APPENDIX E

INVESTIGATIVE DERIVED WASTE CHARACTERIZATION AND DISPOSAL PLANS

Ohio EPA
State of Ohio Environmental Protection Agency
Northeast District Office

2110 East Aurora Rd.
Twinsburg, Ohio 44087

TELE: (330) 963-1200 FAX: (330) 487-0769
www.epa.state.oh.us

Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korleski, Director

November 16, 2009

RE: RAVENNA ARMY AMMUNITION PLANT, PORTAGE/TRUMBULL COUNTIES, FWGWMP, WELL REDEVELOPMENT ACTVITIES, SEPTEMBER 2009, INVESTIGATION DERIVED WASTE AND DISPOSAL PLAN, DATED NOV. 10, 2009

Mr. Mark Patterson
Installation Manager
Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, OH 44266

CERTIFIED MAIL
7009 1680 0000 6381 1015

Dear Mr. Patterson:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the "IDW Report, Redevelopment Activities September 2009," for the Facility-Wide Groundwater Monitoring Program at the Ravenna Army Ammunition Plant, Ravenna, OH" document. This document was received at Ohio EPA, Northeast District Office (NEDO), Division of Emergency and Remedial response (DERR), on November 12, 2009, and is dated November 10, 2009. The document was prepared for the U.S. Army Corps of Engineers (USACE) – Louisville District, by Environmental Quality Management, Inc. (EQM), under contract no. W912QR-04-D-0036.

The report is approved and Ohio EPA concurs that the IDW from the well redevelopment activities of September 2009 may be disposed of as non-hazardous waste.

If you have any questions, please call me at (330) 963-1207.

Sincerely,

Vicki Deppisch
Project Coordinator
Division of Emergency and Remedial Response

VD/kss

cc: Bonnie Buthker, Ohio EPA, DERR, SWDO
John Miller, EQM
Maj. Ed Meade, OHARNG RTLS
Mark Nichter, USACE Louisville
Eileen Mohr, Ohio EPA, NEDO, DERR
Katie Elgin, OHARNG RTLS
Glen Beckham, USACE Louisville
Mark Krivansky, AEC

ec: Mike Eberle, Ohio EPA, NEDO, DERR
Todd Fisher, Ohio EPA, NEDO, DERR

DRAFT

FACILITY-WIDE GROUNDWATER MONITORING PROGRAM

INVESTIGATION-DERIVED WASTE CHARACTERIZATION AND DISPOSAL PLAN WELL REDEVELOPMENT ACTIVITIES SEPTEMBER 2009

RAVENNA ARMY AMMUNITION PLANT,
RAVENNA, OHIO

MARC Contract Number W912QR-04-D-0036
Delivery Order No. 0006

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

November 10, 2009

CONTENTS

TABLES

APPENDICES

ACRONYMS

AOC	Area of Concern
EQM	Environmental Quality Management, Inc.
EPA	U.S. Environmental Protection Agency
IDW	Investigation-derived wastes
Ohio EPA	Ohio Environmental Protection Agency
PPE	Personal protective equipment
RCRA	Resource Conservation and Recovery Act
RVAAP	Ravenna Army Ammunition Plant
SAP	Sampling and Analysis Plan
SVOC	Semi-volatile organic compounds
TCLP	Toxicity Characteristic Leaching Procedure
USACE	US Army Corps of Engineers
VOC	Volatile organic compounds

1.0 INTRODUCTION

Monitoring well redevelopment activities were conducted during September 2009 at the Ravenna Army Ammunition Plant (RVAAP), Ravenna, Ohio, resulting in the generation of investigation-derived wastes (IDW) consisting of purge-water and decontamination water wastes. The IDW purge/decontamination water was generated in the course of redeveloping each well. 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*,
- Recommendations for disposal.

This document follows guidance established by the US Army Corps of Engineers (USACE) and the Ohio EPA regarding IDW disposition at RVAAP.

2.0 OPERATIONAL HISTORY AND WASTE GENERATION

Information regarding the operational history and suspected contaminants for the Facility Wide Groundwater Monitoring Program Plan 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 SAP Addendum describes procedures used for sampling and managing IDW at RVAAP.

Water (purged groundwater and decontamination water) IDW was generated during the redevelopment activities. The water collected from the 14 Areas of Concern (AOCs) where the wells were redeveloped was stored in drums labeled for disposal. The decontamination water was mixed with the purge water. Decontamination procedures are described in Section 4.3.8 Decontamination Procedures of the Facility Wide SAP.

The drum container label number, the type and size of drum container used, estimated volume within each drum, and the source of purge waste water or decontamination fluid is presented in Table 2.1 below.

3.0 MANAGEMENT OF ENVIRONMENTAL MEDIA

All environmental media were managed in a manner that minimized potential risk to human health and the environment. IDW was handled as nonhazardous material pending waste characterization and classification based on analytical results. The Facility-Wide SAP (SAIC, 2001) and the Final Part 1 Sampling and Analysis Plan (Portage, 2004) describe approved procedures used for containerizing and handling IDW.

Table 2.1. IDW Inventory of Drums

Drum Label	Drum Type & Size	Contents	Estimated Volume	Location/Source
EQM 2009-14	55 Gal. Steel	Purge/decontamination water	~50-gallons	Load Lines 1,2,4,5,10 & 11; Demolition Area 2, Cobbs Pond, Central Burn Pits, Ramsdell Quarry, Winklepeck Burning Grounds, NACA Test Area, Mustard Burial Site, Fuze & Booster Quarry
EQM 2009-15	55 Gal. Steel	Purge/decontamination water	~50-gallons	Load Lines 1,2,4,5,10 & 11; Demolition Area 2, Cobbs Pond, Central Burn Pits, Ramsdell Quarry, Winklepeck Burning Grounds, NACA Test Area, Mustard Burial Site, Fuze & Booster Quarry
EQM 2009-16	55 Gal. Steel	Purge/decontamination water	~50-gallons	Load Lines 1,2,4,5,10 & 11; Demolition Area 2, Cobbs Pond, Central Burn Pits, Ramsdell Quarry, Winklepeck Burning Grounds, NACA Test Area, Mustard Burial Site, Fuze & Booster Quarry
EQM 2009-17	55 Gal. Steel	Purge/decontamination water	~50-gallons	Load Lines 1,2,4,5,10 & 11; Demolition Area 2, Cobbs Pond, Central Burn Pits, Ramsdell Quarry, Winklepeck Burning Grounds, NACA Test Area, Mustard Burial Site, Fuze & Booster Quarry

All liquid indigenous IDW generated from each monitoring well that was redeveloped was placed into the 55-gallon drum as previously agreed upon by RVAAP, USACE and Ohio EPA. The water was transferred daily from each well location after redevelopment by closed-top 5-gallon buckets to the appropriately labeled 55-gallon drum located and staged inside Building 1036.

4.0 DISCUSSION OF ANALYTICAL RESULTS

Per Section 7.4 of the *Facility-Wide SAP* (2001), IDW Characterization and Classification for Disposal, all IDW indigenous wastes were characterized for disposal by taking a composite sample collected from the waste stream. The waste stream had a composite sample taken by using a "drum thief" until a total of approximately 4 liters was withdrawn in equal amounts from each of the drums. The waste stream composite sample was submitted to TestAmerica Laboratories, North Canton for full toxicity characteristic leaching procedure (TCLP) analysis using the following methods in accordance with the Facility-Wide SAP (SAIC, 2001):

- TCLP Mercury by SW846 1311/7470A
- TCLP Metals (Silver, arsenic, barium, cadmium, chromium, lead, and selenium) by SW846 1311/6010B
- TCLP Semi-volatile organic compounds (SVOCs) by SW846 1311/8270C
- TCLP Volatile organic compounds (VOCs) by SW846 1311/8260B
- Reactive Cyanide by SW846 7.3.3
- Reactive Sulfide by SW846 7.3.4
- Flash Point by SW846 1010
- pH by SW846 9040B

A trip blank was submitted with the samples and analyzed for Volatile Organic Compounds. The IDW analytical results are presented in Appendix 1.

5.0 RECOMMENDATIONS FOR DISPOSAL

Table 7-1 in the *Facility-Wide SAP* (SAIC, 2001) presents all the maximum concentration of contaminants for the toxicity characteristic for hazardous wastes as per 40 CFR 261.24. Analytical results for the September 2009 redevelopment waters IDW were compared against these criteria to determine whether waste streams generated were potentially hazardous or non-hazardous.

5.1 Analytical Results

IDW was generated during the well redevelopment activities. After comparing the analytical data results generated from redevelopment activities to the contaminants and their regulatory levels from Table 7-1 1 in the *Facility-Wide SAP* (SAIC, 2001), the data indicated that no regulatory criteria for Resource Conservation and Recovery Act (RCRA) hazardous waste determinations were exceeded. Table 5.1 below presents the detected results compared to the regulatory characteristic for hazardous wastes as per 40 CFR 261.24.

It is recommended that the drums containing the redevelopment water be classified as contaminated, but non-hazardous and that it be sent off-site for disposal to a permitted

water treatment facility in accordance with the *Facility-Wide SAP* (SAIC, 2001) guidance under Section 7.0 "Investigation-Derived Waste".

Table 5.1 Detected Analytical Results

Sample ID	Detected Contaminant	Detected Result	Regulatory Level[1]	Above Regulatory Yes/No
FWG-IDW-PURGE/DECON SEPT.09	Arsenic	0.0066 mg/L J	5.0 mg/L	No
	Barium	0.083 mg/L J B	100 mg/L	No
	Chromium	0.007 mg/L J	5.0 mg/L	No
	Lead	0.0036 mg/L J	5.0 mg/L	No
	Flashpoint	>180°F	<140°F	No
	pH	7.5	<2 or >12.5	No
	Reactive Sulfide	40.1 mg/kg	See Table Notes	No
FWG-IDW-TRIP BLANK	None detected			

J = Estimated result. Result is less than reporting limit.
B = Method Blank Contamination
Reactive Sulfide Note: Despite the presence of a low concentration of reactive sulfide 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).
Note that the flags used to qualify the data are consistent with USACE Laboratory Chemistry Guidelines and the RVAAP quarterly groundwater reports.
1 = USEPA Regulatory Characteristic Levels (40 CFR 261.20 through 24).

5.2 Summary of Disposal Recommendations

It is recommended that all drums be classified as contaminated, but non-hazardous and that they be sent off-site for disposal to a permitted water treatment facility. The TCLP/Characteristic test results for the composite sample shows that no chemical was detected in levels that required a labeling of hazardous waste. Table 5.2 presents a summary of each drum and the recommended disposal options for the waste streams presented and previously discussed.

Table 5.2. Summary of Drum Containers, TCLP/Characteristic Waste Criteria, and Disposal Recommendations

Drum Container Label	Media	TCLP Criteria	Disposal Recommendation
EQM 2009-14	Water	Maximum Concentration of Contaminants NOT exceeded	Off-Site Non-Hazardous Disposal
EQM 2009-15	Water	Maximum Concentration of Contaminants NOT exceeded	Off-Site Non-Hazardous Disposal
EQM 2009-16	Water	Maximum Concentration of Contaminants NOT exceeded	Off-Site Non-Hazardous Disposal
EQM 2009-17	Water	Maximum Concentration of Contaminants NOT exceeded	Off-Site Non-Hazardous Disposal

6.0 REFERENCES

SAIC, 2001. *Facility-Wide Sampling and Analysis Plan for Environmental Investigations at the Ravenna Army Ammunition Plant, Ravenna, Ohio.*

Portage Environmental, 2004, *RVAAP Facility Wide Groundwater Monitoring Program Plan.*

APPENDIX 1

INVESTIGATION-DERIVED WASTE ANALYTICAL REPORT

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. EQ30240.0006

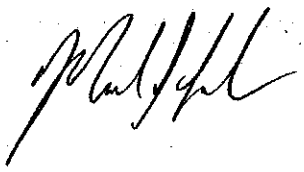
RVAAP

Lot #: A9I230290

Erik Corbin

Environmental Quality Mgt., I
1800 Carillon Blvd
Cincinnati, OH 45240

TESTAMERICA LABORATORIES, INC.



Approved for release.
Mark J. Loeb
Project Manager II
10/13/2009 2:02 PM

Mark J. Loeb
Project Manager
mark.loeb@testamericainc.com

October 13, 2009

ACCREDITED IN ACCORDANCE WITH nelac

4101 Shuffel Street, N.W. North Canton, OH 44720 **tel** 330.497.9396 **fax** 330.497.0772 **www.testamericainc.com**

CASE NARRATIVE

A9I230290

The following report contains the analytical results for one water sample and one quality control sample submitted to TestAmerica North Canton by Environmental Quality MGT., Inc. from the RVAAP Site, project number EQ30240.0006. The samples were received September 23, 2009, according to documented sample acceptance procedures.

The Reactive Cyanide and Reactive Sulfide analysis was performed at the TestAmerica Buffalo Laboratory. Please refer to the narrative provided in the Buffalo package.

TestAmerica utilizes USEPA approved methods 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. Preliminary results were provided to Angye Dragotta, Erik Corbin, Jackie Doan on October 01, 2009. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North 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.

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.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Mark J. Loeb, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 5.0°C.

GC/MS VOLATILES

The matrix spike/matrix spike duplicate(s) for FWG-IDW-PURGE/DECON SEPT. 09 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

There were no client requested Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples in batch 9272525. Therefore, the laboratory has included a Laboratory Control Sample Duplicate (LCSD) in the QC batch. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system.

GC/MS SEMIVOLATILES

There were no client requested Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples in batch 9268043. Therefore, the laboratory has included a Laboratory Control Sample Duplicate (LCSD) in the QC batch. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system.

METALS

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "J". Refer to the sample report pages for the affected analyte(s).

The matrix spike/matrix spike duplicate(s) for batch(es) 9268027 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

GENERAL CHEMISTRY

The analytical results met the requirements of the laboratory's QA/QC program.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available upon request.
California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit

EXECUTIVE SUMMARY - Detection Highlights

A9I230290

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
FWG-IDW-PURGE/DECON SEPT. 09 09/23/09 11:20 001				
Arsenic - TCLP	0.0066 B	0.50	mg/L	SW846 6010B
Barium - TCLP	0.083 B,J	10.0	mg/L	SW846 6010B
Chromium - TCLP	0.0070 B	0.50	mg/L	SW846 6010B
Lead - TCLP	0.0036 B	0.50	mg/L	SW846 6010B
Flashpoint	>180		deg F	SW846 1010
pH (liquid)	7.5		No Units	SW846 9040B

ANALYTICAL METHODS SUMMARY

A9I230290

PARAMETER	ANALYTICAL METHOD
pH Aqueous	SW846 9040B
Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A
Pensky-Martens Method for Determining Ignitability	SW846 1010
Semivolatile Organic Compounds by GC/MS	SW846 8270C
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

A9I230290

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LLCHX	001	FWG-IDW-PURGE/DECON SEPT. 09	09/23/09	11:20
LLCH8	002	FWG-IDW-TRIP BLANK	09/23/09	08:00

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-PURGE/DECON SEPT. 09

TCLP GC/MS Volatiles

Lot-Sample #...: A9I230290-001 **Work Order #...:** LLCHX1AA **Matrix.....:** WG
Date Sampled...: 09/23/09 11:20 **Date Received..:** 09/23/09
Leach Date.....: 09/24/09 **Prep Date.....:** 09/29/09 **Analysis Date..:** 09/29/09
Leach Batch #..: P926706 **Prep Batch #...:** 9271374
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	0.025	mg/L	0.00013
2-Butanone (MEK)	ND	0.25	mg/L	0.00057
Carbon tetrachloride	ND	0.025	mg/L	0.00013
Chlorobenzene	ND	0.025	mg/L	0.00015
Chloroform	ND	0.025	mg/L	0.00016
1,2-Dichloroethane	ND	0.025	mg/L	0.00022
1,1-Dichloroethylene	ND	0.070	mg/L	0.00019
Tetrachloroethylene	ND	0.070	mg/L	0.00029
Trichloroethylene	ND	0.050	mg/L	0.00017
Vinyl chloride	ND	0.025	mg/L	0.00022

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(86 - 125)
1,2-Dichloroethane-d4	94	(80 - 122)
Toluene-d8	104	(90 - 122)
4-Bromofluorobenzene	89	(84 - 125)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-PURGE/DECON SEPT. 09

TCLP GC/MS Semivolatiles

Lot-Sample #...: A9I230290-001 **Work Order #...:** LLCHX1AD **Matrix.....:** WG
Date Sampled...: 09/23/09 11:20 **Date Received..:** 09/23/09
Leach Date.....: 09/24/09 **Prep Date.....:** 09/25/09 **Analysis Date..:** 09/28/09
Leach Batch #..: P926705 **Prep Batch #...:** 9268043
Dilution Factor: 1
Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
o-Cresol	ND	0.0040	mg/L	0.00080
m-Cresol & p-Cresol	ND	0.040	mg/L	0.00075
1,4-Dichlorobenzene	ND	0.0040	mg/L	0.00034
2,4-Dinitrotoluene	ND	0.020	mg/L	0.00027
Hexachlorobenzene	ND	0.020	mg/L	0.00010
Hexachlorobutadiene	ND	0.020	mg/L	0.00027
Hexachloroethane	ND	0.020	mg/L	0.00080
Nitrobenzene	ND	0.0040	mg/L	0.000040
Pentachlorophenol	ND	0.040	mg/L	0.0024
Pyridine	ND	0.020	mg/L	0.00035
2,4,5-Trichloro-phenol	ND	0.020	mg/L	0.00030
2,4,6-Trichloro-phenol	ND	0.020	mg/L	0.00080

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	68	(27 - 110)
2-Fluorobiphenyl	61	(20 - 110)
Terphenyl-d14	89	(44 - 110)
Phenol-d5	50	(10 - 110)
2-Fluorophenol	60	(10 - 110)
2,4,6-Tribromophenol	70	(28 - 110)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-PURGE/DECON SEPT. 09

TCLP Metals

Lot-Sample #...: A9I230290-001 **Matrix.....:** WG
Date Sampled...: 09/23/09 11:20 **Date Received..:** 09/23/09
Leach Date.....: 09/24/09 **Leach Batch #..:** P926705

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9268027						
Mercury	ND	0.0020	mg/L	SW846 7470A	09/25/09	LLCHX1AN
		Dilution Factor: 1		MDL.....: 0.00012		
Arsenic	**0.0066 B**	**0.50**	**mg/L**	**SW846 6010B**	**09/25-09/28/09**	**LLCHX1AF**
		Dilution Factor: 1		MDL.....: 0.0032		
Barium	**0.083 B,J**	**10.0**	**mg/L**	**SW846 6010B**	**09/25-09/28/09**	**LLCHX1AG**
		Dilution Factor: 1		MDL.....: 0.00067		
Cadmium	ND	0.10	mg/L	SW846 6010B	09/25-09/28/09	LLCHX1AH
		Dilution Factor: 1		MDL.....: 0.00066		
Chromium	**0.0070 B**	**0.50**	**mg/L**	**SW846 6010B**	**09/25-09/28/09**	**LLCHX1AJ**
		Dilution Factor: 1		MDL.....: 0.0022		
Lead	**0.0036 B**	**0.50**	**mg/L**	**SW846 6010B**	**09/25-09/28/09**	**LLCHX1AK**
		Dilution Factor: 1		MDL.....: 0.0019		
Selenium	ND	0.25	mg/L	SW846 6010B	09/25-09/28/09	LLCHX1AL
		Dilution Factor: 1		MDL.....: 0.0041		
Silver	ND	0.50	mg/L	SW846 6010B	09/25-09/28/09	LLCHX1AM
		Dilution Factor: 1		MDL.....: 0.0022		

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-PURGE/DECON SEPT. 09

General Chemistry

Lot-Sample #...: A9I230290-001 Work Order #...: LLCHX Matrix.....: WG
Date Sampled...: 09/23/09 11:20 Date Received..: 09/23/09

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)	7.5		No Units	SW846 9040B	09/23/09	9266505
		Dilution Factor: 1		MDL.....:		
Flashpoint	>180		deg F	SW846 1010	09/29/09	9272393
		Dilution Factor: 1		MDL.....:		

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: A9I230290-002 **Work Order #...:** LLCH81AA **Matrix.....:** WQ
Date Sampled...: 09/23/09 08:00 **Date Received..:** 09/23/09
Prep Date.....: 09/29/09 **Analysis Date..:** 09/29/09
Prep Batch #...: 9272525
Dilution Factor: 1 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	5.0	ug/L	0.13
2-Butanone (MEK)	ND	20	ug/L	0.57
Carbon tetrachloride	ND	5.0	ug/L	0.13
Chlorobenzene	ND	5.0	ug/L	0.15
Chloroform	ND	5.0	ug/L	0.16
1,2-Dichloroethane	ND	5.0	ug/L	0.22
1,1-Dichloroethylene	ND	5.0	ug/L	0.19
Tetrachloroethylene	ND	5.0	ug/L	0.29
Trichloroethylene	ND	5.0	ug/L	0.17
Vinyl chloride	ND	5.0	ug/L	0.22

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(78 - 115)
1,2-Dichloroethane-d4	97	(77 - 120)
Toluene-d8	101	(78 - 111)
4-Bromofluorobenzene	88	(80 - 114)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

QUALITY CONTROL SECTION

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A9I230290 **Work Order #...:** LLN9X1AA **Matrix.....:** WATER
MB Lot-Sample #: A9I290000-525

Prep Date.....: 09/29/09
Analysis Date..: 09/29/09 **Prep Batch #...:** 9272525
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	5.0	ug/L	SW846 8260B
2-Butanone (MEK)	ND	20	ug/L	SW846 8260B
Carbon tetrachloride	ND	5.0	ug/L	SW846 8260B
Chlorobenzene	ND	5.0	ug/L	SW846 8260B
Chloroform	ND	5.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	5.0	ug/L	SW846 8260B
1,1-Dichloroethylene	ND	5.0	ug/L	SW846 8260B
Tetrachloroethylene	ND	5.0	ug/L	SW846 8260B
Trichloroethylene	ND	5.0	ug/L	SW846 8260B
Vinyl chloride	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(78 - 115)
1,2-Dichloroethane-d4	94	(77 - 120)
Toluene-d8	102	(78 - 111)
4-Bromofluorobenzene	89	(80 - 114)

NOTE(S):

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

METHOD BLANK REPORT

TCLP GC/MS Volatiles

Client Lot #...: A9I230290 **Work Order #...:** LLDEN1AA **Matrix.....:** SOLID
MB Lot-Sample #: A9I240000-076
Leach Date.....: 09/24/09 **Prep Date.....:** 09/29/09 **Analysis Date..:** 09/29/09
Leach Batch #..: P926706 **Prep Batch #...:** 9271374
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	0.025	mg/L	SW846 8260B
2-Butanone (MEK)	ND	0.25	mg/L	SW846 8260B
Carbon tetrachloride	ND	0.025	mg/L	SW846 8260B
Chlorobenzene	ND	0.025	mg/L	SW846 8260B
Chloroform	ND	0.025	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.025	mg/L	SW846 8260B
1,1-Dichloroethylene	ND	0.070	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.070	mg/L	SW846 8260B
Trichloroethylene	ND	0.050	mg/L	SW846 8260B
Vinyl chloride	ND	0.025	mg/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(86 - 125)
1,2-Dichloroethane-d4	93	(80 - 122)
Toluene-d8	97	(90 - 122)
4-Bromofluorobenzene	85	(84 - 125)

NOTE(S):

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

METHOD BLANK REPORT

TCLP GC/MS Semivolatiles

Client Lot #...: A9I230290 **Work Order #...:** LLF501AA **Matrix.....:** WATER
MB Lot-Sample #: A9I250000-043
Leach Date.....: 09/24/09 **Prep Date.....:** 09/25/09 **Analysis Date..:** 09/28/09
Leach Batch #..: P926705 **Prep Batch #...:** 9268043
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
o-Cresol	ND	0.0040	mg/L	SW846 8270C
m-Cresol & p-Cresol	ND	0.040	mg/L	SW846 8270C
1,4-Dichlorobenzene	ND	0.0040	mg/L	SW846 8270C
2,4-Dinitrotoluene	ND	0.020	mg/L	SW846 8270C
Hexachlorobenzene	ND	0.020	mg/L	SW846 8270C
Hexachlorobutadiene	ND	0.020	mg/L	SW846 8270C
Hexachloroethane	ND	0.020	mg/L	SW846 8270C
Nitrobenzene	ND	0.0040	mg/L	SW846 8270C
Pentachlorophenol	ND	0.040	mg/L	SW846 8270C
Pyridine	ND	0.020	mg/L	SW846 8270C
2,4,5-Trichloro-phenol	ND	0.020	mg/L	SW846 8270C
2,4,6-Trichloro-phenol	ND	0.020	mg/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	76	(27 - 110)
2-Fluorobiphenyl	69	(20 - 110)
Terphenyl-d14	87	(44 - 110)
Phenol-d5	55	(10 - 110)
2-Fluorophenol	69	(10 - 110)
2,4,6-Tribromophenol	66	(28 - 110)

NOTE(S):

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

METHOD BLANK REPORT

TCLP Metals

Client Lot #...: A9I230290 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A9I240000-074 **Prep Batch #...:** 9268027						
Leach Date.....: 09/24/09 **Leach Batch #..:** P926705						
Mercury	ND	0.0020	mg/L	SW846 7470A	09/25/09	LLDEK1AA
		Dilution Factor: 1				
Arsenic	ND	0.50	mg/L	SW846 6010B	09/25-09/28/09	LLDEK1AC
		Dilution Factor: 1				
Barium	**0.0025 B**	**10.0**	**mg/L**	**SW846 6010B**	**09/25-09/28/09**	**LLDEK1AD**
		Dilution Factor: 1				
Cadmium	ND	0.10	mg/L	SW846 6010B	09/25-09/28/09	LLDEK1AE
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	09/25-09/28/09	LLDEK1AF
		Dilution Factor: 1				
Lead	ND	0.50	mg/L	SW846 6010B	09/25-09/28/09	LLDEK1AG
		Dilution Factor: 1				
Selenium	ND	0.25	mg/L	SW846 6010B	09/25-09/28/09	LLDEK1AH
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	09/25-09/28/09	LLDEK1AJ
		Dilution Factor: 1				

NOTE(S):

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

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

TCLP Metals

Client Lot #...: A9I230290 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A9I250000-027 **Prep Batch #...:** 9268027						
Mercury	ND	0.0020	mg/L	SW846 7470A	09/25/09	LLF481AA
		Dilution Factor: 1				
Arsenic	ND	0.50	mg/L	SW846 6010B	09/25-09/28/09	LLF481AC
		Dilution Factor: 1				
Barium	**0.0011 B**	**10.0**	**mg/L**	**SW846 6010B**	**09/25-09/28/09**	**LLF481AD**
		Dilution Factor: 1				
Cadmium	ND	0.10	mg/L	SW846 6010B	09/25-09/28/09	LLF481AE
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	09/25-09/28/09	LLF481AF
		Dilution Factor: 1				
Lead	ND	0.50	mg/L	SW846 6010B	09/25-09/28/09	LLF481AG
		Dilution Factor: 1				
Selenium	ND	0.25	mg/L	SW846 6010B	09/25-09/28/09	LLF481AH
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	09/25-09/28/09	LLF481AJ
		Dilution Factor: 1				

NOTE(S):

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

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A9I230290 **Work Order #...:** LLN9X1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A9I290000-525 LLN9X1AD-LCSD
Prep Date.....: 09/29/09 **Analysis Date..:** 09/29/09
Prep Batch #...: 9272525
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Vinyl chloride	100	(55 - 121)			SW846 8260B
	101	(55 - 121)	0.90	(0-30)	SW846 8260B
1,1-Dichloroethylene	**91**	**(65 - 119)**			**SW846 8260B**
	92	**(65 - 119)**	**2.0**	**(0-20)**	**SW846 8260B**
Chloroform	99	(87 - 119)			SW846 8260B
	99	(87 - 119)	0.27	(0-30)	SW846 8260B
1,2-Dichloroethane	97	(83 - 122)			SW846 8260B
	96	(83 - 122)	0.61	(0-30)	SW846 8260B
2-Butanone (MEK)	97	(53 - 173)			SW846 8260B
	100	(53 - 173)	2.4	(0-40)	SW846 8260B
Carbon tetrachloride	81	(81 - 126)			SW846 8260B
	78 a	(81 - 126)	3.1	(0-30)	SW846 8260B
Trichloroethylene	**100**	**(80 - 122)**			**SW846 8260B**
	103	**(80 - 122)**	**2.9**	**(0-20)**	**SW846 8260B**
Benzene	**99**	**(79 - 116)**			**SW846 8260B**
	97	**(79 - 116)**	**1.2**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	108	(83 - 116)			SW846 8260B
	109	(83 - 116)	1.1	(0-30)	SW846 8260B
Chlorobenzene	**99**	**(81 - 115)**			**SW846 8260B**
	98	**(81 - 115)**	**1.5**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	94	(78 - 115)
	94	(78 - 115)
1,2-Dichloroethane-d4	96	(77 - 120)
	97	(77 - 120)
Toluene-d8	104	(78 - 111)
	103	(78 - 111)
4-Bromofluorobenzene	97	(80 - 114)
	93	(80 - 114)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A9I230290 **Work Order #...:** LLL3Q1AA **Matrix.....:** SOLID
LCS Lot-Sample#: A9I280000-374
Prep Date.....: 09/29/09 **Analysis Date..:** 09/29/09
Prep Batch #...: 9271374
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**99**	**(76 - 118)**	**SW846 8260B**
2-Butanone (MEK)	101	(40 - 110)	SW846 8260B
Carbon tetrachloride	67 a	(71 - 124)	SW846 8260B
Chlorobenzene	**96**	**(76 - 113)**	**SW846 8260B**
Chloroform	99	(82 - 117)	SW846 8260B
1,2-Dichloroethane	96	(78 - 122)	SW846 8260B
1,1-Dichloroethylene	**88**	**(67 - 128)**	**SW846 8260B**
Tetrachloroethylene	105	(64 - 121)	SW846 8260B
Trichloroethylene	**104**	**(76 - 119)**	**SW846 8260B**
Vinyl chloride	99	(47 - 123)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	97	(86 - 124)
1,2-Dichloroethane-d4	93	(80 - 122)
Toluene-d8	101	(90 - 122)
4-Bromofluorobenzene	90	(84 - 125)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9I230290 **Work Order #...:** LLF501AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A9I250000-043 LLF501AD-LCSD
Prep Date.....: 09/25/09 **Analysis Date..:** 09/28/09
Prep Batch #...: 9268043
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
o-Cresol	78	(23 - 110)			SW846 8270C
	87	(23 - 110)	11	(0-30)	SW846 8270C
m-Cresol & p-Cresol	71	(28 - 110)			SW846 8270C
	83	(28 - 110)	16	(0-30)	SW846 8270C
1,4-Dichlorobenzene	53	(13 - 110)			SW846 8270C
	62	(13 - 110)	15	(0-30)	SW846 8270C
2,4-Dinitrotoluene	86	(45 - 119)			SW846 8270C
	97	(45 - 119)	12	(0-30)	SW846 8270C
Hexachlorobenzene	77	(46 - 112)			SW846 8270C
	90	(46 - 112)	15	(0-30)	SW846 8270C
Hexachlorobutadiene	49	(10 - 110)			SW846 8270C
	59	(10 - 110)	19	(0-30)	SW846 8270C
Hexachloroethane	45	(10 - 110)			SW846 8270C
	54	(10 - 110)	19	(0-30)	SW846 8270C
Nitrobenzene	77	(29 - 118)			SW846 8270C
	87	(29 - 118)	12	(0-30)	SW846 8270C
Pentachlorophenol	67	(10 - 116)			SW846 8270C
	68	(10 - 116)	1.8	(0-30)	SW846 8270C
Pyridine	73	(15 - 110)			SW846 8270C
	82	(15 - 110)	12	(0-30)	SW846 8270C
2,4,5-Trichlorophenol	75	(36 - 110)			SW846 8270C
	78	(36 - 110)	4.7	(0-30)	SW846 8270C
2,4,6-Trichlorophenol	69	(32 - 110)			SW846 8270C
	79	(32 - 110)	13	(0-30)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	72	(27 - 110)
	77	(27 - 110)
2-Fluorobiphenyl	67	(20 - 110)
	77	(20 - 110)
Terphenyl-d14	75	(44 - 110)
	85	(44 - 110)
Phenol-d5	50	(10 - 110)
	62	(10 - 110)
2-Fluorophenol	63	(10 - 110)

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9I230290 **Work Order #...:** LLF501AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A9I250000-043 LLF501AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
	73	(10 - 110)
2,4,6-Tribromophenol	71	(28 - 110)
	83	(28 - 110)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #...: A9I230290 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A9I250000-027 **Prep Batch #...:** 9268027					
Mercury	112	(50 - 150)	SW846 7470A	09/25/09	LLF481AK
		Dilution Factor: 1			
Arsenic	95	(50 - 150)	SW846 6010B	09/25-09/28/09	LLF481AL
		Dilution Factor: 1			
Barium	92	(50 - 150)	SW846 6010B	09/25-09/28/09	LLF481AM
		Dilution Factor: 1			
Cadmium	97	(50 - 150)	SW846 6010B	09/25-09/28/09	LLF481AN
		Dilution Factor: 1			
Chromium	92	(50 - 150)	SW846 6010B	09/25-09/28/09	LLF481AP
		Dilution Factor: 1			
Lead	97	(50 - 150)	SW846 6010B	09/25-09/28/09	LLF481AQ
		Dilution Factor: 1			
Selenium	97	(50 - 150)	SW846 6010B	09/25-09/28/09	LLF481AR
		Dilution Factor: 1			
Silver	100	(50 - 150)	SW846 6010B	09/25-09/28/09	LLF481AT
		Dilution Factor: 1			

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A9I230290 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)		Work Order #: LLC9D1AA	LCS Lot-Sample#: A9I230000-505		
	99	(97 - 103)	SW846 9040B	09/23/09	9266505
		Dilution Factor: 1			

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

TCLP GC/MS Volatiles

Client Lot #...: A9I230290 **Work Order #...:** LLCHX1AU-MS **Matrix.....:** WG
MS Lot-Sample #: A9I230290-001 LLCHX1AV-MSD
Date Sampled...: 09/23/09 11:20 **Date Received..:** 09/23/09
Leach Date.....: 09/24/09 **Prep Date.....:** 09/29/09 **Analysis Date..:** 09/29/09
Leach Batch #..: P926706 **Prep Batch #...:** 9271374
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**102**	**(76 - 117)**			**SW846 8260B**
	103	**(76 - 117)**	**0.38**	**(0-30)**	**SW846 8260B**
2-Butanone (MEK)	97	(37 - 110)			SW846 8260B
	101	(37 - 110)	3.6	(0-30)	SW846 8260B
Carbon tetrachloride	67 a	(72 - 124)			SW846 8260B
	70 a	(72 - 124)	4.1	(0-30)	SW846 8260B
Chlorobenzene	**103**	**(72 - 114)**			**SW846 8260B**
	100	**(72 - 114)**	**3.5**	**(0-30)**	**SW846 8260B**
Chloroform	100	(82 - 117)			SW846 8260B
	101	(82 - 117)	1.1	(0-30)	SW846 8260B
1,2-Dichloroethane	99	(80 - 120)			SW846 8260B
	100	(80 - 120)	0.83	(0-30)	SW846 8260B
1,1-Dichloroethylene	**89**	**(67 - 129)**			**SW846 8260B**
	88	**(67 - 129)**	**0.91**	**(0-30)**	**SW846 8260B**
Tetrachloroethylene	108	(60 - 119)			SW846 8260B
	107	(60 - 119)	0.71	(0-30)	SW846 8260B
Trichloroethylene	**103**	**(72 - 121)**			**SW846 8260B**
	102	**(72 - 121)**	**1.2**	**(0-30)**	**SW846 8260B**
Vinyl chloride	98	(54 - 118)			SW846 8260B
	101	(54 - 118)	3.7	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	89	(86 - 125)
	97	(86 - 125)
1,2-Dichloroethane-d4	95	(80 - 122)
	92	(80 - 122)
Toluene-d8	101	(90 - 122)
	101	(90 - 122)
4-Bromofluorobenzene	92	(84 - 125)
	93	(84 - 125)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #...: A9I230290 **Matrix.....:** WATER
Date Sampled...: 09/22/09 09:40 **Date Received..:** 09/23/09

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A9I230138-001 **Prep Batch #...:** 9268027							
Leach Date.....: 09/24/09 **Leach Batch #..:** P926705							
Mercury	71	(50 - 150)			SW846 7470A	09/25/09	LK98H1A8
	75	(50 - 150)	5.5	(0-20)	SW846 7470A	09/25/09	LK98H1A9
		Dilution Factor: 10					
Arsenic	9.8 N	(50 - 150)			SW846 6010B	09/25-09/28/09	LK98H1CA
	9.8 N	(50 - 150)	0.18	(0-20)	SW846 6010B	09/25-09/28/09	LK98H1CC
		Dilution Factor: 50					
Barium	9.5 N	(50 - 150)			SW846 6010B	09/25-09/28/09	LK98H1CD
	9.4 N	(50 - 150)	0.44	(0-20)	SW846 6010B	09/25-09/28/09	LK98H1CE
		Dilution Factor: 50					
Cadmium	9.9 N	(50 - 150)			SW846 6010B	09/25-09/28/09	LK98H1CF
	10 N	(50 - 150)	0.68	(0-20)	SW846 6010B	09/25-09/28/09	LK98H1CG
		Dilution Factor: 50					
Chromium	9.7 N	(50 - 150)			SW846 6010B	09/25-09/28/09	LK98H1CH
	9.7 N	(50 - 150)	0.08	(0-20)	SW846 6010B	09/25-09/28/09	LK98H1CJ
		Dilution Factor: 50					
Lead	10 N	(50 - 150)			SW846 6010B	09/25-09/28/09	LK98H1CK
	10 N	(50 - 150)	0.31	(0-20)	SW846 6010B	09/25-09/28/09	LK98H1CL
		Dilution Factor: 50					
Selenium	9.8 N	(50 - 150)			SW846 6010B	09/25-09/28/09	LK98H1CM
	9.8 N	(50 - 150)	0.71	(0-20)	SW846 6010B	09/25-09/28/09	LK98H1CN
		Dilution Factor: 50					
Silver	8.9 N	(50 - 150)			SW846 6010B	09/25-09/28/09	LK98H1CP
	9.0 N	(50 - 150)	0.96	(0-20)	SW846 6010B	09/25-09/28/09	LK98H1CQ
		Dilution Factor: 50					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A9I230290 **Work Order #...:** LK98H-SMP LK98H-DUP **Matrix.....:** WATER

Date Sampled...: 09/22/09 09:40 **Date Received..:** 09/23/09

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)						SD Lot-Sample #: A9I230138-001		
	3.8	3.8	No Units	1.0	(0-20)	SW846 9040B	09/23/09	9266505
			Dilution Factor: 1					

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A9I230290 **Work Order #...:** LLGX0-SMP LLGX0-DUP **Matrix.....:** WATER

Date Sampled...: 09/24/09 15:55 **Date Received..:** 09/25/09

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Flashpoint						SD Lot-Sample #: A9I250159-001		
	>180	>180	deg F	0.0	(0-20)	SW846 1010	09/29/09	9272393

Dilution Factor: 1

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: CANTON, OH

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact				
Company Name: EQM	Client Project Manager: J Miller ECORBIN SAMPLE MANAGER	Site Contact:	Lab Contact: Mark Loch	COC No: IDW01Sept
Address: 1800 CARILLON BLVD	Telephone: 5138257500	Telephone:	Telephone:	1 of 1 COCs
City/State/Zip: Cincinnati OH 45240	Email: ecorbin@eqm.com		Analyses	
Phone: 5138257500		TAT if different from below ☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		
Project Name: RVAAP	Method of Shipment/Carrier: Drop off			
Project Number: EQ30240.0006	Shipping/Tracking No:			
PO#				

Sample Identification	Sample Date	Sample Time	Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:		TCLP VOC 8260	TCLP SVOC 8270	TCLP Metals	Reactive Sulfide/Reactive Cyanide	pH ignitability	VOC 8260	Sample Specific Notes / Special Instructions:
FWG-IDW-Purge/DeconSept09	9-23-09	1120		X									4		N C	X	X	X	X	X		
FWG-IDW-TRIPBLANK	9-23-09	0800		X						2											X	

Possible Hazard Identification: ☒ 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:

IDW SAMPLING

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	EQM	9-23-09 1145	[signature]	EQM	9-23-09 11:45 a.m
[signature]	EQM	9-23-09 1330 ~~1145~~	[signature]	T.A.L	9/23/09 1330
[signature]	T.A.L	9/23/09 1425	Received in Laboratory by: [signature]	TA	9/23/09 1425

TAL-0018 (1008)

TestAmerica Cooler Receipt Form/Narrative **Lot Number:** 480230290

North Canton Facility

Client EQM Project RVAAP By: Dena Burns (Signature)

Cooler Received on 9/23/09 Opened on 9/23/09

FedEx ☐ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☒ Other ____

TestAmerica Cooler # C218 Multiple Coolers ☐ Foam Box ☐ Client Cooler ☐ Other ____

1. Were custody seals on the outside of the cooler(s)? Yes ☒ No ☐ Intact? Yes ☒ No ☐ NA ☐
   If YES, Quantity 2 Quantity Unsalvageable ____
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☒ No ☐ NA ☐
   Were custody seals on the bottle(s)? Yes ☐ No ☒
   If YES, are there any exceptions? ____ Yes ☐ No ☒
2. Shippers' packing slip attached to the cooler(s)? Relinquished by client? Yes ☒ No ☐
3. Did custody papers accompany the sample(s)? Yes ☒ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☒ No ☐
5. Packing material used: Bubble Wrap ☒ Foam ☐ None ☐ Other ____
6. Cooler temperature upon receipt 5.0 °C See back of form for multiple coolers/temps ☐
   METHOD: IR ☒ Other ☐ ____
   COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
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 sample(s) at the correct pH upon receipt? Yes ☐ No ☐ NA ☒
10. Were correct bottle(s) used for the test(s) indicated? Yes ☒ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☐ NA ☒
12. Sufficient quantity received to perform indicated analyses? Yes ☒ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☒ No ☐ Were VOAs on the COC? Yes ☐ No ☒

Contacted PM ____ Date ____ by ____ via Verbal ☐ Voice Mail ☐ Other ☐

Concerning ____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

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 Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot# 031909-HNO_3; Sulfuric Acid Lot# 100108-H_2SO_4; Sodium Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 050205-$(CH_3COO)_2ZN$/NaOH.* What time was preservative added to sample(s)? ____

Client ID	pH	Date	Initials

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials

Cooler #	Temp. °C	Method	Coolant

Discrepancies Cont'd:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

BUFFALO DATA

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Analytical Report

SDG Number: A9I230290

Project Description(s)

Work Order RSI0969 - Reactive Cyanide / Reactive Sulfide

For:

Mark Loeb

TestAmerica North Canton

4101 Shuffel Drive NW

North Canton, OH 44720

Sally Hoffman

Project Manager

Sally.Hoffman@testamericainc.com

Thursday, October 1, 2009

TestAmerica North Canton
4101 Shuffel Drive NW
North Canton, OH 44720

SDG Number: A9I230290

Project: Reactive Cyanide / Reactive Sulfide
Project Number: A9I230290

Received: 09/25/09
Reported: 10/01/09 10:45

TestAmerica Buffalo
Current Certifications

As of 1/27/2009

STATE	Program	Cert # / Lab ID
Arkansas	CWA, RCRA, SOIL	88-0686
California*	NELAP CWA, RCRA	01169CA
Connecticut	SDWA, CWA, RCRA, SOIL	PH-0568
Florida*	NELAP CWA, RCRA	E87672
Georgia*	SDWA,NELAP CWA, RCRA	956
Illinois*	NELAP SDWA, CWA, RCRA	200003
Iowa	SW/CS	374
Kansas*	NELAP SDWA, CWA, RCRA	E-10187
Kentucky	SDWA	90029
Kentucky UST	UST	30
Louisiana*	NELAP CWA, RCRA	2031
Maine	SDWA, CWA	NY0044
Maryland	SDWA	294
Massachusetts	SDWA, CWA	M-NY044
Michigan	SDWA	9937
Minnesota	SDWA,CWA, RCRA	036-999-337
New Hampshire*	NELAP SDWA, CWA	233701
New Jersey*	NELAP,SDWA, CWA, RCRA,	NY455
New York*	NELAP, AIR, SDWA, CWA, RCRA,CLP	10026
Oklahoma	CWA, RCRA	9421
Pennsylvania*	NELAP CWA,RCRA	68-00281
Tennessee	SDWA	02970
Texas*	NELAP CWA, RCRA	T104704412-08-TX
USDA	FOREIGN SOIL PERMIT	S-41579
USDOE	Department of Energy	DOECAP-STB
Virginia	SDWA	278
Washington*	NELAP CWA,RCRA	C1677
Wisconsin	CWA, RCRA	998310390
West Virginia	CWA,RCRA	252

*As required under the indicated accreditation, the test results in this report meet all NELAP requirements for parameters for which accre ditation is required or available. Any exceptions to NELAP requirements are noted in this report.

TestAmerica North Canton
4101 Shuffel Drive NW
North Canton, OH 44720

SDG Number: A9I230290

Project: Reactive Cyanide / Reactive Sulfide
Project Number: A9I230290

Received: 09/25/09
Reported: 10/01/09 10:45

Case Narrative

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. field-pH), they were not analyzed immediately, but as soon as possible after laboratory receipt.

A pertinent document is appended to this report, 1 page, is included and is an integral part of this report.

TestAmerica Laboratories, Inc. certifies that the analytical results contained herein apply only to the samples tested as received by our Laboratory.

TestAmerica North Canton
4101 Shuffel Drive NW
North Canton, OH 44720

SDG Number: A9I230290

Project: Reactive Cyanide / Reactive Sulfide
Project Number: A9I230290

Received: 09/25/09
Reported: 10/01/09 10:45

DATA QUALIFIERS AND DEFINITIONS

NR Any inclusion of NR indicates that the project specific requirements do not require reporting estimated values below the laboratory reporting limit.

TestAmerica North Canton
4101 Shuffel Drive NW
North Canton, OH 44720

SDG Number: A9I230290

Project: Reactive Cyanide / Reactive Sulfide
Project Number: A9I230290

Received: 09/25/09
Reported: 10/01/09 10:45

Executive Summary - Detections

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Client ID: FWG-IDW-PURGE/DECON SEPT.09 (RSI0969-01 - Water)						**Sampled: 09/23/09 11:20**		**Recvd: 09/25/09 09:10**		
General Chemistry Parameters										
H2S Released From Waste	**40.1**		10.0	NR	mg/L	1.00	09/30/09 09:00	RJP	9I30100	Section 7.3

TestAmerica North Canton
4101 Shuffel Drive NW
North Canton, OH 44720

SDG Number: A9I230290

Project: Reactive Cyanide / Reactive Sulfide
Project Number: A9I230290

Received: 09/25/09
Reported: 10/01/09 10:45

Sample Summary

Sample Identification	Lab Number	Client Matrix	Date/Time Sampled	Date/Time Received	Sample Qualifiers
FWG-IDW-PURGE/DECON SEPT.09	RSI0969-01	Water	09/23/09 11:20	09/25/09 09:10	

TestAmerica North Canton
4101 Shuffel Drive NW
North Canton, OH 44720

SDG Number: A9I230290

Project: Reactive Cyanide / Reactive Sulfide
Project Number: A9I230290

Received: 09/25/09
Reported: 10/01/09 10:45

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Client ID: FWG-IDW-PURGE/DECON SEPT.09 (RSI0969-01 - Water)						**Sampled: 09/23/09 11:20**		**Recvd: 09/25/09 09:10**		
General Chemistry Parameters										
HCN Released From Waste	ND		10.0	0.0030	mg/kg	1.00	09/30/09 13:38	RJP	9I30095	Section 7.3
H2S Released From Waste	**40.1**		10.0	NR	mg/L	1.00	09/30/09 09:00	RJP	9I30100	Section 7.3

TestAmerica North Canton
4101 Shuffel Drive NW
North Canton, OH 44720

SDG Number: A9I230290

Project: Reactive Cyanide / Reactive Sulfide
Project Number: A9I230290

Received: 09/25/09
Reported: 10/01/09 10:45

SAMPLE EXTRACTION DATA

Parameter	Batch	Lab Number	Wt/Vol Extracte	Units	Extract Volume	Units	Date Prepared	Lab Tech	Extraction Method
General Chemistry Parameters									
Section 7.3	9I30100	RSI0969-01	200.00	mL	200.00	mL	09/30/09 09:00	RJP	Reactivity
Section 7.3	9I30095	RSI0969-01	5.00	g	5.00	mL	09/30/09 13:38	RJP	Reactivity

TestAmerica North Canton
4101 Shuffel Drive NW
North Canton, OH 44720

SDG Number: A9I230290

Project: Reactive Cyanide / Reactive Sulfide
Project Number: A9I230290

Received: 09/25/09
Reported: 10/01/09 10:45

LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
General Chemistry Parameters											
Blank Analyzed: 09/30/09 (Lab Number:9I30095-BLK1, Batch: 9I30095)											
HCN Released From Waste			10.0	0.0030	mg/kg	ND					
LCS Analyzed: 09/30/09 (Lab Number:9I30095-BS1, Batch: 9I30095)											
HCN Released From Waste		1000	10.0	0.0030	mg/kg	160	16	10-100			
General Chemistry Parameters											
Blank Analyzed: 09/30/09 (Lab Number:9I30100-BLK1, Batch: 9I30100)											
H2S Released From Waste			10.0	NR	mg/L	ND					
LCS Analyzed: 09/30/09 (Lab Number:9I30100-BS1, Batch: 9I30100)											
H2S Released From Waste		570	10.0	NR	mg/L	160	28	10-100			

TestAmerica Laboratories, Inc.

SAMPLE ANALYSIS REQUISTION

Laboratory TestAmerica Buffalo
Severn Trent Laboratories
10 Hazelwood Drive, Suite 106
Amherst, NY 14228

Lab Request SR115006

Report Package: Report

Need Analytical Report 2009-10-07

Client Code: 14091

Project Manager: MARK LOEB

Sample I.D.	Work Order Number	Client Sample ID	Sampling Date	Analysis Required
A9I230290-1	LLCHX	FWG-IDW-PURGE/DECON SEPT. 09	2009-09-23 11:20	WATER, 7.3.3, Reactive Cyanide (Buffalo)
A9I230290-1	LLCHX	FWG-IDW-PURGE/DECON SEPT. 09	2009-09-23 11:20	WATER, 7.3.4, Reactive Sulfide (Buffalo)

Please use **Client Sample ID** for report

Call MARK LOEB with questions at 330-497-9396

at the TAL North Canton Laboratory

Shipping Method: FED EX

Need detection limit and analysis date included in report.

Please send a signed copy of this form with the report at completion of analysis.

Relinquished by: _____ Date/Time: 9/24/09 0800

Relinquished by: _____ Date/Time: _____

Received for lab by: _____ Date/Time: 9/25/09 0910 902-0

PLEASE RETURN ORIGINAL SAMPLE ANALYSIS REQUISITION

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

END OF REPORT

OhioEPA
State of Ohio Environmental Protection Agency
Northeast District Office

2110 East Aurora Rd.
Twinsburg, Ohio 44087

TELE: (330) 963-1200 FAX: (330) 487-0769
www.epa.state.oh.us

Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korleski, Director

November 23, 2009

RE: RAVENNA ARMY AMMUNITION PLANT, PORTAGE/TRUMBULL COUNTIES, DRAFT, INVESTIGATION DERIVED WASTE AND DISPOSAL PLAN, FWGWMP, OCTOBER 2009 SAMPLING EVENT

Mr. Mark Patterson
Installation Manager
Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, OH 44266

CERTIFIED MAIL
7009 1680 0000 6381 0988

Dear Mr. Patterson:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the "Draft, Investigation-Derived Waste Characterization and Disposal Plan (IDW), for the Facility-Wide Groundwater Monitoring Program, October 2009 Sampling Event, at the Ravenna Army Ammunition Plant, Ravenna, OH" document. This document was received at Ohio EPA, Northeast District Office (NEDO), Division of Emergency and Remedial response (DERR), on November 16, 2009, and is dated November 13, 2009. The document was prepared for the U.S. Army Corps of Engineers (USACE) – Louisville District by Environmental Quality Management, Inc. (EQM), under contract no. W912QR-04-D-0036.

The report is approved and Ohio EPA concurs that the IDW (groundwater and decontamination fluids) from the October 2009 Sampling Event may be disposed of as contaminated, non-hazardous waste and that it be sent off-site for disposal to a permitted water treatment facility.

If you have any questions, please call me at (330) 963-1207.

Sincerely,

FOR

Vicki Deppisch
Project Coordinator
Division of Emergency and Remedial Response

VD/kss

cc: Bonnie Buthker, Ohio EPA, DERR, SWDO
John Miller, EQM
Maj. Ed Meade, OHARNG RTLS
Mark Nichter, USACE Louisville
Eileen Mohr, Ohio EPA, NEDO, DERR
Katie Elgin, OHARNG RTLS
Glen Beckham, USACE Louisville
Mark Krivansky, AEC

ec: Mike Eberle, Ohio EPA, NEDO, DERR
Todd Fisher, Ohio EPA, NEDO, DERR

DRAFT

FACILITY-WIDE GROUNDWATER MONITORING PROGRAM

INVESTIGATION-DERIVED WASTE CHARACTERIZATION AND DISPOSAL PLAN OCTOBER 2009 SAMPLING EVENT

RAVENNA ARMY AMMUNITION PLANT, RAVENNA, OHIO

MARC Contract Number W912QR-04-D-0036
Delivery Order No. 0006

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

November 2009

CONTENTS

TABLES

APPENDICES

ACRONYMS

AOC	Area of Concern
EQM	Environmental Quality Management, Inc.
EPA	U.S. Environmental Protection Agency
IDW	Investigation-derived wastes
Ohio EPA	Ohio Environmental Protection Agency
PPE	Personal protective equipment
RCRA	Resource Conservation and Recovery Act
RVAAP	Ravenna Army Ammunition Plant
SAP	Sampling and Analysis Plan
SVOC	Semi-volatile organic compounds
TCLP	Toxicity Characteristic Leaching Procedure
USACE	US Army Corps of Engineers
VOC	Volatile organic compounds

1.0 INTRODUCTION

Investigative activities were conducted during the Facility Wide Groundwater Monitoring Program sampling events in October 2009 at the Ravenna Army Ammunition Plant (RVAAP), Ravenna, Ohio, resulting in the generation of investigation-derived wastes (IDW) consisting of purge-water and equipment decontamination water wastes. The IDW purge water was generated in the course of sampling each well. The IDW decontamination waters were generated from the cleaning and decontamination activities for non-dedicated equipment needed 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*,
- Recommendations for disposal.

This document follows guidance established by the US Army Corps of Engineers (USACE) and the Ohio EPA regarding IDW disposition at RVAAP.

2.0 OPERATIONAL HISTORY AND WASTE GENERATION

Information regarding the operational history and suspected contaminants for the Facility Wide Groundwater Monitoring Program Plan 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 SAP Addendum describes procedures used for sampling and managing IDW at RVAAP.

Water (purged groundwater and decontamination water) IDW was generated during the October 2009 sampling event. The purge water collected from the 26 Areas of Concern (AOCs) sampled was stored in drums labeled for purge water disposal, as opposed to previous events where each AOC had its own drum. The decision to composite the purge water was decided in a telephone conference between M. Patterson (RVAAP), E. Mohr (OEPA) and V. Deppisch (OEPA) on January 16, 2008. Purge water was generated in accordance with the Facility Wide Sampling and Analysis Plan (SAP), Section 4.3.4.2 (SAIC, 2001) under the Micro-Purging criteria. Decontamination water was generated from the washing, rinsing, and decontamination procedures used for all non-dedicated sampling equipment. The decontamination water was stored in a drum separate from the purge water. These decontamination procedures are described in Section 4.3.8 Decontamination Procedures of the Facility Wide SAP.

The drum container label number, the type and size of drum container used, estimated volume within each drum, and the source of purge waste water or decontamination fluid is presented in Table 2.1 below.

Table 2.1. IDW Inventory of Drums

Drum Label	Drum Type & Size	Contents	Estimated Volume	Location/Source
EQM 2009-18	55 Gal. Steel	Decontamination/Rinse Water	~35-gallons	Equipment Rinse/Decontamination
EQM 2009-19	55 Gal. Steel	Purge water	~45-gallons	*
EQM 2009-20	55 Gal. Steel	Purge water	~45-gallons	*
EQM 2009-21	55 Gal. Steel	Purge water	~45-gallons	*
EQM 2009-22	55 Gal. Steel	Purge water	~30-gallons	*

* = Load Lines 1 through 12, Cobbs Pond, Central Burn Pits, Ramsdell Quarry, Winklepeck Burning Grounds, NACA Test Area, Background Wells, Mustard Burial Site, C-Block, Fuze & Booster Quarry, Open Detonation Area 2, Erie Burning Grounds, Building 1200, Landfill N. of Winklepeck, Atlas Scrap Yard

3.0 MANAGEMENT OF ENVIRONMENTAL MEDIA

All environmental media were managed in a manner that minimized potential risk to human health and the environment. IDW was handled as nonhazardous material pending waste characterization and classification based on analytical results. The Facility-Wide SAP (SAIC, 2001) and the Final Part 1 Sampling and Analysis Plan (Portage, 2004) describe approved procedures used for containerizing and handling IDW.

All liquid indigenous (purged groundwater) IDW generated from each monitoring well micro-purging was placed into the 55-gallon drum as previously agreed upon by RVAAP, USACE and Ohio EPA. The purge water was transferred daily from each well location after sampling by closed-top 5-gallon buckets to the appropriately labeled 55-gallon drum located and staged inside Building 1036.

4.0 DISCUSSION OF ANALYTICAL RESULTS

Per Section 7.4 of the *Facility-Wide SAP* (2001), IDW Characterization and Classification for Disposal, all IDW indigenous wastes were characterized for disposal by taking composite samples collected from each of the segregated waste streams. There were only two segregated waste streams that needed to be investigated: one for the purge water generated, and one for the decontamination procedures. Each waste stream had a composite sample taken by using a "drum thief" until a total of approximately 4 liters was withdrawn in equal amounts from all drums of that particular waste stream. Each waste stream composite sample was submitted to TestAmerica Laboratories, North Canton for full toxicity characteristic leaching procedure (TCLP) analysis using the following methods in accordance with the Facility-Wide SAP (SAIC, 2001):

- TCLP Mercury by SW846 1311/7470A
- TCLP Metals (Silver, arsenic, barium, cadmium, chromium, lead, and selenium) by SW846 1311/6010B
- TCLP Semi-volatile organic compounds (SVOCs) by SW846 1311/8270C
- TCLP Volatile organic compounds (VOCs) by SW846 1311/8260B
- Reactive Cyanide by SW846 7.3.3
- Reactive Sulfide by SW846 7.3.4
- Flash Point by SW846 1010
- pH by SW846 9040B

A trip blank was submitted with the samples and analyzed for Volatile Organic Compounds. The IDW analytical results are presented in Appendix 1.

5.0 RECOMMENDATIONS FOR DISPOSAL

Table 7-1 in the *Facility-Wide SAP* (SAIC, 2001) presents all the maximum concentration of contaminants for the toxicity characteristic for hazardous wastes as per 40 CFR 261.24. Analytical results for the October 2009 groundwater sampling event's IDW were compared against these criteria to determine whether waste streams generated were potentially hazardous or non-hazardous.

5.1 Groundwater

IDW was generated during the well sampling activities by micro-purging monitoring wells associated with this investigation. After comparing the analytical data results generated from groundwater sampling activities to the contaminants and their regulatory levels from Table 7-1 1 in the *Facility-Wide SAP* (SAIC, 2001), the data indicated that no regulatory criteria for Resource Conservation and Recovery Act (RCRA) hazardous waste determinations were exceeded. Table 5.1 below presents the detected results compared to the regulatory characteristic for hazardous wastes as per 40 CFR 261.24.

It is recommended that the drums containing purged groundwater be classified as contaminated, but non-hazardous and that it be sent off-site for disposal to a permitted water treatment facility in accordance with the *Facility-Wide SAP* (SAIC, 2001) guidance under Section 7.0 "Investigation-Derived Waste".

5.2 Decontamination Fluids

A composite sample collected from decontamination fluids generated from cleaning of non-dedicated sampling equipment used during the investigation indicated that all analytes were below TCLP threshold values and therefore should be classified as non-hazardous. It is recommended that the water in this drum be classified as contaminated, non-hazardous, and be sent off-site for disposal to a permitted water treatment facility in

accordance with the *Facility-Wide SAP* (SAIC, 2001) guidance under Section 7.0 Investigation-Derived Waste.

Table 5.1 Detected Analytical Results

Sample ID	Detected Contaminant	Detected Result	Regulatory Level[1]	Above Regulatory Yes/No
FWG-IDW-MWPURGEOCT2009	Barium	0.085 mg/L J	100 mg/L	No
	2-Butanone (MEK)	0.052 mg/L J B	200 mg/L	No
	Flashpoint	>180°F	<140°F	No
	pH	7.9	<2 or >12.5	No
FWG-IDW-MWDECONOCT2009	Barium	0.027 mg/L J	100 mg/L	No
	2-Butanone (MEK)	0.11 mg/L J B	200 mg/L	No
	Flashpoint	>180°F	<140°F	No
	Reactive Sulfide	10 mg/L	See Table Notes	No
	pH	8.9	<2 or >12.5	No
TRIP BLANK	None Detected			

J = Estimated result. Result is less than reporting limit.
Reactive Sulfide Note: Despite the presence of a low concentration of reactive sulfide 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).
Note that the flags used to qualify the data are consistent with USACE Laboratory Chemistry Guidelines and the RVAAP quarterly groundwater reports.
1 = USEPA Regulatory Characteristic Levels (40 CFR 261.20 through 24).

5.3 Summary of Disposal Recommendations

It is recommended that all drums be classified as contaminated, but non-hazardous and that they be sent off-site for disposal to a permitted water treatment facility. The TCLP/Characteristic test results for both composite samples show that no chemical was detected in levels that required a labeling of hazardous. Table 5.2 presents a summary of each drum and the recommended disposal options for the waste streams presented and previously discussed.

Table 5.2. Summary of Drum Containers, TCLP/Characteristic Waste Criteria, and Disposal Recommendations

Drum Container Label	Media	TCLP Criteria	Disposal Recommendation
EQM 2009-18	Water	Maximum Concentration of Contaminants NOT exceeded	Off-Site Non-Hazardous Disposal
EQM 2009-19	Water	Maximum Concentration of Contaminants NOT exceeded	Off-Site Non-Hazardous Disposal
EQM 2009-20	Water	Maximum Concentration of Contaminants NOT exceeded	Off-Site Non-Hazardous Disposal
EQM 2009-21	Water	Maximum Concentration of Contaminants NOT exceeded	Off-Site Non-Hazardous Disposal
EQM 2009-22	Water	Maximum Concentration of Contaminants NOT exceeded	Off-Site Non-Hazardous Disposal

6.0 REFERENCES

SAIC, 2001. *Facility-Wide Sampling and Analysis Plan for Environmental Investigations at the Ravenna Army Ammunition Plant, Ravenna, Ohio.*

Portage Environmental, 2004, *RVAAP Facility Wide Groundwater Monitoring Program Plan.*

APPENDIX 1

INVESTIGATION-DERIVED WASTE ANALYTICAL REPORT

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 30240.0006

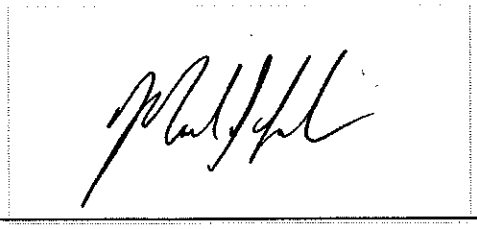
RVAAP (OH)

Lot #: A9J230108

Erik Corbin

Environmental Quality Mgt., I
1800 Carillon Blvd
Cincinnati, OH 45240

TESTAMERICA LABORATORIES, INC.



Approved for release.
Mark J. Loeb
Project Manager II
11/10/2009 2:00 PM

Mark J. Loeb
Project Manager
mark.loeb@testamericainc.com

November 10, 2009

CASE NARRATIVE

A9J230108

The following report contains the analytical results for two water samples and one quality control sample submitted to TestAmerica North Canton by Environmental Quality Mgt., Inc. from the RVAAP (OH) Site, project number 30240.0006. The samples were received October 22, 2009, according to documented sample acceptance procedures.

The Reactive Cyanide and Reactive Sulfide analysis was performed at the Test America Buffalo Laboratory.

TestAmerica utilizes USEPA approved methods 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. Preliminary results were provided to Angye Dragotta, Erik Corbin and Jackie Doan on November 09, 2009. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North 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.

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.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Mark J. Loeb, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 1.2°C.

GC/MS VOLATILES

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "B". All target analytes in the Method Blank must be below the reporting limit (RL) or the associated sample(s) must be ND with the exception of common laboratory contaminants.

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

There were no client requested Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples in batch 9303475. Therefore, the laboratory has included a Laboratory Control Sample Duplicate (LCSD) in the QC batch. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system.

GC/MS SEMIVOLATILES

There were no client requested Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples in batch 9301040. Therefore, the laboratory has included a Laboratory Control Sample Duplicate (LCSD) in the QC batch. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system.

METALS

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

GENERAL CHEMISTRY

The analytical results met the requirements of the laboratory's QA/QC program.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available ~~upon request.~~
California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit

EXECUTIVE SUMMARY - Detection Highlights

A9J230108

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
FWG-IDW-MWPURGEOCT2009 10/22/09 13:00 001				
Barium - TCLP	0.085 B	10.0	mg/L	SW846 6010B
2-Butanone (MEK)	0.052 J,B	0.25	mg/L	SW846 8260B
Flashpoint	>180		deg F	SW846 1010
pH (liquid)	7.9		No Units	SW846 9040B
FWG-IDW-MWDECONOCT2009 10/22/09 13:15 002				
Barium - TCLP	0.0027 B	10.0	mg/L	SW846 6010B
2-Butanone (MEK)	0.11 J,B	0.25	mg/L	SW846 8260B
Flashpoint	>180		deg F	SW846 1010
pH (liquid)	8.9		No Units	SW846 9040B

ANALYTICAL METHODS SUMMARY

A9J230108

PARAMETER	ANALYTICAL METHOD
pH Aqueous	SW846 9040B
Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A
Pensky-Martens Method for Determining Ignitability	SW846 1010
Semivolatile Organic Compounds by GC/MS	SW846 8270C
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

A9J230108

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LM5V3	001	FWG-IDW-MWPURGEOCT2009	10/22/09	13:00
LM5WC	002	FWG-IDW-MWDECONOCT2009	10/22/09	13:15
LM5WE	003	TRIP BLANK	10/22/09	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-MWPURGEOCT2009

TCLP GC/MS Volatiles

Lot-Sample #...: A9J230108-001 **Work Order #...:** LM5V31AA **Matrix.....:** WG
Date Sampled...: 10/22/09 13:00 **Date Received..:** 10/22/09
Leach Date.....: 10/27/09 **Prep Date.....:** 10/29/09 **Analysis Date..:** 10/29/09
Leach Batch #..: P930007 **Prep Batch #...:** 9303476
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	0.025	mg/L	0.00013
2-Butanone (MEK)	**0.052 J,B**	**0.25**	**mg/L**	**0.00057**
Carbon tetrachloride	ND	0.025	mg/L	0.00013
Chlorobenzene	ND	0.025	mg/L	0.00015
Chloroform	ND	0.025	mg/L	0.00016
1,2-Dichloroethane	ND	0.025	mg/L	0.00022
1,1-Dichloroethylene	ND	0.070	mg/L	0.00019
Tetrachloroethylene	ND	0.070	mg/L	0.00029
Trichloroethylene	ND	0.050	mg/L	0.00017
Vinyl chloride	ND	0.025	mg/L	0.00022

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(86 - 125)
1,2-Dichloroethane-d4	93	(80 - 122)
Toluene-d8	99	(90 - 122)
4-Bromofluorobenzene	99	(84 - 125)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-MWPURGEOCT2009

TCLP GC/MS Semivolatiles

Lot-Sample #...: A9J230108-001 **Work Order #...:** LM5V31AD **Matrix.....:** WG
Date Sampled...: 10/22/09 13:00 **Date Received..:** 10/22/09
Leach Date.....: 10/27/09 **Prep Date.....:** 10/28/09 **Analysis Date..:** 10/30/09
Leach Batch #..: P930005 **Prep Batch #...:** 9301040
Dilution Factor: 1
Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
o-Cresol	ND	0.0040	mg/L	0.00080
m-Cresol & p-Cresol	ND	0.040	mg/L	0.00075
1,4-Dichlorobenzene	ND	0.0040	mg/L	0.00034
2,4-Dinitrotoluene	ND	0.020	mg/L	0.00027
Hexachlorobenzene	ND	0.020	mg/L	0.00010
Hexachlorobutadiene	ND	0.020	mg/L	0.00027
Hexachloroethane	ND	0.020	mg/L	0.00080
Nitrobenzene	ND	0.0040	mg/L	0.000040
Pentachlorophenol	ND	0.040	mg/L	0.0024
Pyridine	ND	0.020	mg/L	0.00035
2,4,5-Trichloro-phenol	ND	0.020	mg/L	0.00030
2,4,6-Trichloro-phenol	ND	0.020	mg/L	0.00080

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	67	(27 - 110)
2-Fluorobiphenyl	68	(20 - 110)
Terphenyl-d14	84	(44 - 110)
Phenol-d5	48	(10 - 110)
2-Fluorophenol	57	(10 - 110)
2,4,6-Tribromophenol	70	(28 - 110)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-MWPURGEOCT2009

TCLP Metals

Lot-Sample #...: A9J230108-001 **Matrix.....:** WG
Date Sampled...: 10/22/09 13:00 **Date Received..:** 10/22/09
Leach Date.....: 10/27/09 **Leach Batch #..:** P930005

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9302024						
Mercury	ND	0.0020	mg/L	SW846 7470A	10/29/09	LM5V31AN
		Dilution Factor: 1		MDL.....: 0.00012		
Arsenic	ND	0.50	mg/L	SW846 6010B	10/29-10/31/09	LM5V31AF
		Dilution Factor: 1		MDL.....: 0.0032		
Barium	**0.085 B**	**10.0**	**mg/L**	**SW846 6010B**	**10/29-10/31/09**	**LM5V31AG**
		Dilution Factor: 1		MDL.....: 0.00067		
Cadmium	ND	0.10	mg/L	SW846 6010B	10/29-10/31/09	LM5V31AH
		Dilution Factor: 1		MDL.....: 0.00066		
Chromium	ND	0.50	mg/L	SW846 6010B	10/29-10/31/09	LM5V31AJ
		Dilution Factor: 1		MDL.....: 0.0022		
Lead	ND	0.50	mg/L	SW846 6010B	10/29-10/31/09	LM5V31AK
		Dilution Factor: 1		MDL.....: 0.0019		
Selenium	ND	0.25	mg/L	SW846 6010B	10/29-10/31/09	LM5V31AL
		Dilution Factor: 1		MDL.....: 0.0041		
Silver	ND	0.50	mg/L	SW846 6010B	10/29-10/31/09	LM5V31AM
		Dilution Factor: 1		MDL.....: 0.0022		

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

B Estimated result. Result is less than RL.

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-MWPURGEOCT2009

General Chemistry

Lot-Sample #...: A9J230108-001 **Work Order #...:** LM5V3 **Matrix.....:** WG
Date Sampled...: 10/22/09 13:00 **Date Received..:** 10/22/09

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)	7.9		No Units	SW846 9040B	10/23/09	9296580
	Dilution Factor: 1		MDL.....:			
Flashpoint	>180		deg F	SW846 1010	11/02/09	9306471
	Dilution Factor: 1		MDL.....:			

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-MWDECONOCT2009

TCLP GC/MS Volatiles

Lot-Sample #...: A9J230108-002 **Work Order #...:** LM5WC1AA **Matrix.....:** WG
Date Sampled...: 10/22/09 13:15 **Date Received..:** 10/22/09
Leach Date.....: 10/27/09 **Prep Date.....:** 10/29/09 **Analysis Date..:** 10/29/09
Leach Batch #..: P930007 **Prep Batch #...:** 9303476
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	0.025	mg/L	0.00013
2-Butanone (MEK)	**0.11 J,B**	**0.25**	**mg/L**	**0.00057**
Carbon tetrachloride	ND	0.025	mg/L	0.00013
Chlorobenzene	ND	0.025	mg/L	0.00015
Chloroform	ND	0.025	mg/L	0.00016
1,2-Dichloroethane	ND	0.025	mg/L	0.00022
1,1-Dichloroethylene	ND	0.070	mg/L	0.00019
Tetrachloroethylene	ND	0.070	mg/L	0.00029
Trichloroethylene	ND	0.050	mg/L	0.00017
Vinyl chloride	ND	0.025	mg/L	0.00022

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(86 - 125)
1,2-Dichloroethane-d4	92	(80 - 122)
Toluene-d8	98	(90 - 122)
4-Bromofluorobenzene	98	(84 - 125)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-MWDECONOCT2009

TCLP GC/MS Semivolatiles

Lot-Sample #...: A9J230108-002 **Work Order #...:** LM5WC1AD **Matrix.....:** WG
Date Sampled...: 10/22/09 13:15 **Date Received..:** 10/22/09
Leach Date.....: 10/27/09 **Prep Date.....:** 10/28/09 **Analysis Date..:** 10/30/09
Leach Batch #..: P930005 **Prep Batch #...:** 9301040
Dilution Factor: 1
Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
o-Cresol	ND	0.0040	mg/L	0.00080
m-Cresol & p-Cresol	ND	0.040	mg/L	0.00075
1,4-Dichlorobenzene	ND	0.0040	mg/L	0.00034
2,4-Dinitrotoluene	ND	0.020	mg/L	0.00027
Hexachlorobenzene	ND	0.020	mg/L	0.00010
Hexachlorobutadiene	ND	0.020	mg/L	0.00027
Hexachloroethane	ND	0.020	mg/L	0.00080
Nitrobenzene	ND	0.0040	mg/L	0.000040
Pentachlorophenol	ND	0.040	mg/L	0.0024
Pyridine	ND	0.020	mg/L	0.00035
2,4,5-Trichloro-phenol	ND	0.020	mg/L	0.00030
2,4,6-Trichloro-phenol	ND	0.020	mg/L	0.00080

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	64	(27 - 110)
2-Fluorobiphenyl	66	(20 - 110)
Terphenyl-d14	81	(44 - 110)
Phenol-d5	49	(10 - 110)
2-Fluorophenol	49	(10 - 110)
2,4,6-Tribromophenol	79	(28 - 110)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-MWDECONOCT2009

TCLP Metals

Lot-Sample #...: A9J230108-002 **Matrix.....:** WG
Date Sampled...: 10/22/09 13:15 **Date Received..:** 10/22/09
Leach Date.....: 10/27/09 **Leach Batch #..:** P930005

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9302024						
Mercury	ND	0.0020	mg/L	SW846 7470A	10/29/09	LM5WC1AN
		Dilution Factor: 1		MDL.....: 0.00012		
Arsenic	ND	0.50	mg/L	SW846 6010B	10/29-10/31/09	LM5WC1AF
		Dilution Factor: 1		MDL.....: 0.0032		
Barium	**0.0027 B**	**10.0**	**mg/L**	**SW846 6010B**	**10/29-10/31/09**	**LM5WC1AG**
		Dilution Factor: 1		MDL.....: 0.00067		
Cadmium	ND	0.10	mg/L	SW846 6010B	10/29-10/31/09	LM5WC1AH
		Dilution Factor: 1		MDL.....: 0.00066		
Chromium	ND	0.50	mg/L	SW846 6010B	10/29-10/31/09	LM5WC1AJ
		Dilution Factor: 1		MDL.....: 0.0022		
Lead	ND	0.50	mg/L	SW846 6010B	10/29-10/31/09	LM5WC1AK
		Dilution Factor: 1		MDL.....: 0.0019		
Selenium	ND	0.25	mg/L	SW846 6010B	10/29-10/31/09	LM5WC1AL
		Dilution Factor: 1		MDL.....: 0.0041		
Silver	ND	0.50	mg/L	SW846 6010B	10/29-10/31/09	LM5WC1AM
		Dilution Factor: 1		MDL.....: 0.0022		

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

B Estimated result. Result is less than RL.

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-MWDECONOCT2009

General Chemistry

Lot-Sample #...: A9J230108-002 **Work Order #...:** LM5WC **Matrix.....:** WG
Date Sampled...: 10/22/09 13:15 **Date Received..:** 10/22/09

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)	8.9		No Units	SW846 9040B	10/23/09	9296580
	Dilution Factor: 1			MDL.....:		
Flashpoint	>180		deg F	SW846 1010	11/02/09	9306471
	Dilution Factor: 1			MDL.....:		

Environmental Quality Mgt., Inc.

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: A9J230108-003 **Work Order #...:** LM5WE1AA **Matrix.....:** WQ
Date Sampled...: 10/22/09 **Date Received..:** 10/22/09
Prep Date.....: 10/29/09 **Analysis Date..:** 10/29/09
Prep Batch #...: 9303475
Dilution Factor: 1 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	5.0	ug/L	0.13
2-Butanone (MEK)	ND	20	ug/L	0.57
Carbon tetrachloride	ND	5.0	ug/L	0.13
Chlorobenzene	ND	5.0	ug/L	0.15
Chloroform	ND	5.0	ug/L	0.16
1,2-Dichloroethane	ND	5.0	ug/L	0.22
1,1-Dichloroethylene	ND	5.0	ug/L	0.19
Tetrachloroethylene	ND	5.0	ug/L	0.29
Trichloroethylene	ND	5.0	ug/L	0.17
Vinyl chloride	ND	5.0	ug/L	0.22

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(78 - 115)
1,2-Dichloroethane-d4	89	(77 - 120)
Toluene-d8	97	(78 - 111)
4-Bromofluorobenzene	98	(80 - 114)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

QUALITY CONTROL SECTION

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A9J230108 **Work Order #...:** LNK221AA **Matrix.....:** WATER
MB Lot-Sample #: A9J300000-475

Prep Date.....: 10/29/09
Analysis Date..: 10/29/09 **Prep Batch #...:** 9303475
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	5.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	5.0	ug/L	SW846 8260B
Chlorobenzene	ND	5.0	ug/L	SW846 8260B
Chloroform	ND	5.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	5.0	ug/L	SW846 8260B
1,1-Dichloroethylene	ND	5.0	ug/L	SW846 8260B
Tetrachloroethylene	ND	5.0	ug/L	SW846 8260B
Trichloroethylene	ND	5.0	ug/L	SW846 8260B
Vinyl chloride	ND	5.0	ug/L	SW846 8260B
2-Butanone (MEK)	**3.1 J**	**20**	**ug/L**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	93	(78 - 115)
1,2-Dichloroethane-d4	92	(77 - 120)
Toluene-d8	98	(78 - 111)
4-Bromofluorobenzene	99	(80 - 114)

NOTE(S):

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

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

TCLP GC/MS Volatiles

Client Lot #...: A9J230108 **Work Order #...:** LNK3L1AA **Matrix.....:** WATER
MB Lot-Sample #: A9J300000-476
Leach Date.....: 10/27/09 **Prep Date.....:** 10/29/09 **Analysis Date..:** 10/29/09
Leach Batch #..: P930007 **Prep Batch #...:** 9303476
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	0.025	mg/L	SW846 8260B
2-Butanone (MEK)	**0.039 J**	**0.25**	**mg/L**	**SW846 8260B**
Carbon tetrachloride	ND	0.025	mg/L	SW846 8260B
Chlorobenzene	ND	0.025	mg/L	SW846 8260B
Chloroform	ND	0.025	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.025	mg/L	SW846 8260B
1,1-Dichloroethylene	ND	0.070	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.070	mg/L	SW846 8260B
Trichloroethylene	ND	0.050	mg/L	SW846 8260B
Vinyl chloride	ND	0.025	mg/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	96	(86 - 125)
1,2-Dichloroethane-d4	95	(80 - 122)
Toluene-d8	101	(90 - 122)
4-Bromofluorobenzene	100	(84 - 125)

NOTE(S):

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

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

TCLP GC/MS Semivolatiles

Client Lot #...: A9J230108 **Work Order #...:** LNDKR1AA **Matrix.....:** WATER
MB Lot-Sample #: A9J280000-040
Leach Date.....: 10/27/09 **Prep Date.....:** 10/28/09 **Analysis Date..:** 10/30/09
Leach Batch #..: P930005 **Prep Batch #...:** 9301040
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
o-Cresol	ND	0.0040	mg/L	SW846 8270C
m-Cresol & p-Cresol	ND	0.040	mg/L	SW846 8270C
1,4-Dichlorobenzene	ND	0.0040	mg/L	SW846 8270C
2,4-Dinitrotoluene	ND	0.020	mg/L	SW846 8270C
Hexachlorobenzene	ND	0.020	mg/L	SW846 8270C
Hexachlorobutadiene	ND	0.020	mg/L	SW846 8270C
Hexachloroethane	ND	0.020	mg/L	SW846 8270C
Nitrobenzene	ND	0.0040	mg/L	SW846 8270C
Pentachlorophenol	ND	0.040	mg/L	SW846 8270C
Pyridine	ND	0.020	mg/L	SW846 8270C
2,4,5-Trichloro-phenol	ND	0.020	mg/L	SW846 8270C
2,4,6-Trichloro-phenol	ND	0.020	mg/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	79	(27 - 110)
2-Fluorobiphenyl	76	(20 - 110)
Terphenyl-d14	85	(44 - 110)
Phenol-d5	56	(10 - 110)
2-Fluorophenol	62	(10 - 110)
2,4,6-Tribromophenol	71	(28 - 110)

NOTE(S):

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

METHOD BLANK REPORT

TCLP Metals

Client Lot #...: A9J230108 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A9J270000-259 **Prep Batch #...:** 9302024						
Leach Date.....: 10/27/09 **Leach Batch #..:** P930005						
Mercury	ND	0.0020	mg/L	SW846 7470A	10/29/09	LNA9J1AK
		Dilution Factor: 1				
Arsenic	ND	0.50	mg/L	SW846 6010B	10/29-10/31/09	LNA9J1AC
		Dilution Factor: 1				
Barium	**0.0015 B**	**10.0**	**mg/L**	**SW846 6010B**	**10/29-10/31/09**	**LNA9J1AD**
		Dilution Factor: 1				
Cadmium	ND	0.10	mg/L	SW846 6010B	10/29-10/31/09	LNA9J1AE
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	10/29-10/31/09	LNA9J1AF
		Dilution Factor: 1				
Lead	ND	0.50	mg/L	SW846 6010B	10/29-10/31/09	LNA9J1AG
		Dilution Factor: 1				
Selenium	ND	0.25	mg/L	SW846 6010B	10/29-10/31/09	LNA9J1AH
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	10/29-10/31/09	LNA9J1AJ
		Dilution Factor: 1				

NOTE(S):

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

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

TCLP Metals

Client Lot #...: A9J230108 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A9J290000-024 **Prep Batch #...:** 9302024						
Mercury	ND	0.0020	mg/L	SW846 7470A	10/29/09	LNF1W1AJ
		Dilution Factor: 1				
Arsenic	ND	0.50	mg/L	SW846 6010B	10/29-10/31/09	LNF1W1AA
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	10/29-10/31/09	LNF1W1AC
		Dilution Factor: 1				
Cadmium	ND	0.10	mg/L	SW846 6010B	10/29-10/31/09	LNF1W1AD
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	10/29-10/31/09	LNF1W1AE
		Dilution Factor: 1				
Lead	ND	0.50	mg/L	SW846 6010B	10/29-10/31/09	LNF1W1AF
		Dilution Factor: 1				
Selenium	ND	0.25	mg/L	SW846 6010B	10/29-10/31/09	LNF1W1AG
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	10/29-10/31/09	LNF1W1AH
		Dilution Factor: 1				

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A9J230108 **Work Order #...:** LNK221AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A9J300000-475 LNK221AD-LCSD
Prep Date.....: 10/29/09 **Analysis Date..:** 10/29/09
Prep Batch #...: 9303475
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Vinyl chloride	80	(55 - 121)			SW846 8260B
	82	(55 - 121)	2.4	(0-30)	SW846 8260B
1,1-Dichloroethylene	**99**	**(65 - 119)**			**SW846 8260B**
	98	**(65 - 119)**	**0.80**	**(0-20)**	**SW846 8260B**
Chloroform	101	(87 - 119)			SW846 8260B
	100	(87 - 119)	0.89	(0-30)	SW846 8260B
1,2-Dichloroethane	99	(83 - 122)			SW846 8260B
	100	(83 - 122)	0.87	(0-30)	SW846 8260B
2-Butanone (MEK)	106	(53 - 173)			SW846 8260B
	109	(53 - 173)	3.0	(0-40)	SW846 8260B
Carbon tetrachloride	96	(81 - 126)			SW846 8260B
	95	(81 - 126)	1.3	(0-30)	SW846 8260B
Trichloroethylene	**93**	**(80 - 122)**			**SW846 8260B**
	95	**(80 - 122)**	**1.7**	**(0-20)**	**SW846 8260B**
Benzene	**97**	**(79 - 116)**			**SW846 8260B**
	98	**(79 - 116)**	**1.1**	**(0-20)**	**SW846 8260B**
Tetrachloroethylene	103	(83 - 116)			SW846 8260B
	102	(83 - 116)	1.2	(0-30)	SW846 8260B
Chlorobenzene	**102**	**(81 - 115)**			**SW846 8260B**
	101	**(81 - 115)**	**1.1**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	93	(78 - 115)
	95	(78 - 115)
1,2-Dichloroethane-d4	90	(77 - 120)
	96	(77 - 120)
Toluene-d8	99	(78 - 111)
	97	(78 - 111)
4-Bromofluorobenzene	101	(80 - 114)
	98	(80 - 114)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A9J230108 **Work Order #...:** LNK3L1AC **Matrix.....:** WATER
LCS Lot-Sample#: A9J300000-476
Prep Date.....: 10/29/09 **Analysis Date..:** 10/29/09
Prep Batch #...: 9303476
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**96**	**(76 - 118)**	**SW846 8260B**
2-Butanone (MEK)	100	(40 - 110)	SW846 8260B
Carbon tetrachloride	86	(71 - 124)	SW846 8260B
Chlorobenzene	**101**	**(76 - 113)**	**SW846 8260B**
Chloroform	101	(82 - 117)	SW846 8260B
1,2-Dichloroethane	103	(78 - 122)	SW846 8260B
1,1-Dichloroethylene	**93**	**(67 - 128)**	**SW846 8260B**
Tetrachloroethylene	98	(64 - 121)	SW846 8260B
Trichloroethylene	**92**	**(76 - 119)**	**SW846 8260B**
Vinyl chloride	76	(47 - 123)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	97	(86 - 124)
1,2-Dichloroethane-d4	92	(80 - 122)
Toluene-d8	101	(90 - 122)
4-Bromofluorobenzene	102	(84 - 125)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9J230108 Work Order #...: LNDKR1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: A9J280000-040 LNDKR1AD-LCSD
Prep Date.....: 10/28/09 Analysis Date..: 10/30/09
Prep Batch #...: 9301040
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
o-Cresol	73	(23 - 110)			SW846 8270C
	70	(23 - 110)	3.9	(0-30)	SW846 8270C
m-Cresol & p-Cresol	74	(28 - 110)			SW846 8270C
	71	(28 - 110)	4.3	(0-30)	SW846 8270C
1,4-Dichlorobenzene	68	(13 - 110)			SW846 8270C
	66	(13 - 110)	2.9	(0-30)	SW846 8270C
2,4-Dinitrotoluene	85	(45 - 119)			SW846 8270C
	86	(45 - 119)	1.4	(0-30)	SW846 8270C
Hexachlorobenzene	77	(46 - 112)			SW846 8270C
	77	(46 - 112)	0.0	(0-30)	SW846 8270C
Hexachlorobutadiene	64	(10 - 110)			SW846 8270C
	67	(10 - 110)	3.8	(0-30)	SW846 8270C
Hexachloroethane	63	(10 - 110)			SW846 8270C
	62	(10 - 110)	2.1	(0-30)	SW846 8270C
Nitrobenzene	74	(29 - 118)			SW846 8270C
	72	(29 - 118)	2.8	(0-30)	SW846 8270C
Pentachlorophenol	42	(10 - 116)			SW846 8270C
	42	(10 - 116)	0.27	(0-30)	SW846 8270C
Pyridine	81	(15 - 110)			SW846 8270C
	73	(15 - 110)	9.6	(0-30)	SW846 8270C
2,4,5-Trichloro-phenol	73	(36 - 110)			SW846 8270C
	69	(36 - 110)	6.3	(0-30)	SW846 8270C
2,4,6-Trichloro-phenol	70	(32 - 110)			SW846 8270C
	71	(32 - 110)	1.1	(0-30)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	77	(27 - 110)
	75	(27 - 110)
2-Fluorobiphenyl	75	(20 - 110)
	75	(20 - 110)
Terphenyl-d14	83	(44 - 110)
	85	(44 - 110)
Phenol-d5	60	(10 - 110)
	57	(10 - 110)
2-Fluorophenol	70	(10 - 110)

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9J230108 **Work Order #...:** LNDKR1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A9J280000-040 LNDKR1AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
	66	(10 - 110)
2,4,6-Tribromophenol	73	(28 - 110)
	73	(28 - 110)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #...: A9J230108 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A9J290000-024 **Prep Batch #...:** 9302024					
Mercury	105	(50 - 150)	SW846 7470A Dilution Factor: 1	10/29/09	LNF1W1AT
Arsenic	109	(50 - 150)	SW846 6010B Dilution Factor: 1	10/29-10/31/09	LNF1W1AK
Barium	104	(50 - 150)	SW846 6010B Dilution Factor: 1	10/29-10/31/09	LNF1W1AL
Cadmium	103	(50 - 150)	SW846 6010B Dilution Factor: 1	10/29-10/31/09	LNF1W1AM
Chromium	103	(50 - 150)	SW846 6010B Dilution Factor: 1	10/29-10/31/09	LNF1W1AN
Lead	104	(50 - 150)	SW846 6010B Dilution Factor: 1	10/29-10/31/09	LNF1W1AP
Selenium	107	(50 - 150)	SW846 6010B Dilution Factor: 1	10/29-10/31/09	LNF1W1AQ
Silver	107	(50 - 150)	SW846 6010B Dilution Factor: 1	10/29-10/31/09	LNF1W1AR

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A9J230108 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)		Work Order #: LM7381AA	LCS Lot-Sample#: A9J230000-580		
	99	(97 - 103)	SW846 9040B	10/23/09	9296580
		Dilution Factor: 1			

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

TCLP GC/MS Volatiles

Client Lot #...: A9J230108 **Work Order #...:** LM5WC1AU-MS **Matrix.....:** WG
MS Lot-Sample #: A9J230108-002 LM5WC1AV-MSD
Date Sampled...: 10/22/09 13:15 **Date Received..:** 10/22/09
Leach Date.....: 10/27/09 **Prep Date.....:** 10/29/09 **Analysis Date..:** 10/29/09
Leach Batch #..: P930007 **Prep Batch #...:** 9303476
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**100**	**(76 - 117)**			**SW846 8260B**
	99	**(76 - 117)**	**0.29**	**(0-30)**	**SW846 8260B**
2-Butanone (MEK)	98	(37 - 110)			SW846 8260B
	99	(37 - 110)	0.55	(0-30)	SW846 8260B
Carbon tetrachloride	90	(72 - 124)			SW846 8260B
	90	(72 - 124)	1.1	(0-30)	SW846 8260B
Chlorobenzene	**104**	**(72 - 114)**			**SW846 8260B**
	104	**(72 - 114)**	**0.32**	**(0-30)**	**SW846 8260B**
Chloroform	104	(82 - 117)			SW846 8260B
	103	(82 - 117)	1.2	(0-30)	SW846 8260B
1,2-Dichloroethane	105	(80 - 120)			SW846 8260B
	102	(80 - 120)	2.2	(0-30)	SW846 8260B
1,1-Dichloroethylene	**100**	**(67 - 129)**			**SW846 8260B**
	97	**(67 - 129)**	**2.6**	**(0-30)**	**SW846 8260B**
Tetrachloroethylene	105	(60 - 119)			SW846 8260B
	104	(60 - 119)	1.5	(0-30)	SW846 8260B
Trichloroethylene	**98**	**(72 - 121)**			**SW846 8260B**
	96	**(72 - 121)**	**1.4**	**(0-30)**	**SW846 8260B**
Vinyl chloride	81	(54 - 118)			SW846 8260B
	79	(54 - 118)	3.2	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	97	(86 - 125)
	96	(86 - 125)
1,2-Dichloroethane-d4	94	(80 - 122)
	93	(80 - 122)
Toluene-d8	100	(90 - 122)
	102	(90 - 122)
4-Bromofluorobenzene	101	(84 - 125)
	102	(84 - 125)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #...: A9J230108 **Matrix.....:** WG
Date Sampled...: 10/22/09 13:00 **Date Received..:** 10/22/09

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A9J230108-001 **Prep Batch #...:** 9302024					
Mercury	100	(50 - 150)	SW846 7470A Dilution Factor: 1	10/29/09	LM5V31A4
Arsenic	109	(50 - 150)	SW846 6010B Dilution Factor: 5	10/29-10/31/09	LM5V31AV
Barium	103	(50 - 150)	SW846 6010B Dilution Factor: 5	10/29-10/31/09	LM5V31AW
Cadmium	104	(50 - 150)	SW846 6010B Dilution Factor: 5	10/29-10/31/09	LM5V31AX
Chromium	103	(50 - 150)	SW846 6010B Dilution Factor: 5	10/29-10/31/09	LM5V31A0
Lead	107	(50 - 150)	SW846 6010B Dilution Factor: 5	10/29-10/31/09	LM5V31A1
Selenium	105	(50 - 150)	SW846 6010B Dilution Factor: 5	10/29-10/31/09	LM5V31A2
Silver	95	(50 - 150)	SW846 6010B Dilution Factor: 5	10/29-10/31/09	LM5V31A3

NOTE(S):

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

SAMPLE DUPLICATE EVALUATION REPORT

Metals

Client Lot #...: A9J230108 **Work Order #...:** LM5V3-SMP LM5V3-DUP **Matrix.....:** WG

Date Sampled...: 10/22/09 13:00 **Date Received..:** 10/22/09

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Mercury						SD Lot-Sample #: A9J230108-001		
	ND	ND	mg/L	0	(0-20)	SW846 7470A	10/29/09	9302024
			Dilution Factor: 1					
Arsenic						SD Lot-Sample #: A9J230108-001		
	ND	ND	mg/L	0	(0-20)	SW846 6010B	10/29-10/31/09	9302024
			Dilution Factor: 1					
Barium						SD Lot-Sample #: A9J230108-001		
	0.085 B	0.091 B	mg/L	6.2	(0-20)	SW846 6010B	10/29-10/31/09	9302024
			Dilution Factor: 1					
Cadmium						SD Lot-Sample #: A9J230108-001		
	ND	ND	mg/L	0	(0-20)	SW846 6010B	10/29-10/31/09	9302024
			Dilution Factor: 1					
Chromium						SD Lot-Sample #: A9J230108-001		
	ND	ND	mg/L	0	(0-20)	SW846 6010B	10/29-10/31/09	9302024
			Dilution Factor: 1					
Lead						SD Lot-Sample #: A9J230108-001		
	ND	ND	mg/L	0	(0-20)	SW846 6010B	10/29-10/31/09	9302024
			Dilution Factor: 1					
Selenium						SD Lot-Sample #: A9J230108-001		
	ND	ND	mg/L	0	(0-20)	SW846 6010B	10/29-10/31/09	9302024
			Dilution Factor: 1					
Silver						SD Lot-Sample #: A9J230108-001		
	ND	ND	mg/L	0	(0-20)	SW846 6010B	10/29-10/31/09	9302024
			Dilution Factor: 1					

NOTE(S):

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

B Estimated result. Result is less than RL.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A9J230108 **Work Order #...:** LM6X0-SMP **Matrix.....:** WATER
LM6X0-DUP

Date Sampled...: 10/22/09 13:05 **Date Received..:** 10/23/09

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)						SD Lot-Sample #: A9J230193-003		
	7.7	7.8	No Units	0.78	(0-20)	SW846 9040B	10/23/09	9296580

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A9J230108 **Work Order #...:** LM7JV-SMP LM7JV-DUP **Matrix.....:** WATER

Date Sampled...: 10/22/09 13:05 **Date Received..:** 10/23/09

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)						SD Lot-Sample #: A9J230263-001		
	7.4	7.4	No Units	0.13	(0-20)	SW846 9040B	10/23/09	9296580

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A9J230108 **Work Order #...:** LM5V3-SMP LM5V3-DUP **Matrix.....:** WG

Date Sampled...: 10/22/09 13:00 **Date Received..:** 10/22/09

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Flashpoint						SD Lot-Sample #: A9J230108-001		
	>180	>180	deg F	0.0	(0-20)	SW846 1010	11/02/09	9306471
			Dilution Factor: 1					
pH (liquid)						SD Lot-Sample #: A9J230108-001		
	7.9	7.9	No Units	0.13	(0-20)	SW846 9040B	10/23/09	9296580
			Dilution Factor: 1					

Chain of Custody Record

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client: EQM	Project Manager: John Miller	Date: 10/22/09	Chain of Custody Number: 117230
Address: 1800 Carillon Blvd	Telephone Number (Area Code)/Fax Number: 513 825 7500 (fax 7495)	Lab Number: 330497396	Page 1 of 1
City: Cincinnati / State: OH / Zip Code: 45240	Site Contact: E Corbin	Lab Contact: M Loeb	
Project Name and Location (State): RVAAP (OH) EQPN 30240.0006	Carrier/Waybill Number: M/A Lab Pickup		
Contract/Purchase Order/Quote No.: PO 151000			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: TCLP VOCs	TCLP SVOCs	TCLP Metals	Reactive Sulfide	pH	Ignitability	Special Instructions/ Conditions of Receipt
FWG-IDW-MW PURGE OCT 2009	10/22/09	1300		X			5						X	X	X	X	X	Y	
FWG-IDW-MW DECON OCT 2009	10/22/09	1315		X			5						X	X	X	X	X	Y	

Possible Hazard Identification: [X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown

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

Turn Around Time Required: [ ] 24 Hours [ ] 48 Hours [ ] 7 Days [X] 14 Days [X] 21 Days [ ] Other

QC Requirements (Specify): FULL SOW EC 10/22/09

	Date	Time		Date	Time
1. Relinquished By	10/22	1342	1. Received By	22009	1342
2. Relinquished By	↓	1445	2. Received By	10/22/09	1445
3. Relinquished By			3. Received By		

Comments:

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

TestAmerica Cooler Receipt Form/Narrative **Lot Number:** 480-9230 108
North Canton Facility

Client EQM Project IDW By: Elena Mang (Signature)
Cooler Received on 10/22/09 Opened on 10/22/09
FedEx ☐ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☒ Other ____
TestAmerica Cooler # 1DW Multiple Coolers ☐ Foam Box ☐ Client Cooler ☐ Other ____

1. Were custody seals on the outside of the cooler(s)? Yes ☒ No ☐ Intact? Yes ☒ No ☐ NA ☐
   If YES, Quantity ____ Quantity Unsalvageable ____
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☒ No ☐ NA ☐
   Were custody seals on the bottle(s)? Yes ☐ No ☒
   If YES, are there any exceptions? ____
2. Shippers' packing slip attached to the cooler(s)? Yes ☐ No ☒
3. Did custody papers accompany the sample(s)? Yes ☒ No ☐ Relinquished by client? Yes ☒ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☒ No ☐
5. Packing material used: Bubble Wrap ☒ Foam ☐ None ☐ Other ____
6. Cooler temperature upon receipt 1.2 °C See back of form for multiple coolers/temps ☐
   METHOD: IR ☒ Other ☐ ____
   COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
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 sample(s) at the correct pH upon receipt? Yes ☐ No ☐ NA ☒
10. Were correct bottle(s) used for the test(s) indicated? Yes ☒ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☒ NA ☐
12. Sufficient quantity received to perform indicated analyses? Yes ☒ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☒ No ☐ Were VOAs on the COC? Yes ☐ No ☒

Contacted PM ____ Date ____ by ____ via Verbal ☐ Voice Mail ☐ Other ☐
Concerning ____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

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 Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot#* 031909-HNO_3; *Sulfuric Acid Lot#* 082509-H_2SO_4; *Sodium Hydroxide Lot#* 100108 -*NaOH; Hydrochloric Acid Lot#* 092006-*HCl; Sodium Hydroxide and Zinc Acetate Lot#* 100108-$(CH_3COO)_2ZN/NaOH$. What time was preservative added to sample(s)? ____

Client ID	pH	Date	Initials

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials

Cooler #	Temp. °C	Method	Coolant

Discrepancies Cont'd:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

BUFFALO DATA

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Analytical Report

SDG Number: A9J230108

Project Description(s)
Work Order RSJ1343 - Reactive Cyanide / Reactive Sulfide

For:

Mark Loeb
TestAmerica North Canton
4101 Shuffel Drive NW
North Canton, OH 44720

Sally Hoffman
Project Manager
Sally.Hoffman@testamericainc.com
Thursday, October 29, 2009

TestAmerica North Canton
4101 Shuffel Drive NW
North Canton, OH 44720

SDG Number: A9J230108

Project: Reactive Cyanide / Reactive Sulfide
Project Number: A9J230108

Received: 10/24/09
Reported: 10/29/09 09:10

TestAmerica Buffalo
Current Certifications

As of 1/27/2009

STATE	Program	Cert # / Lab ID
Arkansas	CWA, RCRA, SOIL	88-0686
California*	NELAP CWA, RCRA	01169CA
Connecticut	SDWA, CWA, RCRA, SOIL	PH-0568
Florida*	NELAP CWA, RCRA	E87672
Georgia*	SDWA,NELAP CWA, RCRA	956
Illinois*	NELAP SDWA, CWA, RCRA	200003
Iowa	SW/CS	374
Kansas*	NELAP SDWA, CWA, RCRA	E-10187
Kentucky	SDWA	90029
Kentucky UST	UST	30
Louisiana*	NELAP CWA, RCRA	2031
Maine	SDWA, CWA	NY0044
Maryland	SDWA	294
Massachusetts	SDWA, CWA	M-NY044
Michigan	SDWA	9937
Minnesota	SDWA,CWA, RCRA	036-999-337
New Hampshire*	NELAP SDWA, CWA	233701
New Jersey*	NELAP,SDWA, CWA, RCRA,	NY455
New York*	NELAP, AIR, SDWA, CWA, RCRA,CLP	10026
Oklahoma	CWA, RCRA	9421
Pennsylvania*	NELAP CWA,RCRA	68-00281
Tennessee	SDWA	02970
Texas*	NELAP CWA, RCRA	T104704412-08-TX
USDA	FOREIGN SOIL PERMIT	S-41579
USDOE	Department of Energy	DOECAP-STB
Virginia	SDWA	278
Washington*	NELAP CWA,RCRA	C1677
Wisconsin	CWA, RCRA	998310390
West Virginia	CWA,RCRA	252

*As required under the indicated accreditation, the test results in this report meet all NELAP requirements for parameters for which accre ditation is required or available. Any exceptions to NELAP requirements are noted in this report.

TestAmerica North Canton
4101 Shuffel Drive NW
North Canton, OH 44720

SDG Number: A9J230108

Project: Reactive Cyanide / Reactive Sulfide
Project Number: A9J230108

Received: 10/24/09
Reported: 10/29/09 09:10

CASE NARRATIVE

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. field-pH), they were not analyzed immediately, but as soon as possible after laboratory receipt.

A pertinent document is appended to this report, 1 page, is included and is an integral part of this report.

TestAmerica Laboratories, Inc. certifies that the analytical results contained herein apply only to the samples tested as received by our Laboratory.

TestAmerica North Canton
4101 Shuffel Drive NW
North Canton, OH 44720

SDG Number: A9J230108

Project: Reactive Cyanide / Reactive Sulfide
Project Number: A9J230108

Received: 10/24/09
Reported: 10/29/09 09:10

DATA QUALIFIERS AND DEFINITIONS

NR Any inclusion of NR indicates that the project specific requirements do not require reporting estimated values below the laboratory reporting limit.

TestAmerica North Canton
4101 Shuffel Drive NW
North Canton, OH 44720

SDG Number: A9J230108

Project: Reactive Cyanide / Reactive Sulfide
Project Number: A9J230108

Received: 10/24/09
Reported: 10/29/09 09:10

Executive Summary - Detections

Analyte	Sample Result	Data Qualifiers	RL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Client ID: FWG-IDW-MWDECONOCT2009 (RSJ1343-02 - Water)					**Sampled: 10/22/09 13:15**		**Recvd: 10/24/09 09:20**		
General Chemistry Parameters									
H2S Released From Waste	**10.0**		10.0	mg/L	1.00	10/28/09 10:00	RJP	9J28093	Section 7.3

TestAmerica North Canton
4101 Shuffel Drive NW
North Canton, OH 44720

SDG Number: A9J230108

Project: Reactive Cyanide / Reactive Sulfide
Project Number: A9J230108

Received: 10/24/09
Reported: 10/29/09 09:10

Sample Summary

Sample Identification	Lab Number	Client Matrix	Date/Time Sampled	Date/Time Received	Sample Qualifiers
FWG-IDW-MWDECONOCT2009	RSJ1343-02	Water	10/22/09 13:15	10/24/09 09:20	
FWG-IDW-MWPURGEOCT2009	RSJ1343-01	Water	10/22/09 13:00	10/24/09 09:20	

TestAmerica North Canton
4101 Shuffel Drive NW
North Canton, OH 44720

SDG Number: A9J230108

Project: Reactive Cyanide / Reactive Sulfide
Project Number: A9J230108

Received: 10/24/09
Reported: 10/29/09 09:10

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Client ID: FWG-IDW-MWDECONOCT2009 (RSJ1343-02 - Water)					**Sampled: 10/22/09 13:15**		**Recvd: 10/24/09 09:20**		
General Chemistry Parameters									
HCN Released From Waste	ND		10.0	mg/L	1.00	10/28/09 12:42	RJP	9J28087	Section 7.3
H2S Released From Waste	**10.0**		10.0	mg/L	1.00	10/28/09 10:00	RJP	9J28093	Section 7.3

TestAmerica North Canton
4101 Shuffel Drive NW
North Canton, OH 44720

SDG Number: A9J230108

Project: Reactive Cyanide / Reactive Sulfide
Project Number: A9J230108

Received: 10/24/09
Reported: 10/29/09 09:10

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Client ID: FWG-IDW-MWPURGEOCT2009 (RSJ1343-01 - Water)					**Sampled: 10/22/09 13:00**		**Recvd: 10/24/09 09:20**		
General Chemistry Parameters									
HCN Released From Waste	ND		10.0	mg/L	1.00	10/28/09 12:42	RJP	9J28087	Section 7.3
H2S Released From Waste	ND		10.0	mg/L	1.00	10/28/09 10:00	RJP	9J28093	Section 7.3

TestAmerica North Canton
4101 Shuffel Drive NW
North Canton, OH 44720

SDG Number: A9J230108

Project: Reactive Cyanide / Reactive Sulfide
Project Number: A9J230108

Received: 10/24/09
Reported: 10/29/09 09:10

SAMPLE EXTRACTION DATA

Parameter	Batch	Lab Number	Wt/Vol Extracte	Units	Extract Volume	Units	Date Prepared	Lab Tech	Extraction Method
General Chemistry Parameters									
Section 7.3	9J28093	RSJ1343-01	200.00	mL	200.00	mL	10/28/09 10:00	RJP	Reactivity
Section 7.3	9J28093	RSJ1343-02	200.00	mL	200.00	mL	10/28/09 10:00	RJP	Reactivity
Section 7.3	9J28087	RSJ1343-01	5.00	mL	5.00	mL	10/28/09 12:42	RJP	Reactivity
Section 7.3	9J28087	RSJ1343-02	5.00	mL	5.00	mL	10/28/09 12:42	RJP	Reactivity

TestAmerica North Canton
4101 Shuffel Drive NW
North Canton, OH 44720

SDG Number: A9J230108

Project: Reactive Cyanide / Reactive Sulfide
Project Number: A9J230108

Received: 10/24/09
Reported: 10/29/09 09:10

LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
General Chemistry Parameters										
Blank Analyzed: 10/28/09 (Lab Number:9J28087-BLK1, Batch: 9J28087)										
HCN Released From Waste			10.0	mg/L	ND					
LCS Analyzed: 10/28/09 (Lab Number:9J28087-BS1, Batch: 9J28087)										
HCN Released From Waste		1000	10.0	mg/L	184	18	10-100			
General Chemistry Parameters										
Blank Analyzed: 10/28/09 (Lab Number:9J28093-BLK1, Batch: 9J28093)										
H2S Released From Waste			10.0	mg/L	ND					
LCS Analyzed: 10/28/09 (Lab Number:9J28093-BS1, Batch: 9J28093)										
H2S Released From Waste		570	10.0	mg/L	130	23	10-100			

TestAmerica Laboratories, Inc.

SAMPLE ANALYSIS REQUISTION

Laboratory: TestAmerica Buffalo
Severn Trent Laboratories
10 Hazelwood Drive, Suite 106
Amherst, NY 14228

Lab Request: SR115722

Report Package: Report

Need Analytical Report: 2009-11-05

Client Code: 14091

Project Manager: MARK LOEB

Sample I.D.	Work Order Number	Client Sample ID	Sampling Date	Analysis Required
A9J230108-1	LM5V3	FWG-IDW-MWPURGEOCT2009	2009-10-22 13:00	WATER, 7.3.3, Reactive Cyanide (Buffalo)
A9J230108-1	LM5V3	FWG-IDW-MWPURGEOCT2009	2009-10-22 13:00	WATER, 7.3.4, Reactive Sulfide (Buffalo)
A9J230108-2	LM5WC	FWG-IDW-MWDECONOCT2009	2009-10-22 13:15	WATER, 7.3.3, Reactive Cyanide (Buffalo)
A9J230108-2	LM5WC	FWG-IDW-MWDECONOCT2009	2009-10-22 13:15	WATER, 7.3.4, Reactive Sulfide (Buffalo)

Please use **Client Sample ID** for report

Call MARK LOEB with questions at 330-497-9396

at the TAL North Canton Laboratory

Shipping Method: FED EX

Need detection limit and analysis date included in report.

Please send a signed copy of this form with the report at completion of analysis.

Relinquished by: _____ Date/Time: 10/23/09 0850

Relinquished by: _____ Date/Time: _____

Received for lab by: _____ Date/Time: 10/24/09 0910

PLEASE RETURN ORIGINAL SAMPLE ANALYSIS REQUISITION

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

END OF REPORT

APPENDIX F

REPORTING LIMITS THAT CURRENTLY DO NOT MEET THE RVAAP QAPP PQLS AND/OR REGION 9 PRGS

VOCs

CAS No.	Analyte Name	MDL	Lab RL	RVAAP QAPP PQL	Region 9 PRG	MCL
107-06-2	1,2-Dichloroethane	0.16	1.0	1.0	0.12	5.0
71-43-2	Benzene	0.22	1.0	1.0	0.35	5.0
67-66-3	Chloroform	0.16	1.0	1.0	0.17	NA
10061-01-5	cis-1,3-Dichloropropene	0.12	1.0	1.0	0.4	NA
75-01-4	Vinyl chloride	0.21	1.0	1.0	0.02	2.0
79-34-5	1,1,2,2-Tetrachloroethane	0.22	1.0	1.0	0.055	NA
106-93-4	1,2-Dibromoethane	0.24	1.0	1.0	0.0056	NA
79-01-6	Trichloroethene	0.28	1.0	1.0	0.028	5.0
127-18-4	Tetrachloroethene	0.19	1.0	1.0	0.1	5.0
75-27-4	Bromodichloromethane	0.14	1.0	1.0	0.18	NA
79-00-5	1,1,2-Trichloroethane	0.22	1.0	1.0	0.2	5.0
124-48-1	Dibromochloromethane	0.19	1.0	1.0	0.13	NA
10061-02-6	Trans-1,3-Dichloropropene	0.17	1.0	1.0	0.4	NA
56-23-5	Carbon tetrachloride	0.19	1.0	1.0	0.17	5.0

Note: All units are µg/L
NA = Not Available

SVOCs

CAS No.	Analyte Name	MDL	Lab RL	RVAAP QAPP PQL	Region 9 PRG	MCL
111-44-4	Bis(2-Chloroethyl) ether	0.088	1.0	10	0.01	NA
50-32-8	Benzo(a)pyrene	0.048	0.20	10	0.0092	0.2
53-70-3	Dibenz(a,h)anthracene	0.039	0.20	10	0.0093	NA
118-74-1	Hexachlorobenzene	0.065	0.20	10	0.042	1.0
205-99-2	Benzo(b)fluoranthene	0.049	0.20	10	0.092	NA
193-39-5	Indeno(1,2,3-cd)pyrene	0.065	0.20	10	0.092	NA
56-55-3	Benzo(a)anthracene	0.052	0.20	10	0.092	NA
91-94-1	3,3'-Dichlorobenzidine	0.48	5.0	10	0.15	NA
106-46-7	1,4-Dichlorobenzene	0.52	1.0	10	0.5	75
87-86-5	Pentachlorophenol	0.48	5.0	25	0.56	1.0
87-68-3	Hexachlorobutadiene	0.51	1.0	10	0.86	NA
88-06-2	2,4,6-Trichlorophenol	1.4	5.0	10	3.6	NA

Note: All units are µg/L
NA = Not Available

Pesticides

CAS No.	Analyte Name	MDL	Lab RL	RVAAP QAPP PQL	Region 9 PRG	MCL
60-57-1	Dieldrin	0.0067	0.030	0.05	0.0042	NA
309-00-2	Aldrin	0.0061	0.030	0.05	0.004	NA
1024-57-3	Heptachlor epoxide	0.0065	0.030	0.05	0.0074	0.2
319-84-6	alpha-BHC	0.0062	0.030	0.05	0.011	NA
76-44-8	Heptachlor	0.0062	0.030	0.05	0.015	0.4

Note: All units are µg/L
NA = Not Available

Explosives

CAS No.	Analyte Name	MDL	Lab RL	RVAAP QAPP PQL	Region 9 PRG	MCL
88-72-2	2-Nitrotoluene	0.1	0.48	0.2	120	NA
99-08-1	3-Nitrotoluene	0.1	0.48	0.2	0.049	NA
99-99-0	4-Nitrotoluene	0.1	0.48	0.2	0.66	NA

Note: All units are µg/L
NA = Not Available

PCBs

CAS No.	Analyte Name	MDL	Lab RL	RVAAP QAPP PQL	Region 9 PRG	MCL
11104-28-2	PCB-1221	0.49	0.50	0.50	0.034	5.0
11141-16-5	PCB-1232	0.41	0.50	0.50	0.034	5.0
53469-21-9	PCB-1242	0.11	0.50	0.50	0.034	5.0
12672-29-6	PCB-1248	0.049	0.50	0.50	0.034	5.0
11097-69-1	PCB-1254	0.087	0.50	0.50	0.034	5.0
11096-82-5	PCB-1260	0.071	0.50	0.50	0.034	5.0

Note: All units are µg/L
NA = Not Available

Inorganics

CAS No.	Analyte Name	MDL	Lab RL	RVAAP QAPP PQL	Region 9 PRG	MCL
7440-70-2	Calcium	80	100	100	NS	NA
7440-23-5	Sodium	410	1000	200	NS	NA
7440-09-7	Potassium	72	1000	200	NS	NA

Note: All units are µg/L
NA = Not Available
These compounds will not meet the reporting limits specified in the QAPP. However, these chemicals have consistently been found naturally occurring on the site at values that exceed the QAPP RLs.

APPENDIX G

CORRESPONDENCE & COMMENT RESPONSE TABLE

OhioEPA
State of Ohio Environmental Protection Agency
Northeast District Office

2110 East Aurora Rd.
Twinsburg, Ohio 44087

TELE: (330) 963-1200 FAX: (330) 487-0769
www.epa.state.oh.us

Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korleski, Director

March 31, 2010

RE: RAVENNA ARMY AMMUNITION PLANT,
PORTAGE/TRUMBULL COUNTIES,
DRAFT, FWGWMP OCTOBER 2009
SAMPLING EVENT REPORT,
RESPONSE TO OHIO EPA COMMENTS
DATED MARCH 29, 2010

Mr. Mark Patterson
Installation Manager
Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, OH 44266

CERTIFIED MAIL
7008 3230 0003 5419 7556

Dear Mr. Patterson:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the "Response to Ohio EPA Comments, Facility-Wide Ground Water Monitoring Program (FWGWMP) Draft October 2009 Sampling Event," dated March 29, 2010, document. The document was received at Ohio EPA, Northeast District Office (NEDO), Division of Emergency and Remedial Response (DERR), on March 30, 2010. The document was prepared for the U.S. Army Corps of Engineers (USACE) – Louisville District, by Environmental Quality Management, Inc. (EQM), under contract no. W912QR-04-D-0036.

The IDW plan, included as Appendix E, was previously approved. The comments have been adequately addressed. Please forward one copy of the replacement pages and titles.

If you have any questions, please call me at (330) 963-1207.

Sincerely,

Vicki Deppisch
Project Coordinator
Division of Emergency and Remedial Response

VD/kss

cc: Eileen Mohr, Ohio EPA, DERR, NEDO
Maj. Ed Meade, OHARNG RTLS
Mark Krivansky, AEC
Mark Nichter, USACE Louisville
Conni McCambridge, Ohio EPA, DERR, NEDO
Katie Elgin, OHARNG RTLS
Glen Beckham, USACE Louisville
John Miller, EQM

ec: Mike Eberle, Ohio EPA, DERR, NEDO
Todd Fisher, Ohio EPA, DERR, NEDO

OhioEPA
State of Ohio Environmental Protection Agency
Northeast District Office

2110 East Aurora Rd.
Twinsburg, Ohio 44087

TELE: (330) 963-1200 FAX: (330) 487-0769
www.epa.state.oh.us

Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korleski, Director

March 22, 2010

RE: RAVENNA ARMY AMMUNITION PLANT, PORTAGE/TRUMBULL COUNTIES, FWGWMP, DRAFT, OCTOBER 2009 SAMPLING EVENT REPORT

CERTIFIED MAIL
7008 3230 0003 5419 7464

Mr. Mark Patterson
Installation Manager
Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, OH 44266

Dear Mr. Patterson:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the "Draft, Facility-Wide Ground Water Monitoring Program (FWGWMP) October 2009 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio" document. The "Investigative Derived Waste and Characterization and Disposal Plan" (IDW) has been included as Appendix E. The document was received at Ohio EPA, Northeast District Office (NEDO), Division of Emergency and Remedial Response (DERR), on February 8, 2010. The document was prepared for the U.S. Army Corps of Engineers (USACE) – Louisville District, by Environmental Quality Management, Inc. (EQM), under contract no. W912QR-04-D-0036. This document was reviewed by Ohio EPA personnel in NEDO, DERR, and NEDO's Division of Drinking and Ground Waters (DDAGW).

This monitoring event was completed under the FWGWMP. Forty-six wells were sampled during an eight-day sampling event on October 12 through 15, 2009.

The IDW Plan, Appendix E, was approved in a November 23, 2009 letter from Ohio EPA. Enclosed are Ohio EPA's comments that need to be addressed before the entire document can be approved.

The Director's Final Findings and Orders require that the responses to comments (RTCs) be received within fifteen (15) days of the Army's receipt of Ohio EPA correspondence, and that the revised document be submitted within thirty (30) days of the Army's receipt of Agency correspondence.

If you have any questions, please call me at (330) 963-1207.

Sincerely,

Vicki Deppisch

Vicki Deppisch
Project Coordinator
Division of Emergency and Remedial Response

VD/kss

enclosure

cc: Eileen Mohr, Ohio EPA, DERR, NEDO
Katie Elgin, OHARNG RTLS
Maj. Ed Meade, OHARNG RTLS
Glen Beckham, USACE Louisville
Mark Nichter, USACE Louisville
Mark Krivansky, AEC
Conni McCambridge, Ohio EPA, DERR, NEDO
John Miller, EQM

ec: Mike Eberle, Ohio EPA, DERR, NEDO
Todd Fisher, Ohio EPA, DERR, NEDO

COMMENT RESPONSE TABLE
RVAAP FWGWMP
OCTOBER 2009 SAMPLING EVENT
REVIEWERS: CONNI MC CAMBRIDGE, OHIO EPA, DDAGW, AND VICKI DEPPISCH, OHIO EPA, DERR

No.	Location	Reviewer Comment	Reviewer Recommendation	Preparer Response
1.	Pg. 40 (Sec. 3.2.3, line 26)	The text indicates that tetrachloroethene (PCE) was reported at 4.1 ug/L monitoring well, LL11mw-009. For PCE, the MCL is 5 ug/L and Region 9 PRG is 0.1 ug/L. It is unclear where PCE has been increasing or decreasing in this well during 2009.	Please provide a brief summary and discussion of the historical PCE results reported from this well.	
2.	Pg. 67 to 75 (Sec. 3.2.5-Tqble 3-8)	Table 3-8 contains "rejected data" for 4,4-DDT in two sampled wells. During October 2009, only two pieces of data out of 12,684 were rejected (Section 3.3, pg. 81).	The issue of "rejected data" has been noted in several previous submittals. In each case, the Facility has responded that the issue will be addressed/has been addressed with the analytical lab to avoid further problems. With the appearance of only two pieces of data being rejected, it appears that the Facility has addressed this on-going issue. The new steps appear to have prevented the on-going problem of "rejected data" from reoccurring in this sampling event and hopes it continues in the future.	

Environmental Quality Management, Inc.
1800 Carillon Boulevard
Cincinnati, Ohio 45240
(513) 825-7500
FAX (513) 825-7495
www.eqm.com

March 29, 2010

Ms. Vicki Deppisch
Ohio Environmental Protection Agency, NE District Office
Division of Emergency and Remedial Response
2110 E. Aurora Road
Twinsburg, OH 44087

Re: Facility-Wide Groundwater Monitoring Program
October 2009 Sampling Event Response to Comments
Ravenna Army Ammunition Plant
Ravenna, Ohio

Dear Ms. Deppisch:

On behalf of the US Army Corps of Engineers (USACE) Environmental Quality Management, Inc. (EQM) is submitting to the Ohio EPA the responses to Ohio EPA comments (dated March 22, 2010) on the *Draft Facility-Wide Groundwater Monitoring Program Report on the October 2009 Sampling Event* at the Ravenna Army Ammunition Plant. Enclosed please find two (2) printed copies of the responses. An electronic copy of the responses has also been sent via email.

If you have any questions, please call me at (513) 825-7500, or Mr. Mark Nichter of the USACE at (502) 315-6375.

Sincerely,

ENVIRONMENTAL QUALITY MANAGEMENT, INC.

John M. Miller, CHMM
Project Manager

cc: M. Nichter – USACE
M. Patterson – RVAAP (BRAC)

PRELIMINARY DRAFT FACILITY-WIDE GROUNDWATER MONITORING PROGRAM
(REPORT ON THE OCTOBER 2009 SAMPLING EVENT)
RAVENNA ARMY AMMUNITION PLANT, RAVENNA OHIO
COMMENT RESPONSE TABLE
March 22, 2010

Comment Number	Page or Sheet	New Page or Sheet	Comment	Recommendation	Response
			Ohio EPA (V. Deppisch/C. McCambridge)		
O-1	Pg. 40 (Sec. 3.2.3, line 26)		The text indicates that tetrachloroethene (PCE) was reported at 4.1 µg/L in monitoring well LL11mw-009. For PCE the MCl is 5 µg/L and the Region 9 PRG is 0.1µg/L. It is unclear where PCE has been increasing or decreasing in this well during 2009/	Please provide a brief summary and discussion of the historical PCE results reported from this well.	The following text will be added to Section 4: *Tetrachloroethene (PCE) has been detected in well LL11mw-009 at levels ranging from 3.8µg/L to 4.1µg/L during the April, July and October 2009 sampling events. There does not appear to be an increasing or decreasing trend in the detected levels of PCE, the levels are remaining fairly steady-state. It should be noted that this well has been identified for future sampling and analysis after the required four quarters of sampling. PCE levels will be monitored closely over future sampling and analysis events. The 2010 FWGWMP includes the annual monitoring of this well.* Additionally, the results from the January 2010 event for this well showed PCE at a level of 3.8 µg/L, further evidence that there is no decreasing or increasing trend for this well.
O-2	Pg. 67 to 75 Sec. 3.2.5-Table 3-8)		Table 3-8 contains "rejected data" for 4,4-DDT in two sampled wells. During October 2009, only two pieces of data out of 12,684 were rejected (Section 3.3, pg. 81).	The issue of "rejected data" has been noted in several previous submittals. In each case the Facility has responded that the issue will be addressed/has been addressed with the analytical lab to avoid further problems. With the appearance of only two pieces of data being rejected, it appears that the facility has addressed this ongoing issue.	Noted. Additionally, the January 2010 event had no rejected data.

PRELIMINARY DRAFT FACILITY-WIDE GROUNDWATER MONITORING PROGRAM
(REPORT ON THE OCTOBER 2009 SAMPLING EVENT)
RAVENNA ARMY AMMUNITION PLANT, RAVENNA OHIO
COMMENT RESPONSE TABLE
March 22, 2010

Comment Number	Page or Sheet	New Page or Sheet	Comment	Recommendation	Response
Ohio EPA (V. Deppisch/C. McCambridge)					
				The new steps appear to have prevented the on-going problem of "rejected data" from reoccurring in this sampling event and hopes it continues in the future.	