:16	
Chlorobenzene	1.0	U	1.0	0.25	ug/L			07/30/15 15:16	
Chloroform	1.0	U	1.0	0.25	ug/L			07/30/15 15:16	
Tetrachloroethene	1.0	U	1.0	0.31	ug/L			07/30/15 15:16	
Trichloroethene	1.0	U	1.0	0.22	ug/L			07/30/15 15:16	
Vinyl chloride	1.0	U	1.0	0.29	ug/L			07/30/15 15:16	

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*78 - 125*		*07/30/15 15:16*	
4-Bromofluorobenzene (Surr)	*87*		*61 - 120*		*07/30/15 15:16*	
Toluene d8 (Surr)	*95*		*80 - 120*		*07/30/15 15:16*	
Dibromofluoromethane (Surr)	*90*		*79 - 120*		*07/30/15 15:16*	

Lab Sample ID: LCS 240-191336/4
Matrix: Water
Analysis Batch: 191336

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	10.0	9.94		ug/L		99	76 - 124
1,2-Dichloroethane	10.0	10.3		ug/L		103	80 - 120
Benzene	10.0	10.2		ug/L		102	80 - 120

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

Lab Sample ID: LCS 240-191336/4
Matrix: Water
Analysis Batch: 191336

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Butanone (MEK)	20.0	20.4		ug/L		102	56 - 138
Carbon tetrachloride	10.0	10.7		ug/L		107	77 - 131
Chlorobenzene	10.0	10.1		ug/L		101	80 - 120
Chloroform	10.0	9.88		ug/L		99	80 - 120
Tetrachloroethene	10.0	10.3		ug/L		103	78 - 121
Trichloroethene	10.0	10.4		ug/L		104	80 - 121
Vinyl chloride	10.0	8.22		ug/L		82	52 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2Dichloroethane-d4 (Surr)	*96*		*78 - 125*
4-Bromofluorobenzene (Surr)	*90*		*61 - 120*
Toluene-d8 (Surr)	*95*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*79 - 120*

Lab Sample ID: LB 240-191140/1-A MB
Matrix: Water
Analysis Batch: 191272

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.025	U	0.025	0.0095	mg/L			07/30/15 10:26	1
1,2-Dichloroethane	0.025	U	0.025	0.011	mg/L			07/30/15 10:26	
Benzene	0.025	U	0.025	0.0065	mg/L			07/30/15 10:26	
2-Butanone (MEK)	0.25	U	0.25	0.029	mg/L			07/30/15 10:26	
Carbon tetrachloride	0.025	U	0.025	0.0065	mg/L			07/30/15 10:26	
Chlorobenzene	0.025	U	0.025	0.0075	mg/L			07/30/15 10:26	
Chloroform	0.025	U	0.025	0.0080	mg/L			07/30/15 10:26	
Tetrachloroethene	0.025	U	0.025	0.015	mg/L			07/30/15 10:26	
Trichloroethene	0.025	U	0.025	0.0085	mg/L			07/30/15 10:26	
Vinyl chloride	0.025	U	0.025	0.011	mg/L			07/30/15 10:26	

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2 Dichloroethane-d4 (Surr)	*93*		*80 - 121*		*07/30/15 10:26*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 124*		*07/30/15 10:26*	
Toluene-d8 (Surr)	*106*		*80 - 120*		*07/30/15 10:26*	
Dibromofluoromethane (Surr)	*95*		*80 - 128*		*07/30/15 10:26*	

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

Lab Sample ID: MB 240-191151/7-A
Matrix: Water
Analysis Batch: 191511

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 191151

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.0040	U	0.0040	0.00034	mg/L		07/29/15 09:51	07/31/15 16:14	1
2,4,5-Trichlorophenol	0.0040	U	0.0040	0.00030	mg/L		07/29/15 09:51	07/31/15 16:14	
2,4,6-Trichlorophenol	0.0040	U	0.0040	0.00024	mg/L		07/29/15 09:51	07/31/15 16:14	
2,4-Dinitrotoluene	0.0040	U	0.0040	0.00025	mg/L		07/29/15 09:51	07/31/15 16:14	

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

Lab Sample ID: MB 240-191151/7-A
Matrix: Water
Analysis Batch: 191511

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 191151

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobenzene	0.00080	U	0.00080	0.000085	mg/L		07/29/15 09:51	07/31/15 16:14	1
Hexachlorobutadiene	0.0040	U	0.0040	0.00027	mg/L		07/29/15 09:51	07/31/15 16:14	
Hexachloroethane	0.0040	U	0.0040	0.00019	mg/L		07/29/15 09:51	07/31/15 16:14	
3 & 4 Methylphenol	0.0040	U	0.0040	0.00080	mg/L		07/29/15 09:51	07/31/15 16:14	
2-Methylphenol	0.0040	U	0.0040	0.00017	mg/L		07/29/15 09:51	07/31/15 16:14	
Nitrobenzene	0.0040	U	0.0040	0.000040	mg/L		07/29/15 09:51	07/31/15 16:14	
Pentachlorophenol	0.0040	U	0.0040	0.00027	mg/L		07/29/15 09:51	07/31/15 16:14	
Pyridine	0.0040	U	0.0040	0.00035	mg/L		07/29/15 09:51	07/31/15 16:14	

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2 Fluorobiphenyl (Surr)	*72*		*30 - 110*	*07/29/15 09:51*	*07/31/15 16:14*	*1*
2 Fluorophenol (Surr)	*64*		*20 - 110*	*07/29/15 09:51*	*07/31/15 16:14*	
2,4,6-Tribromophenol (Surr)	*80*		*23 - 110*	*07/29/15 09:51*	*07/31/15 16:14*	
Nitrobenzene-d5 (Surr)	*70*		*28 - 110*	*07/29/15 09:51*	*07/31/15 16:14*	
Phenol d5 (Surr)	*52*		*21 - 110*	*07/29/15 09:51*	*07/31/15 16:14*	
Terphenyld14 (Surr)	*81*		*48 - 110*	*07/29/15 09:51*	*07/31/15 16:14*	

Lab Sample ID: LCS 240-191151/8-A
Matrix: Water
Analysis Batch: 191511

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 191151

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	0.0800	0.0532		mg/L		67	52 - 110
2,4,5-Trichlorophenol	0.0800	0.0695		mg/L		87	51 - 110
2,4,6-Trichlorophenol	0.0800	0.0665		mg/L		83	46 - 110
2,4-Dinitrotoluene	0.0800	0.0689		mg/L		86	54 - 110
Hexachlorobenzene	0.0800	0.0774		mg/L		97	50 - 110
Hexachlorobutadiene	0.0800	0.0531		mg/L		66	34 - 110
Hexachloroethane	0.0800	0.0520		mg/L		65	41 - 110
3 & 4 Methylphenol	0.0800	0.0544		mg/L		68	48 - 110
2-Methylphenol	0.0800	0.0587		mg/L		73	44 - 111
Nitrobenzene	0.0800	0.0587		mg/L		73	40 - 110
Pentachlorophenol	0.160	0.136		mg/L		85	12 - 110
Pyridine	0.0800	0.0483		mg/L		60	30 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2 Fluorobiphenyl (Surr)	*77*		*30 - 110*
2-Fluorophenol (Surr)	*59*		*20 - 110*
2,4,6 Tribromophenol (Surr)	*94*		*23 - 110*
Nitrobenzene-d5 (Surr)	*70*		*28 - 110*
Phenol d5 (Surr)	*44*		*21 - 110*
Terphenyl-d14 (Surr)	*90*		*48 - 110*

Method: 8081A - Organochlorine Pesticides (GC)

Lab Sample ID: MB 240-191152/7-A
Matrix: Water
Analysis Batch: 191616

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 191152

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	0.0050	U	0.0050	0.00014	mg/L		07/29/15 09:53	08/04/15 04:15	1
Endrin	0.00050	U	0.00050	0.000013	mg/L		07/29/15 09:53	08/04/15 04:15	
Heptachlor	0.00050	U	0.00050	0.000014	mg/L		07/29/15 09:53	08/04/15 04:15	
Heptachlor epoxide	0.00050	U	0.00050	0.000015	mg/L		07/29/15 09:53	08/04/15 04:15	
gamma-BHC (Lindane)	0.00050	U	0.00050	0.000013	mg/L		07/29/15 09:53	08/04/15 04:15	
Methoxychlor	0.0010	U	0.0010	0.000013	mg/L		07/29/15 09:53	08/04/15 04:15	
Toxaphene	0.020	U	0.020	0.00020	mg/L		07/29/15 09:53	08/04/15 04:15	

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*61*		*40 - 129*	*07/29/15 09:53*	*08/04/15 04:15*	*1*
Tetrachloro-m-xylene	*60*		*40 - 129*	*07/29/15 09:53*	*08/04/15 04:15*	
DCB Decachlorobiphenyl	*60*		*40 - 152*	*07/29/15 09:53*	*08/04/15 04:15*	
DCB Decachlorobiphenyl	*62*		*40 - 152*	*07/29/15 09:53*	*08/04/15 04:15*	

Lab Sample ID: LCS 240-191152/8-A
Matrix: Water
Analysis Batch: 191858

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 191152

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Endrin	0.00200	0.00283		mg/L		141	73 - 146
Heptachlor	0.00200	0.00226	J	mg/L		113	60 - 140
Heptachlor epoxide	0.00200	0.00234	J	mg/L		117	73 - 158
gamma-BHC (Lindane)	0.00200	0.00220	J	mg/L		110	63 - 157
Methoxychlor	0.00400	0.00556		mg/L		139	49 - 160

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*115*		*40 - 129*
Tetrachloro-m-xylene	*112*		*40 - 129*
DCB Decachlorobiphenyl	*108*		*40 - 152*
DCB Decachlorobiphenyl	*107*		*40 - 152*

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 240-191154/7-A
Matrix: Water
Analysis Batch: 191509

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 191154

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	0.0040	U	0.0040	0.0019	mg/L		07/29/15 09:55	07/31/15 23:57	1
Silvex (2,4,5-TP)	0.0010	U	0.0010	0.00027	mg/L		07/29/15 09:55	07/31/15 23:57	

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*94*		*56 - 120*	*07/29/15 09:55*	*07/31/15 23:57*	*1*
2,4-Dichlorophenylacetic acid	*95*		*56 - 120*	*07/29/15 09:55*	*07/31/15 23:57*	

Lab Sample ID: LCS 240-191154/8-A
Matrix: Water
Analysis Batch: 191509

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 191154

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-D	0.0200	0.0157		mg/L		79	50 - 120
Silvex (2,4,5-TP)	0.00500	0.00351		mg/L		70	45 - 129

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*88*		*56 - 120*
2,4 Dichlorophenylacetic acid	*81*		*56 - 120*

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-191159/2-A
Matrix: Water
Analysis Batch: 191279

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 191159

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.50	U	0.50	0.0029	mg/L		07/29/15 10:11	07/30/15 14:02	1
Barium	10	U	10	0.0010	mg/L		07/29/15 10:11	07/30/15 14:02	
Cadmium	0.10	U	0.10	0.00014	mg/L		07/29/15 10:11	07/30/15 14:02	
Chromium	0.50	U	0.50	0.00055	mg/L		07/29/15 10:11	07/30/15 14:02	
Lead	0.50	U	0.50	0.0019	mg/L		07/29/15 10:11	07/30/15 14:02	
Selenium	0.25	U	0.25	0.0040	mg/L		07/29/15 10:11	07/30/15 14:02	
Silver	0.50	U	0.50	0.00092	mg/L		07/29/15 10:11	07/30/15 14:02	

Lab Sample ID: LCS 240-191159/3-A
Matrix: Water
Analysis Batch: 191279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 191159

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	2.00	2.16		mg/L		108	50 - 150
Barium	2.00	2.02	J	mg/L		101	50 - 150
Cadmium	0.0500	0.0541	J	mg/L		108	50 - 150
Chromium	0.200	0.208	J	mg/L		104	50 - 150
Lead	0.500	0.472	J	mg/L		94	50 - 150
Selenium	2.00	2.24		mg/L		112	50 - 150
Silver	0.0500	0.0558	J	mg/L		112	50 - 150

Lab Sample ID: LB 240-191055/1-B
Matrix: Water
Analysis Batch: 191279

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 191159

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00458	J	0.50	0.0029	mg/L		07/29/15 10:11	07/30/15 13:58	1
Barium	0.00288	J	10	0.0010	mg/L		07/29/15 10:11	07/30/15 13:58	
Cadmium	0.10	U	0.10	0.00014	mg/L		07/29/15 10:11	07/30/15 13:58	
Chromium	0.00100	J	0.50	0.00055	mg/L		07/29/15 10:11	07/30/15 13:58	
Lead	0.50	U	0.50	0.0019	mg/L		07/29/15 10:11	07/30/15 13:58	
Selenium	0.25	U	0.25	0.0040	mg/L		07/29/15 10:11	07/30/15 13:58	
Silver	0.50	U	0.50	0.00092	mg/L		07/29/15 10:11	07/30/15 13:58	

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-191161/2-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 191351 — **Prep Batch: 191161**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0020	U	0.0020	0.000090	mg/L		07/29/15 14:00	07/30/1511:03	1

Lab Sample ID: LCS 240-191161/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 191351 — **Prep Batch: 191161**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.005 00	0.00493		mg/L		99	80 - 120

Lab Sample ID: LB 240-191055/1-C — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: TCLP**
Analysis Batch: 191351 — **Prep Batch: 191161**

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0020	U	0.0020	0.000090	mg/L		07/29/15 14:00	07/30/15 11:02	1

Method: 1010 - Ignitability, Pensky-Martens Closed-Cup Method

Lab Sample ID: LCS 240-191009/1 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 191009

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Flashpoint	81.0	81.00		Degrees F		100	97 - 103

Method: 9012A - Cyanide, Total and/or Amenable

Lab Sample ID: MB 240-191292/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 191329 — **Prep Batch: 191292**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		07/30/15 08:27	07/30/15 10:00	1

Lab Sample ID: LCS 240-191292/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 191329 — **Prep Batch: 191292**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0168	0.0135		mg/L		81	69 - 118

Lab Sample ID: MRL 240-191329/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 191329

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0100	0.00844	J	mg/L		84	70 - 130

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

Lab Sample ID: MB 240-190919/7-A
Matrix: Water
Analysis Batch: 190982

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 190919

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	3.0	U	3.0	0.94	mg/L		07/28/15 08:05	07/28/15 11:25	1

Lab Sample ID: LCS 240-190919/8-A
Matrix: Water
Analysis Batch: 190982

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 190919

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	8.33	7.55		mg/L		91	70 - 130

Method: 9040B - pH

Lab Sample ID: LCS 240-190632/2
Matrix: Water
Analysis Batch: 190632

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	6.15	6.200		SU		101	97 - 103

QC Association Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66

TestAmerica Job ID: 240-53580-1

GC/MS VOA

Leach Batch: 191140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53580-1	FWG-IDW MW PURGE JULY 2015	TCLP	Water	1311	
LB 240-191140/1-A MB	Method Blank	TCLP	Water	1311	

Analysis Batch: 191272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 240-191140/1-A MB	Method Blank	TCLP	Water	8260B	191140
LCS 240-191272/6	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 191336

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-535802	FWG-IDWMW PURGE JULY 2015-TRIP	Total/NA	Water	8260B	
LCS 240-191336/4	Lab Control Sample	Total/NA	Water	8260B	
MB 240-191336/6	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 191495

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53580-1	FWG-IDWMW PURGE JULY 2015	TCLP	Water	8260B	191140

GC/MS Semi VOA

Leach Batch: 191055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53580-1	FWG-IDWMW PURGE JULY 2015	TCLP	Water	1311	

Prep Batch: 191151

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53580-1	FWG-IDWMW PURGE JULY 2015	TCLP	Water	3510C	191055
LCS 240-191151/8-A	Lab Control Sample	Total/NA	Water	3510C	
MB 240-191151/7 A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 191511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53580-1	FWG-IDWMW PURGE JULY 2015	TCLP	Water	8270C	191151
LCS 240-191151/8-A	Lab Control Sample	Total/NA	Water	8270C	191151
MB 240-191151/7-A	Method Blank	Total/NA	Water	8270C	191151

GC Semi VOA

Leach Batch: 191055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53580-1	FWG-IDWMW PURGE JULY 2015	TCLP	Water	1311	

Prep Batch: 191152

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53580-1	FWG-IDW MW PURGE JULY 2015	TCLP	Water	3520C	191055
LCS 240-191152/8-A	Lab Control Sample	Total/NA	Water	3520C	
MB 240-191152/7-A	Method Blank	Total/NA	Water	3520C	

GC Semi VOA (Continued)

Prep Batch: 191154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53580-1	FWG-IDW MW PURGE JULY 2015	TCLP	Water	8151A	191055
LCS 240-191154/8-A	Lab Control Sample	Total/NA	Water	8151A	
MB 240-191154/7-A	Method Blank	Total/NA	Water	8151A	

Analysis Batch: 191509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53580-1	FWG-IDWMW PURGE JULY 2015	TCLP	Water	8151A	191154
LCS 240-191154/8-A	Lab Control Sample	Total/NA	Water	8151A	191154
MB 240-191154/7-A	Method Blank	Total/NA	Water	8151A	191154

Analysis Batch: 191616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53580-1	FWG-IDWMW PURGE JULY 2015	TCLP	Water	8081A	191152
MB 240-191152/7-A	Method Blank	Total/NA	Water	8081A	191152

Analysis Batch: 191858

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-191152/8 A	Lab Control Sample	Total/NA	Water	8081A	191152

Metals

Leach Batch: 191055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53580-1	FWG-IDW MW PURGE JULY 2015	TCLP	Water	1311	
LB 240-191055/1-B	Method Blank	TCLP	Water	1311	
LB 240-191055/1-C	Method Blank	TCLP	Water	1311	

Prep Batch: 191159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53580-1	FWG-IDWMW PURGE JULY 2015	TCLP	Water	3010A	191055
LB 240-191055/1-B	Method Blank	TCLP	Water	3010A	191055
LCS 240-191159/3 A	Lab Control Sample	Total/NA	Water	3010A	
MB 240-191159/2 A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 191161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53580-1	FWG-IDW MW PURGE JULY 2015	TCLP	Water	7470A	191055
LB 240-191055/1-C	Method Blank	TCLP	Water	7470A	191055
LCS 240-191161/3-A	Lab Control Sample	Total/NA	Water	7470A	
MB 240-191161/2A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 191279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53580-1	FWG-IDW MW PURGE JULY 2015	TCLP	Water	6010B	191159
LB 240-191055/1-B	Method Blank	TCLP	Water	6010B	191159
LCS 240-191159/3-A	Lab Control Sample	Total/NA	Water	6010B	191159
MB 240-191159/2-A	Method Blank	Total/NA	Water	6010B	191159

Metals (Continued)

Analysis Batch: 191351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53580-1	FWG-IDW MW PURGE JULY 2015	TCLP	Water	7470A	191161
LB 240-191055/1-C	Method Blank	TCLP	Water	7470A	191161
LCS 240-191161/3-A	Lab Control Sample	Total/NA	Water	7470A	191161
MB 240-191161/2A	Method Blank	Total/NA	Water	7470A	191161

General Chemistry

Analysis Batch: 190632

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53580-1	FWG-IDW MW PURGE JULY 2015	Total/NA	Water	9040B	
LCS 240-190632/2	Lab Control Sample	Total/NA	Water	9040B	

Prep Batch: 190919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53580-1	FWG-IDW MW PURGE JULY 2015	Total/NA	Water	9030B	
LCS 240-190919/8-A	Lab Control Sample	Total/NA	Water	9030B	
MB 240-190919/7 A	Method Blank	Total/NA	Water	9030B	

Analysis Batch: 190982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53580-1	FWG-IDW MW PURGE JULY 2015	Total/NA	Water	9034	190919
LCS 240-190919/8-A	Lab Control Sample	Total/NA	Water	9034	190919
MB 240-190919/7 A	Method Blank	Total/NA	Water	9034	190919

Analysis Batch: 191009

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53580-1	FWG-IDW MW PURGE JULY 2015	Total/NA	Water	1010	
LCS 240-191009/1	Lab Control Sample	Total/NA	Water	1010	

Prep Batch: 191292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53580-1	FWG-IDWMW PURGE JULY 2015	Total/NA	Water	9012A	
LCS 240-191292/2-A	Lab Control Sample	Total/NA	Water	9012A	
MB 240-191292/1 A	Method Blank	Total/NA	Water	9012A	

Analysis Batch: 191329

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53580-1	FWG-IDW MW PURGE JULY 2015	Total/NA	Water	9012A	191292
LCS 240-191292/2-A	Lab Control Sample	Total/NA	Water	9012A	191292
MB 240-191292/1 A	Method Blank	Total/NA	Water	9012A	191292
MRL 240-191329/6	Lab Control Sample	Total/NA	Water	9012A	

Lab Chronicle

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66

TestAmerica Job ID 240-53580-1

Client Sample ID: FWG-IDW-MW PURGE JULY 2015

Lab Sample ID: 240-53580-1

Date Collected: 07/24/15 08:00
Matrix: Water
Date Received: 07/24/15 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			191140	07/29/15 09:35	DRJ	TAL CAN
TCLP	Analysis	8260B			191495	07/31/15 17:56	RJQ	TAL CAN
TCLP	Leach	1311			191055	07/28/15 16:35	DRJ	TAL CAN
TCLP	Prep	3510C			191151	07/29/15 09:51	JDR	TAL CAN
TCLP	Analysis	8270C			191511	07/31/15 19:50	JMG	TAL CAN
TCLP	Leach	1311			191055	07/28/15 16:35	DRJ	TAL CAN
TCLP	Prep	3520C			191152	07/29/15 09:53	CSC	TAL CAN
TCLP	Analysis	8081A			191616	08/04/15 03:53	BPM	TAL CAN
TCLP	Leach	1311			191055	07/28/15 16:35	DRJ	TAL CAN
TCLP	Prep	8151A			191154	07/29/15 09:55	JDR	TAL CAN
TCLP	Analysis	8151A			191509	07/31/15 23:32	DEB	TAL CAN
TCLP	Leach	1311			191055	07/28/15 16:35	DRJ	TAL CAN
TCLP	Prep	3010A			191159	07/29/15 10:11	AI	TAL CAN
TCLP	Analysis	6010B			191279	07/30/15 14:47	KLC	TAL CAN
TCLP	Leach	1311			191055	07/28/15 16:35	DRJ	TAL CAN
TCLP	Prep	7470A			191161	07/29/15 14:00	AI	TAL CAN
TCLP	Analysis	7470A			191351	07/30/15 11:15	WAL	TAL CAN
Total/NA	Analysis	1010			191009	07/28/15 11:07	TPH	TAL CAN
Total/NA	Prep	9012A			191292	07/30/15 08:27	BLW	TAL CAN
Total/NA	Analysis	9012A			191329	07/30/15 10:39	BLW	TAL CAN
Total/NA	Prep	9030B			190919	07/28/15 08:05	BLW	TAL CAN
Total/NA	Analysis	9034			190982	07/28/15 11:25	BLW	TAL CAN
Total/NA	Analysis	9040B			190632	07/25/15 10:34	DTN	TAL CAN

Client Sample ID: FWG-IDW-MW PURGE JULY 2015-TRIP

Lab Sample ID: 240-53580-2

Date Collected: 07/24/15 08:00
Matrix: Water
Date Received: 07/24/15 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	191336	07/30/15 16:06	LRW	TAL CAN

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Certification Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP 66

TestAmerica Job ID 240-53580-1

Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-17
Connecticut	State Program		PH-0590	12-31-15
Illinois	NELAP	5	200004	07-31-16
Kansas	NELAP	7	E-10336	01-31-16 *
Kentucky (UST)	State Program	4	58	02-26-16
Kentucky (WW)	State Program	4	98016	12-31-15
L-A-B	DoD ELAP		L2315	07-18-16
Minnesota	NELAP	5	039-999-348	12-31-15
Nevada	State Program	9	OH-000482008A	07-31-16
New Jersey	NELAP	2	OH001	09-30-15 *
New York	NELAP	2	10975	03-31-16 *
Ohio VAP	State Program	5	CL0024	10-31-15
Oregon	NELAP	10	4062	02 23-16
Pennsylvania	NELAP	3	68-00340	08-31-16
Texas	NELAP	6		08-31-15 *
USDA	Federal		P330-13-00319	1 1 26-16
Virginia	NELAP	3	460175	09-14-15
Washington	State Program	10	C971	01-12-16
West Virginia DEP	State Program	3	210	12-31-15
Wisconsin	State Program	5	999518190	08-31-15 *

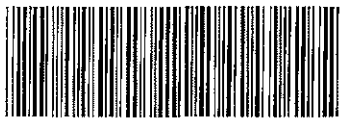
* Certification renewal pending - certification considered valid.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

CHAIN OF CUSTODY
AND
RECEIVING DOCUMENTS



240-53580 Chain of Custody

4101 Shuffel Street, N.W. North Canton, OH 44720 tel 330.497.9396 fax 330.497.0772 www.testamericainc.com

ca Canton
treet, N. N.

20/C310

Chain of Custody Record

TestAme

THE LEADER IN ENVIRONM
TestAmerica Labora
Form No. CA-C-WI-002, Rev. 4.2,

OH 44720
.9396 Fax: 330.497.0772

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact
MW

Project Manager:
Tel/Fax: SB 8257500 X7330

Site Contact:
Lab Contact:

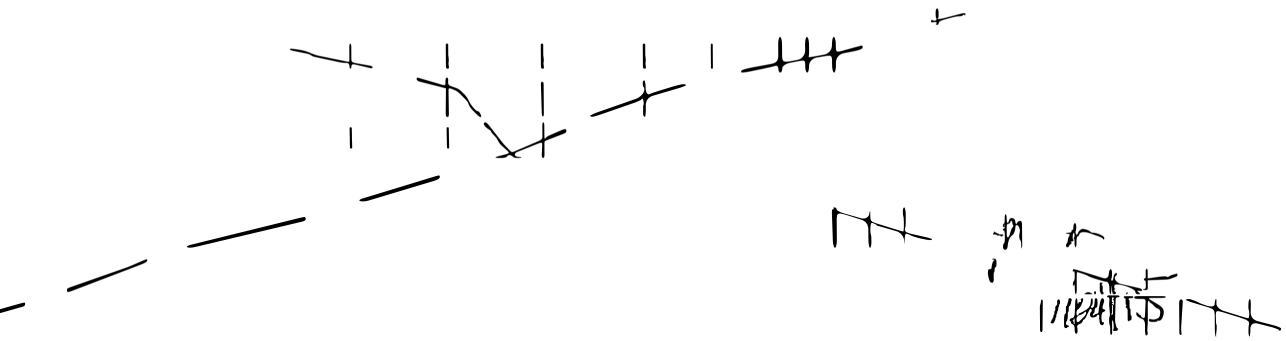
COC No: AD 720
1 of 1 C
Sampler: AD
For Lab Use Only:
Walkin Client:
Lab Sampling:

Job / SDG No.:

mple Identification

Sample Specific

MW Purge July 2015
MW Purge July 2015 Tri



1=Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

tification:
a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the
he lab is to dispose of the sample.

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Return to Client ☒ Disposal by Lab ☐ Archive for Months

QC Requirements & Comments:

☐ No

Cooler Temp. (C): Obs'd: Corr'd: Therm ID No.:

Company: Date/Time: Received in Laboratory by: Company: Date/Time:

TestAmerica Canton Sample Receipt Form/Narrative
Canton Facili

Client EQM — Cooler unpacked by:

Cooler Received on 7/24/15

FedEx: 1st Grd Exp UPS FAS Stetson

Recei t After-hours: Dro -off Date/Time — Storage Location

TestAmerica Cooler # ~~Foam~~ Box li — Box Other ____ _____

Packing material used ~~Bubble Wrap~~ Foam Plastic Bag None Other _____ _

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt

IR GUN# A (CF +1.0 °C) Observed Cooler Temp. 2.0 °C Co rrected Cooler Temp. 3.0 °C

~~IR GUN# 4 (CF +0.5 °C) Observed Cooler Temp. °C Correeted Cooler Temp. °C~~ ☐ See Multiple

~~IR GUN# 5 (CF +0.4 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C~~ Cooler Form

IR GUN# 8 (CF -1.5 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity Yes No
   -Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA
   -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Were sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC432654**
12. Were VOAs on the COC? Yes No
13. Were air bubbles >6 mm in any VOA vials? Yes No NA
14. Was a trip blank present in the cooler(s)? Trip Blank Lot # B50620VK Yes No

Contacted PM _____ Date _____ by __ via Verbal Voice Mail Other
Concerning

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

15. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container.
Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory.
Time preserved: Preservative(s) added/Lot number(s):

Temperature readings: __ _____ _____ _____ _____ _____ _

Client Sample ID	Container Type	Container pH	Preservative Added (mls)	Lot #
FWG-IDW-MW PURGE JULY 201	240-53580-A-1	Plastic 250ml - with Sodium Hydro	>12	
FWG-IDW-MW PURGE JULY 201	240-53580-C-1	Plastic 500ml - with Zn Acetate and	>9	

APPENDIX E

REPORTING LIMITS THAT CURRENTLY DO NOT MEET THE RVAAP QAPP PROJECT ACTION REQUIRMENTS, MCLS, AND/OR RSL (June 2015)

Appendix E

VOCs CAS No.	Analyte Name	Units	DL	LOD[1]	LOQ	PAR[2]	MCL	RSL[3]
79-34-5	1,1,2,2-Tetrachloroethane	µg/L	0.18	0.25	1	1	NS	0.076
106-93-4	1,2-Dibromoethane	µg/L	0.19	0.5	1	1	NS	0.0075
107-06-2	1,2-Dichloroethane	µg/L	0.2	0.5	1	1	5	0.17
75-27-4	Bromodichloromethane	µg/L	0.15	0.25	1	1	80	0.13
124-48-1	Dibromochloromethane	µg/L	0.43	0.5	1	1	NS	0.17
75-01-4	Vinyl chloride	µg/L	0.29	0.5	1	1	2	0.019

SVOCs CAS No.	Analyte Name	Units	DL	LOD[1]	LOQ	PAR[2]	MCL	RSL[3]
91-94-1	3,3'-Dichlorobenzidine	µg/L	0.37	1	5	5	NS	0.12
534-52-1	4,6-Dinitro-2-methylphenol	µg/L	2.4	4	5	25	NS	1.5
50-32-8	Benzo(a)pyrene	µg/L	0.051	0.1	0.2	0.2	0.2	0.0034
205-99-2	Benzo(b)fluoranthene	µg/L	0.045	0.1	0.2	0.2	NS	0.034
111-44-4	bis(2-Chloroethyl)ether	µg/L	0.1	0.1	1	1	NS	0.014
53-70-3	Dibenzo(a,h)anthracene	µg/L	0.45	0.1	0.2	50	NS	0.0065
118-74-1	Hexachlorobenzene	µg/L	0.085	0.1	0.2	10	1	0.0098
87-68-3	Hexachlorobutadiene	µg/L	0.27	0.5	1	10	NS	0.14
193-39-5	Indeno(1,2,3-cd)pyrene	µg/L	0.043	0.1	0.2	0.2	NS	0.034
180-60-1	2,2'-Oxybis (1-Chloropropane)	µg/L	0.4	0.5	1	10	NS	0.36
621-64-7	N-Nitroso-di-n-propylamine	µg/L	0.24	0.5	1	10	NS	0.011
87-86-5	Pentachlorophenol	µg/L	0.27	1	5	5	1	0.04

Pesticides CAS No.	Analyte Name	Units	DL	LOD[1]	LOQ	PAR[2]	MCL	RSL[3]
309-00-2	Aldrin	µg/L	0.018	0.05	0.05	0.03	NS	0.0092
319-84-6	alpha-BHC	µg/L	0.014	0.05	0.05	0.03	NS	0.0071
60-57-1	Dieldrin	µg/L	0.013	0.05	0.05	0.03	NS	0.0017
76-44-8	Heptachlor	µg/L	0.005	0.05	0.05	0.03	0.4	0.0014
1024-57-3	Heptachlor epoxide	µg/L	0.014	0.05	0.05	0.03	0.2	0.0014
8001-35-2	Toxaphene	µg/L	0.2	2	2	2	3	0.015

PCB CAS No.	Analyte Name	Units	DL	LOD[1]	LOQ	PAR[2]	MCL	RSL[3]
11104-28-2	PCB- 1221	µg/L	0.13	0.2	0.5	0.2	0.5	0.0046
11141-16-5	PCB- 1232	µg/L	0.16	0.2	0.5	0.2	0.5	0.0046
53469-21-9	PCB- 1242	µg/L	0.22	0.4	0.5	0.4	0.5	0.0078
12672-29-6	PCB- 1248	µg/L	0.1	0.2	0.5	0.2	0.5	0.0078
11097-69-1	PCB- 1254	µg/L	0.16	0.2	0.5	0.2	0.5	0.0078
11096-82-5	PCB- 1260	µg/L	0.17	0.2	0.5	0.2	0.5	0.0078

Explosives CAS No.	Analyte Name	Units	DL	LOD[1]	LOQ	PAR[2]	MCL	RSL[3]
606-20-2	2,6-Dinitrotoluene	µg/L	0.05	0.1	0.13	0.1	NS	0.048

Inorganics CAS No.	Analyte Name	Units	DL	LOD[1]	LOQ	PAR[2]	MCL	RSL[3]
7440-38-2	Arsenic	µg/L	2.9	10	10	5	10	0.052
7440-70-2	Calcium	µg/L	260	1000	5000	100	NS	NS
7440-09-7	Potassium	µg/L	70	900	5000	200	NS	NS
7439-95-4	Magnesium	µg/L	55	300	5000	100	NS	NS
7440-66-6	Zinc	µg/L	27	50	50	10	NS	6000
7440-28-0	Thallium	µg/L	0.79	1.5	2	1	2	0.2
57-12-5	Cyanide	mg/L	0.002	0.005	0.1	0.01	0.2	0.0015

Notes:

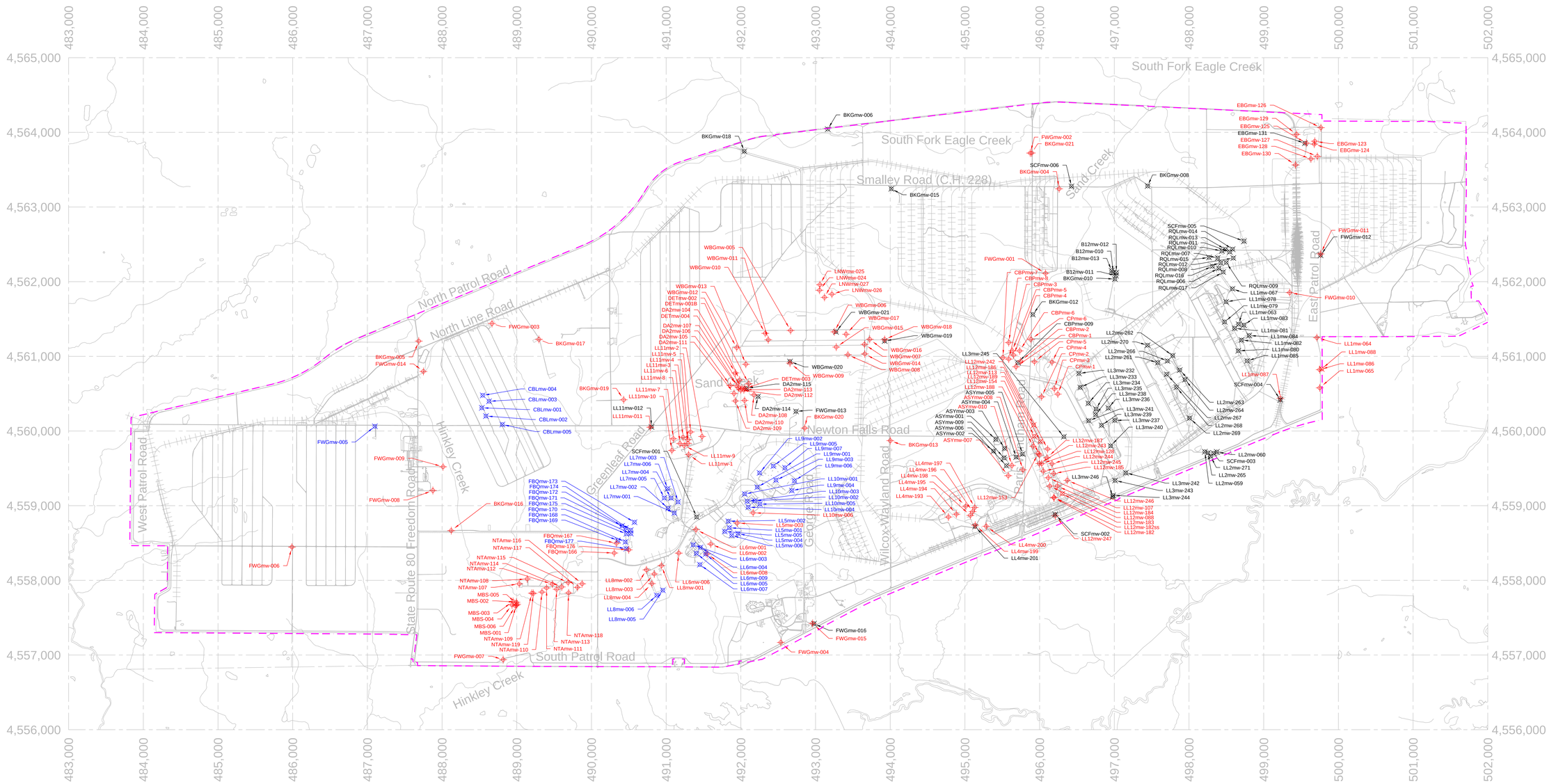
1- LOD= The smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate is 1%.

2- Project Action Requirements from table 4 of the Facility Wide QAPP

3- RSL = USEPA Regional Screening Level (6/15)

NS= No Standard

PLATES



LEGEND

- SHARON MEMBER WELL
- UNCONSOLIDATED WELL
- HOMEWOOD MEMBER WELL
- PROPERTY LINE

N

0 500 1000

SCALE (METERS)

COORDINATE SYSTEM UTM NAD 83 ZONE 17

REV	DESCRIPTION	DATE	APPROVED

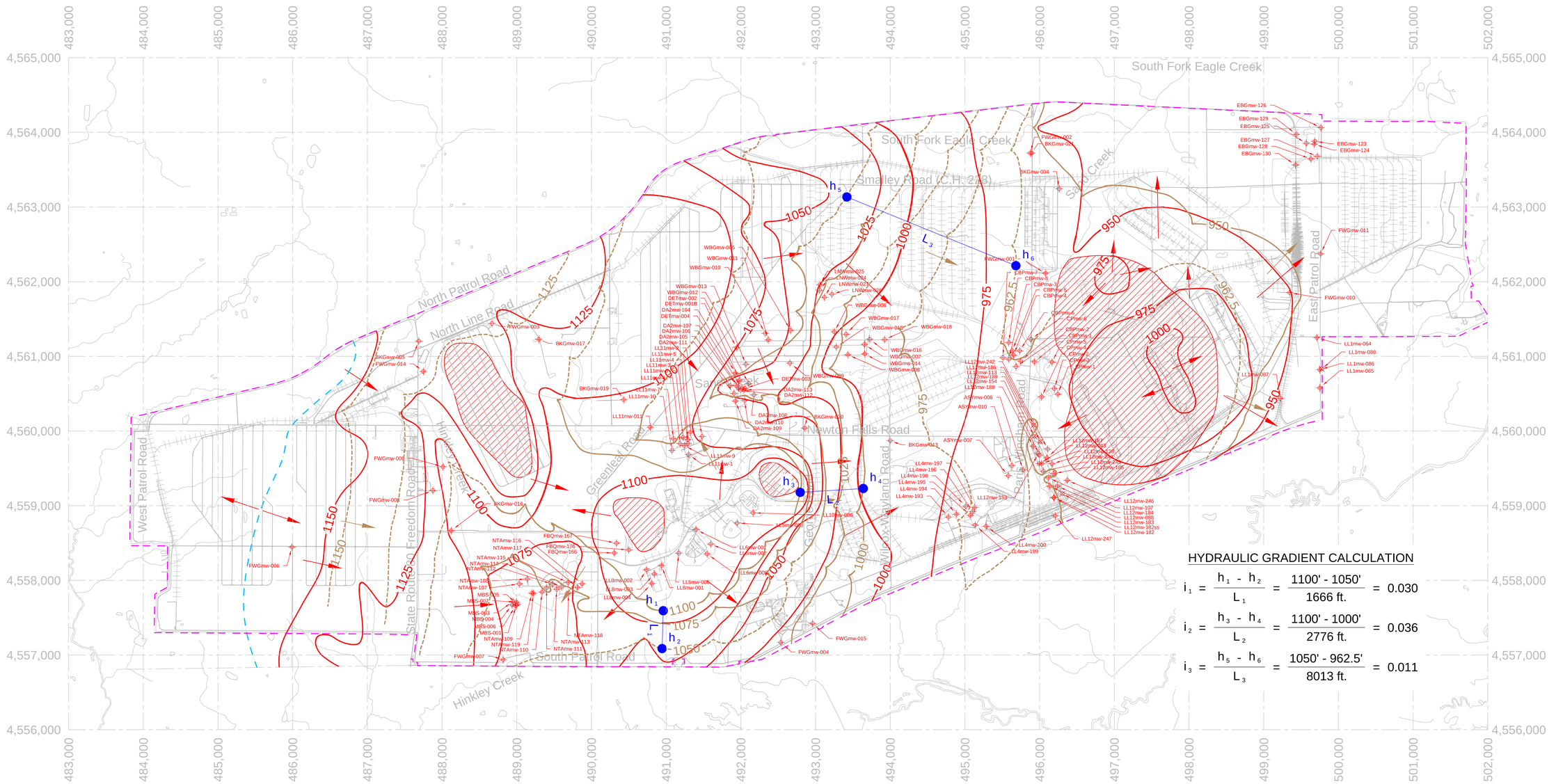
REVISIONS

ENVIRONMENTAL QUALITY MANAGEMENT, INC.
1800 CARILLON BLVD., CINCINNATI, OHIO 45240
PHONE 513.825.7500 | FAX 513.825.7495
WWW.EQM.COM

DRAWN	R. RUSSELL	09-10-2014
CHECKED	S. SPESSHARDT	09-12-2014
APPROVED	J. MILLER	09-12-2014
SCALE:	AS SHOWN	

MONITORING WELLS
AT RVAAP

SIZE	PROJECT NO.	DWG NO.	REV
E	030174.0016	PLATE 1	0



HYDRAULIC GRADIENT CALCULATION

$$i_1 = \frac{h_1 - h_2}{L_1} = \frac{1100' - 1050'}{1666\ ft.} = 0.030$$

$$i_2 = \frac{h_3 - h_4}{L_2} = \frac{1100' - 1000'}{2776\ ft.} = 0.036$$

$$i_3 = \frac{h_5 - h_6}{L_3} = \frac{1050' - 962.5'}{8013\ ft.} = 0.011$$

RVAAP Area	Well ID	Potentiometric Elevation August 2013 (ft. amsl)
Load Line 1	LL1mw-094	934.75
	LL1mw-095	934.80
	LL1mw-096	934.67
	LL1mw-097	939.66
	LL1mw-098	934.69
Load Line 4	LL4mw-193	977.29
	LL4mw-194	977.55
	LL4mw-195	972.89
	LL4mw-196	972.03
	LL4mw-197	971.74
	LL4mw-198	978.08
	LL4mw-199	971.08
	LL4mw-200	971.09
Load Line 5	LL5mw-003	1112.71
Load Line 6	LL6mw-001	1115.35
	LL6mw-002	1112.90
	LL6mw-006	1113.04
	LL6mw-008	1112.66
Load Line 8	LL8mw-001	1114.18
	LL8mw-002	1110.59
	LL8mw-003	1110.46
	LL8mw-004	1108.60
Load Line 10	LL10mw-006	1114.98
Load Line 11	LL11mw-001	1091.81
	LL11mw-002	1079.62
	LL11mw-003	1087.41
	LL11mw-004	1084.50
	LL11mw-005	1075.06
	LL11mw-006	1094.22
	LL11mw-007	1068.80
	LL11mw-008	1086.99
	LL11mw-009	1089.13
	LL11mw-010	1079.09
	LL11mw-011	1073.01

RVAAP Area	Well ID	Potentiometric Elevation August 2013 (ft. amsl)
Load Line 12	LL12mw-088	975.22
	LL12mw-107	972.93
	LL12mw-113	975.23
	LL12mw-128	970.55
	LL12mw-153	972.83
	LL12mw-154	972.12
	LL12mw-182	977.56
	LL12mw-182xs	977.11
	LL12mw-183	972.78
	LL12mw-184	972.62
	LL12mw-185	975.27
	LL12mw-186	973.23
	LL12mw-187	972.62
	LL12mw-188	976.64
	LL12mw-189	974.85
	LL12mw-242	974.26
	LL12mw-243	972.80
	LL12mw-244	972.90
	LL12mw-245	973.29
	LL12mw-246	970.71
	LL12mw-247	979.94
Atlas Scrap Yard	ASYmw-007	970.62
	ASYmw-008	973.45
	ASYmw-010	970.56
Central Burn Pits	CBPmw-001	964.19
	CBPmw-002	963.24
	CBPmw-003	963.56
	CBPmw-004	962.03
	CBPmw-005	962.10
	CBPmw-006	961.45
	CBPmw-007	962.88
	CBPmw-008	959.85
Cobbs Pond	CPmw-001	973.36
	CPmw-002	972.11
	CPmw-003	971.92
	CPmw-004	971.45
	CPmw-005	964.03
	CPmw-006	957.34

RVAAP Area	Well ID	Potentiometric Elevation August 2013 (ft. amsl)
Demolition Area 2	DETmw-001B	1045.03
	DETmw-002	1029.24
	DETmw-003	1027.73
	DETmw-004	1028.35
	DA2mw-104	1054.61
	DA2mw-105	1042.10
	DA2mw-106	1040.18
	DA2mw-107	1034.23
	DA2mw-108	1026.17
	DA2mw-109	1060.51
	DA2mw-110	1058.03
	DA2mw-111	1035.53
	DA2mw-112	1030.41
	DA2mw-113	1030.07
Erie Burning Grounds	EBGmw-123	938.02
	EBGmw-124	937.73
	EBGmw-125	937.53
	EBGmw-126	938.87
	EBGmw-127	939.61
	EBGmw-128	938.66
	EBGmw-129	939.40
	EBGmw-130	937.88
Fuze and Booster Quarry	FBQmw-166	1104.02
	FBQmw-167	1112.46
	FBQmw-176	1125.34
Landfill North of Winklepeck	LNWmw-024	1028.31
	LNWmw-025	1025.18
	LNWmw-026	1024.16
	LNWmw-027	1022.68

RVAAP Area	Well ID	Potentiometric Elevation August 2013 (ft. amsl)
NACA Test Area	NTAmw-107	1069.33
	NTAmw-108	1068.86
	NTAmw-109	1069.43
	NTAmw-110	1070.19
	NTAmw-111	1077.62
	NTAmw-112	1071.16
	NTAmw-113	1070.34
	NTAmw-114	1074.01
	NTAmw-115	1076.48
	NTAmw-116	1089.47
	NTAmw-117	1082.33
	NTAmw-118	1074.17
	NTAmw-119	1069.26
Winklepeck Burning Grounds	WBGmw-005	1050.10
	WBGmw-006	1009.40
	WBGmw-007	984.69
	WBGmw-008	994.78
	WBGmw-009	1036.92
	WBGmw-010	1062.97
	WBGmw-011	1062.69
	WBGmw-012	1063.78
	WBGmw-013	1062.36
	WBGmw-014	981.86
	WBGmw-015	1001.32
	WBGmw-016	981.65
	WBGmw-017	999.87
	WBGmw-018	978.40

RVAAP Area	Well ID	Potentiometric Elevation August 2013 (ft. amsl)
Suspected Mustard Agent Burial Site	MBSmw-001	1065.84
	MBSmw-002	1066.48
	MBSmw-003	1068.08
	MBSmw-004	1067.20
	MBSmw-005	1065.88
	MBSmw-006	1065.82
Facilitywide	FWGmw-001	948.49
	FWGmw-002	950.44
	FWGmw-003	1127.13
	FWGmw-004	1026.09
	FWGmw-006	1181.48
	FWGmw-007	1052.56
	FWGmw-008	1156.62
	FWGmw-009	1100.22
	FWGmw-010	953.27
	FWGmw-011	939.88
	FWGmw-014	1134.47
	FWGmw-015	1010.54
Background	BKGmw-004	954.51
	BKGmw-005	1142.00
	BKGmw-013	977.69
	BKGmw-016	1095.60
	BKGmw-017	1119.10
	BKGmw-019	1092.35
	BKGmw-020	1060.29
	BKGmw-021	961.25

LEGEND

- UNCONSOLIDATED WELL
- PROPERTY LINE
- 1100 LINE OF EQUAL GROUNDWATER ELEVATION (ft.,amsl) [DASHED WHERE INFERRED]
- GROUNDWATER DIRECTION
- UNCONSOLIDATED AQUIFER MISSING
- INFERRED GROUNDWATER DIVIDE

N

0 500 1000

SCALE (METERS)

COORDINATE SYSTEM UTM NAD 83 ZONE 17

REV	DESCRIPTION	DATE	APPROVED

REVISIONS

ENVIRONMENTAL QUALITY MANAGEMENT, INC.
1800 CARILLON BLVD., CINCINNATI, OHIO 45240
PHONE 513.825.7500 | FAX 513.825.7495
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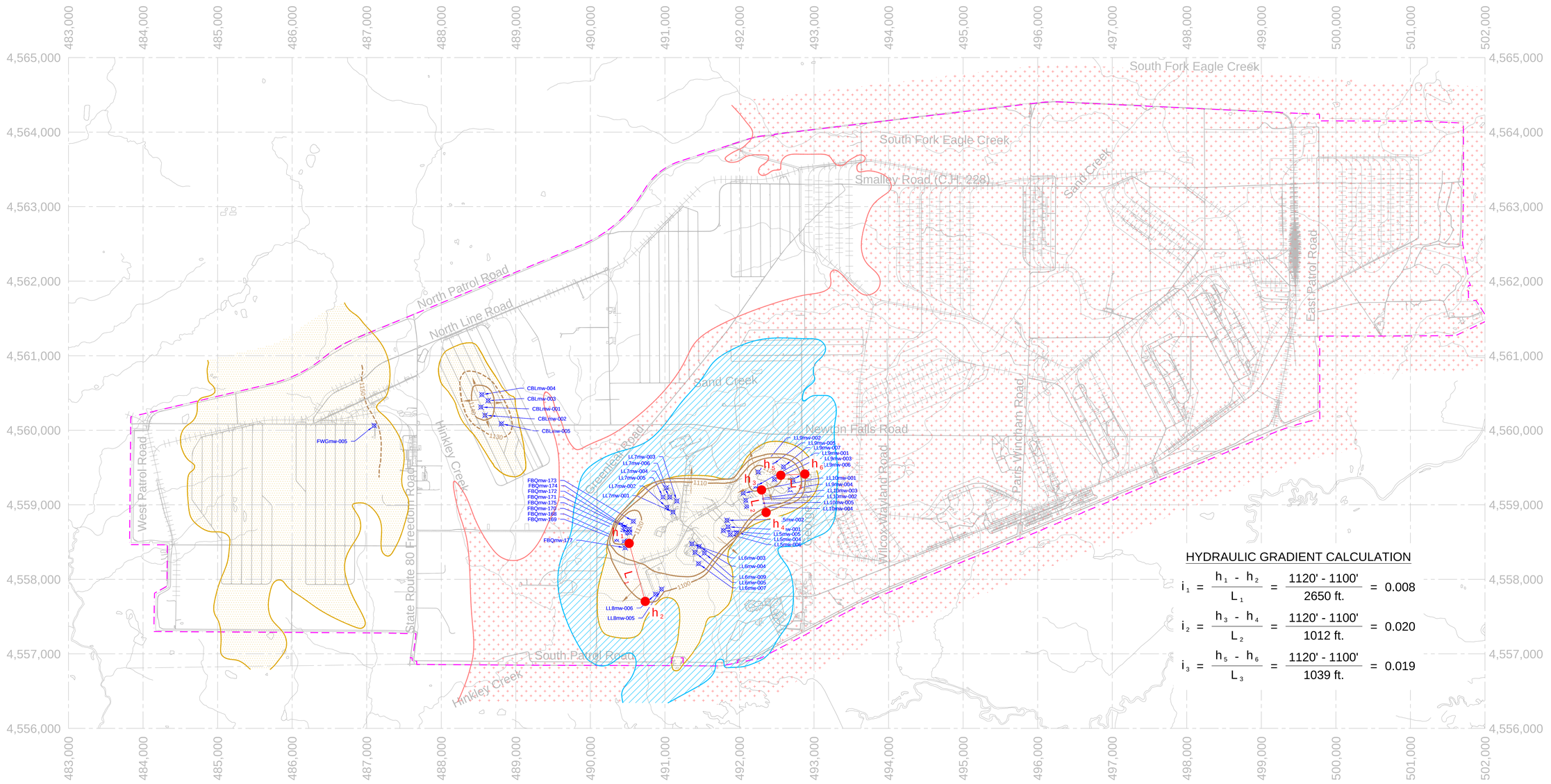
DRAWN	R. RUSSELL	09-10-2014
CHECKED	S. SPESSHARDT	09-12-2014
APPROVED	J. MILLER	09-12-2014
SCALE:	AS SHOWN	

POTENTIOMETRIC SURFACE OF UNCONSOLIDATED AQUIFER (MAY 2014)

SIZE	PROJECT NO.	DWG NO.	REV
E	030174.0016	PLATE 2	0



HYDRAULIC GRADIENT CALCULATION

$$i_1 = \frac{h_1 - h_2}{L_1} = \frac{1120' - 1100'}{2650\ ft.} = 0.008$$

$$i_2 = \frac{h_3 - h_4}{L_2} = \frac{1120' - 1100'}{1012\ ft.} = 0.020$$

$$i_3 = \frac{h_5 - h_6}{L_3} = \frac{1120' - 1100'}{1039\ ft.} = 0.019$$

RVAAP Area	Well ID	Potentiometric Elevation August 2013 (ft. amsl)
Load Line 5	LL5mw-001	1111.42
	LL5mw-002	1112.01
	LL5mw-004	1111.54
	LL5mw-005	1111.42
	LL5mw-006	1111.49
Load Line 6	LL6mw-003	1112.72
	LL6mw-004	1111.40
	LL6mw-005	1110.13
	LL6mw-007	1113.51
	LL6mw-009	1112.54
Load Line 7	LL7mw-001	1112.21
	LL7mw-002	1118.87
	LL7mw-003	1112.33
	LL7mw-004	1114.15
	LL7mw-005	1117.33
	LL7mw-006	1115.47
Load Line 8	LL8mw-005	1106.91
	LL8mw-006	1100.36
Load Line 9	LL9mw-001	1122.74
	LL9mw-002	1121.22
	LL9mw-003	1125.25
	LL9mw-004	1114.66
	LL9mw-005	1117.98
	LL9mw-006	1114.61
	LL9mw-007	1113.57
Load Line 10	LL10mw-001	1112.20
	LL10mw-002	1114.14
	LL10mw-003	1114.22
	LL10mw-004	1113.37
	LL10mw-005	1114.38

RVAAP Area	Well ID	Potentiometric Elevation August 2013 (ft. amsl)
C-Block Quarry	CBLmw-001	1141.33
	CBLmw-002	1140.84
	CBLmw-003	1144.01
	CBLmw-004	1142.64
	CBLmw-005	1134.07
Fuze and Booster Quarry	FBQmw-168	1124.65
	FBQmw-169	1115.79
	FBQmw-170	1127.08
	FBQmw-171	1126.62
	FBQmw-172	1127.82
	FBQmw-173	1123.69
	FBQmw-174	1126.42
	FBQmw-175	1125.35
	FBQmw-177	1118.80
Facilitywide	FWGmw-005	1150.05

NOTES

1. BEDROCK GEOLOGY ADOPTED FROM "GEOLOGY AND GROUND-WATER RESOURCES OF PORTAGE COUNTY, OHIO" (WINSLOW AND WHITE, 1966). NOT ALL LITHOLOGIC UNITS ARE PRESENTED.

LEGEND

- HOMEWOOD MEMBER WELL
- PROPERTY LINE
- 1100 — LINE OF EQUAL GROUNDWATER ELEVATION (ft.,amsl)
- 1030 — (INTERMEDIATE DASHED)
- GROUNDWATER DIRECTION
- HOMEWOOD MEMBER
- SHARON MEMBER
- SHARON SHALE

N

0 500 1000

SCALE (METERS)

COORDINATE SYSTEM UTM NAD 83 ZONE 17

REV	DESCRIPTION	DATE	APPROVED

REVISIONS

ENVIRONMENTAL QUALITY MANAGEMENT, INC.
1800 CARILLON BLVD., CINCINNATI, OHIO 45240
PHONE 513.825.7500 | FAX 513.825.7495
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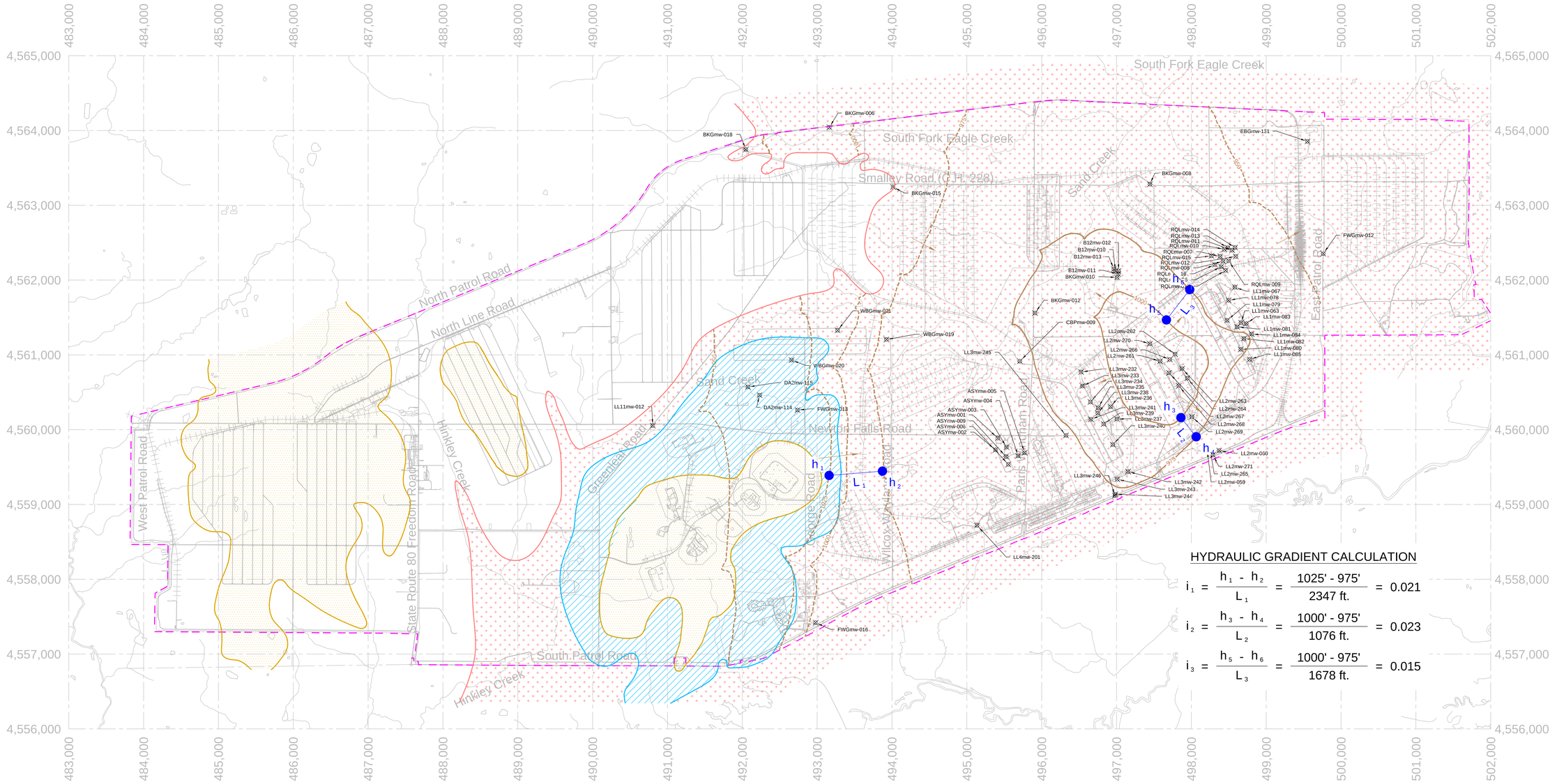
DRAWN	R. RUSSELL	09-10-2014
CHECKED	S. SPESSHARDT	09-12-2014
APPROVED	J. MILLER	09-12-2014

SCALE: AS SHOWN

POTENTIOMETRIC SURFACE OF HOMEWOOD (MAY 2014)

SIZE	PROJECT NO.	DWG NO.	REV
E	030174.0016	PLATE 3	0



RVAAP Area	Well ID	Potentiometric Elevation August 2013 (ft. amsl)
Load Line 1	LL1mw-063	973.69
	LL1mw-067	964.62
	LL1mw-078	968.50
	LL1mw-079	968.49
	LL1mw-080	986.87
	LL1mw-081	971.70
	LL1mw-082	980.18
	LL1mw-083	965.06
	LL1mw-084	973.48
	LL1mw-085	963.15
Load Line 2	LL2mw-059	954.90
	LL2mw-060	953.19
	LL2mw-261	1005.02
	LL2mw-262	1006.72
	LL2mw-263	1005.06
	LL2mw-264	1007.28
	LL2mw-265	953.06
	LL2mw-266	1006.85
	LL2mw-267	1006.49
	LL2mw-268	1003.18
	LL2mw-269	996.06
	LL2mw-270	1003.68
	LL2mw-271	951.90
Load Line 3	LL3mw-232	986.02
	LL3mw-233	981.10
	LL3mw-234	997.08
	LL3mw-235	994.79
	LL3mw-236	997.12
	LL3mw-237	992.58
	LL3mw-238	992.32
	LL3mw-239	982.17
	LL3mw-240	983.05
	LL3mw-241	987.40
	LL3mw-242	986.45
	LL3mw-243	982.55
	LL3mw-244	981.07
	LL3mw-245	970.72
	LL3mw-246	969.74
Load Line 4	LL4mw-201	969.30

RVAAP Area	Well ID	Potentiometric Elevation August 2013 (ft. amsl)
Load Line 11	LL11mw-012	1061.65
Atlas Scrap Yard	AS1mw-001	971.68
	AS1mw-002	973.00
	AS1mw-003	971.82
	AS1mw-004	972.03
	AS1mw-005	973.41
	AS1mw-006	970.80
	AS1mw-009	973.03
Building 1200	B12mw-010	992.27
	B12mw-011	992.61
	B12mw-012	992.93
	B12mw-013	988.21
Central Burn Pits	CBPmw-009	963.89
Demolition Area 2	DA2mw-114	1026.64
	DA2mw-115	1032.86
Ene Burning Grounds	EBGmw-131	941.79
Ramsdell Quarry Landfill	RQLmw-006	962.47
	RQLmw-007	961.12
	RQLmw-008	961.06
	RQLmw-009	960.86
	RQLmw-010	958.74
	RQLmw-011	956.96
	RQLmw-012	958.35
	RQLmw-013	957.62
	RQLmw-014	956.08
	RQLmw-015	962.20
	RQLmw-016	962.45
	RQLmw-017	963.63
Winklepeck Burning Grounds	WBGmw-019	974.54
	WBGmw-020	1034.11
	WBGmw-021	1003.42
Facilitywide	FWGmw-012	941.37
	FWGmw-013	1043.33
	FWGmw-016	999.25
Background	BKGmw-006	1006.85
	BKGmw-008	958.71
	BKGmw-012	993.86
	BKGmw-012	993.06
	BKGmw-015	992.59
	BKGmw-018	1030.15

NOTES

1. BEDROCK GEOLOGY ADOPTED FROM "GEOLOGY AND GROUND-WATER RESOURCES OF PORTAGE COUNTY, OHIO" (WINSLOW AND WHITE, 1966). NOT ALL LITHOLOGIC UNITS ARE PRESENTED.

LEGEND

- SHARON MEMBER WELL
- PROPERTY LINE
- 1100 — LINE OF EQUAL GROUNDWATER ELEVATION (ft.,amsl) (INTERMEDIATE DASHED)
- 1030 — LINE OF EQUAL GROUNDWATER ELEVATION (ft.,amsl) (INTERMEDIATE DASHED)
- GROUNDWATER DIRECTION
- HOMEWOOD MEMBER
- SHARON MEMBER
- SHARON SHALE

N

0 500 1000

SCALE (METERS)

COORDINATE SYSTEM UTM NAD 83 ZONE 17

REV	DESCRIPTION	DATE	APPROVED

REVISIONS

ENVIRONMENTAL QUALITY MANAGEMENT, INC.
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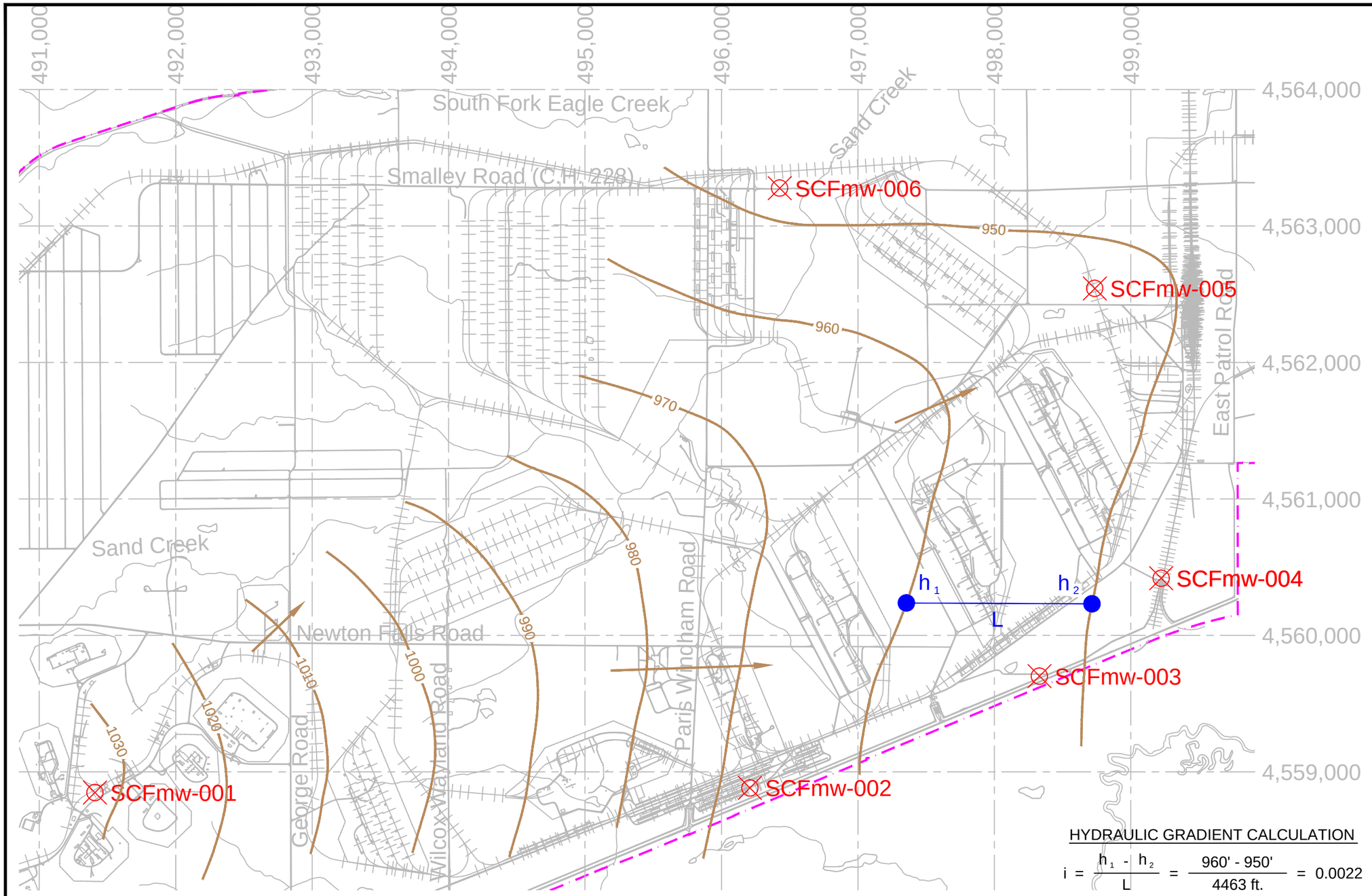
DRAWN	R. RUSSELL	09-10-2014
CHECKED	S. SPESSHARDT	09-12-2014
APPROVED	J. MILLER	09-12-2014
SCALE:	AS SHOWN	

POTENTIOMETRIC SURFACE OF UPPER SHARON (MAY 2014)

SIZE	PROJECT NO.	DWG NO.	REV
E	030174.0016	PLATE 4	0



SHARON CONGLOMERATE WELLS

Well ID	Elevation (ft, amsl)
SCFmw-001	1033.30
SCFmw-002	966.93
SCFmw-003	951.67
SCFmw-004	944.37
SCFmw-005	952.01
SCFmw-006	948.71

N

0 500 1000

SCALE (METERS)

HYDRAULIC GRADIENT CALCULATION

$$i = \frac{h_1 - h_2}{L} = \frac{960' - 950'}{4463\ ft.} = 0.0022$$

LEGEND

- PROPERTY LINE
- 980 — LINE OF EQUAL GROUNDWATER ELEVATION (ft,amsl)
- GROUNDWATER DIRECTION
- MONITORING WELL

COORDINATE SYSTEM UTM NAD 83 ZONE 17

REV	DESCRIPTION	DATE	APPROVED

REVISIONS

ENVIRONMENTAL QUALITY MANAGEMENT, INC.
1800 CARILLON BLVD.
CINCINNATI, OHIO 45240
P (513)825-7500
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DRAWN	R. RUSSELL	09-10-2014
CHECKED	S. SPESSHARDT	09-12-2014
APPROVED	J. MILLER	09-12-2014
SCALE:	AS SHOWN	

POTENTIOMETRIC SURFACE OF SHARON CONGLOMERATE (MAY 2014)

ORIGINAL SIZE	PROJECT NO.	DWG NO.	REV
B	30174.0016.001	PLATE 5	0