

**Appendix H IDW Disposal Letter Report**

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**Regional Office**

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May 22, 2013

Mr. Eric Cheng, P.E.  
Technical Manager  
U.S. Army Corps of Engineers, Louisville District  
600 Martin Luther King Jr. Place  
Louisville, Kentucky 40202-0059

Subject: Investigation-Derived Waste Letter Report  
2011 Performance-Based Acquisition  
Environmental Investigation and Remediation  
14 Compliance Restoration Sites  
Ravenna Army Ammunition Plant, Ravenna, Ohio  
Contract No. W912QR-04-D-0039  
Delivery Order No. 0004  
Project No. 5161.004

Dear Mr. Cheng:

Investigation activities in accordance with the Site Inspection and Remedial Investigation Work Plan (October 2012) were conducted from 18 March 2013 through 5 April 2013. These activities resulted in the generation of Investigation-Derived Waste (IDW) consisting of soil cuttings from direct push borings and equipment decontamination fluids. The purpose of this letter report is to characterize and classify IDW for disposal and to propose methods for disposing of the IDW.

This letter report includes a summary of IDW generated, the origin of the IDW (Table 1), as well as proposed classification and recommendations for disposal of the IDW (Table 2). This letter report follows guidance established by the following:

- 1.) The Facility-Wide Sampling and Analysis Plan (SAIC 2011), and
- 2.) Final Site Inspection and Remedial Investigation (SI/RI) Work Plan (ECC 2012).

Three distinct IDW streams were sampled as part of the SI/RI Work Plan field activities. Each waste stream was composited and sampled per requirements outlined in Section 7.0 of the Facility-Wide Sampling and Analysis Plan (FWSAP) and SI/RI Work Plan. IDW streams generated are:

- One (1) 55-gallon drum containing equipment decontamination fluids (Liquinox, distilled water (DI), and HCL/nitric acid), sampled on 5 April 2013
- One (1) 55-gallon drum containing soils from RI sampling activities conducted at CC RVAAP-68 Electrical Substations East, West, and No. 3, sampled on 3 April 2013. This drum was sampled separately due to possible poly chlorinated byphenyl (PCB) contamination
- Three (3) 55-gallon drums containing soils from RI sampling activities, sampled on 5 April 2013.

Per Section 7.0 of the Facility-Wide SAP, three composite samples were collected for Toxicity Characteristic Leaching Procedure (TCLP) parameters, flashpoint, reactivity, and corrosivity and submitted for laboratory analysis to characterize the following waste streams for disposal:

- Liquid IDW

The first sample (068SB-0063-0001-IDW) characterized one drum of decontamination fluid containing 2% hydrochloric acid (HCL)/10% nitric acid, deionized (DI) water, and Liquinox). This sample was analyzed for full TCLP plus poly chlorinated biphenyls (PCBs), flashpoint, reactivity, and corrosivity. Sampling equipment used at CC RVAAP-68 Electrical Substations East, West, and No. 3 were decontaminated following standard protocol. Liquid decontamination fluids generated during sampling at CC RVAAP-68 were containerized in the same drum as non-PCB sites. PCB's were a possible site chemical of concern (COC) at the Electrical Substations East, West, and No. 3 due to the former presence of transformers at these sites.

- Solid IDW

The second sample (068SB-0062-0001-IDW) was composited from three, 55-gallon drums containing soil cuttings.

- Solid IDW with possible PCBs

The third sample (078SB-0059-0001-IDW) was composited from one, 55-gallon drum containing soil cuttings. This drum was sampled separately as the soils may have been impacted with PCBs. These soils originated from drill cuttings collected at CC RVAAP-68 Electrical Substations East, West, and No. 3.

Table 1 summarizes the IDW samples collected.

**Table 1 – Summary of Site Inspection/Remedial Investigation Investigation-Derived Waste**

<b>Container Type and Size</b>	<b>Contents</b>	<b>Generation Dates</b>	<b>Sample ID</b>
55- Gallon Closed Top Drum	De-con Fluids from sampling equipment decontamination	18 March 2013 through 4 April 2013	068SB-0063-0001-IDW
55- Gallon Closed Top Drum	Soil Cuttings	18 March 2013 through 4 April 2013	068SB-0062-0001-IDW
55- Gallon Closed Top Drum	Soil Cuttings	18 March 2013 through 4 April 2013	068SB-0062-0001-IDW
55- Gallon Closed Top Drum	Soil Cuttings	18 March 2013 through 4 April 2013	068SB-0062-0001-IDW
55-Gallon Closed Top Drum	Soil Cuttings	29 March 2013 through 4 April 2013	078SB-0059-0001-IDW

Per Section 8.0 of the FWSAP, non-indigenous IDW is characterized for disposal on the basis of composite samples collected and submitted for laboratory analysis to characterize the waste stream for disposal. Upon receipt of analytical results from the laboratory, the analytical data was reviewed to determine if the waste was potentially hazardous. This review consisted of a comparison of the analytical results against the TCLP criteria presented in Table 8-1 and 8-2, Maximum Concentration of Contaminants for the Toxicity Characteristic (40 Code of Federal Regulation (CFR) 261.24), presented in the FWSAP. The results of this review are summarized below.

**IDW –FLUIDS**

One liquid composite sample (068SB-0063-0001-IDW) was collected. **Attachment 1** presents the analytical laboratory data for TCLP flashpoint, reactivity, and corrosivity analyses for IDW fluids generated during the 18 March through 5 April field activities. All analytical results were below regulatory levels as presented in Tables 8-1 and 8-2 in the FWSAP.

**IDW –SOLIDS**

Two solid composite samples (078SB-0059-0001-IDW, and 068SB-0062-0001-IDW) were collected. **Attachment 2** presents the analytical laboratory data for TCLP, flashpoint, reactivity, and corrosivity analyses for IDW solids generated during the 18 March through 5 April 2013 field activities. All analytical results were below regulatory levels as presented in Tables 8-1 and 8-2 in the FWSAP.

Please note the IDW addressed in this letter report has been characterized under provisions of the FWSAP using TCLP analysis and process knowledge. Unless RVAAP has additional information that would result in the IDW meeting, or containing materials that meet, the definition of a listed hazardous waste as defined in 40 CFR Part 261 Subpart D, it is recommended that the IDW, as presently characterized, be disposed as summarized in Table 2.

**Table 2 - Summary of Final Waste Classification and Recommended Options**

<b>Medium</b>	<b>Waste Criterion</b>	<b>Disposal Recommendation</b>
Water	Inorganics, Organics	Permitted Wastewater Treatment Facility or Permitted Solid Waste Facility
Soils	Inorganics, Organics	Permitted Wastewater Treatment Facility or Permitted Solid Waste Facility
Soils	Inorganics, Organics	Permitted Wastewater Treatment Facility or Permitted Solid Waste Facility

Since RVAAP, under RCRA, is the generator of this material, ECC requests concurrence or direction in the waste classification prior to disposal to ensure materials are properly disposed. Following your direction and immediate approval, ECC will proceed with appropriate waste disposal.

Should you have any questions or wish to discuss the proposed activities further, please do not hesitate to contact the undersigned at (508) 229-2270, ext. 22109, or via email.

Regards,  
**ECC**

A handwritten signature in black ink that reads "Alexander Easterday". The signature is written in a cursive style with a large initial 'A' and a long, sweeping underline.

Alexander Easterday  
Senior Project Manager

Copy: Ann Wood, ARNG  
Katie Tait, OHARNG  
Mark Patterson, RVAAP Facility Manager  
Eileen Mohr, Ohio EPA  
Ed D'Amato, Ohio EPA

## **ATTACHMENTS**

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## Attachment 1 – IDW Analytical Results - Fluids

Analysis Type	Chemical	Units	Reporting Limit	TCLP Criteria	Results
					068SB-0063-0001-IDW
TCLP Semi-Volatile Organics	1,4-Dichlorobenzene	mg/L	0.00080	7.50	0.00080 U
TCLP Semi-Volatile Organics	2,4,5-Trichlorophenol	mg/L	0.00080	400.00	0.00080 U
TCLP Semi-Volatile Organics	2,4,6-Trichlorophenol	mg/L	0.00080	2.00	0.00080 U
TCLP Semi-Volatile Organics	2,4-Dinitrotoluene	mg/L	0.00080	0.13	0.00080 U
TCLP Semi-Volatile Organics	Hexachlorobenzene	mg/L	0.00010	0.13	0.00010 U
TCLP Semi-Volatile Organics	Hexachlorobutadiene	mg/L	0.00080	0.50	0.00080 U
TCLP Semi-Volatile Organics	Hexachloroethane	mg/L	0.00080	3.00	0.00080 U
TCLP Semi-Volatile Organics	3 & 4 Methylphenol	mg/L	0.00080	200	0.00080 U
TCLP Semi-Volatile Organics	2-Methylphenol	mg/L	0.00080	200	0.00080 U
TCLP Semi-Volatile Organics	Nitrobenzene	mg/L	0.00010	2.00	0.00010 U
TCLP Semi-Volatile Organics	Pentachlorophenol	mg/L	0.0024	100.00	0.0024 U
TCLP Semi-Volatile Organics	Pyridine	mg/L	0.00080	5.00	0.00080 U
TCLP Metals	Arsenic	mg/L	0.010	5.00	0.010 U
TCLP Metals	Barium	mg/L	0.0050	100.00	0.20 J
TCLP Metals	Cadmium	mg/L	0.0010	1.00	0.00057 J
TCLP Metals	Chromium	mg/L	0.0040	5.00	0.0040 U
TCLP Metals	Lead	mg/L	0.0050	5.00	0.0050 U
TCLP Metals	Mercury	mg/L	0.00020	0.20	0.00020 U
TCLP Metals	Selenium	mg/L	0.010	1.00	0.010 U
TCLP Metals	Silver	mg/L	0.0050	5.00	0.0050 U
TCLP Herbicides	2,4,5-TP (Silvex)	mg/L	0.00010	1.00	0.00010 U
TCLP Herbicides	2,4-D	mg/L	0.00025	10.00	0.00025 U
TCLP Pesticides	Chlordane	mg/L	0.000079	0.03	0.000079 U
TCLP Pesticides	Endrin	mg/L	0.000026	0.02	0.000026 U
TCLP Pesticides	Gamma-BHC (Lindane)	mg/L	0.000024	0.40	0.000024 U
TCLP Pesticides	Heptachlor	mg/L	0.000024	0.01	0.000024 U
TCLP Pesticides	Heptachlor Epoxide	mg/L	0.000024	0.01	0.000024 U
TCLP Pesticides	Methoxychlor	mg/L	0.000077	10.00	0.000077 U
TCLP Pesticides	Toxaphene	mg/L	0.0012	0.50	0.0012 U
TCLP Volatile Organics	1,1-Dichloroethene	mg/L	0.013	0.70	0.013 U
TCLP Volatile Organics	1,2-Dichloroethane	mg/L	0.013	0.50	0.013 U
TCLP Volatile Organics	2-Butanone	mg/L	0.025	200	0.030 J
TCLP Volatile Organics	Benzene	mg/L	0.013	0.50	0.013 U
TCLP Volatile Organics	Carbon Tetrachloride	mg/L	0.013	0.50	0.013 U
TCLP Volatile Organics	Chlorobenzene	mg/L	0.013	100.00	0.013 U
TCLP Volatile Organics	Chloroform	mg/L	0.025	6.00	0.013 U
TCLP Volatile Organics	Tetrachloroethylene	mg/L	0.025	0.70	0.025 U
TCLP Volatile Organics	Trichloroethene	mg/L	0.013	0.50	0.013 U
TCLP Volatile Organics	Vinyl Chloride	mg/L	0.013	0.20	0.013 U
PCBs	Aroclor – 1221	µg/L	1.1	-	1.1 U
PCBs	Aroclor – 1016	µg/L	1.1	-	1.1 U
PCBs	Aroclor – 1232	µg/L	2.2	-	1.1 U
PCBs	Aroclor – 1242	µg/L	1.1	-	2.2 U
PCBs	Aroclor – 1248	µg/L	1.1	-	1.1 U
PCBs	Aroclor – 1254	µg/L	1.1	-	1.1 U
PCBs	Aroclor – 1260	µg/L	1.1	-	1.1 U
Flashpoint	Flashpoint	°F	1.0	-	>180 °F
Reactivity	Cyanide, total	mg/L	0.010	-	0.010 U
Reactivity	Sulfide	mg/L	2.5	-	2.5 U
Corrosivity	Corrosivity	SU	0.100	-	7.87

Notes:

J – Estimated value

U – Undetected above laboratory reporting limit

mg/L – milligrams per liter

µg/L – micrograms per liter

SU – Standard units

°F – degrees Fahrenheit

## Attachment 2 – IDW Analytical Results - Solids

Analysis Type	Chemical	Units	Reporting Limit	TCLP Criteria	Results	
					068SB-0062-0001-IDW	078SB-0059-0001-IDW
TCLP Semi-Volatile Organics	1,4-Dichlorobenzene	mg/L	0.00080	7.50	0.00080 U	0.00080 U
TCLP Semi-Volatile Organics	2,4,5-Trichlorophenol	mg/L	0.00080	400.00	0.00080 U	0.00080 U
TCLP Semi-Volatile Organics	2,4,6-Trichlorophenol	mg/L	0.00080	2.00	0.00080 U	0.00080 U
TCLP Semi-Volatile Organics	2,4-Dinitrotoluene	mg/L	0.00080	0.13	0.00080 U	0.00080 U
TCLP Semi-Volatile Organics	Hexachlorobenzene	mg/L	0.00010	0.13	0.00010 U	0.00010 U
TCLP Semi-Volatile Organics	Hexachlorobutadiene	mg/L	0.00080	0.50	0.00080 U	0.00080 U
TCLP Semi-Volatile Organics	Hexachloroethane	mg/L	0.00080	3.00	0.00080 U	0.00080 U
TCLP Semi-Volatile Organics	3 & 4 Methylphenol	mg/L	0.00080	200	0.00080 U	0.00080 U
TCLP Semi-Volatile Organics	2-Methylphenol	mg/L	0.00080	200	0.00080 U	0.00080 U
TCLP Semi-Volatile Organics	Nitrobenzene	mg/L	0.00010	2.00	0.00010 U	0.00010 U
TCLP Semi-Volatile Organics	Pentachlorophenol	mg/L	0.0024	100.00	0.0024 U	0.0024 U
TCLP Semi-Volatile Organics	Pyridine	mg/L	0.00080	5.00	0.00080 U	0.00080 U
TCLP Metals	Arsenic	mg/L	0.010	5.00	0.0045 J	0.0042 J
TCLP Metals	Barium	mg/L	0.0050	100.00	0.60 J	0.46 J
TCLP Metals	Cadmium	mg/L	0.0010	1.00	0.0023 J	0.00043 J
TCLP Metals	Chromium	mg/L	0.0040	5.00	0.0027 J	0.0018 J
TCLP Metals	Lead	mg/L	0.0050	5.00	0.0050 U	0.0050 U
TCLP Metals	Mercury	mg/L	0.00020	0.20	0.00020 U	0.00020 U
TCLP Metals	Selenium	mg/L	0.010	1.00	0.0051 J	0.0042 J
TCLP Metals	Silver	mg/L	0.0050	5.00	0.0050 U	0.0050 U
TCLP Herbicides	2,4,5-TP (Silvex)	mg/L	0.00010	1.00	0.00010 U	0.00010 U
TCLP Herbicides	2,4-D	mg/L	0.00025	10.00	0.00033 J	0.00025 U
TCLP Pesticides	Chlordane	mg/L	0.000079	0.03	0.000079 U	0.000079 U
TCLP Pesticides	Endrin	mg/L	0.000026	0.02	0.000026 U	0.000026 U
TCLP Pesticides	Gamma-BHC (Lindane)	mg/L	0.000024	0.40	0.000024 U	0.000024 U
TCLP Pesticides	Heptachlor	mg/L	0.000024	0.01	0.000024 U	0.000024 U
TCLP Pesticides	Heptachlor Epoxide	mg/L	0.000024	0.01	0.000024 U	0.000024 U
TCLP Pesticides	Methoxychlor	mg/L	0.000077	10.00	0.000077 U	0.000077 U
TCLP Pesticides	Toxaphene	mg/L	0.0012	0.50	0.0012 U	0.0012 U
TCLP Volatile Organics	1,1-Dichloroethene	mg/L	0.013	0.70	0.013 U	0.013 U
TCLP Volatile Organics	1,2-Dichloroethane	mg/L	0.013	0.50	0.013 U	0.013 U
TCLP Volatile Organics	2-Butanone	mg/L	0.025	200	0.025 U	0.025 U
TCLP Volatile Organics	Benzene	mg/L	0.013	0.50	0.013 U	0.013 U
TCLP Volatile Organics	Carbon Tetrachloride	mg/L	0.013	0.50	0.013 U	0.013 U
TCLP Volatile Organics	Chlorobenzene	mg/L	0.013	100.00	0.013 U	0.013 U
TCLP Volatile Organics	Chloroform	mg/L	0.025	6.00	0.013 U	0.013 U
TCLP Volatile Organics	Tetrachloroethylene	mg/L	0.025	0.70	0.025 U	0.025 U
TCLP Volatile Organics	Trichloroethene	mg/L	0.013	0.50	0.013 U	0.013 U
TCLP Volatile Organics	Vinyl Chloride	mg/L	0.013	0.20	0.013 U	0.013 U
PCBs	Aroclor – 1221	µg/Kg	1.1	-	NA	29 U
PCBs	Aroclor – 1016	µg/Kg	1.1	-	NA	29 U
PCBs	Aroclor – 1232	µg/Kg	2.2	-	NA	29 U
PCBs	Aroclor – 1242	µg/Kg	1.1	-	NA	29 U
PCBs	Aroclor – 1248	µg/Kg	1.1	-	NA	29 U
PCBs	Aroclor – 1254	µg/Kg	1.1	-	NA	29 U
PCBs	Aroclor – 1260	µg/Kg	1.1	-	NA	29 U
Flashpoint	Flashpoint	°F	1.0	-	>180 °F	>180 °F
Reactivity	Cyanide, total	mg/Kg	0.010	-	0.03 U	0.038
Reactivity	Sulfide	mg/Kg	2.5	-	32 U	89
Corrosivity	Corrosivity	SU	0.100	-	7.22	8.20

Notes:

- J – Estimated value
- U – Undetected above laboratory reporting limit
- mg/L – milligrams per liter
- µg/Kg – micrograms per kilogram
- SU – Standard units for pH
- °F – degrees Fahrenheit



John R. Kasich, Governor  
Mary Taylor, Lt. Governor  
Scott J. Nally, Director

June 5, 2013

RE: RAVENNA ARMY AMMUNITION PLANT  
PORTAGE/TRUMBULL COUNTIES  
CC SITES IDW  
OHIO EPA ID # 67000859155

**CERTIFIED LETTER 7010106000000898534**

Mr. Mark Patterson  
Environmental Program Manager  
Ravenna Army Ammunition Plant  
Building 1037  
8451 State Route 5  
Ravenna, OH 44266-9297

Dear Mr. Patterson:

The Ohio Environmental Protection Agency (Ohio EPA), Northeast District Office (NEDO), Division of Environmental Response and Revitalization (DERR) has received and reviewed the document entitled: *“Investigation-Derived Waste Letter Report, 2011 Performance-Based Acquisition, Environmental Investigation and Remediation, 14 Compliance Restoration Sites, Ravenna Army Ammunition Plant, Ravenna, Ohio.”* This letter report, dated May 22, 2013 and received at Ohio EPA on June 04, 2013, was prepared for the U.S. Army Corps of Engineers (USACE) – Louisville District by ECC under Contract Number W912QR-04-D-0039.

Based upon the presented results, the Ohio EPA is in agreement that the liquid Investigation Derived Wastes (IDW) should be disposed of at a permitted wastewater treatment facility and the soils at a permitted solid waste facility. As generator of the material, it is the responsibility to ensure that all wastes are disposed of in accordance with applicable state, federal, and local rules, laws and regulations; and that analytical testing is also conducted in accordance with the accepting facility's requirements.

If you have any questions concerning this correspondence, please do not hesitate to contact me at 330-963-1221.

Sincerely,

Eileen T. Mohr  
Project Manager  
Division of Environmental Response and Revitalization

EM:ds

pc: Katie Tait, OHARNG  
Ann Wood, ARNGD  
Cullen Grasty, USACE Louisville  
ec: Justin Burke, Ohio EPA, DERR, CO  
Nancy Zikmanis, Ohio EPA, DERR, NEDO  
Todd Fisher, Ohio EPA, DERR, NEDO  
Ed D'Amato, Ohio EPA, DERR, NEDO

Northeast District Office • 2110 East Aurora Road • Twinsburg, OH 44087-1924  
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Date: 6-7-2013

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**OhioEPA**

Northeast District Office  
2110 E. Aurora Road  
Twinsburg, Ohio 44087

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	<p>A. Signature  <input checked="" type="checkbox"/> <i>Gail Harrit</i> <input type="checkbox"/> Agent  <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name)  <i>Gail Harrit</i></p> <p>C. Date of Delivery  <i>6-7-2013</i></p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes                  If YES, enter delivery address below: <input checked="" type="checkbox"/> No</p>
<p>1. Article Addressed to:</p> <p>MR. MARK PATTERSON                  ENVIRONMENTAL PROGRAM MANAGER                  RVAAP BLDG 1037                  8451 STATE ROUTE 5                  RAVENNA, OH 44266-9297</p>	<p>3. Service Type</p> <p><input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail  <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise  <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>
<p>2. Article Number                  (Transfer from service label)</p>	<p>7010106000000898534 EM:ds 6 5 13</p>
<p>PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540</p>	

COPY

**NON-HAZARDOUS WASTE MANIFEST**

1. Generator ID Number  
OHS 210 020 736

2. Page 1 of 1

3. Emergency Response Phone  
330-677-0785

4. Waste Tracking Number  
081513

5. Generator's Name and Mailing Address  
Ravenna Army Ammunition Plant  
8451 State Route 5  
Ravenna, Ohio 44266

Generator's Site Address (if different than mailing address)  
Same

330-358-2920

Generator's Phone:

6. Transporter 1 Company Name  
Emerald Environmental Services, Inc

U.S. EPA ID Number  
OHR 000 102 053

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address  
Vexor Technology  
955 West Smith Road  
Medina, Ohio 44256

U.S. EPA ID Number

330-721-9773

OHD 077 772 895

Facility's Phone:

9. Waste Shipping Name and Description	10. Containers		11. Total Quantity	12. Unit Wt./Vol.
	No.	Type		
1. Non DOT Regulated, Non Hazardous Material (SOIL CUTTINGS)	4	DM	1400	P
2. Non DOT Regulated, Non Hazardous Material (WASTE WATCH) (DECONTINUED)	1	DM	590	G
3.				
4.				

13. Special Handling Instructions and Additional Information

9.1.) Approval # VEX 25094  
9.2.) Approval # VEX 25095

Job Number: 13-0081 EES

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Officer's Printed/Typed Name  
Mark Patterson

Signature  
Mark Patterson

Month Day Year  
8 15 13

15. International Shipments  Import to U.S.  Export from U.S.

Transporter Signature (for exports only):

Port of entry/ext.:  
Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name  
Darrin Bowers

Signature  
Darrin Bowers

Month Day Year  
8 15 13

Transporter 2 Printed/Typed Name

Signature

Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space  Quantity  Type  Residue  Partial Rejection  Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)

U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name  
Tom Brie

Signature  
Tom Brie

Month Day Year  
08 15 13

GENERATOR

TRANSPORTER INT'L

DESIGNATED FACILITY

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15 June 2015



Mr. Eric Cheng, P.E.  
Technical Manager  
U.S. Army Corps of Engineers, Louisville District  
600 Martin Luther King Jr. Place  
Louisville, Kentucky 40202-0059

**Regional Office**

33 Boston Post Rd West  
Suite 420  
Marlborough, MA 01752

Phone: 508.229.2270  
Fax: 508.229.7737

**Reference:** Contract No. W912QR-04-D-0039  
Delivery Order No. 0004  
Project No. 5161.004

**Subject:** Revised Investigation Derived Waste Disposal Letter Report  
2011 Performance-Based Acquisition  
Environmental Investigation and Remediation  
14 Compliance Restoration Sites  
Former Ravenna Army Ammunition Plant  
Portage and Trumbull Counties, Ohio

Dear Mr. Cheng:

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- 1.) The Facility-Wide Sampling and Analysis Plan (SAIC 2011), and
- 2.) Final Site Inspection and Remedial Investigation (SI/RI) Work Plan (ECC 2012).

Two distinct IDW streams were sampled as part of the SI/RI Work Plan field activities. Each waste stream was composited and sampled per requirements outlined in Section 7.0 of the Facility-Wide Sampling and Analysis Plan (FWSAP) and SI/RI Work Plan. IDW streams generated are:

- One (1), 55-gallon drum containing equipment decontamination fluids (Liquinox, distilled water [DI], and 2% hydrochloric acid[HCl]/10% nitric acid), sampled on 10 April 2015 and,
- One (1) 55-gallon drum containing soils from RI sampling activities conducted at CC RVAAP-69 Building 1048 Former Fire Station, CC RVAAP-79 Main Ore Storage Area, CC RVAAP-79 Area 8, CC RVAAP-79 Load Line 3, and CC RVAAP-79 Route 80 Tank Farm, sampled on 10 April 2015.

**Corporate Office**

1240 Bayshore Highway  
Burlingame, CA 94010

Phone: (650) 347-1555  
Fax: (650) 347-8789

www.ecc.net

Per Section 7.0 of the Facility-Wide SAP, two composite samples were collected for Toxicity Characteristic Leaching Procedure (TCLP) parameters (summarized in

Attachment 1), flashpoint, reactivity, and corrosivity and submitted for laboratory analysis to characterize the following waste streams for disposal:

- Liquid IDW (Decontamination Fluids)

The first sample (079SB-0384-0001-IDW) characterized one drum of decontamination (de-con) fluid containing 2% HCl/10% Nitric acid, DI water, and Liquinox. This sample was analyzed for full TCLP, flashpoint, reactivity, and corrosivity. Decontamination fluids were generated from the washing, rinsing, and decontamination procedures used for all non-dedicated sampling equipment.

- Solid IDW (Soil Cuttings)

The second sample (079SB-00383-0001-IDW) characterized one drum containing soil cuttings. Table 1 summarizes the IDW samples collected.

**Table 1 – Summary of SI/RI IDW**

<b>Container Type and Size</b>	<b>Contents</b>	<b>Generation Dates</b>	<b>Sample ID</b>
55- Gallon Closed Top Drum	De-con Fluids from sampling equipment decontamination	6 April 2015 through 13 May 2015	079SB-0384-0001-IDW
55- Gallon Open Top Drum	Soil Cuttings	6 April 2015 through 29 April 2015	079SB-0383-0001-IDW

Per Section 8.0 of the FWSAP, non-indigenous IDW is characterized for disposal on the basis of composite samples collected and submitted for laboratory analysis to characterize the waste stream for disposal. Upon receipt of analytical results from the laboratory, the analytical data was reviewed to determine if the waste was potentially hazardous. This review consisted of a comparison of the analytical results against the TCLP criteria presented in Table 8-1 and 8-2, Maximum Concentration of Contaminants for the Toxicity Characteristic (40 Code of Federal Regulation (CFR) 261.24), presented in the FWSAP. The results of this review are summarized below.

Liquid IDW (Decontamination Fluids)

One liquid composite sample (079SB-0384-0001-IDW) was collected on 10 April 2015. Attachment 2 presents the analytical laboratory data for TCLP, flashpoint, reactivity, and corrosivity analyses for IDW fluids generated during the 6 April through 13 May 2015 field activities. All analytical results were below regulatory levels as presented in Tables 8-1 and 8-2 in the FWSAP. It should be noted that although additional liquid IDW (de-con fluids) generated during the sampling events conducted at CC RVAAP-69 and CC RVAAP-79 on 28 April, 29 April, 12 May, and 13 May 2015 (at CC RVAAP-79 only) was added to the liquid IDW drum after the 10 April 2015 sampling date, the locations sampled were at the suspected horizontal and vertical extent of known site contaminants, and as such would have lower concentrations than previously sampled areas. Therefore, they would not increase the concentrations of contaminants of any liquid IDW analytes.



Solid IDW – Drill Cuttings

One solid composite sample (079SB-00383-0001-IDW) was collected on 10 April 2015. Attachment 3 presents the analytical laboratory data for TCLP, flashpoint, reactivity, and corrosivity analyses for IDW solids generated during the 6 April through 29 April 2015 field activities. All analytical results were below regulatory levels as presented in Tables 8-1 and 8-2 in the FWSAP. It should be noted that although additional solid IDW (drill cuttings) generated during the sampling events conducted at CC RVAAP-69 and CC RVAAP-79 on 28 April and 29 April 2015 was added to the solids IDW drum after the 10 April 2015 sampling date, the locations sampled were at the suspected horizontal and vertical extent of known site contaminants, and as such would have lower concentrations than previously sampled areas. Therefore, they would not increase the concentrations of contaminants of any solid IDW analytes.

A field quality control (QC) sample (trip blank) was included with the IDW samples. The sample (sample ID 079SB-0388-0001-TB) was analyzed for volatile organic compounds (VOCs). The results for this sample were all non-detect with the exception of acetone (detected at 6.5 ug/L (estimated) and methylene chloride (detected at 3.3 ug/L). Both of these compounds are common laboratory contaminants and as such are not believed to be associated with the IDW samples.

The laboratory analytical report is provided as Attachment 4.

Please note that the IDW addressed in this letter report has been characterized under provisions of the FWSAP using TCLP analysis and process knowledge. Unless the former Ravenna Army Ammunition Plant (RVAAP) has additional information that would result in the IDW meeting, or containing materials that meet, the definition of a listed hazardous waste as defined in 40 CFR Part 261 Subpart D, it is recommended that the IDW, as presently characterized, be disposed as summarized in Table 2.

**Table 2 - Summary of Final Waste Classification and Recommended Options**

<b>Medium</b>	<b>Sample ID</b>	<b>Waste Criterion</b>	<b>TCLP Criteria</b>	<b>Disposal Recommendation</b>
Water	079SB-0384-0001-IDW	Inorganics, Organics	Regulatory Limits not Exceeded	Offsite Disposal as Non-Hazardous Waste - Permitted Wastewater Treatment Facility or Permitted Solid Waste Facility
Soils	079SB-0383-0001-IDW	Inorganics, Organics	Regulatory Limits not Exceeded	Offsite Disposal as Non-Hazardous Waste - Permitted Wastewater Treatment Facility or Permitted Solid Waste Facility

Since former RVAAP, under the Resource Conservation and Recovery Act (RCRA), is the generator of this material, Environmental Chemical Corporation (ECC) requests concurrence or direction in the waste classification prior to disposal to ensure materials are properly disposed.

Following your direction and immediate approval, ECC will proceed with appropriate waste disposal.

Should you have any questions or wish to discuss the proposed activities further, please do not hesitate to contact the undersigned at 508-274-3084.

Regards,

A handwritten signature in cursive script that reads "Pamela Foti". The signature is enclosed in a thin black rectangular border.

Pam Foti, Project Manager

Attachments: Attachment 1 – TCLP Parameters and Analytical Methods  
Attachment 2 – IDW Sampling Analytical Results – Fluids  
Attachment 3 – IDW Sampling Analytical Results - Solids  
Attachment 4 – Laboratory Analytical Report

## **ATTACHMENTS**

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**Attachment 1 – TCLP Parameters and Analytical Methods**

<b>Parameter</b>	<b>Method</b>
Volatile Organic Compounds	SW846 8260B
Semivolatile Organic Compounds	SW846 8270C
Pesticides	SW846 8081A
Herbicides	SW846 8151A
Metals	SW846 6010B
Mercury	SW846 7470A
Ignitability	SW846 1010
Reactivity	SW846 9012A/9034
Corrosivity	SW846 9045C

Notes: TCLP = Toxicity Characteristic Leaching Procedure

**Attachment 2 – IDW Sampling Analytical Results – Fluids**

Analysis Type	Chemical	Units	Limit of Detection (mg/L)	TCLP Criteria (mg/L)	Results	Above Regulatory Limit – Yes/No
					079SB-0384-0001-IDW (Fluids)	
TCLP Semi-Volatile Organics	1,4-Dichlorobenzene	mg/L	0.0020	7.50	0.0020 U	No
TCLP Semi-Volatile Organics	2,4,5-Trichlorophenol	mg/L	0.0020	400.00	0.0020 U	No
TCLP Semi-Volatile Organics	2,4,6-Trichlorophenol	mg/L	0.0020	2.00	0.0020 U	No
TCLP Semi-Volatile Organics	2,4-Dinitrotoluene	mg/L	0.0020	0.13	0.0020 U	No
TCLP Semi-Volatile Organics	Hexachlorobenzene	mg/L	0.00040	0.13	0.00040 U	No
TCLP Semi-Volatile Organics	Hexachlorobutadiene	mg/L	0.0020	0.50	0.0020 U	No
TCLP Semi-Volatile Organics	Hexachloroethane	mg/L	0.0020	3.00	0.0020 U	No
TCLP Semi-Volatile Organics	3 &4 Methylphenol	mg/L	0.0040	200	0.0040 U	No
TCLP Semi-Volatile Organics	2-Methylphenol	mg/L	0.0020	200	0.0020 U	No
TCLP Semi-Volatile Organics	Nitrobenzene	mg/L	0.00040	2.00	0.00040 U	No
TCLP Semi-Volatile Organics	Pentachlorophenol	mg/L	0.0040	100.00	0.0040 U	No
TCLP Semi-Volatile Organics	Pyridine	mg/L	0.0020	5.00	0.0020 U	No
TCLP Metals	Arsenic	mg/L	0.010	5.00	0.0074 J	No
TCLP Metals	Barium	mg/L	0.0050	100.00	0.045 J	No
TCLP Metals	Cadmium	mg/L	0.0010	1.00	0.00076 J	No
TCLP Metals	Chromium	mg/L	0.0040	5.00	0.0067 J	No
TCLP Metals	Lead	mg/L	0.0050	5.00	0.023 J	No
TCLP Metals	Mercury	mg/L	0.00020	0.20	0.00020 U	No
TCLP Metals	Selenium	mg/L	0.010	1.00	0.010 U	No
TCLP Metals	Silver	mg/L	0.0050	5.00	0.0050 U	No
TCLP Herbicides	2,4,5-TP (Silvex)	mg/L	0.00020	1.00	0.00020 U	No
TCLP Herbicides	2,4-D	mg/L	0.0040	10.00	0.0040 U	No
TCLP Pesticides	Chlordane	mg/L	0.0015	0.03	0.0015 U	No
TCLP Pesticides	Endrin	mg/L	0.00015	0.02	0.00015 U	No
TCLP Pesticides	Gamma-BHC (Lindane)	mg/L	0.00015	0.40	0.00015 U	No
TCLP Pesticides	Heptachlor	mg/L	0.00015	0.01	0.00015 U	No
TCLP Pesticides	Heptachlor Epoxide	mg/L	0.00015	0.01	0.00015 U	No
TCLP Pesticides	Methoxychlor	mg/L	0.00015	10.00	0.00015 U	No
TCLP Pesticides	Toxaphene	mg/L	0.0060	0.50	0.0060 U	No
TCLP Volatile Organics	1,1-Dichloroethene	mg/L	0.013	0.7	0.013 U	No
TCLP Volatile Organics	1,2-Dichloroethane	mg/L	0.013	0.50	0.013 U	No
TCLP Volatile Organics	2-Butanone	mg/L	0.025	200	0.025 U	No
TCLP Volatile Organics	Benzene	mg/L	0.013	0.50	0.013 U	No
TCLP Volatile Organics	Carbon Tetrachloride	mg/L	0.013	0.50	0.013 U	No
TCLP Volatile Organics	Chlorobenzene	mg/L	0.013	100.00	0.013 U	No
TCLP Volatile Organics	Chloroform	mg/L	0.013	6.00	0.013 U	No
TCLP Volatile Organics	Tetrachloroethylene	mg/L	0.025	0.70	0.025 U	No
TCLP Volatile Organics	Trichloroethene	mg/L	0.013	0.50	0.013 U	No
TCLP Volatile Organics	Vinyl Chloride	mg/L	0.013	0.20	0.013 U	No
Flashpoint	Flashpoint	F	1.0	-	>200 F	No
Reactivity	Cyanide, total	mg/L	0.0050	-	0.0050 U	No
Reactivity	Sulfide	mg/L	3.0	-	3.00 U	No
Corrosivity	Corrosivity	SU	0.100	-	7.22	No

### Attachment 3 – IDW Sampling Analytical Results - Solids

Analysis Type	Chemical	Units	Limit of Detection (mg/L)	TCLP Criteria (mg/L)	Results	Above Regulatory Limit – Yes/No
					079SB-00383-0001-IDW (Solids)	
TCLP Semi-Volatile Organics	1,4-Dichlorobenzene	mg/L	0.00050	7.50	0.00050 U	No
TCLP Semi-Volatile Organics	2,4,5-Trichlorophenol	mg/L	0.00050	400.0	0.00050 U	No
TCLP Semi-Volatile Organics	2,4,6-Trichlorophenol	mg/L	0.00050	2.00	0.00050 U	No
TCLP Semi-Volatile Organics	2,4-Dinitrotoluene	mg/L	0.00050	0.13	0.00050 U	No
TCLP Semi-Volatile Organics	Hexachlorobenzene	mg/L	0.00010	0.13	0.00010 U	No
TCLP Semi-Volatile Organics	Hexachlorobutadiene	mg/L	0.00050	0.50	0.00050 U	No
TCLP Semi-Volatile Organics	Hexachloroethane	mg/L	0.00050	3.00	0.00050 U	No
TCLP Semi-Volatile Organics	3 & 4 Methylphenol	mg/L	0.0010	200	0.0010 U	No
TCLP Semi-Volatile Organics	2-Methylphenol	mg/L	0.00050	200	0.00050 U	No
TCLP Semi-Volatile Organics	Nitrobenzene	mg/L	0.00010	2.00	0.00010 U	No
TCLP Semi-Volatile Organics	Pentachlorophenol	mg/L	0.0010	100.0	0.0010 U	No
TCLP Semi-Volatile Organics	Pyridine	mg/L	0.00050	5.00	0.0011 J	No
TCLP Metals	Arsenic	mg/L	0.040	5.00	0.013 J	No
TCLP Metals	Barium	mg/L	0.0050	100.0	0.38 J	No
TCLP Metals	Cadmium	mg/L	0.0010	1.00	0.0010 J	No
TCLP Metals	Chromium	mg/L	0.0040	5.00	0.0039 J	No
TCLP Metals	Lead	mg/L	0.0050	5.00	0.022 J	No
TCLP Metals	Mercury	mg/L	0.00020	0.20	0.00020 U	No
TCLP Metals	Selenium	mg/L	0.040	1.00	0.018 J	No
TCLP Metals	Silver	mg/L	0.0050	5.00	0.0027 U	No
TCLP Herbicides	2,4,5-TP (Silvex)	mg/L	0.00020	1.00	0.00020 U	No
TCLP Herbicides	2,4-D	mg/L	0.0040	10.00	0.0040 U	No
TCLP Pesticides	Chlordane	mg/L	0.0012	0.03	0.0012 U	No
TCLP Pesticides	Endrin	mg/L	0.00012	0.02	0.00012 U	No
TCLP Pesticides	Gamma-BHC (Lindane)	mg/L	0.00012	0.40	0.00012 U	No
TCLP Pesticides	Heptachlor	mg/L	0.00012	0.01	0.00012 U	No
TCLP Pesticides	Heptachlor Epoxide	mg/L	0.00012	0.01	0.00012 U	No
TCLP Pesticides	Methoxychlor	mg/L	0.00012	10.00	0.00012 U	No
TCLP Pesticides	Toxaphene	mg/L	0.0048	0.50	0.0048 U	No
TCLP Volatile Organics	1,1-Dichloroethene	mg/L	0.013	0.7	0.013 U	No
TCLP Volatile Organics	1,2-Dichloroethane	mg/L	0.013	0.50	0.013 U	No
TCLP Volatile Organics	2-Butanone	mg/L	0.025	200	0.025 U	No
TCLP Volatile Organics	Benzene	mg/L	0.013	0.50	0.013 U	No
TCLP Volatile Organics	Carbon Tetrachloride	mg/L	0.013	0.50	0.013 U	No
TCLP Volatile Organics	Chlorobenzene	mg/L	0.013	100.0	0.013 U	No
TCLP Volatile Organics	Chloroform	mg/L	0.013	6.00	0.013 U	No
TCLP Volatile Organics	Tetrachloroethylene	mg/L	0.025	0.70	0.025 U	No
TCLP Volatile Organics	Trichloroethene	mg/L	0.013	0.50	0.013 U	No
TCLP Volatile Organics	Vinyl Chloride	mg/L	0.013	0.20	0.013 U	No
Flashpoint	Flashpoint	F	1.0	-	>200 F	No
Reactivity	Cyanide, total	mg/kg	0.55	-	0.55 U	No
Reactivity	Sulfide	mg/kg	35	-	35 U	No
Corrosivity	Corrosivity	SU	0.100	-	6.26	No

**Notes:**

U – Not detected at concentration greater than the limit of detection

ug/kg – micrograms per kilogram

NA - Not Analyzed

J – Estimated Value

mg/L – milligrams per liter

mg/Kg – milligrams per kilogram

F – degrees Fahrenheit

SU – Standard unit for pH

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**Attachment 4 – Laboratory Analytical Report**

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## Jeff Donovan

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**From:** Tait, Kathryn S NFG NG OHARNG (US) <kathryn.s.tait.nfg@mail.mil>  
**Sent:** Tuesday, June 16, 2015 1:28 PM  
**To:** Pam Foti; Eric Cheng (eric.s.cheng@usace.army.mil)  
**Cc:** Jeff Donovan; Sedlak, Kevin M CTR (US); Leeper, Mark S CIV (US); Catherine Guido  
**Subject:** RE: IDW Disposal Letter Report - RVAAP - ECC Waste (UNCLASSIFIED)

Classification: UNCLASSIFIED  
Caveats: NONE

Pam:  
This revised report is acceptable and can be considered the final report.  
This will need to be included in the applicable site-related reports so the Ohio EPA gets a chance to look at it. Go ahead and work the next steps in the waste process (waste profile and waste pickup). Thanks.

Katie Tait  
Environmental Specialist 2  
OHARNG  
Camp Ravenna  
1438 State Route 534 SW  
Newton Falls OH 44444  
(614)336-6136

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NON-HAZARDOUS WASTE MANIFEST 1. Generator ID Number OH5 210 020 736 2. Page 1 of 1 3. Emergency Response Phone 800-851-8051 4. Waste Tracking Number 7/4/15-1

5. Generator's Name and Mailing Address: Former Ravenna Army Ammunition Plant, 8451 State Route 5, Ravenna, OH 44366. Generator's Site Address (if different than mailing address): Former Ravenna Army Ammunition Plant, 8451 State Route 5, Ravenna, OH 44366. Contact: Kathryn Tait. Generator's Phone: 614-335-8135

6. Transporter 1 Company Name: General Environmental Services, Inc. U.S. EPA ID Number: OHR 000 102 053

7. Transporter 2 Company Name: U.S. EPA ID Number:

8. Designated Facility Name and Site Address: Vexor Technology, 955 West Smith Road, Medina, OH 44256. U.S. EPA ID Number: OHR 000 777 895. Facility's Phone: 330-721-8773

9. Waste Shipping Name and Description	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	
	No.	Type			
1. Non DOT Regulated, Non Hazardous Material (Soil Cuttings) N/E NO. 1319517	1	DM	400	165 85T	
2. Non DOT Regulated, Non Hazardous Material (Decon Solution) N/E NO. 1319518	1	DM	200	165 85T	H
3.					
4. W# 12775					

13. Special Handling Instructions and Additional Information:  
 1.) Approval # VEX29433  
 2.) Approval # VEX29433  
 Alternate Emergency Contact: Jeff Donowan of ECC @ 508-509-1784

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

Generator's/Offor's Printed/Typed Name: Kathryn Tait. Signature: Kathryn Tait. Month: 7, Day: 15, Year: 15

15. International Shipments:  Import to U.S.  Export from U.S. Port of entry/exit: Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials:  
 Transporter 1 Printed/Typed Name: Steve Sigary. Signature: Steve Sigary. Month: 7, Day: 15, Year: 15.  
 Transporter 2 Printed/Typed Name: Signature: Month: Day: Year:

17. Discrepancy: 17a. Discrepancy Indication Space:  Quantity  Type  Residue  Partial Rejection  Full Rejection

Manifest Reference Number: U.S. EPA ID Number:

17b. Alternate Facility (or Generator): U.S. EPA ID Number:

Facility's Phone: 17c. Signature of Alternate Facility (or Generator): Month: Day: Year:

18. Designated Facility Owner or Operator Certification of receipt of materials covered by the manifest except as noted in Item 17a:  
 Printed/Typed Name: Signature: Month: Day: Year:

GENERATOR  
TRANSPORTER INTL  
TRANSPORTER  
DESIGNATED FACILITY

VEXOR Technology, Inc.  
 955 West Smith Road  
 Medina, Ohio 4425  
 Phone: 330-721-9773  
 FAX: 330-721-9438  
 EPA ID# OHD 077772895

## MATERIAL CHARACTERIZATION

Approval#: VEX29433  
 Sample #: \_\_\_\_\_  
 Sales Rep: \_\_\_\_\_  
 Date Submitted: \_\_\_\_\_

Generator: Former Ravenna Army Ammunition Plant			Bill to Name: Emerald Environmental		
Site Address: 8451 State Route 5			Site Address: 1621 St. Clair Ave.		
City: Ravenna	State: OH	Zip: 44266	City: Kent	State: OH	Zip: 44240
Phone: (614)336-6136	Fax: Generator mailing address: Camp Ravenna, 1438 State Route 534 SW, Newton Falls, OH 44444 Attn: Kathryn Tait		Phone: 330-677-0785	Fax: 330-677-1567	
EPA ID#: OH5210020736		SIC Code: -	Business Contact: Chris Archacki		
Technical Contact: Jeff Donovan with ECC 508-509-1784			Title: Field Services Manager		
Title: Project Manager			Email: carchacki@emerald-environmental.com		
Email: JDonovan@ecc.net					

### MATERIAL DESCRIPTION

Name and Description of Material: Soil Cuttings	
Process Generating Material: Site Investigation	U.S. EPA Hazardous Waste: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Proper DOT Shipping Name: Non DOT Regulated, Non Hazardous Material	
Method of Shipment: <input type="checkbox"/> Bulk <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Tote <input type="checkbox"/> Cubic Yd Box Other Explain: _____	
Estimated Annual Volume: _____ Cubic Yards _____ Tons _____ Gallons <u>20</u> Drums <u>meta</u> Container material (metal, plastic etc)	
Frequency: <input type="checkbox"/> One Time Only <input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Yearly <input checked="" type="checkbox"/> Other Approx drum weight <u>400</u> lbs	
Special Handling Instructions: N/A	
Preferred Disposal Method: <input checked="" type="checkbox"/> Landfill <input type="checkbox"/> Waste to Energy <input type="checkbox"/> Recycling <input type="checkbox"/> VEF <input type="checkbox"/> Other: _____	

### MATERIAL PROPERTIES AT 78°F

a) Physical State: <input checked="" type="checkbox"/> Solid <input type="checkbox"/> Semi-solid <input type="checkbox"/> Powder <input type="checkbox"/> Liquid <input type="checkbox"/> Phases	
b) Reactivity: <input type="checkbox"/> Water reactive <input type="checkbox"/> Acid Reactive <input type="checkbox"/> Alkaline Reactive <input type="checkbox"/> Oxidizer <input type="checkbox"/> Autosetting <input checked="" type="checkbox"/> none	
c) Flash Point, °F: <input type="checkbox"/> ≤ 72 <input type="checkbox"/> >72-100 <input type="checkbox"/> >100-140 <input type="checkbox"/> >140-200 <input type="checkbox"/> >200 <input checked="" type="checkbox"/> NA	
d) S. G./Density      e) pH: <input type="checkbox"/> ≤ 2 <input type="checkbox"/> >2 - 6 <input type="checkbox"/> >6 - 9 <input type="checkbox"/> >9 - <12.5 <input type="checkbox"/> ≥ 12.5 <input checked="" type="checkbox"/> NA	
f) Odor: <input checked="" type="checkbox"/> None <input type="checkbox"/> Mild <input type="checkbox"/> Strong Describe: _____ g) Color _____	
h) Total Organic Halogen (TOX) <input checked="" type="checkbox"/> 0 ppm <input type="checkbox"/> >1000 ppm* If this material is considered a "USED OIL" and is to be managed as a USED OIL, please complete the "USED OIL" ADDENDUM and attach to this profile.	
i) PCB Content: <input checked="" type="checkbox"/> 0 ppm <input type="checkbox"/> 1-49 ppm* <input type="checkbox"/> equal to or > 50 ppm *Supporting analysis and documentation required.	

Constituent	Range % (wt-vol)	
	Min	Max
Soil	99	100
Water	.5	<1%

Constituent	Range % (wt-vol)	
	Min	Max
Sulfur		
Chlorine		
Bromine		
Fluorine		
Nitrogen		
Oxygen		
Carbon		
Ash		
Btu's		
Biomass		

Metal	ppm	Metal	ppm	Metal	ppm	Metal	ppm
Thallium	<RegLevel	Antimony	<RegLevel	Beryllium	<RegLevel	Cobalt	<RegLevel
Copper	<RegLevel	Nickel	<RegLevel	Vanadium	<RegLevel	Tin	<RegLevel
Zinc	<RegLevel	Iron	<RegLevel	Manganese	<RegLevel	Magnesium	<RegLevel
Molybdenum	<RegLevel	Palladium	<RegLevel				

# MATERIAL CHARACTERIZATION

Approval#: \_\_\_\_\_

RCRA CONTAMINANTS <input checked="" type="checkbox"/> TCLP <input type="checkbox"/> TOTAL <input checked="" type="checkbox"/> NONE IN THIS SECTION										
EPA #	NAME		REGULATOR Y LEVEL	ACTUA L		EPA#	NAME		REGULATOR Y LEVEL	ACTUAL
D004	Arsenic	<input type="checkbox"/>	>5.0			D024	m-Cresol	<input type="checkbox"/>	>200.0	
D005	Barium	<input type="checkbox"/>	>100.0			D025	p-Cresol	<input type="checkbox"/>	>200.0	
D006	Cadmium	<input type="checkbox"/>	>1.0			D026	Cresol (total)	<input type="checkbox"/>	>200.0	
D007	Chromium	<input type="checkbox"/>	>5.0			D027	1,4-Dichlorobenzene	<input type="checkbox"/>	>7.5	
D008	Lead	<input type="checkbox"/>	>5.0			D028	1,2-Dichlorethane	<input type="checkbox"/>	>0.5	
D009	Mercury	<input type="checkbox"/>	>0.2			D029	1,2-Dichlorethylene	<input type="checkbox"/>	>.13	
D010	Selenium	<input type="checkbox"/>	>1.0			D030	2,4-Dinitrotoluene	<input type="checkbox"/>	>0.008	
D011	Silver	<input type="checkbox"/>	>5.0			D031	Heptachlor	<input type="checkbox"/>	>0.13	
D012	Endrin	<input type="checkbox"/>	>0.02			D032	Hexachlorobenzene	<input type="checkbox"/>	>0.5	
D013	Lindane	<input type="checkbox"/>	>0.4			D033	Hexachloro-1,3-butadiene	<input type="checkbox"/>	>0.5	
D014	Methoxychlor	<input type="checkbox"/>	>10.0			D034	Hexachloroethane	<input type="checkbox"/>	>3.0	
D015	Toxaphene	<input type="checkbox"/>	>0.05			D035	Methyl Ethyl Ketone	<input type="checkbox"/>	>200.0	
D016	2,4-D	<input type="checkbox"/>	>10.0			D036	Nitrobenzene	<input type="checkbox"/>	>2.0	
D017	2,4,5-TP (Silvex)	<input type="checkbox"/>	>1.0			D037	Petachlorophenol	<input type="checkbox"/>	>100.0	
D018	Benzene	<input type="checkbox"/>	>0.5			D038	Pyridine	<input type="checkbox"/>	>100.0	
D019	Carbon Tetrchloride	<input type="checkbox"/>	>0.5			D039	Tetrchloroethylene	<input type="checkbox"/>	>0.7	
D020	Chlordane	<input type="checkbox"/>	>0.03			D040	Trichloroethylene	<input type="checkbox"/>	>0.5	
D021	Chlorobenzene	<input type="checkbox"/>	>100.0			D041	2,4,5-Trichlorophenol	<input type="checkbox"/>	>400.0	
D022	Chloroform	<input type="checkbox"/>	>6.0			D042	2,4,6-Trichlorophenol	<input type="checkbox"/>	>2.0	
D023	o-Cresol	<input type="checkbox"/>	>200.0			D043	Vinyl Chloride	<input type="checkbox"/>	>0.2	

## GENERATOR CERTIFICATION

I hereby certify that to the best of my knowledge and belief, the information contained herein is a true and accurate description of the material being offered for disposal.

Samples of this material submitted to VEXOR are representative of the material described in this profile. I further certify that by utilizing this profile, neither myself nor any other employee of the company will deliver for treatment, processing or recycling or attempt to deliver for same any material that is classified as toxic waste, hazardous waste, medical or infectious waste or any other material that this facility is prohibited from accepting by law.

Authorized Representative Name (Printed): Kathryn S. Tait  
 Company: Ohio Army National Guard

Authorized Representative Signature: Kathryn S Tait

Title: Environmental Specialist 2      Date: 6/26/2015

### For VEXOR Use Only

Reviewed by: [Signature] Date: 7/1/15      Second review: [Signature] Date: 7/1/15

VEXOR Technology, Inc.  
 955 West Smith Road  
 Medina, Ohio 4425  
 Phone: 330-721-9773  
 FAX: 330-721-9438  
 EPA ID# OH07772895

# MATERIAL CHARACTERIZATION

Approval#: VEX29432  
 Sample #: \_\_\_\_\_  
 Sales Rep: \_\_\_\_\_  
 Date Submitted: \_\_\_\_\_

Generator: Former Ravenna Army Ammunition Plant			Bill to Name: Emerald Environmental		
Site Address: 8451 State Route 5			Site Address: 1621 St. Clair Ave.		
City: Ravenna	State: OH	Zip: 44266	City: Kent	State: OH	Zip: 44240
Phone: (614) 336-6136	Fax: Generator mailing address: Camp Ravenna, 1438 State Route 534 SW, Newton Falls, OH 44444 Attn: Kathryn Tait		Phone: 330-677-0785	Fax: 330-677-1567	
EPA ID#: OH5210020736		SIC Code: -	Business Contact: Chris Archacki		
Technical Contact: Jeff Donovan with ECC 508-509-1784			Title: Field Services Manager		
Title: Project Manager			Email: carchacki@emerald-environmental.com		
Email: JDonovan@ecc.net					

### MATERIAL DESCRIPTION

Name and Description of Material: De-contamination Fluids

Process Generating Material: Sampling Equipment Decontamination U.S. EPA Hazardous Waste:  Yes  No

Proper DOT Shipping Name: Non DOT Regulated, Non Hazardous Material

Method of Shipment:  Bulk  Drum  Tote  Cubic Yd Box Other Explain: \_\_\_\_\_

Estimated Annual Volume: \_\_\_\_\_ Cubic Yards \_\_\_\_\_ Tons \_\_\_\_\_ Gallons 20 Drums meta Container material (metal, plastic etc)

Frequency:  One Time Only  Daily  Weekly  Monthly  Yearly  Other Approx drum weight 200 lbs

Special Handling Instructions: N/A

Preferred Disposal Method:  Landfill  Waste to Energy  Recycling  VEF  Other: \_\_\_\_\_

### MATERIAL PROPERTIES AT 78°F

a) Physical State:  Solid  Semi-solid  Powder  Liquid  Phases

b) Reactivity:  Water reactive  Acid Reactive  Alkaline Reactive  Oxidizer  Autosetting  none

c) Flash Point, °F:  ≤ 72  >72-100  >100-140  >140-200  >200  NA

d) S. G./Density 1.0 e) pH:  ≤ 2  >2 - 6  >6 - 9  >9 - <12.5  ≥ 12.5  NA

f) Odor:  None  Mild  Strong Describe: \_\_\_\_\_ g) Color \_\_\_\_\_

h) Total Organic Halogen (TOX)  0 ppm  >1000 ppm\* If this material is considered a "USED OIL" and is to be managed as a USED OIL, please complete the "USED OIL" ADDENDUM and attach to this profile.

i) PCB Content:  0 ppm  1-49 ppm\*  equal to or > 50 ppm \*Supporting analysis and documentation required.

Constituent	Range % (wt-vol)	
	Min	Max
Water	99	100
Sediment	1	<2%

Constituent	Range % (wt-vol)	
	Min	Max
Sulfur		
Chlorine		
Bromine		
Fluorine		
Nitrogen		
Oxygen		
Carbon		
Ash		
Btu's		
Biomass		

Metal	ppm	Metal	ppm	Metal	ppm	Metal	ppm
Thallium	<RegLevel	Antimony	<RegLevel	Beryllium	<RegLevel	Cobalt	<RegLevel
Copper	<RegLevel	Nickel	<RegLevel	Vanadium	<RegLevel	Tin	<RegLevel
Zinc	<RegLevel	Iron	<RegLevel	Manganese	<RegLevel	Magnesium	<RegLevel
Molybdenum	<RegLevel	Palladium	<RegLevel				



# MATERIAL CHARACTERIZATION

Approval#: \_\_\_\_\_

RCRA CONTAMINANTS <input checked="" type="checkbox"/> TCLP <input type="checkbox"/> TOTAL <input checked="" type="checkbox"/> NONE IN THIS SECTION									
EPA #	NAME		REGULATOR Y LEVEL	ACTUA L	EPA#	NAME		REGULATOR Y LEVEL	ACTUAL
D004	Arsenic	<input type="checkbox"/>	>5.0		D024	m-Cresol	<input type="checkbox"/>	>200.0	
D005	Barium	<input type="checkbox"/>	>100.0		D025	p-Cresol	<input type="checkbox"/>	>200.0	
D006	Cadmium	<input type="checkbox"/>	>1.0		D026	Cresol (total)	<input type="checkbox"/>	>200.0	
D007	Chromium	<input type="checkbox"/>	>5.0		D027	1,4-Dichlorobenzene	<input type="checkbox"/>	>7.5	
D008	Lead	<input type="checkbox"/>	>5.0		D028	1,2-Dichloroethane	<input type="checkbox"/>	>0.5	
D009	Mercury	<input type="checkbox"/>	>0.2		D029	1,2-Dichloroethylene	<input type="checkbox"/>	>.13	
D010	Selenium	<input type="checkbox"/>	>1.0		D030	2,4-Dinitrotoluene	<input type="checkbox"/>	>0.008	
D011	Silver	<input type="checkbox"/>	>5.0		D031	Heptachlor	<input type="checkbox"/>	>0.13	
D012	Endrin	<input type="checkbox"/>	>0.02		D032	Hexachlorobenzene	<input type="checkbox"/>	>0.5	
D013	Lindane	<input type="checkbox"/>	>0.4		D033	Hexachloro-1,3-butadiene	<input type="checkbox"/>	>0.5	
D014	Methoxychlor	<input type="checkbox"/>	>10.0		D034	Hexachloroethane	<input type="checkbox"/>	>3.0	
D015	Toxaphene	<input type="checkbox"/>	>0.05		D035	Methyl Ethyl Ketone	<input type="checkbox"/>	>200.0	
D016	2,4-D	<input type="checkbox"/>	>10.0		D036	Nitrobenzene	<input type="checkbox"/>	>2.0	
D017	2,4,5-TP (Silvex)	<input type="checkbox"/>	>1.0		D037	Petachlorophenol	<input type="checkbox"/>	>100.0	
D018	Benzene	<input type="checkbox"/>	>0.5		D038	Pyridine	<input type="checkbox"/>	>100.0	
D019	Carbon Tetrachloride	<input type="checkbox"/>	>0.5		D039	Tetrachloroethylene	<input type="checkbox"/>	>0.7	
D020	Chlordane	<input type="checkbox"/>	>0.03		D040	Trichloroethylene	<input type="checkbox"/>	>0.5	
D021	Chlorobenzene	<input type="checkbox"/>	>100.0		D041	2,4,5-Trichlorophenol	<input type="checkbox"/>	>400.0	
D022	Chloroform	<input type="checkbox"/>	>6.0		D042	2,4,6-Trichlorophenol	<input type="checkbox"/>	>2.0	
D023	o-Cresol	<input type="checkbox"/>	>200.0		D043	Vinyl Chloride	<input type="checkbox"/>	>0.2	

## GENERATOR CERTIFICATION

I hereby certify that to the best of my knowledge and belief, the information contained herein is a true and accurate description of the material being offered for disposal.

Samples of this material submitted to VEXOR are representative of the material described in this profile. I further certify that by utilizing this profile, neither myself nor any other employee of the company will deliver for treatment, processing or recycling or attempt to deliver for same any material that is classified as toxic waste, hazardous waste, medical or infectious waste or any other material that this facility is prohibited from accepting by law.

Authorized Representative Name (Printed): Kathryn S Tait  
 Company: Ohio Army National Guard

Authorized Representative Signature: Kathryn S Tait

Title: Environmental Specialist 2      Date: 6/26/2015

### For VEXOR Use Only

Reviewed by: [Signature] Date: 7/1/15      Second review: [Signature] Date: 7/1/15

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# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton

4101 Shuffel Street NW

North Canton, OH 44720

Tel: (330)497-9396

TestAmerica Job ID: 240-49236-1

Client Project/Site: Ravenna Army Ammunition Plant

For:

Environmental Chemical Corp.

33 Boston Post Road West

Suite 420

Marlborough, Massachusetts 01752

Attn: Mr. Jackson Kiker



Authorized for release by:

4/30/2015 6:19:23 PM

Mark Loeb, Project Manager II

(330)966-9387

[mark.loeb@testamericainc.com](mailto:mark.loeb@testamericainc.com)

### LINKS

Review your project  
results through

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Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

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



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# Definitions/Glossary

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
^	Instrument related QC is outside acceptance limits.

### GC/MS Semi VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
M	Manual integrated compound.
^	Instrument related QC is outside acceptance limits.

### GC Semi VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
Q	One or more quality control criteria failed.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
M	Manual integrated compound.
J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
D	The reported value is from a dilution.
^	Instrument related QC is outside acceptance limits.

### HPLC/IC

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

### Metals

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
D	The reported value is from a dilution.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

### General Chemistry

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
H	Sample was prepped or analyzed beyond the specified holding time
J	Estimated: The analyte was positively identified; the quantitation is an estimation

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration

TestAmerica Canton

## Definitions/Glossary

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

### Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Case Narrative

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

**Job ID: 240-49236-1**

**Laboratory: TestAmerica Canton**

**Narrative**

## CASE NARRATIVE

**Client: Environmental Chemical Corp.**

**Project: Ravenna Army Ammunition Plant**

**Report Number: 240-49236-1**

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

The 353.2 Nitrocellulose, 8330 Nitroguanidine and 8330B Explosives analysis were performed at the TestAmerica Sacramento Laboratory.

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

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

TestAmerica utilizes USEPA approved methods and DOD QSM, where applicable, in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

All parameters for which TestAmerica North Canton has certification were evaluated to the limit of detection (LOD) and include qualified results where applicable. Parameters not certified under QSM, if any, were evaluated to the detection limit (DL) and include qualified results where applicable.

The sample(s) that contain constituents flagged with U are undetected. The result associated with this flag is the limit of detection (LOD).

### **RECEIPT**

The samples were received on 4/10/2015 2:21 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 3.5° C, 3.7° C, 4.1° C and 5.3° C.

### **TCLP VOLATILE ORGANIC COMPOUNDS (GCMS)**

Samples 079SB-0383-0001-IDW (240-49236-1) and 079SB-0384-0001-IDW (240-49236-2) were analyzed for TCLP volatile organic compounds (GCMS) in accordance with EPA SW-846 Methods 1311/8260 DoD. The samples were leached on 04/15/2015 and analyzed on 04/21/2015.

## Case Narrative

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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### Job ID: 240-49236-1 (Continued)

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#### Laboratory: TestAmerica Canton (Continued)

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

#### VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples 079SB-0385-0001-SW (240-49236-3), 079SB-0387-0001-RB (240-49236-5) and 079SB-0388-0001-TB (240-49236-6) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B DoD. The samples were analyzed on 04/14/2015.

Bromomethane and Chloroethane failed the recovery criteria high for MRL 240-176298/15. Bromomethane, Chloroethane, Chloromethane and Vinyl chloride failed the recovery criteria high for MRL 240-176298/5. Refer to the QC report for details.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 176298. 079SB-0385-0001-SW (240-49236-3), 079SB-0387-0001-RB (240-49236-5) and 079SB-0388-0001-TB (240-49236-6)

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

#### TCLP SEMIVOLATILE ORGANIC COMPOUNDS (GCMS)

Samples 079SB-0383-0001-IDW (240-49236-1) and 079SB-0384-0001-IDW (240-49236-2) were analyzed for TCLP semivolatile organic compounds (GCMS) in accordance with EPA SW-846 Methods 1311/8270 DOD. The samples were leached on 04/15/2015, prepared on 04/16/2015 and analyzed on 04/24/2015.

The following sample was diluted due to the nature of the sample matrix: 079SB-0384-0001-IDW (240-49236-2). Elevated reporting limits (RLs) are provided.

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

#### SEMIVOLATILE ORGANIC COMPOUNDS (GCMS)

Sample 079SB-0385-0001-SW (240-49236-3) was analyzed for semivolatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8270C. The sample was prepared on 04/13/2015 and analyzed on 04/24/2015.

Surrogates are added during the extraction process prior to dilution. When the sample is diluted, surrogate recoveries are diluted out and no corrective action is required.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with 176086.

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

#### NITROGUANIDINE (HPLC)

Sample 079SB-0385-0001-SW (240-49236-3) was analyzed for nitroguanidine (HPLC) in accordance with EPA SW-846 Method 8330\_Ngu. The sample was prepared on 04/13/2015 and analyzed on 04/20/2015.

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

#### TCLP CHLORINATED PESTICIDES

Samples 079SB-0383-0001-IDW (240-49236-1) and 079SB-0384-0001-IDW (240-49236-2) were analyzed for TCLP chlorinated pesticides in accordance with EPA SW-846 Methods 1311/8081 DOD. The samples were leached on 04/15/2015, prepared on 04/16/2015 and 04/22/2015 and analyzed on 04/22/2015 and 04/27/2015.

DCB Decachlorobiphenyl and Tetrachloro-m-xylene failed the surrogate recovery criteria low for 079SB-0384-0001-IDW (240-49236-2). DCB Decachlorobiphenyl and Tetrachloro-m-xylene failed the surrogate recovery criteria low for 079SB-0384-0001-IDWMS (240-49236-2MS). Refer to the QC report for details.

Both surrogates failed low. Re-extraction confirms matrix issue. Re-extracted data within hold time and reported. 079SB-0384-0001-IDW (240-49236-2) and (240-49236-F-2-I MS)



# Case Narrative

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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## Job ID: 240-49236-1 (Continued)

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### Laboratory: TestAmerica Canton (Continued)

Endrin, Heptachlor, Heptachlor epoxide and Methoxychlor failed the recovery criteria low for the MS of sample 079SB-0384-0001-IDWMS (240-49236-2) in batch 240-178086.

Methoxychlor was detected in method blank MB 240-177491/3-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

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

### CHLORINATED PESTICIDES

Sample 079SB-0385-0001-SW (240-49236-3) was analyzed for chlorinated pesticides in accordance with EPA SW-846 Method 8081A DoD. The samples were prepared on 04/15/2015 and analyzed on 04/16/2015.

The continuing calibration verification (CCV) associated with batch 177258 recovered above the upper control limit for Multiple Analytes. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: 079SB-0383-0001-IDW (240-49236-1).

The continuing calibration verification (CCV) associated with batch 178086 recovered above the upper control limit for Heptachlor. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: 079SB-0384-0001-IDW (240-49236-2).

The DCB surrogate recovery for the following samples was outside acceptance limits (low biased) on the confirmation column : 079SB-0385-0001-SW (240-49236-3). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control. Re-extraction of the sample confirms low DCB recovery.

The continuing calibration verification (CCV) associated with batch 176694 recovered above the upper control limit for DDD. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: 079SB-0385-0001-SW (240-49236-3).

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with 176084.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with 176509.

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

### POLYCHLORINATED BIPHENYLS (PCBS)

Sample 079SB-0385-0001-SW (240-49236-3) was analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082 DoD. The sample was prepared on 04/13/2015 and analyzed on 04/14/2015.

Surrogates are added during the extraction process prior to dilution. When the sample dilution is 5X or greater, surrogate recoveries are diluted out and no corrective action is required. All of the samples in this data set analyzed for PCBs were subjected to the sulfuric acid cleanup procedure before instrumental analysis, per EPA Method 3665A.

DCB Decachlorobiphenyl failed the surrogate recovery criteria low for 079SB-0385-0001-SW (240-49236-3). Refer to the QC report for details.

Surrogate DCB recovery for the following sample was outside control limits: 079SB-0385-0001-SW (240-49236-3). Re-extraction and re-analysis was performed with concurring results. The original analysis has been reported.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with 176083.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated

# Case Narrative

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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## Job ID: 240-49236-1 (Continued)

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### Laboratory: TestAmerica Canton (Continued)

with 176510.

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

#### TCLP CHLORINATED HERBICIDES

Samples 079SB-0383-0001-IDW (240-49236-1) and 079SB-0384-0001-IDW (240-49236-2) were analyzed for TCLP chlorinated herbicides in accordance with EPA SW-846 Methods 1311/8151A DoD. The samples were leached on 04/15/2015, prepared on 04/16/2015 and analyzed on 04/21/2015.

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

#### NITROAROMATICS AND NITRAMINES (HPLC)

Sample 079SB-0385-0001-SW (240-49236-3) was analyzed for Nitroaromatics and Nitramines (HPLC) in accordance with EPA SW-846 Method 8330B. The sample was prepared on 04/13/2015 and analyzed on 04/15/2015 and 04/24/2015.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 320-70962.

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

#### TCLP METALS (ICP)

Samples 079SB-0383-0001-IDW (240-49236-1) and 079SB-0384-0001-IDW (240-49236-2) were analyzed for TCLP metals (ICP) in accordance with EPA SW-846 Methods 1311/6010 DoD. The samples were leached on 04/15/2015, prepared on 04/16/2015 and analyzed on 04/17/2015.

ICB, CCB, and ICSA samples are evaluated using the lowest LOD and DL criteria in LIMS. Using this criteria, an individual element may occasionally be flagged as out of control. If the element has a higher LOD or DL, the data is evaluated to the higher limit and determined to be acceptable.

Arsenic, Barium, Chromium, Lead and Selenium were detected in method blank LB 240-176620/1-B at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Barium and Chromium were detected in method blank MB 240-176697/2-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Arsenic exceeded the RPD limit for the duplicate of sample 079SB-0383-0001-IDW (240-49236-1). Refer to the QC report for details.

Sample 079SB-0383-0001-IDW (240-49236-1)[4X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The following sample was diluted due to the nature of the sample matrix: 079SB-0383-0001-IDW (240-49236-1). Elevated reporting limits (RLs) are provided.

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

#### TOTAL RECOVERABLE METALS (ICPMS)

Samples 079SB-0385-0001-SW (240-49236-3) and 079SB-0386-0001-RB (240-49236-4) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020 DoD. The samples were prepared on 04/13/2015 and analyzed on 04/14/2015, 04/15/2015 and 04/20/2015.

ICB, CCB, and ICSA samples are evaluated using the lowest LOD and DL criteria in LIMS. Using this criteria, an individual element may occasionally be flagged as out of control. If the element has a higher LOD or DL, the data is evaluated to the higher limit and determined to be acceptable.

Several analytes were detected in method blank MB 240-176157/1-A at levels that were above the method detection limit but below the

## Case Narrative

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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### Job ID: 240-49236-1 (Continued)

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#### Laboratory: TestAmerica Canton (Continued)

reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Antimony, Cadmium, Cobalt, Lead and Thallium exceeded the RPD limit for the duplicate of sample 079SB-0385-0001-SW (240-49236-3). Refer to the QC report for details.

Sample 079SB-0385-0001-SW (240-49236-3)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

#### TCLP MERCURY

Samples 079SB-0383-0001-IDW (240-49236-1) and 079SB-0384-0001-IDW (240-49236-2) were analyzed for TCLP Mercury in accordance with EPA SW-846 Methods 1311/7470 DoD. The samples were leached on 04/15/2015, prepared on 04/16/2015 and analyzed on 04/17/2015.

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

#### TOTAL MERCURY

Samples 079SB-0385-0001-SW (240-49236-3) and 079SB-0386-0001-RB (240-49236-4) were analyzed for total mercury in accordance with EPA SW-846 Method 7470A. The samples were prepared on 04/13/2015 and analyzed on 04/14/2015.

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

#### FLASHPOINT

Sample 079SB-0383-0001-IDW (240-49236-1) was analyzed for flashpoint in accordance with EPA SW-846 Method 1010. The sample was analyzed on 04/15/2015.

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

#### FLASHPOINT

Sample 079SB-0384-0001-IDW (240-49236-2) was analyzed for flashpoint in accordance with EPA SW-846 Method 1010. The sample was analyzed on 04/15/2015.

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

#### NITROCELLULOSE

Sample 079SB-0385-0001-SW (240-49236-3) was analyzed for Nitrocellulose in accordance with EPA Method 353.2. The sample was prepared and analyzed on 04/21/2015.

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

#### TOTAL CYANIDE

Sample 079SB-0383-0001-IDW (240-49236-1) was analyzed for total cyanide in accordance with EPA SW-846 Method 9012A DoD. The sample was prepared and analyzed on 04/13/2015.

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

#### TOTAL CYANIDE

Sample 079SB-0384-0001-IDW (240-49236-2) was analyzed for total cyanide in accordance with EPA SW-846 Method 9012A DoD. The sample was prepared and analyzed on 04/23/2015.

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

#### SULFIDE

Sample 079SB-0383-0001-IDW (240-49236-1) was analyzed for sulfide in accordance with EPA SW-846 Method 9034. The sample was

## Case Narrative

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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### Job ID: 240-49236-1 (Continued)

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#### Laboratory: TestAmerica Canton (Continued)

prepared and analyzed on 04/14/2015.

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

#### SULFIDE

Sample 079SB-0384-0001-IDW (240-49236-2) was analyzed for sulfide in accordance with EPA SW-846 Method 9034. The sample was prepared and analyzed on 04/14/2015.

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

#### PH

Sample 079SB-0384-0001-IDW (240-49236-2) was analyzed for pH in accordance with EPA SW-846 Method 9040C. The sample was analyzed on 04/13/2015.

The following sample was received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: 079SB-0384-0001-IDW (240-49236-2).

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

#### PH

Sample 079SB-0383-0001-IDW (240-49236-1) was analyzed for pH in accordance with EPA SW-846 Method 9045C. The sample was analyzed on 04/13/2015.

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

#### PERCENT SOLIDS

Sample 079SB-0383-0001-IDW (240-49236-1) was analyzed for percent solids in accordance with EPA Method 160.3 MOD. The sample was analyzed on 04/10/2015.

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

# Method Summary

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CAN
8081A	Organochlorine Pesticides (GC)	SW846	TAL CAN
8082	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CAN
8151A	Herbicides (GC)	SW846	TAL CAN
8330 Modified	Nitroguanidine (HPLC)	SW846	TAL SAC
8330B	Nitroaromatics and Nitramines (HPLC)	SW846	TAL SAC
6010B	Metals (ICP)	SW846	TAL CAN
6020	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL CAN
1010	Ignitability, Pensky-Martens Closed-Cup Method	SW846	TAL CAN
9012A	Cyanide, Total and/or Amenable	SW846	TAL CAN
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CAN
9040C	pH	SW846	TAL CAN
9045C	pH	SW846	TAL CAN
Moisture	Percent Moisture	EPA	TAL CAN
WS-WC-0050	Nitrocellulose	TAL-SAC	TAL SAC

#### Protocol References:

EPA = US Environmental Protection Agency

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

TAL-SAC = TestAmerica Laboratories, West Sacramento, Facility Standard Operating Procedure.

#### Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

# Sample Summary

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-49236-1	079SB-0383-0001-IDW	Solid	04/10/15 08:00	04/10/15 14:21
240-49236-2	079SB-0384-0001-IDW	Water	04/10/15 08:30	04/10/15 14:21
240-49236-3	079SB-0385-0001-SW	Water	04/10/15 08:45	04/10/15 14:21
240-49236-4	079SB-0386-0001-RB	Water	04/10/15 08:50	04/10/15 14:21
240-49236-5	079SB-0387-0001-RB	Water	04/10/15 09:00	04/10/15 14:21
240-49236-6	079SB-0388-0001-TB	Water	04/10/15 07:30	04/10/15 14:21

## Detection Summary

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

### Client Sample ID: 079SB-0383-0001-IDW

### Lab Sample ID: 240-49236-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Pyridine	0.0011	J M	0.020	0.00035	mg/L	1		8270C	TCLP
Silver	0.0027	J	0.50	0.00092	mg/L	1		6010B	TCLP
Arsenic	0.013	J D	2.0	0.012	mg/L	4		6010B	TCLP
Barium	0.38	J	10	0.0010	mg/L	1		6010B	TCLP
Cadmium	0.0010	J	0.10	0.00014	mg/L	1		6010B	TCLP
Chromium	0.0039	J	0.50	0.00055	mg/L	1		6010B	TCLP
Lead	0.022	J	0.50	0.0019	mg/L	1		6010B	TCLP
Selenium	0.018	J D	1.0	0.016	mg/L	4		6010B	TCLP
Flashpoint	>200		1.00	1.00	Degrees F	1		1010	Total/NA
Corrosivity	6.26		0.100	0.100	SU	1		9045C	Total/NA

### Client Sample ID: 079SB-0384-0001-IDW

### Lab Sample ID: 240-49236-2

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0074	J	0.50	0.0029	mg/L	1		6010B	TCLP
Barium	0.045	J	10	0.0010	mg/L	1		6010B	TCLP
Cadmium	0.00076	J	0.10	0.00014	mg/L	1		6010B	TCLP
Chromium	0.0067	J	0.50	0.00055	mg/L	1		6010B	TCLP
Lead	0.023	J	0.50	0.0019	mg/L	1		6010B	TCLP
Flashpoint	>200		1.00	1.00	Degrees F	1		1010	Total/NA
Corrosivity	7.22	H	0.100	0.100	SU	1		9040C	Total/NA

### Client Sample ID: 079SB-0385-0001-SW

### Lab Sample ID: 240-49236-3

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Acetone	1.9	J	10	0.94	ug/L	1		8260B	Total/NA
Antimony	0.43	J	2.0	0.16	ug/L	1		6020	Total Recoverable
Arsenic	0.93	J	5.0	0.18	ug/L	1		6020	Total Recoverable
Barium	18		5.0	1.1	ug/L	1		6020	Total Recoverable
Beryllium	0.27	J	1.0	0.053	ug/L	1		6020	Total Recoverable
Cadmium	0.38	J	2.0	0.061	ug/L	1		6020	Total Recoverable
Calcium	18000		2000	240	ug/L	1		6020	Total Recoverable
Chromium	1.3	J	6.0	0.20	ug/L	1		6020	Total Recoverable
Cobalt	0.28	J	1.0	0.021	ug/L	1		6020	Total Recoverable
Copper	1.1	J	4.0	0.75	ug/L	1		6020	Total Recoverable
Iron	30	J	150	16	ug/L	1		6020	Total Recoverable
Lead	0.18	J	1.0	0.11	ug/L	1		6020	Total Recoverable
Magnesium	31000	D	5000	240	ug/L	5		6020	Total Recoverable
Potassium	2700		1000	30	ug/L	1		6020	Total Recoverable
Selenium	0.62	J	5.0	0.25	ug/L	1		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

## Detection Summary

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

### Client Sample ID: 079SB-0385-0001-SW (Continued)

### Lab Sample ID: 240-49236-3

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Sodium	43000		1000	68	ug/L	1		6020	Total Recoverable
Thallium	0.22	J	2.0	0.074	ug/L	1		6020	Total Recoverable
Vanadium	0.35	J	5.0	0.23	ug/L	1		6020	Total Recoverable

### Client Sample ID: 079SB-0386-0001-RB

### Lab Sample ID: 240-49236-4

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	53	J	60	9.0	ug/L	1		6020	Total Recoverable
Antimony	0.66	J	2.0	0.16	ug/L	1		6020	Total Recoverable
Arsenic	0.38	J	5.0	0.18	ug/L	1		6020	Total Recoverable
Beryllium	0.16	J	1.0	0.053	ug/L	1		6020	Total Recoverable
Cadmium	0.079	J	2.0	0.061	ug/L	1		6020	Total Recoverable
Chromium	2.0	J	6.0	0.20	ug/L	1		6020	Total Recoverable
Cobalt	0.13	J	1.0	0.021	ug/L	1		6020	Total Recoverable
Iron	57	J	150	16	ug/L	1		6020	Total Recoverable
Manganese	5.8	J	10	1.1	ug/L	1		6020	Total Recoverable
Nickel	2.8	J	5.0	0.23	ug/L	1		6020	Total Recoverable
Sodium	840	J	1000	68	ug/L	1		6020	Total Recoverable
Thallium	0.11	J	2.0	0.074	ug/L	1		6020	Total Recoverable
Vanadium	0.26	J	5.0	0.23	ug/L	1		6020	Total Recoverable

### Client Sample ID: 079SB-0387-0001-RB

### Lab Sample ID: 240-49236-5

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Acetone	1.1	J	10	0.94	ug/L	1		8260B	Total/NA

### Client Sample ID: 079SB-0388-0001-TB

### Lab Sample ID: 240-49236-6

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Acetone	6.5	J	10	0.94	ug/L	1		8260B	Total/NA
Methylene Chloride	3.3		1.0	0.33	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton



# Client Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

**Client Sample ID: 079SB-0383-0001-IDW**

**Lab Sample ID: 240-49236-1**

**Date Collected: 04/10/15 08:00**

**Matrix: Solid**

**Date Received: 04/10/15 14:21**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.013	U	0.025	0.0095	mg/L			04/21/15 19:11	1
1,2-Dichloroethane	0.013	U	0.025	0.011	mg/L			04/21/15 19:11	1
2-Butanone (MEK)	0.025	U	0.25	0.029	mg/L			04/21/15 19:11	1
Benzene	0.013	U	0.025	0.0065	mg/L			04/21/15 19:11	1
Carbon tetrachloride	0.013	U	0.025	0.0065	mg/L			04/21/15 19:11	1
Chlorobenzene	0.013	U	0.025	0.0075	mg/L			04/21/15 19:11	1
Chloroform	0.013	U	0.025	0.0080	mg/L			04/21/15 19:11	1
Tetrachloroethene	0.025	U	0.025	0.015	mg/L			04/21/15 19:11	1
Trichloroethene	0.013	U	0.025	0.0085	mg/L			04/21/15 19:11	1
Vinyl chloride	0.013	U	0.025	0.011	mg/L			04/21/15 19:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	85		80 - 120					04/21/15 19:11	1
1,2-Dichloroethane-d4 (Surr)	85		80 - 121					04/21/15 19:11	1
4-Bromofluorobenzene (Surr)	77		70 - 124					04/21/15 19:11	1
Dibromofluoromethane (Surr)	90		84 - 128					04/21/15 19:11	1

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.00050	U	0.0040	0.00034	mg/L		04/16/15 08:13	04/24/15 12:18	1
2,4,5-Trichlorophenol	0.00050	U	0.020	0.00030	mg/L		04/16/15 08:13	04/24/15 12:18	1
2,4,6-Trichlorophenol	0.00050	U	0.020	0.00024	mg/L		04/16/15 08:13	04/24/15 12:18	1
2,4-Dinitrotoluene	0.00050	U	0.020	0.00025	mg/L		04/16/15 08:13	04/24/15 12:18	1
Hexachlorobenzene	0.00010	U	0.020	0.000085	mg/L		04/16/15 08:13	04/24/15 12:18	1
Hexachlorobutadiene	0.00050	U	0.020	0.00027	mg/L		04/16/15 08:13	04/24/15 12:18	1
Hexachloroethane	0.00050	U	0.020	0.00019	mg/L		04/16/15 08:13	04/24/15 12:18	1
3 & 4 Methylphenol	0.0010	U	0.040	0.00080	mg/L		04/16/15 08:13	04/24/15 12:18	1
2-Methylphenol	0.00050	U	0.0040	0.00017	mg/L		04/16/15 08:13	04/24/15 12:18	1
Nitrobenzene	0.00010	U	0.0040	0.000040	mg/L		04/16/15 08:13	04/24/15 12:18	1
Pentachlorophenol	0.0010	U	0.040	0.00027	mg/L		04/16/15 08:13	04/24/15 12:18	1
<b>Pyridine</b>	<b>0.0011</b>	<b>J M</b>	0.020	0.00035	mg/L		04/16/15 08:13	04/24/15 12:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	81		22 - 110				04/16/15 08:13	04/24/15 12:18	1
2-Fluorophenol (Surr)	60		10 - 110				04/16/15 08:13	04/24/15 12:18	1
Nitrobenzene-d5 (Surr)	78		29 - 111				04/16/15 08:13	04/24/15 12:18	1
Terphenyl-d14 (Surr)	85		40 - 119				04/16/15 08:13	04/24/15 12:18	1
2,4,6-Tribromophenol (Surr)	84		17 - 117				04/16/15 08:13	04/24/15 12:18	1
Phenol-d5 (Surr)	74		10 - 110				04/16/15 08:13	04/24/15 12:18	1

**Method: 8081A - Organochlorine Pesticides (GC) - TCLP**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	0.0012	U	0.030	0.00014	mg/L		04/16/15 08:22	04/22/15 04:55	1
Endrin	0.00012	U Q	0.010	0.000013	mg/L		04/16/15 08:22	04/22/15 04:55	1
gamma-BHC (Lindane)	0.00012	U Q	0.010	0.000013	mg/L		04/16/15 08:22	04/22/15 04:55	1
Heptachlor	0.00012	U Q	0.010	0.000014	mg/L		04/16/15 08:22	04/22/15 04:55	1
Heptachlor epoxide	0.00012	U Q	0.010	0.000015	mg/L		04/16/15 08:22	04/22/15 04:55	1
Methoxychlor	0.00012	U Q	0.030	0.000013	mg/L		04/16/15 08:22	04/22/15 04:55	1
Toxaphene	0.0048	U	0.50	0.00020	mg/L		04/16/15 08:22	04/22/15 04:55	1

TestAmerica Canton

# Client Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

**Client Sample ID: 079SB-0383-0001-IDW**

**Lab Sample ID: 240-49236-1**

Date Collected: 04/10/15 08:00

Matrix: Solid

Date Received: 04/10/15 14:21

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	92	Q	44 - 144	04/16/15 08:22	04/22/15 04:55	1
DCB Decachlorobiphenyl	93	Q	44 - 144	04/16/15 08:22	04/22/15 04:55	1
Tetrachloro-m-xylene	90	Q	44 - 127	04/16/15 08:22	04/22/15 04:55	1
Tetrachloro-m-xylene	92	Q	44 - 127	04/16/15 08:22	04/22/15 04:55	1

**Method: 8151A - Herbicides (GC) - TCLP**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	0.0040	U	0.50	0.0019	mg/L		04/16/15 08:24	04/21/15 20:53	1
Silvex (2,4,5-TP)	0.00020	U	0.10	0.00027	mg/L		04/16/15 08:24	04/21/15 20:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	91	Q	37 - 116	04/16/15 08:24	04/21/15 20:53	1
2,4-Dichlorophenylacetic acid	82	Q	37 - 116	04/16/15 08:24	04/21/15 20:53	1

**Method: 6010B - Metals (ICP) - TCLP**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	0.0027	J	0.50	0.00092	mg/L		04/16/15 09:57	04/17/15 08:35	1
Arsenic	0.013	J D	2.0	0.012	mg/L		04/16/15 09:57	04/17/15 09:10	4
Barium	0.38	J	10	0.0010	mg/L		04/16/15 09:57	04/17/15 08:35	1
Cadmium	0.0010	J	0.10	0.00014	mg/L		04/16/15 09:57	04/17/15 08:35	1
Chromium	0.0039	J	0.50	0.00055	mg/L		04/16/15 09:57	04/17/15 08:35	1
Lead	0.022	J	0.50	0.0019	mg/L		04/16/15 09:57	04/17/15 08:35	1
Selenium	0.018	J D	1.0	0.016	mg/L		04/16/15 09:57	04/17/15 09:10	4

**Method: 7470A - Mercury (CVAA) - TCLP**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	0.00020	U	0.0020	0.000090	mg/L		04/16/15 14:00	04/17/15 10:44	1

**General Chemistry**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	>200		1.00	1.00	Degrees F			04/15/15 09:50	1
Cyanide, Total	0.55	U	0.55	0.33	mg/Kg	☆	04/13/15 09:56	04/13/15 14:29	1
Sulfide	35	U	36	26	mg/Kg	☆	04/14/15 08:03	04/14/15 13:02	1
Corrosivity	6.26		0.100	0.100	SU			04/13/15 12:45	1
Percent Solids	84		0.10	0.10	%			04/10/15 18:17	1
Percent Moisture	16		0.10	0.10	%			04/10/15 18:17	1

# Client Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

**Client Sample ID: 079SB-0384-0001-IDW**

**Lab Sample ID: 240-49236-2**

**Date Collected: 04/10/15 08:30**

**Matrix: Water**

**Date Received: 04/10/15 14:21**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.013	U	0.025	0.0095	mg/L			04/21/15 19:36	1
1,2-Dichloroethane	0.013	U	0.025	0.011	mg/L			04/21/15 19:36	1
2-Butanone (MEK)	0.025	U	0.25	0.029	mg/L			04/21/15 19:36	1
Benzene	0.013	U	0.025	0.0065	mg/L			04/21/15 19:36	1
Carbon tetrachloride	0.013	U	0.025	0.0065	mg/L			04/21/15 19:36	1
Chlorobenzene	0.013	U	0.025	0.0075	mg/L			04/21/15 19:36	1
Chloroform	0.013	U	0.025	0.0080	mg/L			04/21/15 19:36	1
Tetrachloroethene	0.025	U	0.025	0.015	mg/L			04/21/15 19:36	1
Trichloroethene	0.013	U	0.025	0.0085	mg/L			04/21/15 19:36	1
Vinyl chloride	0.013	U	0.025	0.011	mg/L			04/21/15 19:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120					04/21/15 19:36	1
1,2-Dichloroethane-d4 (Surr)	93		80 - 121					04/21/15 19:36	1
4-Bromofluorobenzene (Surr)	85		70 - 124					04/21/15 19:36	1
Dibromofluoromethane (Surr)	96		84 - 128					04/21/15 19:36	1

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.0020	U	0.016	0.0014	mg/L		04/16/15 08:13	04/24/15 12:43	4
2,4,5-Trichlorophenol	0.0020	U	0.080	0.0012	mg/L		04/16/15 08:13	04/24/15 12:43	4
2,4,6-Trichlorophenol	0.0020	U	0.080	0.00096	mg/L		04/16/15 08:13	04/24/15 12:43	4
2,4-Dinitrotoluene	0.0020	U	0.080	0.0010	mg/L		04/16/15 08:13	04/24/15 12:43	4
Hexachlorobenzene	0.00040	U	0.080	0.00034	mg/L		04/16/15 08:13	04/24/15 12:43	4
Hexachlorobutadiene	0.0020	U	0.080	0.0011	mg/L		04/16/15 08:13	04/24/15 12:43	4
Hexachloroethane	0.0020	U	0.080	0.00076	mg/L		04/16/15 08:13	04/24/15 12:43	4
3 & 4 Methylphenol	0.0040	U	0.16	0.0032	mg/L		04/16/15 08:13	04/24/15 12:43	4
2-Methylphenol	0.0020	U	0.016	0.00068	mg/L		04/16/15 08:13	04/24/15 12:43	4
Nitrobenzene	0.00040	U	0.016	0.00016	mg/L		04/16/15 08:13	04/24/15 12:43	4
Pentachlorophenol	0.0040	U	0.16	0.0011	mg/L		04/16/15 08:13	04/24/15 12:43	4
Pyridine	0.0020	U	0.080	0.0014	mg/L		04/16/15 08:13	04/24/15 12:43	4
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	85		22 - 110				04/16/15 08:13	04/24/15 12:43	4
2-Fluorophenol (Surr)	19		10 - 110				04/16/15 08:13	04/24/15 12:43	4
Nitrobenzene-d5 (Surr)	72		29 - 111				04/16/15 08:13	04/24/15 12:43	4
Terphenyl-d14 (Surr)	80		40 - 119				04/16/15 08:13	04/24/15 12:43	4
2,4,6-Tribromophenol (Surr)	96		17 - 117				04/16/15 08:13	04/24/15 12:43	4
Phenol-d5 (Surr)	68		10 - 110				04/16/15 08:13	04/24/15 12:43	4

**Method: 8081A - Organochlorine Pesticides (GC) - TCLP - RE**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	0.0015	U Q	0.038	0.00018	mg/L		04/22/15 15:15	04/27/15 15:27	1
Endrin	0.00015	U Q J	0.013	0.000016	mg/L		04/22/15 15:15	04/27/15 15:27	1
gamma-BHC (Lindane)	0.00015	U Q	0.013	0.000016	mg/L		04/22/15 15:15	04/27/15 15:27	1
Heptachlor	0.00015	U Q J	0.013	0.000018	mg/L		04/22/15 15:15	04/27/15 15:27	1
Heptachlor epoxide	0.00015	U Q J	0.013	0.000019	mg/L		04/22/15 15:15	04/27/15 15:27	1
Methoxychlor	0.00015	U Q J	0.038	0.000016	mg/L		04/22/15 15:15	04/27/15 15:27	1
Toxaphene	0.0060	U Q	0.63	0.00024	mg/L		04/22/15 15:15	04/27/15 15:27	1

TestAmerica Canton

# Client Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

**Client Sample ID: 079SB-0384-0001-IDW**

**Lab Sample ID: 240-49236-2**

Date Collected: 04/10/15 08:30

Matrix: Water

Date Received: 04/10/15 14:21

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	4	Q	44 - 144	04/22/15 15:15	04/27/15 15:27	1
DCB Decachlorobiphenyl	4	Q	44 - 144	04/22/15 15:15	04/27/15 15:27	1
Tetrachloro-m-xylene	35	Q	44 - 127	04/22/15 15:15	04/27/15 15:27	1
Tetrachloro-m-xylene	25	Q	44 - 127	04/22/15 15:15	04/27/15 15:27	1

**Method: 8151A - Herbicides (GC) - TCLP**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	0.0040	U	0.50	0.0019	mg/L		04/16/15 08:24	04/21/15 21:41	1
Silvex (2,4,5-TP)	0.00020	U	0.10	0.00027	mg/L		04/16/15 08:24	04/21/15 21:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	97	M Q	37 - 116	04/16/15 08:24	04/21/15 21:41	1
2,4-Dichlorophenylacetic acid	99	Q	37 - 116	04/16/15 08:24	04/21/15 21:41	1

**Method: 6010B - Metals (ICP) - TCLP**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	0.0050	U	0.50	0.00092	mg/L		04/16/15 09:57	04/17/15 09:06	1
Arsenic	0.0074	J	0.50	0.0029	mg/L		04/16/15 09:57	04/17/15 09:06	1
Barium	0.045	J	10	0.0010	mg/L		04/16/15 09:57	04/17/15 09:06	1
Cadmium	0.00076	J	0.10	0.00014	mg/L		04/16/15 09:57	04/17/15 09:06	1
Chromium	0.0067	J	0.50	0.00055	mg/L		04/16/15 09:57	04/17/15 09:06	1
Lead	0.023	J	0.50	0.0019	mg/L		04/16/15 09:57	04/17/15 09:06	1
Selenium	0.010	U	0.25	0.0040	mg/L		04/16/15 09:57	04/17/15 09:06	1

**Method: 7470A - Mercury (CVAA) - TCLP**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	0.00020	U	0.0020	0.000090	mg/L		04/16/15 14:00	04/17/15 10:49	1

**General Chemistry**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	>200		1.00	1.00	Degrees F			04/15/15 06:57	1
Cyanide, Total	0.0050	U	0.010	0.0020	mg/L		04/23/15 11:18	04/23/15 14:37	1
Sulfide	3.0	U	3.0	0.94	mg/L		04/14/15 08:03	04/14/15 13:11	1
Corrosivity	7.22	H	0.100	0.100	SU			04/13/15 11:27	1

# Client Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

**Client Sample ID: 079SB-0385-0001-SW**

**Lab Sample ID: 240-49236-3**

**Date Collected: 04/10/15 08:45**

**Matrix: Water**

**Date Received: 04/10/15 14:21**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.44	ug/L			04/14/15 12:04	1
1,1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.22	ug/L			04/14/15 12:04	1
1,1,2-Trichloroethane	0.50	U	1.0	0.24	ug/L			04/14/15 12:04	1
1,1-Dichloroethane	1.0	U	1.0	0.30	ug/L			04/14/15 12:04	1
1,1-Dichloroethene	1.0	U	1.0	0.45	ug/L			04/14/15 12:04	1
1,2-Dichloroethane	1.0	U	1.0	0.23	ug/L			04/14/15 12:04	1
1,2-Dichloroethene, Total	1.0	U	2.0	0.20	ug/L			04/14/15 12:04	1
1,2-Dichloropropane	1.0	U	1.0	0.25	ug/L			04/14/15 12:04	1
2-Butanone (MEK)	2.0	U	10	0.53	ug/L			04/14/15 12:04	1
2-Hexanone	2.0	U	10	0.48	ug/L			04/14/15 12:04	1
4-Methyl-2-pentanone (MIBK)	2.0	U	10	0.99	ug/L			04/14/15 12:04	1
<b>Acetone</b>	<b>1.9</b>	<b>J</b>	10	0.94	ug/L			04/14/15 12:04	1
Benzene	1.0	U	1.0	0.35	ug/L			04/14/15 12:04	1
Bromoform	1.0	U	1.0	0.56	ug/L			04/14/15 12:04	1
Bromomethane	1.0	U	1.0	0.44	ug/L			04/14/15 12:04	1
Carbon disulfide	1.0	U	1.0	0.38	ug/L			04/14/15 12:04	1
Carbon tetrachloride	1.0	U	1.0	0.43	ug/L			04/14/15 12:04	1
Chlorobenzene	1.0	U	1.0	0.25	ug/L			04/14/15 12:04	1
Chloromethane	1.0	U	1.0	0.44	ug/L			04/14/15 12:04	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.46	ug/L			04/14/15 12:04	1
Dibromochloromethane	1.0	U	1.0	0.43	ug/L			04/14/15 12:04	1
Bromodichloromethane	1.0	U	1.0	0.29	ug/L			04/14/15 12:04	1
Ethylbenzene	1.0	U	1.0	0.25	ug/L			04/14/15 12:04	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			04/14/15 12:04	1
Methylene Chloride	1.0	U	1.0	0.33	ug/L			04/14/15 12:04	1
Styrene	0.50	U	1.0	0.45	ug/L			04/14/15 12:04	1
Tetrachloroethene	1.0	U	1.0	0.31	ug/L			04/14/15 12:04	1
Toluene	1.0	U	1.0	0.23	ug/L			04/14/15 12:04	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.56	ug/L			04/14/15 12:04	1
Trichloroethene	1.0	U	1.0	0.22	ug/L			04/14/15 12:04	1
Vinyl chloride	1.0	U	1.0	0.29	ug/L			04/14/15 12:04	1
Xylenes, Total	2.0	U	2.0	0.52	ug/L			04/14/15 12:04	1
Chloroform	1.0	U	1.0	0.25	ug/L			04/14/15 12:04	1
Bromochloromethane	1.0	U	1.0	0.50	ug/L			04/14/15 12:04	1
1,2-Dibromoethane	1.0	U	1.0	0.32	ug/L			04/14/15 12:04	1
Chloroethane	1.0	U	1.0	0.32	ug/L			04/14/15 12:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		85 - 120		04/14/15 12:04	1
1,2-Dichloroethane-d4 (Surr)	101		70 - 120		04/14/15 12:04	1
4-Bromofluorobenzene (Surr)	95		75 - 120		04/14/15 12:04	1
Dibromofluoromethane (Surr)	96		85 - 115		04/14/15 12:04	1

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.096	U	0.19	0.043	ug/L		04/13/15 06:18	04/24/15 11:53	1
Acenaphthylene	0.096	U	0.19	0.046	ug/L		04/13/15 06:18	04/24/15 11:53	1
Anthracene	0.096	U	0.19	0.085	ug/L		04/13/15 06:18	04/24/15 11:53	1
Benzo[a]anthracene	0.096	U	0.19	0.028	ug/L		04/13/15 06:18	04/24/15 11:53	1
Benzo[a]pyrene	0.096	U	0.19	0.049	ug/L		04/13/15 06:18	04/24/15 11:53	1

TestAmerica Canton

# Client Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

**Client Sample ID: 079SB-0385-0001-SW**

**Lab Sample ID: 240-49236-3**

**Date Collected: 04/10/15 08:45**

**Matrix: Water**

**Date Received: 04/10/15 14:21**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[b]fluoranthene	0.096	U	0.19	0.038	ug/L		04/13/15 06:18	04/24/15 11:53	1
Benzo[g,h,i]perylene	0.096	U	0.19	0.045	ug/L		04/13/15 06:18	04/24/15 11:53	1
Benzoic acid	19	U	24	9.6	ug/L		04/13/15 06:18	04/24/15 11:53	1
Benzo[k]fluoranthene	0.096	U	0.19	0.043	ug/L		04/13/15 06:18	04/24/15 11:53	1
Benzyl alcohol	0.48	U	4.8	0.37	ug/L		04/13/15 06:18	04/24/15 11:53	1
Bis(2-chloroethoxy)methane	0.48	U	0.96	0.31	ug/L		04/13/15 06:18	04/24/15 11:53	1
Bis(2-chloroethyl)ether	0.096	U	0.96	0.096	ug/L		04/13/15 06:18	04/24/15 11:53	1
bis (2-chloroisopropyl) ether	0.48	U	0.96	0.38	ug/L		04/13/15 06:18	04/24/15 11:53	1
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	1.6	ug/L		04/13/15 06:18	04/24/15 11:53	1
4-Bromophenyl phenyl ether	0.48	U	1.9	0.21	ug/L		04/13/15 06:18	04/24/15 11:53	1
Butyl benzyl phthalate	0.48	U	4.8	0.25	ug/L		04/13/15 06:18	04/24/15 11:53	1
Carbazole	0.48	U	0.96	0.27	ug/L		04/13/15 06:18	04/24/15 11:53	1
4-Chloroaniline	0.48	U	1.9	0.20	ug/L		04/13/15 06:18	04/24/15 11:53	1
4-Chloro-3-methylphenol	0.48	U	1.9	0.20	ug/L		04/13/15 06:18	04/24/15 11:53	1
2-Chloronaphthalene	0.48	U	0.96	0.096	ug/L		04/13/15 06:18	04/24/15 11:53	1
2-Chlorophenol	0.48	U	0.96	0.28	ug/L		04/13/15 06:18	04/24/15 11:53	1
4-Chlorophenyl phenyl ether	0.48	U	1.9	0.29	ug/L		04/13/15 06:18	04/24/15 11:53	1
Chrysene	0.096	U	0.19	0.048	ug/L		04/13/15 06:18	04/24/15 11:53	1
Dibenz(a,h)anthracene	0.096	U	0.19	0.043	ug/L		04/13/15 06:18	04/24/15 11:53	1
Dibenzofuran	0.096	U	0.96	0.019	ug/L		04/13/15 06:18	04/24/15 11:53	1
1,2-Dichlorobenzene	0.48	U	0.96	0.28	ug/L		04/13/15 06:18	04/24/15 11:53	1
1,3-Dichlorobenzene	0.48	U	0.96	0.22	ug/L		04/13/15 06:18	04/24/15 11:53	1
1,4-Dichlorobenzene	0.48	U	0.96	0.33	ug/L		04/13/15 06:18	04/24/15 11:53	1
3,3'-Dichlorobenzidine	0.96	U	4.8	0.36	ug/L		04/13/15 06:18	04/24/15 11:53	1
2,4-Dichlorophenol	0.48	U	1.9	0.18	ug/L		04/13/15 06:18	04/24/15 11:53	1
Diethyl phthalate	0.96	U	1.9	0.58	ug/L		04/13/15 06:18	04/24/15 11:53	1
2,4-Dimethylphenol	0.48	U	1.9	0.24	ug/L		04/13/15 06:18	04/24/15 11:53	1
Dimethyl phthalate	0.48	U	1.9	0.28	ug/L		04/13/15 06:18	04/24/15 11:53	1
Di-n-butyl phthalate	4.8	U	4.8	1.6	ug/L		04/13/15 06:18	04/24/15 11:53	1
4,6-Dinitro-2-methylphenol	3.8	U	4.8	2.3	ug/L		04/13/15 06:18	04/24/15 11:53	1
2,4-Dinitrophenol	0.96	U	4.8	0.31	ug/L		04/13/15 06:18	04/24/15 11:53	1
2,4-Dinitrotoluene	0.48	U	4.8	0.24	ug/L		04/13/15 06:18	04/24/15 11:53	1
2,6-Dinitrotoluene	4.8	U	4.8	1.0	ug/L		04/13/15 06:18	04/24/15 11:53	1
Di-n-octyl phthalate	0.48	U	1.9	0.22	ug/L		04/13/15 06:18	04/24/15 11:53	1
Fluoranthene	0.096	U	0.19	0.043	ug/L		04/13/15 06:18	04/24/15 11:53	1
Fluorene	0.096	U	0.19	0.039	ug/L		04/13/15 06:18	04/24/15 11:53	1
Hexachlorobenzene	0.096	U	0.19	0.082	ug/L		04/13/15 06:18	04/24/15 11:53	1
Hexachlorobutadiene	0.48	U	0.96	0.26	ug/L		04/13/15 06:18	04/24/15 11:53	1
Hexachlorocyclopentadiene	0.48	U	9.6	0.23	ug/L		04/13/15 06:18	04/24/15 11:53	1
Hexachloroethane	0.48	U	0.96	0.18	ug/L		04/13/15 06:18	04/24/15 11:53	1
Indeno[1,2,3-cd]pyrene	0.096	U	0.19	0.042	ug/L		04/13/15 06:18	04/24/15 11:53	1
Isophorone	0.48	U	0.96	0.26	ug/L		04/13/15 06:18	04/24/15 11:53	1
2-Methylnaphthalene	0.096	U	0.19	0.087	ug/L		04/13/15 06:18	04/24/15 11:53	1
2-Methylphenol	0.48	U	0.96	0.16	ug/L		04/13/15 06:18	04/24/15 11:53	1
3 & 4 Methylphenol	0.96	U	1.9	0.77	ug/L		04/13/15 06:18	04/24/15 11:53	1
Naphthalene	0.096	U	0.19	0.060	ug/L		04/13/15 06:18	04/24/15 11:53	1
2-Nitroaniline	0.48	U	1.9	0.20	ug/L		04/13/15 06:18	04/24/15 11:53	1
3-Nitroaniline	0.48	U	1.9	0.27	ug/L		04/13/15 06:18	04/24/15 11:53	1
4-Nitroaniline	0.48	U	1.9	0.21	ug/L		04/13/15 06:18	04/24/15 11:53	1

TestAmerica Canton

# Client Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

**Client Sample ID: 079SB-0385-0001-SW**

**Lab Sample ID: 240-49236-3**

Date Collected: 04/10/15 08:45

Matrix: Water

Date Received: 04/10/15 14:21

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrobenzene	0.096	U	0.96	0.038	ug/L		04/13/15 06:18	04/24/15 11:53	1
2-Nitrophenol	0.48	U	1.9	0.27	ug/L		04/13/15 06:18	04/24/15 11:53	1
4-Nitrophenol	3.8	U	4.8	0.28	ug/L		04/13/15 06:18	04/24/15 11:53	1
N-Nitrosodi-n-propylamine	0.48	U	0.96	0.23	ug/L		04/13/15 06:18	04/24/15 11:53	1
N-Nitrosodiphenylamine	0.48	U	0.96	0.30	ug/L		04/13/15 06:18	04/24/15 11:53	1
Pentachlorophenol	0.96	U	4.8	0.26	ug/L		04/13/15 06:18	04/24/15 11:53	1
Phenanthrene	0.096	U	0.19	0.060	ug/L		04/13/15 06:18	04/24/15 11:53	1
Phenol	0.96	U	0.96	0.58	ug/L		04/13/15 06:18	04/24/15 11:53	1
Pyrene	0.096	U	0.19	0.040	ug/L		04/13/15 06:18	04/24/15 11:53	1
1,2,4-Trichlorobenzene	0.48	U	0.96	0.27	ug/L		04/13/15 06:18	04/24/15 11:53	1
2,4,5-Trichlorophenol	0.48	U	4.8	0.29	ug/L		04/13/15 06:18	04/24/15 11:53	1
2,4,6-Trichlorophenol	0.48	U	4.8	0.23	ug/L		04/13/15 06:18	04/24/15 11:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	74		50 - 110				04/13/15 06:18	04/24/15 11:53	1
2-Fluorophenol (Surr)	75		20 - 110				04/13/15 06:18	04/24/15 11:53	1
Nitrobenzene-d5 (Surr)	69		40 - 110				04/13/15 06:18	04/24/15 11:53	1
Phenol-d5 (Surr)	74		10 - 115				04/13/15 06:18	04/24/15 11:53	1
Terphenyl-d14 (Surr)	53		50 - 135				04/13/15 06:18	04/24/15 11:53	1
2,4,6-Tribromophenol (Surr)	87		40 - 125				04/13/15 06:18	04/24/15 11:53	1

**Method: 8081A - Organochlorine Pesticides (GC) - RE**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	0.048	U Q	0.048	0.017	ug/L		04/15/15 09:05	04/16/15 20:43	1
4,4'-DDE	0.048	U	0.048	0.012	ug/L		04/15/15 09:05	04/16/15 20:43	1
4,4'-DDT	0.048	U	0.048	0.016	ug/L		04/15/15 09:05	04/16/15 20:43	1
Aldrin	0.048	U	0.048	0.013	ug/L		04/15/15 09:05	04/16/15 20:43	1
alpha-BHC	0.048	U	0.048	0.013	ug/L		04/15/15 09:05	04/16/15 20:43	1
alpha-Chlordane	0.048	U	0.048	0.012	ug/L		04/15/15 09:05	04/16/15 20:43	1
beta-BHC	0.048	U	0.048	0.017	ug/L		04/15/15 09:05	04/16/15 20:43	1
delta-BHC	0.048	U	0.048	0.028	ug/L		04/15/15 09:05	04/16/15 20:43	1
Dieldrin	0.048	U	0.048	0.013	ug/L		04/15/15 09:05	04/16/15 20:43	1
Endosulfan I	0.048	U	0.048	0.015	ug/L		04/15/15 09:05	04/16/15 20:43	1
Endosulfan II	0.048	U	0.048	0.014	ug/L		04/15/15 09:05	04/16/15 20:43	1
Endosulfan sulfate	0.048	U	0.048	0.014	ug/L		04/15/15 09:05	04/16/15 20:43	1
Endrin	0.048	U	0.048	0.013	ug/L		04/15/15 09:05	04/16/15 20:43	1
Endrin aldehyde	0.048	U	0.048	0.017	ug/L		04/15/15 09:05	04/16/15 20:43	1
Endrin ketone	0.048	U	0.048	0.015	ug/L		04/15/15 09:05	04/16/15 20:43	1
gamma-BHC (Lindane)	0.048	U	0.048	0.013	ug/L		04/15/15 09:05	04/16/15 20:43	1
gamma-Chlordane	0.048	U	0.048	0.013	ug/L		04/15/15 09:05	04/16/15 20:43	1
Heptachlor	0.048	U	0.048	0.013	ug/L		04/15/15 09:05	04/16/15 20:43	1
Heptachlor epoxide	0.048	U	0.048	0.014	ug/L		04/15/15 09:05	04/16/15 20:43	1
Methoxychlor	0.048	U	0.096	0.013	ug/L		04/15/15 09:05	04/16/15 20:43	1
Toxaphene	1.9	U	1.9	0.19	ug/L		04/15/15 09:05	04/16/15 20:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	35		30 - 135				04/15/15 09:05	04/16/15 20:43	1
DCB Decachlorobiphenyl	28	Q	30 - 135				04/15/15 09:05	04/16/15 20:43	1
Tetrachloro-m-xylene	78		25 - 140				04/15/15 09:05	04/16/15 20:43	1
Tetrachloro-m-xylene	73		25 - 140				04/15/15 09:05	04/16/15 20:43	1

TestAmerica Canton

# Client Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

**Client Sample ID: 079SB-0385-0001-SW**

**Lab Sample ID: 240-49236-3**

Date Collected: 04/10/15 08:45

Matrix: Water

Date Received: 04/10/15 14:21

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1221	0.19	U Q	0.48	0.12	ug/L		04/13/15 06:11	04/14/15 14:05	1
Aroclor-1016	0.19	U Q	0.48	0.16	ug/L		04/13/15 06:11	04/14/15 14:05	1
Aroclor-1232	0.19	U Q	0.48	0.15	ug/L		04/13/15 06:11	04/14/15 14:05	1
Aroclor-1242	0.38	U Q	0.48	0.21	ug/L		04/13/15 06:11	04/14/15 14:05	1
Aroclor-1248	0.19	U Q	0.48	0.095	ug/L		04/13/15 06:11	04/14/15 14:05	1
Aroclor-1254	0.19	U Q	0.48	0.15	ug/L		04/13/15 06:11	04/14/15 14:05	1
Aroclor-1260	0.19	U Q	0.48	0.16	ug/L		04/13/15 06:11	04/14/15 14:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	76		40 - 140				04/13/15 06:11	04/14/15 14:05	1
Tetrachloro-m-xylene	76		40 - 140				04/13/15 06:11	04/14/15 14:05	1
DCB Decachlorobiphenyl	23	Q	40 - 135				04/13/15 06:11	04/14/15 14:05	1
DCB Decachlorobiphenyl	23	Q	40 - 135				04/13/15 06:11	04/14/15 14:05	1

**Method: 8330 Modified - Nitroguanidine (HPLC)**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	2.4	ug/L		04/13/15 19:24	04/20/15 17:05	1

**Method: 8330B - Nitroaromatics and Nitramines (HPLC)**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.053	U	0.11	0.033	ug/L		04/13/15 09:25	04/15/15 20:09	1
1,3-Dinitrobenzene	0.11	U	0.11	0.053	ug/L		04/13/15 09:25	04/15/15 20:09	1
2,4,6-Trinitrotoluene	0.11	U J	0.11	0.053	ug/L		04/13/15 09:25	04/15/15 20:09	1
2,4-Dinitrotoluene	0.11	U	0.11	0.053	ug/L		04/13/15 09:25	04/15/15 20:09	1
2,6-Dinitrotoluene	0.11	U	0.11	0.053	ug/L		04/13/15 09:25	04/15/15 20:09	1
2-Amino-4,6-dinitrotoluene	0.11	U	0.21	0.016	ug/L		04/13/15 09:25	04/15/15 20:09	1
2-Nitrotoluene	0.11	U	0.53	0.094	ug/L		04/13/15 09:25	04/15/15 20:09	1
3-Nitrotoluene	0.11	U	0.53	0.061	ug/L		04/13/15 09:25	04/15/15 20:09	1
4-Nitrotoluene	0.11	U	0.53	0.094	ug/L		04/13/15 09:25	04/15/15 20:09	1
4-Amino-2,6-dinitrotoluene	0.11	U	0.11	0.053	ug/L		04/13/15 09:25	04/15/15 20:09	1
HMX	0.053	U	0.11	0.038	ug/L		04/13/15 09:25	04/15/15 20:09	1
RDX	0.053	U	0.11	0.038	ug/L		04/13/15 09:25	04/15/15 20:09	1
Nitrobenzene	0.11	U	0.11	0.053	ug/L		04/13/15 09:25	04/15/15 20:09	1
Tetryl	0.11	U	0.11	0.053	ug/L		04/13/15 09:25	04/15/15 20:09	1
Nitroglycerin	0.53	U	0.69	0.35	ug/L		04/13/15 09:25	04/15/15 20:09	1
PETN	0.53	U	0.69	0.32	ug/L		04/13/15 09:25	04/15/15 20:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	91		79 - 111				04/13/15 09:25	04/15/15 20:09	1
3,4-Dinitrotoluene	95		79 - 111				04/13/15 09:25	04/24/15 02:59	1

**Method: 6020 - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	60	U	60	9.0	ug/L		04/13/15 10:08	04/15/15 13:07	1
Antimony	0.43	J	2.0	0.16	ug/L		04/13/15 10:08	04/14/15 11:16	1
Arsenic	0.93	J	5.0	0.18	ug/L		04/13/15 10:08	04/14/15 11:16	1
Barium	18		5.0	1.1	ug/L		04/13/15 10:08	04/14/15 11:16	1
Beryllium	0.27	J	1.0	0.053	ug/L		04/13/15 10:08	04/20/15 17:32	1
Cadmium	0.38	J	2.0	0.061	ug/L		04/13/15 10:08	04/14/15 11:16	1
Calcium	18000		2000	240	ug/L		04/13/15 10:08	04/14/15 11:16	1
Chromium	1.3	J	6.0	0.20	ug/L		04/13/15 10:08	04/14/15 11:16	1

TestAmerica Canton



# Client Sample Results

Client: Environmental Chemical Corp.  
 Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

**Client Sample ID: 079SB-0385-0001-SW**

**Lab Sample ID: 240-49236-3**

Date Collected: 04/10/15 08:45

Matrix: Water

Date Received: 04/10/15 14:21

**Method: 6020 - Metals (ICP/MS) - Total Recoverable (Continued)**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.28	J	1.0	0.021	ug/L		04/13/15 10:08	04/14/15 11:16	1
Copper	1.1	J	4.0	0.75	ug/L		04/13/15 10:08	04/14/15 11:16	1
Iron	30	J	150	16	ug/L		04/13/15 10:08	04/14/15 11:16	1
Lead	0.18	J	1.0	0.11	ug/L		04/13/15 10:08	04/14/15 11:16	1
Magnesium	31000	D	5000	240	ug/L		04/13/15 10:08	04/15/15 13:43	5
Manganese	10	U	10	1.1	ug/L		04/13/15 10:08	04/15/15 13:07	1
Nickel	3.0	U	5.0	0.23	ug/L		04/13/15 10:08	04/14/15 11:16	1
Potassium	2700		1000	30	ug/L		04/13/15 10:08	04/14/15 11:16	1
Selenium	0.62	J	5.0	0.25	ug/L		04/13/15 10:08	04/14/15 11:16	1
Silver	0.25	U	1.0	0.020	ug/L		04/13/15 10:08	04/14/15 11:16	1
Sodium	43000		1000	68	ug/L		04/13/15 10:08	04/15/15 13:07	1
Thallium	0.22	J	2.0	0.074	ug/L		04/13/15 10:08	04/14/15 11:16	1
Vanadium	0.35	J	5.0	0.23	ug/L		04/13/15 10:08	04/14/15 11:16	1
Zinc	50	U	50	7.3	ug/L		04/13/15 10:08	04/14/15 11:16	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.090	ug/L		04/13/15 14:00	04/14/15 11:15	1

**General Chemistry**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	0.48	mg/L		04/21/15 06:08	04/21/15 14:53	1

# Client Sample Results

Client: Environmental Chemical Corp.  
 Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

**Client Sample ID: 079SB-0386-0001-RB**

**Lab Sample ID: 240-49236-4**

Date Collected: 04/10/15 08:50

Matrix: Water

Date Received: 04/10/15 14:21

**Method: 6020 - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	53	J	60	9.0	ug/L		04/13/15 10:08	04/15/15 13:31	1
Antimony	0.66	J	2.0	0.16	ug/L		04/13/15 10:08	04/14/15 11:43	1
Arsenic	0.38	J	5.0	0.18	ug/L		04/13/15 10:08	04/14/15 11:43	1
Barium	4.0	U	5.0	1.1	ug/L		04/13/15 10:08	04/14/15 11:43	1
Beryllium	0.16	J	1.0	0.053	ug/L		04/13/15 10:08	04/20/15 17:51	1
Cadmium	0.079	J	2.0	0.061	ug/L		04/13/15 10:08	04/14/15 11:43	1
Calcium	1000	U	2000	240	ug/L		04/13/15 10:08	04/14/15 11:43	1
Chromium	2.0	J	6.0	0.20	ug/L		04/13/15 10:08	04/14/15 11:43	1
Cobalt	0.13	J	1.0	0.021	ug/L		04/13/15 10:08	04/14/15 11:43	1
Copper	4.0	U	4.0	0.75	ug/L		04/13/15 10:08	04/14/15 11:43	1
Iron	57	J	150	16	ug/L		04/13/15 10:08	04/14/15 11:43	1
Lead	0.50	U	1.0	0.11	ug/L		04/13/15 10:08	04/14/15 11:43	1
Magnesium	300	U	1000	48	ug/L		04/13/15 10:08	04/14/15 11:43	1
Manganese	5.8	J	10	1.1	ug/L		04/13/15 10:08	04/15/15 13:31	1
Nickel	2.8	J	5.0	0.23	ug/L		04/13/15 10:08	04/14/15 11:43	1
Potassium	150	U	1000	30	ug/L		04/13/15 10:08	04/14/15 11:43	1
Selenium	0.50	U	5.0	0.25	ug/L		04/13/15 10:08	04/14/15 11:43	1
Silver	0.25	U	1.0	0.020	ug/L		04/13/15 10:08	04/14/15 11:43	1
Sodium	840	J	1000	68	ug/L		04/13/15 10:08	04/14/15 11:43	1
Thallium	0.11	J	2.0	0.074	ug/L		04/13/15 10:08	04/14/15 11:43	1
Vanadium	0.26	J	5.0	0.23	ug/L		04/13/15 10:08	04/14/15 11:43	1
Zinc	50	U	50	7.3	ug/L		04/13/15 10:08	04/14/15 11:43	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.090	ug/L		04/13/15 14:00	04/14/15 11:16	1

# Client Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

**Client Sample ID: 079SB-0387-0001-RB**

**Lab Sample ID: 240-49236-5**

**Date Collected: 04/10/15 09:00**

**Matrix: Water**

**Date Received: 04/10/15 14:21**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.44	ug/L			04/14/15 12:27	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.22	ug/L			04/14/15 12:27	1
1,1,2-Trichloroethane	0.50	U	1.0	0.24	ug/L			04/14/15 12:27	1
1,1-Dichloroethane	1.0	U	1.0	0.30	ug/L			04/14/15 12:27	1
1,1-Dichloroethene	1.0	U	1.0	0.45	ug/L			04/14/15 12:27	1
1,2-Dichloroethane	1.0	U	1.0	0.23	ug/L			04/14/15 12:27	1
1,2-Dichloroethene, Total	1.0	U	2.0	0.20	ug/L			04/14/15 12:27	1
1,2-Dichloropropane	1.0	U	1.0	0.25	ug/L			04/14/15 12:27	1
2-Butanone (MEK)	2.0	U	10	0.53	ug/L			04/14/15 12:27	1
2-Hexanone	2.0	U	10	0.48	ug/L			04/14/15 12:27	1
4-Methyl-2-pentanone (MIBK)	2.0	U	10	0.99	ug/L			04/14/15 12:27	1
<b>Acetone</b>	<b>1.1</b>	<b>J</b>	10	0.94	ug/L			04/14/15 12:27	1
Benzene	1.0	U	1.0	0.35	ug/L			04/14/15 12:27	1
Bromoform	1.0	U	1.0	0.56	ug/L			04/14/15 12:27	1
Bromomethane	1.0	U	1.0	0.44	ug/L			04/14/15 12:27	1
Carbon disulfide	1.0	U	1.0	0.38	ug/L			04/14/15 12:27	1
Carbon tetrachloride	1.0	U	1.0	0.43	ug/L			04/14/15 12:27	1
Chlorobenzene	1.0	U	1.0	0.25	ug/L			04/14/15 12:27	1
Chloromethane	1.0	U	1.0	0.44	ug/L			04/14/15 12:27	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.46	ug/L			04/14/15 12:27	1
Dibromochloromethane	1.0	U	1.0	0.43	ug/L			04/14/15 12:27	1
Bromodichloromethane	1.0	U	1.0	0.29	ug/L			04/14/15 12:27	1
Ethylbenzene	1.0	U	1.0	0.25	ug/L			04/14/15 12:27	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			04/14/15 12:27	1
Methylene Chloride	1.0	U	1.0	0.33	ug/L			04/14/15 12:27	1
Styrene	0.50	U	1.0	0.45	ug/L			04/14/15 12:27	1
Tetrachloroethene	1.0	U	1.0	0.31	ug/L			04/14/15 12:27	1
Toluene	1.0	U	1.0	0.23	ug/L			04/14/15 12:27	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.56	ug/L			04/14/15 12:27	1
Trichloroethene	1.0	U	1.0	0.22	ug/L			04/14/15 12:27	1
Vinyl chloride	1.0	U	1.0	0.29	ug/L			04/14/15 12:27	1
Xylenes, Total	2.0	U	2.0	0.52	ug/L			04/14/15 12:27	1
Chloroform	1.0	U	1.0	0.25	ug/L			04/14/15 12:27	1
Bromochloromethane	1.0	U	1.0	0.50	ug/L			04/14/15 12:27	1
1,2-Dibromoethane	1.0	U	1.0	0.32	ug/L			04/14/15 12:27	1
Chloroethane	1.0	U	1.0	0.32	ug/L			04/14/15 12:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		85 - 120		04/14/15 12:27	1
1,2-Dichloroethane-d4 (Surr)	99		70 - 120		04/14/15 12:27	1
4-Bromofluorobenzene (Surr)	97		75 - 120		04/14/15 12:27	1
Dibromofluoromethane (Surr)	97		85 - 115		04/14/15 12:27	1

TestAmerica Canton

# Client Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

**Client Sample ID: 079SB-0388-0001-TB**

**Lab Sample ID: 240-49236-6**

**Date Collected: 04/10/15 07:30**

**Matrix: Water**

**Date Received: 04/10/15 14:21**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.44	ug/L			04/14/15 12:50	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.22	ug/L			04/14/15 12:50	1
1,1,2-Trichloroethane	0.50	U	1.0	0.24	ug/L			04/14/15 12:50	1
1,1-Dichloroethane	1.0	U	1.0	0.30	ug/L			04/14/15 12:50	1
1,1-Dichloroethene	1.0	U	1.0	0.45	ug/L			04/14/15 12:50	1
1,2-Dichloroethane	1.0	U	1.0	0.23	ug/L			04/14/15 12:50	1
1,2-Dichloroethene, Total	1.0	U	2.0	0.20	ug/L			04/14/15 12:50	1
1,2-Dichloropropane	1.0	U	1.0	0.25	ug/L			04/14/15 12:50	1
2-Butanone (MEK)	2.0	U	10	0.53	ug/L			04/14/15 12:50	1
2-Hexanone	2.0	U	10	0.48	ug/L			04/14/15 12:50	1
4-Methyl-2-pentanone (MIBK)	2.0	U	10	0.99	ug/L			04/14/15 12:50	1
<b>Acetone</b>	<b>6.5</b>	<b>J</b>	10	0.94	ug/L			04/14/15 12:50	1
Benzene	1.0	U	1.0	0.35	ug/L			04/14/15 12:50	1
Bromoform	1.0	U	1.0	0.56	ug/L			04/14/15 12:50	1
Bromomethane	1.0	U	1.0	0.44	ug/L			04/14/15 12:50	1
Carbon disulfide	1.0	U	1.0	0.38	ug/L			04/14/15 12:50	1
Carbon tetrachloride	1.0	U	1.0	0.43	ug/L			04/14/15 12:50	1
Chlorobenzene	1.0	U	1.0	0.25	ug/L			04/14/15 12:50	1
Chloromethane	1.0	U	1.0	0.44	ug/L			04/14/15 12:50	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.46	ug/L			04/14/15 12:50	1
Dibromochloromethane	1.0	U	1.0	0.43	ug/L			04/14/15 12:50	1
Bromodichloromethane	1.0	U	1.0	0.29	ug/L			04/14/15 12:50	1
Ethylbenzene	1.0	U	1.0	0.25	ug/L			04/14/15 12:50	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			04/14/15 12:50	1
<b>Methylene Chloride</b>	<b>3.3</b>		1.0	0.33	ug/L			04/14/15 12:50	1
Styrene	0.50	U	1.0	0.45	ug/L			04/14/15 12:50	1
Tetrachloroethene	1.0	U	1.0	0.31	ug/L			04/14/15 12:50	1
Toluene	1.0	U	1.0	0.23	ug/L			04/14/15 12:50	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.56	ug/L			04/14/15 12:50	1
Trichloroethene	1.0	U	1.0	0.22	ug/L			04/14/15 12:50	1
Vinyl chloride	1.0	U	1.0	0.29	ug/L			04/14/15 12:50	1
Xylenes, Total	2.0	U	2.0	0.52	ug/L			04/14/15 12:50	1
Chloroform	1.0	U	1.0	0.25	ug/L			04/14/15 12:50	1
Bromochloromethane	1.0	U	1.0	0.50	ug/L			04/14/15 12:50	1
1,2-Dibromoethane	1.0	U	1.0	0.32	ug/L			04/14/15 12:50	1
Chloroethane	1.0	U	1.0	0.32	ug/L			04/14/15 12:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		85 - 120		04/14/15 12:50	1
1,2-Dichloroethane-d4 (Surr)	98		70 - 120		04/14/15 12:50	1
4-Bromofluorobenzene (Surr)	95		75 - 120		04/14/15 12:50	1
Dibromofluoromethane (Surr)	97		85 - 115		04/14/15 12:50	1

TestAmerica Canton

# Surrogate Summary

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	12DCE (80-121)	BFB (70-124)	DBFM (84-128)
LCS 240-177316/9	Lab Control Sample	90	84	84	94

### Surrogate Legend

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

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

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (50-150)	12DCE (50-150)	BFB (50-150)	DBFM (50-150)
MRL 240-177316/14	Lab Control Sample	87	88	80	91
MRL 240-177316/7	Lab Control Sample	97	91	89	94

### Surrogate Legend

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

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

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	12DCE (80-121)	BFB (70-124)	DBFM (84-128)
240-49236-1	079SB-0383-0001-IDW	85	85	77	90
LB 240-176667/1-A MB	Method Blank	89	88	82	95

### Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (50-150)	12DCE (50-150)	BFB (50-150)	DBFM (50-150)
MRL 240-176298/15	Lab Control Sample	96	101	97	96
MRL 240-176298/5	Lab Control Sample	96	100	99	99

### Surrogate Legend

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

TestAmerica Canton

# Surrogate Summary

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

DBFM = Dibromofluoromethane (Surr)

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (85-120)	12DCE (70-120)	BFB (75-120)	DBFM (85-115)
240-49236-3	079SB-0385-0001-SW	95	101	95	96
240-49236-5	079SB-0387-0001-RB	97	99	97	97
240-49236-6	079SB-0388-0001-TB	97	98	95	97
LCS 240-176298/4	Lab Control Sample	97	100	98	98
MB 240-176298/6	Method Blank	95	99	95	95

### Surrogate Legend

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

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

Matrix: Water

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	12DCE (80-121)	BFB (70-124)	DBFM (84-128)
240-49236-2	079SB-0384-0001-IDW	99	93	85	96
240-49236-2 MS	079SB-0384-0001-IDW	97	87	92	99
240-49236-2 MSD	079SB-0384-0001-IDW	95	99	88	98

### Surrogate Legend

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

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

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		FBP (22-110)	2FP (10-110)	NBZ (29-111)	PHL (10-110)	TPH (40-119)	TBP (17-117)
LCS 240-176654/9-A	Lab Control Sample	85	33	86	70	83	97
MB 240-176654/8-A	Method Blank	87	46	82	74	84	71

### Surrogate Legend

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

TestAmerica Canton

## Surrogate Summary

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		FBP (70-130)	2FP (50-150)	NBZ (50-150)	PHL (50-150)	TPH (50-150)	TBP (50-150)
MRL 240-177779/17	Lab Control Sample	95	101	95	96	98	113
MRL 240-177779/3	Lab Control Sample	94	107	97	99	98	108

#### Surrogate Legend

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

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

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		FBP (22-110)	2FP (10-110)	NBZ (29-111)	TPH (40-119)	TBP (17-117)	PHL (10-110)
240-49236-1	079SB-0383-0001-IDW	81	60	78	85	84	74

#### Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		FBP (50-110)	2FP (20-110)	NBZ (40-110)	PHL (10-115)	TPH (50-135)	TBP (40-125)
240-49236-3	079SB-0385-0001-SW	74	75	69	74	53	87
LCS 240-176086/3-A	Lab Control Sample	69	70	70	67	70	83
MB 240-176086/2-A	Method Blank	78	80	75	80	80	86

#### Surrogate Legend

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

# Surrogate Summary

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

Matrix: Water

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		FBP (22-110)	2FP (10-110)	NBZ (29-111)	TPH (40-119)	TBP (17-117)	PHL (10-110)
240-49236-2	079SB-0384-0001-IDW	85	19	72	80	96	68

### Surrogate Legend

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

## Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCB1 (44-144)	DCB2 (44-144)	TCX1 (44-127)	TCX2 (44-127)
LCS 240-176661/6-A	Lab Control Sample	102	101	89	87
MB 240-176661/5-A	Method Blank	78	82	83	80

### Surrogate Legend

DCB = DCB Decachlorobiphenyl  
TCX = Tetrachloro-m-xylene

## Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCB1 (50-150)	DCB2 (50-150)	TCX1 (50-150)	TCX2 (50-150)
MRL 240-177258/31	Lab Control Sample	123	123	116	120
MRL 240-177258/49	Lab Control Sample	116	117	117	118

### Surrogate Legend

DCB = DCB Decachlorobiphenyl  
TCX = Tetrachloro-m-xylene

## Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCB1 (44-144)	DCB2 (44-144)	TCX1 (44-127)	TCX2 (44-127)
240-49236-1	079SB-0383-0001-IDW	92 Q	93 Q	90 Q	92 Q

### Surrogate Legend

DCB = DCB Decachlorobiphenyl  
TCX = Tetrachloro-m-xylene

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## Surrogate Summary

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

### Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCB1 (30-135)	DCB2 (30-135)	TCX1 (25-140)	TCX2 (25-140)
240-49236-3 - RE	079SB-0385-0001-SW	35	28 Q	78	73
LCS 240-176509/3-A	Lab Control Sample	92	93	91	88
MB 240-176509/2-A	Method Blank	99	96	84	84

**Surrogate Legend**  
DCB = DCB Decachlorobiphenyl  
TCX = Tetrachloro-m-xylene

### Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCB1 (44-144)	DCB2 (44-144)	TCX1 (44-127)	TCX2 (44-127)
LCS 240-177491/4-A	Lab Control Sample	108	105	72	71
MB 240-177491/3-A	Method Blank	98	98	79	78

**Surrogate Legend**  
DCB = DCB Decachlorobiphenyl  
TCX = Tetrachloro-m-xylene

### Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCB1 (50-150)	DCB2 (50-150)	TCX1 (50-150)	TCX2 (50-150)
MRL 240-176694/16	Lab Control Sample	125	120	107	109
MRL 240-176694/31	Lab Control Sample	126	123	112	112
MRL 240-178086/12	Lab Control Sample	101	101	109	113
MRL 240-178086/19	Lab Control Sample	119	115	112	115

**Surrogate Legend**  
DCB = DCB Decachlorobiphenyl  
TCX = Tetrachloro-m-xylene

### Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Water

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCB1 (44-144)	DCB2 (44-144)	TCX1 (44-127)	TCX2 (44-127)
240-49236-2 - RE	079SB-0384-0001-IDW	4 Q	4 Q	35 Q	25 Q
240-49236-2 MS	079SB-0384-0001-IDW	2 Q	2 Q	34 Q	26 Q

**Surrogate Legend**  
DCB = DCB Decachlorobiphenyl  
TCX = Tetrachloro-m-xylene

TestAmerica Canton

## Surrogate Summary

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TCX1 (40-140)	TCX2 (40-140)	DCB1 (40-135)	DCB2 (40-135)
240-49236-3	079SB-0385-0001-SW	76	76	23 Q	23 Q
LCS 240-176083/4-A	Lab Control Sample	74	82	70	69
MB 240-176083/3-A	Method Blank	74	70	90	88

**Surrogate Legend**  
 TCX = Tetrachloro-m-xylene  
 DCB = DCB Decachlorobiphenyl

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TCX1 (50-150)	TCX2 (50-150)	DCB1 (50-150)	DCB2 (50-150)
MRL 240-176376/10	Lab Control Sample	119	111	120	130
MRL 240-176376/4	Lab Control Sample	104	111	111	118

**Surrogate Legend**  
 TCX = Tetrachloro-m-xylene  
 DCB = DCB Decachlorobiphenyl

### Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		DCPA1 (37-116)	DCPA2 (37-116)
LCS 240-176663/6-A	Lab Control Sample	88	90
MB 240-176663/5-A	Method Blank	94	72
MRL 240-177320/15	Lab Control Sample	147	113
MRL 240-177320/7	Lab Control Sample	103	108

**Surrogate Legend**  
 DCPA = 2,4-Dichlorophenylacetic acid

### Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		DCPA1 (37-116)	DCPA2 (37-116)
240-49236-1	079SB-0383-0001-IDW	91 Q	82 Q
240-49236-1 MS	079SB-0383-0001-IDW	81	78

**Surrogate Legend**  
 DCPA = 2,4-Dichlorophenylacetic acid

# Surrogate Summary

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

## Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: TCLP

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPA1 (37-116)	DCPA2 (37-116)
240-49236-2	079SB-0384-0001-IDW	97 M Q	99 Q

#### Surrogate Legend

DCPA = 2,4-Dichlorophenylacetic acid

## Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DNT1 (79-111)
240-49236-3	079SB-0385-0001-SW	91
240-49236-3	079SB-0385-0001-SW	95
LCS 320-70962/2-A	Lab Control Sample	95
MB 320-70962/1-A	Method Blank	92

#### Surrogate Legend

DNT = 3,4-Dinitrotoluene

# QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

**Lab Sample ID: MB 240-176298/6**

**Matrix: Water**

**Analysis Batch: 176298**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.44	ug/L			04/14/15 09:38	1
1,1,1,2-Tetrachloroethane	0.50	U	1.0	0.22	ug/L			04/14/15 09:38	1
1,1,2-Trichloroethane	0.50	U	1.0	0.24	ug/L			04/14/15 09:38	1
1,1-Dichloroethane	1.0	U	1.0	0.30	ug/L			04/14/15 09:38	1
1,1-Dichloroethene	1.0	U	1.0	0.45	ug/L			04/14/15 09:38	1
1,2-Dichloroethane	1.0	U	1.0	0.23	ug/L			04/14/15 09:38	1
1,2-Dichloroethene, Total	1.0	U	2.0	0.20	ug/L			04/14/15 09:38	1
1,2-Dichloropropane	1.0	U	1.0	0.25	ug/L			04/14/15 09:38	1
2-Butanone (MEK)	2.0	U	10	0.53	ug/L			04/14/15 09:38	1
2-Hexanone	2.0	U	10	0.48	ug/L			04/14/15 09:38	1
4-Methyl-2-pentanone (MIBK)	2.0	U	10	0.99	ug/L			04/14/15 09:38	1
Acetone	2.0	U	10	0.94	ug/L			04/14/15 09:38	1
Benzene	1.0	U	1.0	0.35	ug/L			04/14/15 09:38	1
Bromoform	1.0	U	1.0	0.56	ug/L			04/14/15 09:38	1
Bromomethane	1.0	U	1.0	0.44	ug/L			04/14/15 09:38	1
Carbon disulfide	1.0	U	1.0	0.38	ug/L			04/14/15 09:38	1
Carbon tetrachloride	1.0	U	1.0	0.43	ug/L			04/14/15 09:38	1
Chlorobenzene	1.0	U	1.0	0.25	ug/L			04/14/15 09:38	1
Chloromethane	1.0	U	1.0	0.44	ug/L			04/14/15 09:38	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.46	ug/L			04/14/15 09:38	1
Dibromochloromethane	1.0	U	1.0	0.43	ug/L			04/14/15 09:38	1
Bromodichloromethane	1.0	U	1.0	0.29	ug/L			04/14/15 09:38	1
Ethylbenzene	1.0	U	1.0	0.25	ug/L			04/14/15 09:38	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			04/14/15 09:38	1
Methylene Chloride	1.0	U	1.0	0.33	ug/L			04/14/15 09:38	1
Styrene	0.50	U	1.0	0.45	ug/L			04/14/15 09:38	1
Tetrachloroethene	1.0	U	1.0	0.31	ug/L			04/14/15 09:38	1
Toluene	1.0	U	1.0	0.23	ug/L			04/14/15 09:38	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.56	ug/L			04/14/15 09:38	1
Trichloroethene	1.0	U	1.0	0.22	ug/L			04/14/15 09:38	1
Vinyl chloride	1.0	U	1.0	0.29	ug/L			04/14/15 09:38	1
Xylenes, Total	2.0	U	2.0	0.52	ug/L			04/14/15 09:38	1
Chloroform	1.0	U	1.0	0.25	ug/L			04/14/15 09:38	1
Bromochloromethane	1.0	U	1.0	0.50	ug/L			04/14/15 09:38	1
1,2-Dibromoethane	1.0	U	1.0	0.32	ug/L			04/14/15 09:38	1
Chloroethane	1.0	U	1.0	0.32	ug/L			04/14/15 09:38	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		85 - 120		04/14/15 09:38	1
1,2-Dichloroethane-d4 (Surr)	99		70 - 120		04/14/15 09:38	1
4-Bromofluorobenzene (Surr)	95		75 - 120		04/14/15 09:38	1
Dibromofluoromethane (Surr)	95		85 - 115		04/14/15 09:38	1

TestAmerica Canton

## QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

**Lab Sample ID: LCS 240-176298/4**

**Matrix: Water**

**Analysis Batch: 176298**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	10.7		ug/L		107	65 - 130
1,1,2,2-Tetrachloroethane	10.0	9.22		ug/L		92	65 - 130
1,1,2-Trichloroethane	10.0	9.39		ug/L		94	75 - 125
1,1-Dichloroethane	10.0	10.6		ug/L		106	70 - 135
1,1-Dichloroethene	10.0	10.9		ug/L		109	70 - 130
1,2-Dichloroethane	10.0	10.5		ug/L		105	70 - 130
1,2-Dichloropropane	10.0	10.2		ug/L		102	75 - 125
2-Butanone (MEK)	20.0	19.4		ug/L		97	30 - 150
2-Hexanone	20.0	17.8		ug/L		89	55 - 130
4-Methyl-2-pentanone (MIBK)	20.0	19.4		ug/L		97	60 - 135
Acetone	20.0	16.4		ug/L		82	40 - 140
Benzene	10.0	10.2		ug/L		102	80 - 120
Bromoform	10.0	9.41		ug/L		94	70 - 130
Bromomethane	10.0	8.72		ug/L		87	30 - 145
Carbon disulfide	10.0	11.3		ug/L		113	35 - 160
Carbon tetrachloride	10.0	11.2		ug/L		112	65 - 140
Chlorobenzene	10.0	9.48		ug/L		95	80 - 120
Chloromethane	10.0	10.3		ug/L		103	40 - 125
cis-1,3-Dichloropropene	10.0	10.6		ug/L		106	70 - 130
Dibromochloromethane	10.0	9.75		ug/L		97	60 - 135
Bromodichloromethane	10.0	9.94		ug/L		99	75 - 120
Ethylbenzene	10.0	9.93		ug/L		99	75 - 125
Methyl tert-butyl ether	10.0	10.2		ug/L		102	65 - 125
Methylene Chloride	10.0	10.1		ug/L		101	55 - 140
Styrene	10.0	10.1		ug/L		101	65 - 135
Tetrachloroethene	10.0	10.0		ug/L		100	45 - 150
Toluene	10.0	9.79		ug/L		98	75 - 120
trans-1,3-Dichloropropene	10.0	10.7		ug/L		107	55 - 140
Trichloroethene	10.0	10.5		ug/L		105	70 - 125
Vinyl chloride	10.0	9.95		ug/L		100	50 - 145
Xylenes, Total	20.0	19.8		ug/L		99	75 - 130
Chloroform	10.0	10.3		ug/L		103	65 - 135
Bromochloromethane	10.0	10.2		ug/L		102	65 - 130
Chloroethane	10.0	9.31		ug/L		93	60 - 135

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	97		85 - 120
1,2-Dichloroethane-d4 (Surr)	100		70 - 120
4-Bromofluorobenzene (Surr)	98		75 - 120
Dibromofluoromethane (Surr)	98		85 - 115

**Lab Sample ID: MRL 240-176298/15**

**Matrix: Water**

**Analysis Batch: 176298**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	0.00100	0.000982	J	ng/uL		98	70 - 130
1,1,2,2-Tetrachloroethane	0.00100	0.000945	J	ng/uL		95	70 - 130

TestAmerica Canton

## QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

Lab Sample ID: MRL 240-176298/15

Matrix: Water

Analysis Batch: 176298

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2-Trichloroethane	0.00100	0.000931	J	ng/uL		93	70 - 130
1,1-Dichloroethane	0.00100	0.000968	J	ng/uL		97	70 - 130
1,1-Dichloroethene	0.00100	0.000965	J	ng/uL		97	70 - 130
1,2-Dichloroethane	0.00100	0.000984	J	ng/uL		98	70 - 130
1,2-Dichloropropane	0.00100	0.000928	J	ng/uL		93	70 - 130
2-Butanone (MEK)	0.0100	0.00811	J	ng/uL		81	70 - 130
2-Hexanone	0.0100	0.00817	J	ng/uL		82	70 - 130
4-Methyl-2-pentanone (MIBK)	0.0100	0.00909	J	ng/uL		91	70 - 130
Acetone	0.0100	0.00706	J	ng/uL		71	70 - 130
Benzene	0.00100	0.000970	J	ng/uL		97	70 - 130
Bromoform	0.00100	0.000830	J	ng/uL		83	70 - 130
Bromomethane	0.00100	0.00136	^	ng/uL		136	70 - 130
Carbon disulfide	0.00100	0.000787	J	ng/uL		79	70 - 130
Carbon tetrachloride	0.00100	0.000935	J	ng/uL		94	70 - 130
Chlorobenzene	0.00100	0.000960	J	ng/uL		96	70 - 130
Chloromethane	0.00100	0.00130		ng/uL		130	70 - 130
cis-1,3-Dichloropropene	0.00100	0.000825	J	ng/uL		83	70 - 130
Dibromochloromethane	0.00100	0.000768	J	ng/uL		77	70 - 130
Bromodichloromethane	0.00100	0.000958	J	ng/uL		96	70 - 130
Ethylbenzene	0.00100	0.00101		ng/uL		101	70 - 130
Methyl tert-butyl ether	0.00100	0.000891	J	ng/uL		89	70 - 130
Methylene Chloride	0.00100	0.000972	J	ng/uL		97	70 - 130
Styrene	0.00100	0.000846	J	ng/uL		85	70 - 130
Tetrachloroethene	0.00100	0.00102		ng/uL		102	70 - 130
Toluene	0.00100	0.000947	J	ng/uL		95	70 - 130
trans-1,3-Dichloropropene	0.00100	0.000794	J	ng/uL		79	70 - 130
Trichloroethene	0.00100	0.000992	J	ng/uL		99	70 - 130
Vinyl chloride	0.00100	0.00130		ng/uL		130	70 - 130
Xylenes, Total	0.00200	0.00189	J	ng/uL		95	70 - 130
Chloroform	0.00100	0.000964	J	ng/uL		96	70 - 130
Bromochloromethane	0.00100	0.000981	J	ng/uL		98	70 - 130
Chloroethane	0.00100	0.00131	^	ng/uL		131	70 - 130

Surrogate	MRL %Recovery	MRL Qualifier	Limits
Toluene-d8 (Surr)	96		50 - 150
1,2-Dichloroethane-d4 (Surr)	101		50 - 150
4-Bromofluorobenzene (Surr)	97		50 - 150
Dibromofluoromethane (Surr)	96		50 - 150

Lab Sample ID: MRL 240-176298/5

Matrix: Water

Analysis Batch: 176298

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	0.00100	0.00109		ng/uL		109	70 - 130
1,1,1,2-Tetrachloroethane	0.00100	0.000903	J	ng/uL		90	70 - 130
1,1,2-Trichloroethane	0.00100	0.000924	J	ng/uL		92	70 - 130
1,1-Dichloroethane	0.00100	0.00104		ng/uL		104	70 - 130

TestAmerica Canton

## QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

Lab Sample ID: MRL 240-176298/5

Matrix: Water

Analysis Batch: 176298

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	0.00100	0.00100		ng/uL		100	70 - 130
1,2-Dichloroethane	0.00100	0.000987	J	ng/uL		99	70 - 130
1,2-Dichloropropane	0.00100	0.00102		ng/uL		102	70 - 130
2-Butanone (MEK)	0.0100	0.00892	J	ng/uL		89	70 - 130
2-Hexanone	0.0100	0.00881	J	ng/uL		88	70 - 130
4-Methyl-2-pentanone (MIBK)	0.0100	0.00924	J	ng/uL		92	70 - 130
Acetone	0.0100	0.00855	J	ng/uL		85	70 - 130
Benzene	0.00100	0.00102		ng/uL		102	70 - 130
Bromoform	0.00100	0.000768	J	ng/uL		77	70 - 130
Bromomethane	0.00100	0.00143	^	ng/uL		143	70 - 130
Carbon disulfide	0.00100	0.000940	J	ng/uL		94	70 - 130
Carbon tetrachloride	0.00100	0.000976	J	ng/uL		98	70 - 130
Chlorobenzene	0.00100	0.000987	J	ng/uL		99	70 - 130
Chloromethane	0.00100	0.00138	^	ng/uL		138	70 - 130
cis-1,3-Dichloropropene	0.00100	0.000980	J	ng/uL		98	70 - 130
Dibromochloromethane	0.00100	0.000862	J	ng/uL		86	70 - 130
Bromodichloromethane	0.00100	0.000930	J	ng/uL		93	70 - 130
Ethylbenzene	0.00100	0.000988	J	ng/uL		99	70 - 130
Methyl tert-butyl ether	0.00100	0.00101		ng/uL		101	70 - 130
Methylene Chloride	0.00100	0.000888	J	ng/uL		89	70 - 130
Styrene	0.00100	0.000929	J	ng/uL		93	70 - 130
Tetrachloroethene	0.00100	0.00110		ng/uL		110	70 - 130
Toluene	0.00100	0.000982	J	ng/uL		98	70 - 130
trans-1,3-Dichloropropene	0.00100	0.000921	J	ng/uL		92	70 - 130
Trichloroethene	0.00100	0.00105		ng/uL		105	70 - 130
Vinyl chloride	0.00100	0.00137	^	ng/uL		137	70 - 130
Xylenes, Total	0.00200	0.00187	J	ng/uL		93	70 - 130
Chloroform	0.00100	0.000987	J	ng/uL		99	70 - 130
Bromochloromethane	0.00100	0.00104		ng/uL		104	70 - 130
Chloroethane	0.00100	0.00133	^	ng/uL		133	70 - 130

Surrogate	MRL %Recovery	MRL Qualifier	Limits
Toluene-d8 (Surr)	96		50 - 150
1,2-Dichloroethane-d4 (Surr)	100		50 - 150
4-Bromofluorobenzene (Surr)	99		50 - 150
Dibromofluoromethane (Surr)	99		50 - 150

Lab Sample ID: LCS 240-177316/9

Matrix: Solid

Analysis Batch: 177316

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	0.500	0.511		mg/L		102	71 - 133
1,2-Dichloroethane	0.500	0.464		mg/L		93	80 - 120
2-Butanone (MEK)	1.00	0.859		mg/L		86	49 - 120
Benzene	0.500	0.485		mg/L		97	80 - 120
Carbon tetrachloride	0.500	0.402		mg/L		80	54 - 122
Chlorobenzene	0.500	0.483		mg/L		97	80 - 120

TestAmerica Canton

## QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

**Lab Sample ID: LCS 240-177316/9**

**Matrix: Solid**

**Analysis Batch: 177316**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Tetrachloroethene	0.500	0.463		mg/L		93	79 - 134
Trichloroethene	0.500	0.531		mg/L		106	78 - 130
Vinyl chloride	0.500	0.493		mg/L		99	56 - 120
Chloroform	0.500	0.481		mg/L		96	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	90		80 - 120
1,2-Dichloroethane-d4 (Surr)	84		80 - 121
4-Bromofluorobenzene (Surr)	84		70 - 124
Dibromofluoromethane (Surr)	94		84 - 128

**Lab Sample ID: MRL 240-177316/14**

**Matrix: Solid**

**Analysis Batch: 177316**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	0.00100	0.00102		ng/uL		102	70 - 130
1,2-Dichloroethane	0.00100	0.00105		ng/uL		105	70 - 130
2-Butanone (MEK)	0.0100	0.00805	J	ng/uL		80	70 - 130
Benzene	0.00100	0.00105		ng/uL		105	70 - 130
Carbon tetrachloride	0.00100	0.00105		ng/uL		105	70 - 130
Chlorobenzene	0.00100	0.00113		ng/uL		113	70 - 130
Tetrachloroethene	0.00100	0.00135	^	ng/uL		135	70 - 130
Trichloroethene	0.00100	0.00110		ng/uL		110	70 - 130
Vinyl chloride	0.00100	0.000875	J	ng/uL		88	70 - 130
Chloroform	0.00100	0.00114		ng/uL		114	70 - 130

Surrogate	MRL %Recovery	MRL Qualifier	Limits
Toluene-d8 (Surr)	87		50 - 150
1,2-Dichloroethane-d4 (Surr)	88		50 - 150
4-Bromofluorobenzene (Surr)	80		50 - 150
Dibromofluoromethane (Surr)	91		50 - 150

**Lab Sample ID: MRL 240-177316/7**

**Matrix: Solid**

**Analysis Batch: 177316**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	0.00100	0.000978	J	ng/uL		98	70 - 130
1,2-Dichloroethane	0.00100	0.00118		ng/uL		118	70 - 130
2-Butanone (MEK)	0.0100	0.00738	J	ng/uL		74	70 - 130
Benzene	0.00100	0.00104		ng/uL		104	70 - 130
Carbon tetrachloride	0.00100	0.000795	J	ng/uL		80	70 - 130
Chlorobenzene	0.00100	0.00111		ng/uL		111	70 - 130
Tetrachloroethene	0.00100	0.00106		ng/uL		106	70 - 130
Trichloroethene	0.00100	0.00118		ng/uL		118	70 - 130
Vinyl chloride	0.00100	0.00127		ng/uL		127	70 - 130
Chloroform	0.00100	0.00110		ng/uL		110	70 - 130

TestAmerica Canton



# QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

**Lab Sample ID: MRL 240-177316/7**

**Matrix: Solid**

**Analysis Batch: 177316**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

<i>Surrogate</i>	<i>MRL</i> %Recovery	<i>MRL</i> Qualifier	<i>Limits</i>
<i>Toluene-d8 (Surr)</i>	97		50 - 150
<i>1,2-Dichloroethane-d4 (Surr)</i>	91		50 - 150
<i>4-Bromofluorobenzene (Surr)</i>	89		50 - 150
<i>Dibromofluoromethane (Surr)</i>	94		50 - 150

**Lab Sample ID: LB 240-176667/1-A MB**

**Matrix: Solid**

**Analysis Batch: 177316**

**Client Sample ID: Method Blank**

**Prep Type: TCLP**

<i>Analyte</i>	<i>MB</i> Result	<i>MB</i> Qualifier	<i>LOQ</i>	<i>DL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,1-Dichloroethene	0.013	U	0.025	0.0095	mg/L			04/21/15 18:23	1
1,2-Dichloroethane	0.013	U	0.025	0.011	mg/L			04/21/15 18:23	1
2-Butanone (MEK)	0.025	U	0.25	0.029	mg/L			04/21/15 18:23	1
Benzene	0.013	U	0.025	0.0065	mg/L			04/21/15 18:23	1
Carbon tetrachloride	0.013	U	0.025	0.0065	mg/L			04/21/15 18:23	1
Chlorobenzene	0.013	U	0.025	0.0075	mg/L			04/21/15 18:23	1
Tetrachloroethene	0.025	U	0.025	0.015	mg/L			04/21/15 18:23	1
Trichloroethene	0.013	U	0.025	0.0085	mg/L			04/21/15 18:23	1
Vinyl chloride	0.013	U	0.025	0.011	mg/L			04/21/15 18:23	1
Chloroform	0.013	U	0.025	0.0080	mg/L			04/21/15 18:23	1

<i>Surrogate</i>	<i>MB</i> %Recovery	<i>MB</i> Qualifier	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Toluene-d8 (Surr)</i>	89		80 - 120		04/21/15 18:23	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	88		80 - 121		04/21/15 18:23	1
<i>4-Bromofluorobenzene (Surr)</i>	82		70 - 124		04/21/15 18:23	1
<i>Dibromofluoromethane (Surr)</i>	95		84 - 128		04/21/15 18:23	1

**Lab Sample ID: 240-49236-2 MS**

**Matrix: Water**

**Analysis Batch: 177316**

**Client Sample ID: 079SB-0384-0001-IDW**

**Prep Type: TCLP**

<i>Analyte</i>	<i>Sample</i> Result	<i>Sample</i> Qualifier	<i>Spike</i> Added	<i>MS</i> Result	<i>MS</i> Qualifier	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec.</i> Limits
1,1-Dichloroethene	0.013	U	0.500	0.574		mg/L		115	67 - 139
1,2-Dichloroethane	0.013	U	0.500	0.455		mg/L		91	80 - 120
2-Butanone (MEK)	0.025	U	1.00	0.923		mg/L		92	49 - 120
Benzene	0.013	U	0.500	0.459		mg/L		92	80 - 120
Carbon tetrachloride	0.013	U	0.500	0.338		mg/L		68	60 - 120
Chlorobenzene	0.013	U	0.500	0.467		mg/L		93	80 - 120
Tetrachloroethene	0.025	U	0.500	0.477		mg/L		95	74 - 138
Trichloroethene	0.013	U	0.500	0.515		mg/L		103	75 - 134
Vinyl chloride	0.013	U	0.500	0.508		mg/L		102	51 - 120
Chloroform	0.013	U	0.500	0.470		mg/L		94	80 - 124

<i>Surrogate</i>	<i>MS</i> %Recovery	<i>MS</i> Qualifier	<i>Limits</i>
<i>Toluene-d8 (Surr)</i>	97		80 - 120
<i>1,2-Dichloroethane-d4 (Surr)</i>	87		80 - 121
<i>4-Bromofluorobenzene (Surr)</i>	92		70 - 124

TestAmerica Canton

## QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

Lab Sample ID: 240-49236-2 MS

Matrix: Water

Analysis Batch: 177316

Client Sample ID: 079SB-0384-0001-IDW

Prep Type: TCLP

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	99		84 - 128

Lab Sample ID: 240-49236-2 MSD

Matrix: Water

Analysis Batch: 177316

Client Sample ID: 079SB-0384-0001-IDW

Prep Type: TCLP

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
				Result	Qualifier						
1,1-Dichloroethene	0.013	U	0.500	0.660		mg/L		132	67 - 139	14	30
1,2-Dichloroethane	0.013	U	0.500	0.471		mg/L		94	80 - 120	4	30
2-Butanone (MEK)	0.025	U	1.00	0.990		mg/L		99	49 - 120	7	30
Benzene	0.013	U	0.500	0.489		mg/L		98	80 - 120	6	30
Carbon tetrachloride	0.013	U	0.500	0.380		mg/L		76	60 - 120	12	30
Chlorobenzene	0.013	U	0.500	0.494		mg/L		99	80 - 120	6	30
Tetrachloroethene	0.025	U	0.500	0.480		mg/L		96	74 - 138	1	30
Trichloroethene	0.013	U	0.500	0.547		mg/L		109	75 - 134	6	30
Vinyl chloride	0.013	U	0.500	0.541		mg/L		108	51 - 120	6	30
Chloroform	0.013	U	0.500	0.501		mg/L		100	80 - 124	6	30

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	95		80 - 120
1,2-Dichloroethane-d4 (Surr)	99		80 - 121
4-Bromofluorobenzene (Surr)	88		70 - 124
Dibromofluoromethane (Surr)	98		84 - 128

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

Lab Sample ID: MB 240-176086/2-A

Matrix: Water

Analysis Batch: 177779

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 176086

Analyte	MB MB		LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acenaphthene	0.10	U	0.20	0.044	ug/L		04/13/15 06:18	04/24/15 09:23	1
Acenaphthylene	0.10	U	0.20	0.048	ug/L		04/13/15 06:18	04/24/15 09:23	1
Anthracene	0.10	U	0.20	0.088	ug/L		04/13/15 06:18	04/24/15 09:23	1
Benzo[a]anthracene	0.10	U	0.20	0.030	ug/L		04/13/15 06:18	04/24/15 09:23	1
Benzo[a]pyrene	0.10	U	0.20	0.051	ug/L		04/13/15 06:18	04/24/15 09:23	1
Benzo[b]fluoranthene	0.10	U	0.20	0.039	ug/L		04/13/15 06:18	04/24/15 09:23	1
Benzo[g,h,i]perylene	0.10	U	0.20	0.046	ug/L		04/13/15 06:18	04/24/15 09:23	1
Benzoic acid	20	U	25	10	ug/L		04/13/15 06:18	04/24/15 09:23	1
Benzo[k]fluoranthene	0.10	U	0.20	0.045	ug/L		04/13/15 06:18	04/24/15 09:23	1
Benzyl alcohol	0.50	U	5.0	0.38	ug/L		04/13/15 06:18	04/24/15 09:23	1
Bis(2-chloroethoxy)methane	0.50	U	1.0	0.32	ug/L		04/13/15 06:18	04/24/15 09:23	1
Bis(2-chloroethyl)ether	0.10	U	1.0	0.10	ug/L		04/13/15 06:18	04/24/15 09:23	1
bis (2-chloroisopropyl) ether	0.50	U	1.0	0.40	ug/L		04/13/15 06:18	04/24/15 09:23	1
Bis(2-ethylhexyl) phthalate	5.0	U	5.0	1.7	ug/L		04/13/15 06:18	04/24/15 09:23	1
4-Bromophenyl phenyl ether	0.50	U	2.0	0.22	ug/L		04/13/15 06:18	04/24/15 09:23	1
Butyl benzyl phthalate	0.50	U	5.0	0.26	ug/L		04/13/15 06:18	04/24/15 09:23	1

TestAmerica Canton

# QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

**Lab Sample ID: MB 240-176086/2-A**

**Matrix: Water**

**Analysis Batch: 177779**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 176086**

Analyte	MB	MB	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Carbazole	0.50	U	1.0	0.28	ug/L		04/13/15 06:18	04/24/15 09:23	1
4-Chloroaniline	0.50	U	2.0	0.21	ug/L		04/13/15 06:18	04/24/15 09:23	1
4-Chloro-3-methylphenol	0.50	U	2.0	0.21	ug/L		04/13/15 06:18	04/24/15 09:23	1
2-Chloronaphthalene	0.50	U	1.0	0.10	ug/L		04/13/15 06:18	04/24/15 09:23	1
2-Chlorophenol	0.50	U	1.0	0.29	ug/L		04/13/15 06:18	04/24/15 09:23	1
4-Chlorophenyl phenyl ether	0.50	U	2.0	0.30	ug/L		04/13/15 06:18	04/24/15 09:23	1
Chrysene	0.10	U	0.20	0.050	ug/L		04/13/15 06:18	04/24/15 09:23	1
Dibenz(a,h)anthracene	0.10	U	0.20	0.045	ug/L		04/13/15 06:18	04/24/15 09:23	1
Dibenzofuran	0.10	U	1.0	0.020	ug/L		04/13/15 06:18	04/24/15 09:23	1
1,2-Dichlorobenzene	0.50	U	1.0	0.29	ug/L		04/13/15 06:18	04/24/15 09:23	1
1,3-Dichlorobenzene	0.50	U	1.0	0.23	ug/L		04/13/15 06:18	04/24/15 09:23	1
1,4-Dichlorobenzene	0.50	U	1.0	0.34	ug/L		04/13/15 06:18	04/24/15 09:23	1
3,3'-Dichlorobenzidine	1.0	U	5.0	0.37	ug/L		04/13/15 06:18	04/24/15 09:23	1
2,4-Dichlorophenol	0.50	U	2.0	0.19	ug/L		04/13/15 06:18	04/24/15 09:23	1
Diethyl phthalate	1.0	U	2.0	0.60	ug/L		04/13/15 06:18	04/24/15 09:23	1
2,4-Dimethylphenol	0.50	U	2.0	0.25	ug/L		04/13/15 06:18	04/24/15 09:23	1
Dimethyl phthalate	0.50	U	2.0	0.29	ug/L		04/13/15 06:18	04/24/15 09:23	1
Di-n-butyl phthalate	5.0	U	5.0	1.7	ug/L		04/13/15 06:18	04/24/15 09:23	1
4,6-Dinitro-2-methylphenol	4.0	U	5.0	2.4	ug/L		04/13/15 06:18	04/24/15 09:23	1
2,4-Dinitrophenol	1.0	U	5.0	0.32	ug/L		04/13/15 06:18	04/24/15 09:23	1
2,4-Dinitrotoluene	0.50	U	5.0	0.25	ug/L		04/13/15 06:18	04/24/15 09:23	1
2,6-Dinitrotoluene	5.0	U	5.0	1.1	ug/L		04/13/15 06:18	04/24/15 09:23	1
Di-n-octyl phthalate	0.50	U	2.0	0.23	ug/L		04/13/15 06:18	04/24/15 09:23	1
Fluoranthene	0.10	U	0.20	0.045	ug/L		04/13/15 06:18	04/24/15 09:23	1
Fluorene	0.10	U	0.20	0.041	ug/L		04/13/15 06:18	04/24/15 09:23	1
Hexachlorobenzene	0.10	U	0.20	0.085	ug/L		04/13/15 06:18	04/24/15 09:23	1
Hexachlorobutadiene	0.50	U	1.0	0.27	ug/L		04/13/15 06:18	04/24/15 09:23	1
Hexachlorocyclopentadiene	0.50	U	10	0.24	ug/L		04/13/15 06:18	04/24/15 09:23	1
Hexachloroethane	0.50	U	1.0	0.19	ug/L		04/13/15 06:18	04/24/15 09:23	1
Indeno[1,2,3-cd]pyrene	0.10	U	0.20	0.043	ug/L		04/13/15 06:18	04/24/15 09:23	1
Isophorone	0.50	U	1.0	0.27	ug/L		04/13/15 06:18	04/24/15 09:23	1
2-Methylnaphthalene	0.10	U	0.20	0.090	ug/L		04/13/15 06:18	04/24/15 09:23	1
2-Methylphenol	0.50	U	1.0	0.17	ug/L		04/13/15 06:18	04/24/15 09:23	1
3 & 4 Methylphenol	1.0	U	2.0	0.80	ug/L		04/13/15 06:18	04/24/15 09:23	1
Naphthalene	0.10	U	0.20	0.063	ug/L		04/13/15 06:18	04/24/15 09:23	1
2-Nitroaniline	0.50	U	2.0	0.21	ug/L		04/13/15 06:18	04/24/15 09:23	1
3-Nitroaniline	0.50	U	2.0	0.28	ug/L		04/13/15 06:18	04/24/15 09:23	1
4-Nitroaniline	0.50	U	2.0	0.22	ug/L		04/13/15 06:18	04/24/15 09:23	1
Nitrobenzene	0.10	U	1.0	0.040	ug/L		04/13/15 06:18	04/24/15 09:23	1
2-Nitrophenol	0.50	U	2.0	0.28	ug/L		04/13/15 06:18	04/24/15 09:23	1
4-Nitrophenol	4.0	U	5.0	0.29	ug/L		04/13/15 06:18	04/24/15 09:23	1
N-Nitrosodi-n-propylamine	0.50	U	1.0	0.24	ug/L		04/13/15 06:18	04/24/15 09:23	1
N-Nitrosodiphenylamine	0.50	U	1.0	0.31	ug/L		04/13/15 06:18	04/24/15 09:23	1
Pentachlorophenol	1.0	U	5.0	0.27	ug/L		04/13/15 06:18	04/24/15 09:23	1
Phenanthrene	0.10	U	0.20	0.062	ug/L		04/13/15 06:18	04/24/15 09:23	1
Phenol	1.0	U	1.0	0.60	ug/L		04/13/15 06:18	04/24/15 09:23	1
Pyrene	0.10	U	0.20	0.042	ug/L		04/13/15 06:18	04/24/15 09:23	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.28	ug/L		04/13/15 06:18	04/24/15 09:23	1

TestAmerica Canton

# QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

**Lab Sample ID: MB 240-176086/2-A**

**Matrix: Water**

**Analysis Batch: 177779**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 176086**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-Trichlorophenol	0.50	U	5.0	0.30	ug/L		04/13/15 06:18	04/24/15 09:23	1
2,4,6-Trichlorophenol	0.50	U	5.0	0.24	ug/L		04/13/15 06:18	04/24/15 09:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	78		50 - 110	04/13/15 06:18	04/24/15 09:23	1
2-Fluorophenol (Surr)	80		20 - 110	04/13/15 06:18	04/24/15 09:23	1
Nitrobenzene-d5 (Surr)	75		40 - 110	04/13/15 06:18	04/24/15 09:23	1
Phenol-d5 (Surr)	80		10 - 115	04/13/15 06:18	04/24/15 09:23	1
Terphenyl-d14 (Surr)	80		50 - 135	04/13/15 06:18	04/24/15 09:23	1
2,4,6-Tribromophenol (Surr)	86		40 - 125	04/13/15 06:18	04/24/15 09:23	1

**Lab Sample ID: LCS 240-176086/3-A**

**Matrix: Water**

**Analysis Batch: 177779**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 176086**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	20.0	14.7		ug/L		73	45 - 110
Acenaphthylene	20.0	14.1		ug/L		70	50 - 105
Anthracene	20.0	15.1		ug/L		75	55 - 110
Benzo[a]anthracene	20.0	14.6		ug/L		73	55 - 110
Benzo[a]pyrene	20.0	13.4		ug/L		67	55 - 110
Benzo[b]fluoranthene	20.0	14.7		ug/L		74	45 - 120
Benzo[g,h,i]perylene	20.0	14.2		ug/L		71	40 - 125
Benzoic acid	40.0	13.5	J M	ug/L		34	0 - 125
Benzo[k]fluoranthene	20.0	15.3		ug/L		77	45 - 125
Benzyl alcohol	20.0	13.5		ug/L		67	30 - 110
Bis(2-chloroethoxy)methane	20.0	15.5		ug/L		77	45 - 105
Bis(2-chloroethyl)ether	20.0	14.5		ug/L		72	35 - 110
bis (2-chloroisopropyl) ether	20.0	15.5		ug/L		78	25 - 130
Bis(2-ethylhexyl) phthalate	20.0	14.6		ug/L		73	40 - 125
4-Bromophenyl phenyl ether	20.0	17.1		ug/L		86	50 - 115
Butyl benzyl phthalate	20.0	15.1		ug/L		76	45 - 115
Carbazole	20.0	16.5		ug/L		83	50 - 115
4-Chloroaniline	20.0	13.8		ug/L		69	15 - 110
4-Chloro-3-methylphenol	20.0	15.3		ug/L		77	45 - 110
2-Chloronaphthalene	20.0	14.2		ug/L		71	50 - 105
2-Chlorophenol	20.0	14.2		ug/L		71	35 - 105
4-Chlorophenyl phenyl ether	20.0	15.4		ug/L		77	50 - 110
Chrysene	20.0	15.8		ug/L		79	55 - 110
Dibenz(a,h)anthracene	20.0	14.5		ug/L		73	40 - 125
Dibenzofuran	20.0	15.1		ug/L		75	55 - 105
1,2-Dichlorobenzene	20.0	13.6		ug/L		68	35 - 100
1,3-Dichlorobenzene	20.0	12.9		ug/L		64	30 - 100
1,4-Dichlorobenzene	20.0	13.4		ug/L		67	30 - 100
3,3'-Dichlorobenzidine	40.0	29.7		ug/L		74	20 - 110
2,4-Dichlorophenol	20.0	14.9		ug/L		74	50 - 105
Diethyl phthalate	20.0	16.0		ug/L		80	40 - 120
2,4-Dimethylphenol	20.0	11.6		ug/L		58	30 - 110

TestAmerica Canton

# QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

**Lab Sample ID: LCS 240-176086/3-A**

**Matrix: Water**

**Analysis Batch: 177779**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 176086**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dimethyl phthalate	20.0	16.1		ug/L		81	25 - 125
Di-n-butyl phthalate	20.0	18.0		ug/L		90	55 - 115
4,6-Dinitro-2-methylphenol	40.0	29.2		ug/L		73	40 - 130
2,4-Dinitrophenol	40.0	26.0		ug/L		65	15 - 140
2,4-Dinitrotoluene	20.0	16.2		ug/L		81	50 - 120
2,6-Dinitrotoluene	20.0	15.6		ug/L		78	50 - 115
Di-n-octyl phthalate	20.0	13.7		ug/L		69	35 - 135
Fluoranthene	20.0	16.8		ug/L		84	55 - 115
Fluorene	20.0	15.0		ug/L		75	50 - 110
Hexachlorobenzene	20.0	16.1		ug/L		81	50 - 110
Hexachlorobutadiene	20.0	12.9		ug/L		65	25 - 105
Hexachlorocyclopentadiene	20.0	0.839	J	ug/L		4	4 - 110
Hexachloroethane	20.0	13.4		ug/L		67	30 - 95
Indeno[1,2,3-cd]pyrene	20.0	14.0		ug/L		70	45 - 125
Isophorone	20.0	14.5		ug/L		72	50 - 110
2-Methylnaphthalene	20.0	13.8		ug/L		69	45 - 105
2-Methylphenol	20.0	13.7		ug/L		68	40 - 110
3 & 4 Methylphenol	20.0	14.1		ug/L		71	30 - 110
Naphthalene	20.0	13.8		ug/L		69	40 - 100
2-Nitroaniline	20.0	15.7		ug/L		78	50 - 115
3-Nitroaniline	20.0	16.9		ug/L		84	20 - 125
4-Nitroaniline	20.0	16.4		ug/L		82	35 - 120
Nitrobenzene	20.0	14.4		ug/L		72	45 - 110
2-Nitrophenol	20.0	14.6		ug/L		73	40 - 115
4-Nitrophenol	40.0	32.2		ug/L		80	0 - 125
N-Nitrosodi-n-propylamine	20.0	14.5		ug/L		72	35 - 130
N-Nitrosodiphenylamine	40.0	33.0		ug/L		83	50 - 110
Pentachlorophenol	40.0	28.5		ug/L		71	40 - 115
Phenanthrene	20.0	15.2		ug/L		76	50 - 115
Phenol	20.0	14.2		ug/L		71	0 - 115
Pyrene	20.0	15.6		ug/L		78	50 - 130
1,2,4-Trichlorobenzene	20.0	13.5		ug/L		68	35 - 105
2,4,5-Trichlorophenol	20.0	15.3		ug/L		77	50 - 110
2,4,6-Trichlorophenol	20.0	14.5		ug/L		73	50 - 115

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl (Surr)	69		50 - 110
2-Fluorophenol (Surr)	70		20 - 110
Nitrobenzene-d5 (Surr)	70		40 - 110
Phenol-d5 (Surr)	67		10 - 115
Terphenyl-d14 (Surr)	70		50 - 135
2,4,6-Tribromophenol (Surr)	83		40 - 125

TestAmerica Canton

## QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

**Lab Sample ID: MB 240-176654/8-A**

**Matrix: Solid**

**Analysis Batch: 177779**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 176654**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Pyridine	0.00050	U	0.020	0.00035	mg/L		04/16/15 08:13	04/24/15 10:13	1
1,4-Dichlorobenzene	0.00050	U	0.0040	0.00034	mg/L		04/16/15 08:13	04/24/15 10:13	1
2,4-Dinitrotoluene	0.00050	U	0.020	0.00025	mg/L		04/16/15 08:13	04/24/15 10:13	1
Hexachlorobenzene	0.00010	U	0.020	0.000085	mg/L		04/16/15 08:13	04/24/15 10:13	1
Hexachlorobutadiene	0.00050	U	0.020	0.00027	mg/L		04/16/15 08:13	04/24/15 10:13	1
Hexachloroethane	0.00050	U	0.020	0.00019	mg/L		04/16/15 08:13	04/24/15 10:13	1
2-Methylphenol	0.00050	U	0.0040	0.00017	mg/L		04/16/15 08:13	04/24/15 10:13	1
3 & 4 Methylphenol	0.0010	U	0.040	0.00080	mg/L		04/16/15 08:13	04/24/15 10:13	1
Nitrobenzene	0.00010	U	0.0040	0.000040	mg/L		04/16/15 08:13	04/24/15 10:13	1
Pentachlorophenol	0.0010	U	0.040	0.00027	mg/L		04/16/15 08:13	04/24/15 10:13	1
2,4,5-Trichlorophenol	0.00050	U	0.020	0.00030	mg/L		04/16/15 08:13	04/24/15 10:13	1
2,4,6-Trichlorophenol	0.00050	U	0.020	0.00024	mg/L		04/16/15 08:13	04/24/15 10:13	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	87		22 - 110	04/16/15 08:13	04/24/15 10:13	1
2-Fluorophenol (Surr)	46		10 - 110	04/16/15 08:13	04/24/15 10:13	1
Nitrobenzene-d5 (Surr)	82		29 - 111	04/16/15 08:13	04/24/15 10:13	1
Phenol-d5 (Surr)	74		10 - 110	04/16/15 08:13	04/24/15 10:13	1
Terphenyl-d14 (Surr)	84		40 - 119	04/16/15 08:13	04/24/15 10:13	1
2,4,6-Tribromophenol (Surr)	71		17 - 117	04/16/15 08:13	04/24/15 10:13	1

**Lab Sample ID: LCS 240-176654/9-A**

**Matrix: Solid**

**Analysis Batch: 177779**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 176654**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Pyridine	0.0800	0.0583		mg/L		73	10 - 110
1,4-Dichlorobenzene	0.0800	0.0633		mg/L		79	16 - 110
2,4-Dinitrotoluene	0.0800	0.0758		mg/L		95	45 - 126
Hexachlorobenzene	0.0800	0.0713		mg/L		89	47 - 116
Hexachlorobutadiene	0.0800	0.0619		mg/L		77	10 - 110
Hexachloroethane	0.0800	0.0620		mg/L		78	10 - 110
2-Methylphenol	0.0800	0.0627		mg/L		78	24 - 110
3 & 4 Methylphenol	0.0800	0.0651		mg/L		81	27 - 110
Nitrobenzene	0.0800	0.0686		mg/L		86	35 - 117
Pentachlorophenol	0.160	0.115		mg/L		72	12 - 110
2,4,5-Trichlorophenol	0.0800	0.0674		mg/L		84	35 - 111
2,4,6-Trichlorophenol	0.0800	0.0675		mg/L		84	32 - 110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	85		22 - 110
2-Fluorophenol (Surr)	33		10 - 110
Nitrobenzene-d5 (Surr)	86		29 - 111
Phenol-d5 (Surr)	70		10 - 110
Terphenyl-d14 (Surr)	83		40 - 119
2,4,6-Tribromophenol (Surr)	97		17 - 117

TestAmerica Canton

# QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

**Lab Sample ID: MRL 240-177779/17**

**Matrix: Solid**

**Analysis Batch: 177779**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	5.00	4.72		ng/uL		94	70 - 130
Acenaphthylene	5.00	4.86		ng/uL		97	70 - 130
Anthracene	5.00	4.94		ng/uL		99	70 - 130
Benzo[a]anthracene	5.00	4.85		ng/uL		97	70 - 130
Benzo[a]pyrene	5.00	4.94		ng/uL		99	70 - 130
Benzo[b]fluoranthene	5.00	4.72		ng/uL		94	70 - 130
Benzo[g,h,i]perylene	5.00	4.79		ng/uL		96	70 - 130
Benzoic acid	10.0	8.79	M	ng/uL		88	70 - 130
Benzo[k]fluoranthene	5.00	5.00		ng/uL		100	70 - 130
Benzyl alcohol	5.00	4.61		ng/uL		92	70 - 130
Bis(2-chloroethoxy)methane	5.00	5.01		ng/uL		100	70 - 130
Bis(2-chloroethyl)ether	5.00	4.69		ng/uL		94	70 - 130
bis (2-chloroisopropyl) ether	5.00	5.11		ng/uL		102	70 - 130
Bis(2-ethylhexyl) phthalate	5.00	5.02		ng/uL		100	70 - 130
4-Bromophenyl phenyl ether	5.00	5.21		ng/uL		104	70 - 130
Butyl benzyl phthalate	5.00	4.89		ng/uL		98	70 - 130
Carbazole	5.00	4.94		ng/uL		99	70 - 130
4-Chloroaniline	5.00	5.20		ng/uL		104	70 - 130
Pyridine	5.00	4.55		ng/uL		91	70 - 130
4-Chloro-3-methylphenol	5.00	5.15		ng/uL		103	70 - 130
2-Chloronaphthalene	5.00	4.77		ng/uL		95	70 - 130
2-Chlorophenol	5.00	4.74		ng/uL		95	70 - 130
4-Chlorophenyl phenyl ether	5.00	4.89		ng/uL		98	70 - 130
Chrysene	5.00	4.88		ng/uL		98	70 - 130
Dibenz(a,h)anthracene	5.00	4.93		ng/uL		99	70 - 130
Dibenzofuran	5.00	4.99		ng/uL		100	70 - 130
1,2-Dichlorobenzene	5.00	4.99		ng/uL		100	70 - 130
1,3-Dichlorobenzene	5.00	4.83		ng/uL		97	70 - 130
1,4-Dichlorobenzene	5.00	4.85		ng/uL		97	70 - 130
3,3'-Dichlorobenzidine	10.0	9.15		ng/uL		91	70 - 130
2,4-Dichlorophenol	5.00	5.08		ng/uL		102	70 - 130
Diethyl phthalate	5.00	5.09		ng/uL		102	70 - 130
2,4-Dimethylphenol	5.00	5.00		ng/uL		100	70 - 130
Dimethyl phthalate	5.00	5.13		ng/uL		103	70 - 130
Di-n-butyl phthalate	5.00	5.03		ng/uL		101	70 - 130
4,6-Dinitro-2-methylphenol	10.0	4.42	^	ng/uL		44	70 - 130
2,4-Dinitrophenol	10.0	4.84	^	ng/uL		48	70 - 130
2,4-Dinitrotoluene	5.00	5.28		ng/uL		106	70 - 130
2,6-Dinitrotoluene	5.00	4.89		ng/uL		98	70 - 130
Di-n-octyl phthalate	5.00	5.02		ng/uL		100	70 - 130
Fluoranthene	5.00	4.93		ng/uL		99	70 - 130
Fluorene	5.00	4.98		ng/uL		100	70 - 130
Hexachlorobenzene	5.00	4.80		ng/uL		96	70 - 130
Hexachlorobutadiene	5.00	4.95		ng/uL		99	70 - 130
Hexachlorocyclopentadiene	5.00	2.69	^	ng/uL		54	70 - 130
Hexachloroethane	5.00	4.93		ng/uL		99	70 - 130
Indeno[1,2,3-cd]pyrene	5.00	4.96		ng/uL		99	70 - 130
Isophorone	5.00	4.99		ng/uL		100	70 - 130

TestAmerica Canton

## QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

Lab Sample ID: MRL 240-17779/17

Matrix: Solid

Analysis Batch: 177779

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylnaphthalene	5.00	4.67		ng/uL		93	70 - 130
2-Methylphenol	5.00	4.98		ng/uL		100	70 - 130
3 & 4 Methylphenol	5.00	4.87		ng/uL		97	70 - 130
Naphthalene	5.00	4.87		ng/uL		97	70 - 130
2-Nitroaniline	5.00	5.10		ng/uL		102	70 - 130
3-Nitroaniline	5.00	5.26		ng/uL		105	70 - 130
4-Nitroaniline	5.00	4.71		ng/uL		94	70 - 130
Nitrobenzene	5.00	4.74		ng/uL		95	70 - 130
2-Nitrophenol	5.00	4.89		ng/uL		98	70 - 130
4-Nitrophenol	10.0	9.69		ng/uL		97	70 - 130
N-Nitrosodi-n-propylamine	5.00	4.92		ng/uL		98	70 - 130
N-Nitrosodiphenylamine	10.0	10.4		ng/uL		104	70 - 130
Pentachlorophenol	10.0	8.76		ng/uL		88	70 - 130
Phenanthrene	5.00	4.87		ng/uL		97	70 - 130
Phenol	5.00	4.91		ng/uL		98	70 - 130
Pyrene	5.00	4.90		ng/uL		98	70 - 130
1,2,4-Trichlorobenzene	5.00	4.91		ng/uL		98	70 - 130
2,4,5-Trichlorophenol	5.00	4.94		ng/uL		99	70 - 130
2,4,6-Trichlorophenol	5.00	5.14		ng/uL		103	70 - 130

Surrogate	MRL %Recovery	MRL Qualifier	MRL Limits
2-Fluorobiphenyl (Surr)	95		70 - 130
2-Fluorophenol (Surr)	101		50 - 150
Nitrobenzene-d5 (Surr)	95		50 - 150
Phenol-d5 (Surr)	96		50 - 150
Terphenyl-d14 (Surr)	98		50 - 150
2,4,6-Tribromophenol (Surr)	113		50 - 150

Lab Sample ID: MRL 240-17779/3

Matrix: Solid

Analysis Batch: 177779

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	5.00	4.82		ng/uL		96	70 - 130
Acenaphthylene	5.00	4.81		ng/uL		96	70 - 130
Anthracene	5.00	4.99		ng/uL		100	70 - 130
Benzo[a]anthracene	5.00	4.92		ng/uL		98	70 - 130
Benzo[a]pyrene	5.00	4.91		ng/uL		98	70 - 130
Benzo[b]fluoranthene	5.00	4.62		ng/uL		92	70 - 130
Benzo[g,h,i]perylene	5.00	4.94		ng/uL		99	70 - 130
Benzoic acid	10.0	9.82		ng/uL		98	70 - 130
Benzo[k]fluoranthene	5.00	5.27		ng/uL		105	70 - 130
Benzyl alcohol	5.00	5.12		ng/uL		102	70 - 130
Bis(2-chloroethoxy)methane	5.00	5.02		ng/uL		100	70 - 130
Bis(2-chloroethyl)ether	5.00	4.93		ng/uL		99	70 - 130
bis (2-chloroisopropyl) ether	5.00	5.36		ng/uL		107	70 - 130
Bis(2-ethylhexyl) phthalate	5.00	4.95		ng/uL		99	70 - 130
4-Bromophenyl phenyl ether	5.00	5.51		ng/uL		110	70 - 130

TestAmerica Canton



# QC Sample Results

Client: Environmental Chemical Corp.  
 Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

Lab Sample ID: MRL 240-17779/3

Matrix: Solid

Analysis Batch: 177779

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Butyl benzyl phthalate	5.00	4.76		ng/uL		95	70 - 130
Carbazole	5.00	5.16		ng/uL		103	70 - 130
4-Chloroaniline	5.00	4.85	M	ng/uL		97	70 - 130
Pyridine	5.00	4.95		ng/uL		99	70 - 130
4-Chloro-3-methylphenol	5.00	5.12		ng/uL		102	70 - 130
2-Chloronaphthalene	5.00	4.87		ng/uL		97	70 - 130
2-Chlorophenol	5.00	5.07		ng/uL		101	70 - 130
4-Chlorophenyl phenyl ether	5.00	5.04		ng/uL		101	70 - 130
Chrysene	5.00	5.00		ng/uL		100	70 - 130
Dibenz(a,h)anthracene	5.00	4.92		ng/uL		98	70 - 130
Dibenzofuran	5.00	4.87		ng/uL		97	70 - 130
1,2-Dichlorobenzene	5.00	5.33		ng/uL		107	70 - 130
1,3-Dichlorobenzene	5.00	5.18		ng/uL		104	70 - 130
1,4-Dichlorobenzene	5.00	5.28		ng/uL		106	70 - 130
3,3'-Dichlorobenzidine	10.0	9.74		ng/uL		97	70 - 130
2,4-Dichlorophenol	5.00	4.96		ng/uL		99	70 - 130
Diethyl phthalate	5.00	5.02		ng/uL		100	70 - 130
2,4-Dimethylphenol	5.00	4.92		ng/uL		98	70 - 130
Dimethyl phthalate	5.00	5.12		ng/uL		102	70 - 130
Di-n-butyl phthalate	5.00	5.36		ng/uL		107	70 - 130
4,6-Dinitro-2-methylphenol	10.0	10.3		ng/uL		103	70 - 130
2,4-Dinitrophenol	10.0	9.94		ng/uL		99	70 - 130
2,4-Dinitrotoluene	5.00	5.21		ng/uL		104	70 - 130
2,6-Dinitrotoluene	5.00	5.05		ng/uL		101	70 - 130
Di-n-octyl phthalate	5.00	4.79		ng/uL		96	70 - 130
Fluoranthene	5.00	5.18		ng/uL		104	70 - 130
Fluorene	5.00	4.86		ng/uL		97	70 - 130
Hexachlorobenzene	5.00	5.41		ng/uL		108	70 - 130
Hexachlorobutadiene	5.00	4.94		ng/uL		99	70 - 130
Hexachlorocyclopentadiene	5.00	4.97		ng/uL		99	70 - 130
Hexachloroethane	5.00	5.44		ng/uL		109	70 - 130
Indeno[1,2,3-cd]pyrene	5.00	4.86		ng/uL		97	70 - 130
Isophorone	5.00	4.85		ng/uL		97	70 - 130
2-Methylnaphthalene	5.00	4.74		ng/uL		95	70 - 130
2-Methylphenol	5.00	5.15		ng/uL		103	70 - 130
3 & 4 Methylphenol	5.00	5.07		ng/uL		101	70 - 130
Naphthalene	5.00	4.70		ng/uL		94	70 - 130
2-Nitroaniline	5.00	5.03		ng/uL		101	70 - 130
3-Nitroaniline	5.00	5.21		ng/uL		104	70 - 130
4-Nitroaniline	5.00	4.71		ng/uL		94	70 - 130
Nitrobenzene	5.00	4.76		ng/uL		95	70 - 130
2-Nitrophenol	5.00	5.00		ng/uL		100	70 - 130
4-Nitrophenol	10.0	10.0		ng/uL		100	70 - 130
N-Nitrosodi-n-propylamine	5.00	5.28		ng/uL		106	70 - 130
N-Nitrosodiphenylamine	10.0	11.0		ng/uL		110	70 - 130
Pentachlorophenol	10.0	9.10		ng/uL		91	70 - 130
Phenanthrene	5.00	4.96		ng/uL		99	70 - 130
Phenol	5.00	5.05		ng/uL		101	70 - 130

TestAmerica Canton

## QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

Lab Sample ID: MRL 240-17779/3

Matrix: Solid

Analysis Batch: 17779

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Pyrene	5.00	4.94		ng/uL		99	70 - 130
1,2,4-Trichlorobenzene	5.00	4.94		ng/uL		99	70 - 130
2,4,5-Trichlorophenol	5.00	5.05		ng/uL		101	70 - 130
2,4,6-Trichlorophenol	5.00	4.86		ng/uL		97	70 - 130

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Fluorobiphenyl (Surr)	94		70 - 130
2-Fluorophenol (Surr)	107		50 - 150
Nitrobenzene-d5 (Surr)	97		50 - 150
Phenol-d5 (Surr)	99		50 - 150
Terphenyl-d14 (Surr)	98		50 - 150
2,4,6-Tribromophenol (Surr)	108		50 - 150

### Method: 8081A - Organochlorine Pesticides (GC)

Lab Sample ID: MB 240-176509/2-A

Matrix: Water

Analysis Batch: 176694

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 176509

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	0.050	U	0.050	0.018	ug/L		04/15/15 09:05	04/16/15 19:56	1
4,4'-DDE	0.050	U	0.050	0.012	ug/L		04/15/15 09:05	04/16/15 19:56	1
4,4'-DDT	0.050	U	0.050	0.017	ug/L		04/15/15 09:05	04/16/15 19:56	1
Aldrin	0.050	U	0.050	0.013	ug/L		04/15/15 09:05	04/16/15 19:56	1
alpha-BHC	0.050	U	0.050	0.014	ug/L		04/15/15 09:05	04/16/15 19:56	1
alpha-Chlordane	0.050	U	0.050	0.012	ug/L		04/15/15 09:05	04/16/15 19:56	1
beta-BHC	0.050	U	0.050	0.018	ug/L		04/15/15 09:05	04/16/15 19:56	1
delta-BHC	0.050	U	0.050	0.029	ug/L		04/15/15 09:05	04/16/15 19:56	1
Dieldrin	0.050	U	0.050	0.013	ug/L		04/15/15 09:05	04/16/15 19:56	1
Endosulfan I	0.050	U	0.050	0.016	ug/L		04/15/15 09:05	04/16/15 19:56	1
Endosulfan II	0.050	U	0.050	0.015	ug/L		04/15/15 09:05	04/16/15 19:56	1
Endosulfan sulfate	0.050	U	0.050	0.015	ug/L		04/15/15 09:05	04/16/15 19:56	1
Endrin	0.050	U	0.050	0.013	ug/L		04/15/15 09:05	04/16/15 19:56	1
Endrin aldehyde	0.050	U	0.050	0.018	ug/L		04/15/15 09:05	04/16/15 19:56	1
Endrin ketone	0.050	U	0.050	0.016	ug/L		04/15/15 09:05	04/16/15 19:56	1
gamma-BHC (Lindane)	0.050	U	0.050	0.013	ug/L		04/15/15 09:05	04/16/15 19:56	1
gamma-Chlordane	0.050	U	0.050	0.013	ug/L		04/15/15 09:05	04/16/15 19:56	1
Heptachlor	0.050	U	0.050	0.014	ug/L		04/15/15 09:05	04/16/15 19:56	1
Heptachlor epoxide	0.050	U	0.050	0.015	ug/L		04/15/15 09:05	04/16/15 19:56	1
Methoxychlor	0.050	U	0.10	0.013	ug/L		04/15/15 09:05	04/16/15 19:56	1
Toxaphene	2.0	U	2.0	0.20	ug/L		04/15/15 09:05	04/16/15 19:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	99		30 - 135	04/15/15 09:05	04/16/15 19:56	1
DCB Decachlorobiphenyl	96		30 - 135	04/15/15 09:05	04/16/15 19:56	1
Tetrachloro-m-xylene	84		25 - 140	04/15/15 09:05	04/16/15 19:56	1
Tetrachloro-m-xylene	84		25 - 140	04/15/15 09:05	04/16/15 19:56	1

TestAmerica Canton

## QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

### Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 240-176509/3-A

Matrix: Water

Analysis Batch: 176694

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 176509

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4,4'-DDD	0.500	0.579		ug/L		116	25 - 150
4,4'-DDE	0.500	0.518		ug/L		104	35 - 140
4,4'-DDT	0.500	0.561		ug/L		112	45 - 140
Aldrin	0.500	0.452		ug/L		90	25 - 140
alpha-BHC	0.500	0.496		ug/L		99	60 - 130
alpha-Chlordane	0.500	0.482		ug/L		96	65 - 125
beta-BHC	0.500	0.476		ug/L		95	65 - 125
delta-BHC	0.500	0.511		ug/L		102	45 - 135
Dieldrin	0.500	0.506		ug/L		101	60 - 130
Endosulfan I	0.500	0.358		ug/L		72	50 - 110
Endosulfan II	0.500	0.399		ug/L		80	30 - 130
Endosulfan sulfate	0.500	0.487		ug/L		97	55 - 135
Endrin	0.500	0.530		ug/L		106	55 - 135
Endrin aldehyde	0.500	0.479		ug/L		96	55 - 135
Endrin ketone	0.500	0.458		ug/L		92	75 - 125
gamma-BHC (Lindane)	0.500	0.498		ug/L		100	25 - 135
gamma-Chlordane	0.500	0.491		ug/L		98	60 - 125
Heptachlor	0.500	0.509		ug/L		102	40 - 130
Heptachlor epoxide	0.500	0.485		ug/L		97	60 - 130
Methoxychlor	0.500	0.534		ug/L		107	55 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	92		30 - 135
DCB Decachlorobiphenyl	93		30 - 135
Tetrachloro-m-xylene	91		25 - 140
Tetrachloro-m-xylene	88		25 - 140

Lab Sample ID: MB 240-176661/5-A

Matrix: Solid

Analysis Batch: 177258

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 176661

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	78		44 - 144	04/16/15 08:22	04/22/15 05:39	1
DCB Decachlorobiphenyl	82		44 - 144	04/16/15 08:22	04/22/15 05:39	1
Tetrachloro-m-xylene	83		44 - 127	04/16/15 08:22	04/22/15 05:39	1
Tetrachloro-m-xylene	80		44 - 127	04/16/15 08:22	04/22/15 05:39	1

Lab Sample ID: LCS 240-176661/6-A

Matrix: Solid

Analysis Batch: 177258

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 176661

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Endrin	0.00200	0.00208	J D	mg/L		104	56 - 144
gamma-BHC (Lindane)	0.00200	0.00186	J D	mg/L		93	60 - 139
Heptachlor	0.00200	0.00191	J D	mg/L		96	65 - 123
Heptachlor epoxide	0.00200	0.00195	J D	mg/L		98	62 - 141
Methoxychlor	0.00400	0.00347	J D	mg/L		87	52 - 138

TestAmerica Canton

## QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

### Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 240-176661/6-A

Matrix: Solid

Analysis Batch: 177258

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 176661

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	102		44 - 144
DCB Decachlorobiphenyl	101		44 - 144
Tetrachloro-m-xylene	89		44 - 127
Tetrachloro-m-xylene	87		44 - 127

Lab Sample ID: MRL 240-176694/16

Matrix: Water

Analysis Batch: 176694

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
4,4'-DDD	5.00	5.13		ug/L		103	70 - 130
4,4'-DDD	5.00	5.09		ug/L		102	70 - 130
4,4'-DDE	5.00	4.76		ug/L		95	70 - 130
4,4'-DDE	5.00	5.08		ug/L		102	70 - 130
4,4'-DDT	5.00	4.74		ug/L		95	70 - 130
4,4'-DDT	5.00	4.80		ug/L		96	70 - 130
Aldrin	5.00	5.06		ug/L		101	70 - 130
Aldrin	5.00	5.14		ug/L		103	70 - 130
alpha-BHC	5.00	4.81		ug/L		96	70 - 130
alpha-BHC	5.00	4.86		ug/L		97	70 - 130
alpha-Chlordane	5.00	5.25		ug/L		105	70 - 130
alpha-Chlordane	5.00	5.37		ug/L		107	70 - 130
beta-BHC	5.00	5.62		ug/L		112	70 - 130
beta-BHC	5.00	5.74		ug/L		115	70 - 130
delta-BHC	5.00	4.71		ug/L		94	70 - 130
delta-BHC	5.00	4.80		ug/L		96	70 - 130
Dieldrin	5.00	5.19		ug/L		104	70 - 130
Dieldrin	5.00	5.30		ug/L		106	70 - 130
Endosulfan I	5.00	5.38		ug/L		108	70 - 130
Endosulfan I	5.00	5.52		ug/L		110	70 - 130
Endosulfan II	5.00	5.84		ug/L		117	70 - 130
Endosulfan II	5.00	5.86		ug/L		117	70 - 130
Endosulfan sulfate	5.00	5.75		ug/L		115	70 - 130
Endosulfan sulfate	5.00	5.68		ug/L		114	70 - 130
Endrin	5.00	5.53		ug/L		111	70 - 130
Endrin	5.00	5.58		ug/L		112	70 - 130
Endrin aldehyde	5.00	5.72		ug/L		114	70 - 130
Endrin aldehyde	5.00	5.74		ug/L		115	70 - 130
Endrin ketone	5.00	5.65		ug/L		113	70 - 130
Endrin ketone	5.00	5.57		ug/L		111	70 - 130
gamma-BHC (Lindane)	5.00	4.98		ug/L		100	70 - 130
gamma-BHC (Lindane)	5.00	5.02		ug/L		100	70 - 130
gamma-Chlordane	5.00	5.14		ug/L		103	70 - 130
gamma-Chlordane	5.00	5.34		ug/L		107	70 - 130
Heptachlor	5.00	5.41		ug/L		108	70 - 130
Heptachlor	5.00	5.51		ug/L		110	70 - 130
Heptachlor epoxide	5.00	5.41		ug/L		108	70 - 130
Heptachlor epoxide	5.00	5.51		ug/L		110	70 - 130

TestAmerica Canton

# QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

## Method: 8081A - Organochlorine Pesticides (GC) (Continued)

**Lab Sample ID: MRL 240-176694/16**

**Matrix: Water**

**Analysis Batch: 176694**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Methoxychlor	5.00	6.05		ug/L		121	70 - 130
Methoxychlor	5.00	5.80		ug/L		116	70 - 130
<b>Surrogate</b>	<b>%Recovery</b>	<b>MRL</b>	<b>Qualifier</b>				<b>Limits</b>
DCB Decachlorobiphenyl	125						50 - 150
DCB Decachlorobiphenyl	120						50 - 150
Tetrachloro-m-xylene	107						50 - 150
Tetrachloro-m-xylene	109						50 - 150

**Lab Sample ID: MRL 240-176694/31**

**Matrix: Water**

**Analysis Batch: 176694**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
4,4'-DDD	5.00	6.17		ug/L		123	70 - 130
4,4'-DDD	5.00	5.65		ug/L		113	70 - 130
4,4'-DDE	5.00	5.51		ug/L		110	70 - 130
4,4'-DDE	5.00	5.34		ug/L		107	70 - 130
4,4'-DDT	5.00	4.83		ug/L		97	70 - 130
4,4'-DDT	5.00	4.70		ug/L		94	70 - 130
Aldrin	5.00	5.30		ug/L		106	70 - 130
Aldrin	5.00	5.32		ug/L		106	70 - 130
alpha-BHC	5.00	5.15		ug/L		103	70 - 130
alpha-BHC	5.00	5.11		ug/L		102	70 - 130
alpha-Chlordane	5.00	5.51		ug/L		110	70 - 130
alpha-Chlordane	5.00	5.53		ug/L		111	70 - 130
beta-BHC	5.00	6.09		ug/L		122	70 - 130
beta-BHC	5.00	5.96		ug/L		119	70 - 130
delta-BHC	5.00	5.27		ug/L		105	70 - 130
delta-BHC	5.00	5.15		ug/L		103	70 - 130
Dieldrin	5.00	5.46		ug/L		109	70 - 130
Dieldrin	5.00	5.37		ug/L		107	70 - 130
Endosulfan I	5.00	5.72		ug/L		114	70 - 130
Endosulfan I	5.00	5.72		ug/L		114	70 - 130
Endosulfan II	5.00	5.88		ug/L		118	70 - 130
Endosulfan II	5.00	5.73		ug/L		115	70 - 130
Endosulfan sulfate	5.00	6.01		ug/L		120	70 - 130
Endosulfan sulfate	5.00	5.74		ug/L		115	70 - 130
Endrin	5.00	5.81		ug/L		116	70 - 130
Endrin	5.00	5.65		ug/L		113	70 - 130
Endrin aldehyde	5.00	6.02		ug/L		120	70 - 130
Endrin aldehyde	5.00	5.80		ug/L		116	70 - 130
Endrin ketone	5.00	5.79		ug/L		116	70 - 130
Endrin ketone	5.00	5.56		ug/L		111	70 - 130
gamma-BHC (Lindane)	5.00	5.33		ug/L		107	70 - 130
gamma-BHC (Lindane)	5.00	5.27		ug/L		105	70 - 130
gamma-Chlordane	5.00	5.43		ug/L		109	70 - 130
gamma-Chlordane	5.00	5.52		ug/L		110	70 - 130

TestAmerica Canton

# QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

## Method: 8081A - Organochlorine Pesticides (GC) (Continued)

**Lab Sample ID: MRL 240-176694/31**

**Matrix: Water**

**Analysis Batch: 176694**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Heptachlor	5.00	5.76		ug/L		115	70 - 130
Heptachlor	5.00	5.81		ug/L		116	70 - 130
Heptachlor epoxide	5.00	5.71		ug/L		114	70 - 130
Heptachlor epoxide	5.00	5.72		ug/L		114	70 - 130
Methoxychlor	5.00	6.22		ug/L		124	70 - 130
Methoxychlor	5.00	5.73		ug/L		115	70 - 130

Surrogate	MRL %Recovery	MRL Qualifier	Limits
DCB Decachlorobiphenyl	126		50 - 150
DCB Decachlorobiphenyl	123		50 - 150
Tetrachloro-m-xylene	112		50 - 150
Tetrachloro-m-xylene	112		50 - 150

**Lab Sample ID: MRL 240-177258/31**

**Matrix: Solid**

**Analysis Batch: 177258**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Endrin	5.00	5.75		ug/L		115	70 - 130
Endrin	5.00	5.81		ug/L		116	70 - 130
gamma-BHC (Lindane)	5.00	5.48		ug/L		110	70 - 130
gamma-BHC (Lindane)	5.00	5.54		ug/L		111	70 - 130
Heptachlor	5.00	5.88		ug/L		118	70 - 130
Heptachlor	5.00	6.12		ug/L		122	70 - 130
Heptachlor epoxide	5.00	5.86		ug/L		117	70 - 130
Heptachlor epoxide	5.00	6.00		ug/L		120	70 - 130
Methoxychlor	5.00	5.97		ug/L		119	70 - 130
Methoxychlor	5.00	6.05		ug/L		121	70 - 130

Surrogate	MRL %Recovery	MRL Qualifier	Limits
DCB Decachlorobiphenyl	123		50 - 150
DCB Decachlorobiphenyl	123		50 - 150
Tetrachloro-m-xylene	116		50 - 150
Tetrachloro-m-xylene	120		50 - 150

**Lab Sample ID: MRL 240-177258/49**

**Matrix: Solid**

**Analysis Batch: 177258**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Endrin	5.00	5.61		ug/L		112	70 - 130
Endrin	5.00	5.42		ug/L		108	70 - 130
gamma-BHC (Lindane)	5.00	5.36		ug/L		107	70 - 130
gamma-BHC (Lindane)	5.00	5.46		ug/L		109	70 - 130
Heptachlor	5.00	5.73		ug/L		115	70 - 130
Heptachlor	5.00	5.96		ug/L		119	70 - 130
Heptachlor epoxide	5.00	5.76		ug/L		115	70 - 130
Heptachlor epoxide	5.00	5.86		ug/L		117	70 - 130

TestAmerica Canton

## QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

### Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MRL 240-177258/49

Matrix: Solid

Analysis Batch: 177258

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Methoxychlor	5.00	4.23		ug/L		85	70 - 130
Methoxychlor	5.00	3.94		ug/L		79	70 - 130

Surrogate	MRL %Recovery	MRL Qualifier	Limits
DCB Decachlorobiphenyl	116		50 - 150
DCB Decachlorobiphenyl	117		50 - 150
Tetrachloro-m-xylene	117		50 - 150
Tetrachloro-m-xylene	118		50 - 150

Lab Sample ID: MB 240-177491/3-A

Matrix: Water

Analysis Batch: 178086

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 177491

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	0.0012	U	0.030	0.00014	mg/L		04/22/15 15:15	04/27/15 16:16	1
Endrin	0.00012	U	0.010	0.000013	mg/L		04/22/15 15:15	04/27/15 16:16	1
gamma-BHC (Lindane)	0.00012	U	0.010	0.000013	mg/L		04/22/15 15:15	04/27/15 16:16	1
Heptachlor	0.00012	U	0.010	0.000014	mg/L		04/22/15 15:15	04/27/15 16:16	1
Heptachlor epoxide	0.00012	U	0.010	0.000015	mg/L		04/22/15 15:15	04/27/15 16:16	1
Methoxychlor	0.0000237	J	0.030	0.000013	mg/L		04/22/15 15:15	04/27/15 16:16	1
Toxaphene	0.0048	U	0.50	0.00020	mg/L		04/22/15 15:15	04/27/15 16:16	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	98		44 - 144	04/22/15 15:15	04/27/15 16:16	1
DCB Decachlorobiphenyl	98		44 - 144	04/22/15 15:15	04/27/15 16:16	1
Tetrachloro-m-xylene	79		44 - 127	04/22/15 15:15	04/27/15 16:16	1
Tetrachloro-m-xylene	78		44 - 127	04/22/15 15:15	04/27/15 16:16	1

Lab Sample ID: LCS 240-177491/4-A

Matrix: Water

Analysis Batch: 178086

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 177491

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Endrin	0.00200	0.00209	J D	mg/L		104	56 - 144
gamma-BHC (Lindane)	0.00200	0.00167	J D	mg/L		84	60 - 139
Heptachlor	0.00200	0.00181	J D	mg/L		91	65 - 123
Heptachlor epoxide	0.00200	0.00191	J D	mg/L		96	62 - 141
Methoxychlor	0.00400	0.00403	J D	mg/L		101	52 - 138

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	108		44 - 144
DCB Decachlorobiphenyl	105		44 - 144
Tetrachloro-m-xylene	72		44 - 127
Tetrachloro-m-xylene	71		44 - 127

TestAmerica Canton

## QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

### Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MRL 240-178086/12

Matrix: Water

Analysis Batch: 178086

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Endrin	5.00	4.63		ug/L		93	70 - 130
Endrin	5.00	4.62		ug/L		92	70 - 130
gamma-BHC (Lindane)	5.00	5.09		ug/L		102	70 - 130
gamma-BHC (Lindane)	5.00	5.14		ug/L		103	70 - 130
Heptachlor	5.00	5.21		ug/L		104	70 - 130
Heptachlor	5.00	5.42		ug/L		108	70 - 130
Heptachlor epoxide	5.00	5.45		ug/L		109	70 - 130
Heptachlor epoxide	5.00	5.54		ug/L		111	70 - 130
Methoxychlor	5.00	5.00		ug/L		100	70 - 130
Methoxychlor	5.00	5.12		ug/L		102	70 - 130

Surrogate	MRL %Recovery	MRL Qualifier	Limits
DCB Decachlorobiphenyl	101		50 - 150
DCB Decachlorobiphenyl	101		50 - 150
Tetrachloro-m-xylene	109		50 - 150
Tetrachloro-m-xylene	113		50 - 150

Lab Sample ID: MRL 240-178086/19

Matrix: Water

Analysis Batch: 178086

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Endrin	5.00	5.60		ug/L		112	70 - 130
Endrin	5.00	5.47		ug/L		109	70 - 130
gamma-BHC (Lindane)	5.00	4.98		ug/L		100	70 - 130
gamma-BHC (Lindane)	5.00	4.91		ug/L		98	70 - 130
Heptachlor	5.00	5.61		ug/L		112	70 - 130
Heptachlor	5.00	5.65		ug/L		113	70 - 130
Heptachlor epoxide	5.00	5.64		ug/L		113	70 - 130
Heptachlor epoxide	5.00	5.60		ug/L		112	70 - 130
Methoxychlor	5.00	6.15		ug/L		123	70 - 130
Methoxychlor	5.00	5.77		ug/L		115	70 - 130

Surrogate	MRL %Recovery	MRL Qualifier	Limits
DCB Decachlorobiphenyl	119		50 - 150
DCB Decachlorobiphenyl	115		50 - 150
Tetrachloro-m-xylene	112		50 - 150
Tetrachloro-m-xylene	115		50 - 150

Lab Sample ID: 240-49236-2 MS

Matrix: Water

Analysis Batch: 178086

Client Sample ID: 079SB-0384-0001-IDW

Prep Type: TCLP

Prep Batch: 177491

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Endrin	0.00015	U Q J	0.00250	0.000411	D Q J	mg/L		16	50 - 150
gamma-BHC (Lindane)	0.00015	U Q	0.00250	0.00157	J D Q	mg/L		63	50 - 150
Heptachlor	0.00015	U Q J	0.00250	0.000356	D Q J	mg/L		14	50 - 150

TestAmerica Canton



## QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

### Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 240-49236-2 MS

Matrix: Water

Analysis Batch: 178086

Client Sample ID: 079SB-0384-0001-IDW

Prep Type: TCLP

Prep Batch: 177491

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Heptachlor epoxide	0.00015	U Q J	0.00250	0.000591	D Q J	mg/L		24	50 - 150
Methoxychlor	0.00015	U Q J	0.00500	0.00106	D Q J	mg/L		21	50 - 150

Surrogate	MS %Recovery	MS Qualifier	Limits
DCB Decachlorobiphenyl	2	Q	44 - 144
DCB Decachlorobiphenyl	2	Q	44 - 144
Tetrachloro-m-xylene	34	Q	44 - 127
Tetrachloro-m-xylene	26	Q	44 - 127

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

Lab Sample ID: MB 240-176083/3-A

Matrix: Water

Analysis Batch: 176376

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 176083

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1221	0.20	U	0.50	0.13	ug/L		04/13/15 06:11	04/14/15 14:21	1
Aroclor-1016	0.20	U	0.50	0.17	ug/L		04/13/15 06:11	04/14/15 14:21	1
Aroclor-1232	0.20	U	0.50	0.16	ug/L		04/13/15 06:11	04/14/15 14:21	1
Aroclor-1242	0.40	U	0.50	0.22	ug/L		04/13/15 06:11	04/14/15 14:21	1
Aroclor-1248	0.20	U	0.50	0.10	ug/L		04/13/15 06:11	04/14/15 14:21	1
Aroclor-1254	0.20	U	0.50	0.16	ug/L		04/13/15 06:11	04/14/15 14:21	1
Aroclor-1260	0.20	U	0.50	0.17	ug/L		04/13/15 06:11	04/14/15 14:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	74		40 - 140	04/13/15 06:11	04/14/15 14:21	1
Tetrachloro-m-xylene	70		40 - 140	04/13/15 06:11	04/14/15 14:21	1
DCB Decachlorobiphenyl	90		40 - 135	04/13/15 06:11	04/14/15 14:21	1
DCB Decachlorobiphenyl	88		40 - 135	04/13/15 06:11	04/14/15 14:21	1

Lab Sample ID: LCS 240-176083/4-A

Matrix: Water

Analysis Batch: 176376

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 176083

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor-1016	5.00	4.08		ug/L		82	25 - 145
Aroclor-1260	5.00	4.42		ug/L		88	30 - 145

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	74		40 - 140
Tetrachloro-m-xylene	82		40 - 140
DCB Decachlorobiphenyl	70		40 - 135
DCB Decachlorobiphenyl	69		40 - 135

TestAmerica Canton

## QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

**Lab Sample ID: MRL 240-176376/10**

**Matrix: Water**

**Analysis Batch: 176376**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor-1016	0.0500	0.0539		ng/uL		108	70 - 130
Aroclor-1016	0.0500	0.0572		ng/uL		114	70 - 130
Aroclor-1260	0.0500	0.0552		ng/uL		110	70 - 130
Aroclor-1260	0.0500	0.0563		ng/uL		113	70 - 130

Surrogate	MRL %Recovery	MRL Qualifier	Limits
Tetrachloro-m-xylene	119		50 - 150
Tetrachloro-m-xylene	111		50 - 150
DCB Decachlorobiphenyl	120		50 - 150
DCB Decachlorobiphenyl	130		50 - 150

**Lab Sample ID: MRL 240-176376/4**

**Matrix: Water**

**Analysis Batch: 176376**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor-1016	0.0500	0.0541		ng/uL		108	70 - 130
Aroclor-1260	0.0500	0.0543		ng/uL		109	70 - 130

Surrogate	MRL %Recovery	MRL Qualifier	Limits
Tetrachloro-m-xylene	104		50 - 150
Tetrachloro-m-xylene	111		50 - 150
DCB Decachlorobiphenyl	111		50 - 150
DCB Decachlorobiphenyl	118		50 - 150

### Method: 8151A - Herbicides (GC)

**Lab Sample ID: MB 240-176663/5-A**

**Matrix: Solid**

**Analysis Batch: 177320**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 176663**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	0.0040	U	0.50	0.0019	mg/L		04/16/15 08:24	04/21/15 22:05	1
Silvex (2,4,5-TP)	0.00020	U	0.10	0.00027	mg/L		04/16/15 08:24	04/21/15 22:05	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	94		37 - 116	04/16/15 08:24	04/21/15 22:05	1
2,4-Dichlorophenylacetic acid	72		37 - 116	04/16/15 08:24	04/21/15 22:05	1

**Lab Sample ID: LCS 240-176663/6-A**

**Matrix: Solid**

**Analysis Batch: 177320**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 176663**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-D	0.0200	0.0132	J	mg/L		66	35 - 136
Silvex (2,4,5-TP)	0.00500	0.00346	J	mg/L		69	46 - 112

TestAmerica Canton

## QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

### Method: 8151A - Herbicides (GC) (Continued)

**Lab Sample ID: LCS 240-176663/6-A**

**Matrix: Solid**

**Analysis Batch: 177320**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 176663**

	LCS	LCS	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
2,4-Dichlorophenylacetic acid	88		37 - 116
2,4-Dichlorophenylacetic acid	90		37 - 116

**Lab Sample ID: MRL 240-177320/15**

**Matrix: Solid**

**Analysis Batch: 177320**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

<i>Analyte</i>	<i>Spike Added</i>	<i>MRL Result</i>	<i>MRL Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
2,4-D	0.0200	0.0231	J	ng/uL		115	70 - 130
2,4-D	0.0200	0.0261	J ^	ng/uL		131	70 - 130
Silvex (2,4,5-TP)	0.00500	0.00555	J	ng/uL		111	70 - 130
Silvex (2,4,5-TP)	0.00500	0.00562	J	ng/uL		112	70 - 130

	MRL	MRL	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
2,4-Dichlorophenylacetic acid	147		37 - 116
2,4-Dichlorophenylacetic acid	113		37 - 116

**Lab Sample ID: MRL 240-177320/7**

**Matrix: Solid**

**Analysis Batch: 177320**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

<i>Analyte</i>	<i>Spike Added</i>	<i>MRL Result</i>	<i>MRL Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
2,4-D	0.0200	0.0202	J	ng/uL		101	70 - 130
2,4-D	0.0200	0.0219	J	ng/uL		109	70 - 130
Silvex (2,4,5-TP)	0.00500	0.00497	J	ng/uL		99	70 - 130
Silvex (2,4,5-TP)	0.00500	0.00471	J	ng/uL		94	70 - 130

	MRL	MRL	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
2,4-Dichlorophenylacetic acid	103		37 - 116
2,4-Dichlorophenylacetic acid	108		37 - 116

**Lab Sample ID: 240-49236-1 MS**

**Matrix: Solid**

**Analysis Batch: 177320**

**Client Sample ID: 079SB-0383-0001-IDW**

**Prep Type: TCLP**

**Prep Batch: 176663**

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
2,4-D	0.0040	U	0.0200	0.0141	J	mg/L		71	54 - 114
Silvex (2,4,5-TP)	0.00020	U	0.00500	0.00371	J	mg/L		74	52 - 124

	MS	MS	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
2,4-Dichlorophenylacetic acid	81		37 - 116
2,4-Dichlorophenylacetic acid	78		37 - 116

TestAmerica Canton

## QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

### Method: 8330 Modified - Nitroguanidine (HPLC)

**Lab Sample ID: MB 320-71039/1-A**  
**Matrix: Water**  
**Analysis Batch: 71582**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 71039**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	2.4	ug/L		04/13/15 19:24	04/20/15 16:30	1

**Lab Sample ID: LCS 320-71039/2-A**  
**Matrix: Water**  
**Analysis Batch: 71582**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 71039**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitroguanidine	250	195		ug/L		78	73 - 117

**Lab Sample ID: 240-49236-3 MS**  
**Matrix: Water**  
**Analysis Batch: 71582**

**Client Sample ID: 079SB-0385-0001-SW**  
**Prep Type: Total/NA**  
**Prep Batch: 71039**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitroguanidine	6.0	U	250	206		ug/L		82	73 - 117

**Lab Sample ID: 240-49236-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 71582**

**Client Sample ID: 079SB-0385-0001-SW**  
**Prep Type: Total/NA**  
**Prep Batch: 71039**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitroguanidine	6.0	U	250	206		ug/L		83	73 - 117	0	15

### Method: 8330B - Nitroaromatics and Nitramines (HPLC)

**Lab Sample ID: MB 320-70962/1-A**  
**Matrix: Water**  
**Analysis Batch: 71173**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 70962**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.050	U	0.10	0.031	ug/L		04/13/15 09:25	04/15/15 17:15	1
1,3-Dinitrobenzene	0.10	U	0.10	0.050	ug/L		04/13/15 09:25	04/15/15 17:15	1
2,4,6-Trinitrotoluene	0.10	U	0.10	0.050	ug/L		04/13/15 09:25	04/15/15 17:15	1
2,4-Dinitrotoluene	0.10	U	0.10	0.050	ug/L		04/13/15 09:25	04/15/15 17:15	1
2,6-Dinitrotoluene	0.10	U	0.10	0.050	ug/L		04/13/15 09:25	04/15/15 17:15	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.20	0.015	ug/L		04/13/15 09:25	04/15/15 17:15	1
2-Nitrotoluene	0.10	U	0.50	0.088	ug/L		04/13/15 09:25	04/15/15 17:15	1
3-Nitrotoluene	0.10	U	0.50	0.057	ug/L		04/13/15 09:25	04/15/15 17:15	1
4-Nitrotoluene	0.10	U	0.50	0.088	ug/L		04/13/15 09:25	04/15/15 17:15	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.10	0.050	ug/L		04/13/15 09:25	04/15/15 17:15	1
HMX	0.050	U	0.10	0.036	ug/L		04/13/15 09:25	04/15/15 17:15	1
RDX	0.050	U	0.10	0.036	ug/L		04/13/15 09:25	04/15/15 17:15	1
Nitrobenzene	0.10	U	0.10	0.050	ug/L		04/13/15 09:25	04/15/15 17:15	1
Tetryl	0.10	U	0.10	0.050	ug/L		04/13/15 09:25	04/15/15 17:15	1
Nitroglycerin	0.50	U	0.65	0.33	ug/L		04/13/15 09:25	04/15/15 17:15	1
PETN	0.50	U	0.65	0.30	ug/L		04/13/15 09:25	04/15/15 17:15	1

TestAmerica Canton

## QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

### Method: 8330B - Nitroaromatics and Nitramines (HPLC) (Continued)

**Lab Sample ID: MB 320-70962/1-A**  
**Matrix: Water**  
**Analysis Batch: 71173**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 70962**

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
3,4-Dinitrotoluene	92		79 - 111	04/13/15 09:25	04/15/15 17:15	1

**Lab Sample ID: LCS 320-70962/2-A**  
**Matrix: Water**  
**Analysis Batch: 71173**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 70962**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dinitrobenzene	1.00	1.07		ug/L		107	72 - 123
2,4,6-Trinitrotoluene	1.00	1.03		ug/L		103	69 - 111
2,4-Dinitrotoluene	1.00	1.02		ug/L		102	70 - 119
2,6-Dinitrotoluene	1.00	1.02		ug/L		102	71 - 119
2-Amino-4,6-dinitrotoluene	1.00	1.03		ug/L		103	77 - 123
2-Nitrotoluene	1.00	0.985		ug/L		98	64 - 120
3-Nitrotoluene	1.00	0.991		ug/L		99	67 - 114
4-Nitrotoluene	1.00	0.998		ug/L		100	67 - 115
4-Amino-2,6-dinitrotoluene	1.00	0.990		ug/L		99	68 - 113
HMX	1.00	1.05		ug/L		105	67 - 115
RDX	1.00	1.09		ug/L		109	68 - 122
Nitrobenzene	1.00	1.05		ug/L		105	69 - 119
Tetryl	1.00	1.03		ug/L		103	66 - 105
Nitroglycerin	5.00	5.38		ug/L		108	85 - 115
PETN	5.00	4.90		ug/L		98	84 - 117

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
3,4-Dinitrotoluene	95		79 - 111

### Method: 6010B - Metals (ICP)

**Lab Sample ID: MB 240-176697/2-A**  
**Matrix: Solid**  
**Analysis Batch: 176918**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 176697**

Analyte	MB MB		LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Silver	0.0050	U	0.50	0.00092	mg/L		04/16/15 09:57	04/17/15 08:27	1
Arsenic	0.010	U	0.50	0.0029	mg/L		04/16/15 09:57	04/17/15 08:27	1
Barium	0.00189	J	10	0.0010	mg/L		04/16/15 09:57	04/17/15 08:27	1
Cadmium	0.0010	U	0.10	0.00014	mg/L		04/16/15 09:57	04/17/15 08:27	1
Chromium	0.000744	J	0.50	0.00055	mg/L		04/16/15 09:57	04/17/15 08:27	1
Lead	0.0050	U	0.50	0.0019	mg/L		04/16/15 09:57	04/17/15 08:27	1
Selenium	0.010	U	0.25	0.0040	mg/L		04/16/15 09:57	04/17/15 08:27	1

**Lab Sample ID: LCS 240-176697/3-A**  
**Matrix: Solid**  
**Analysis Batch: 176918**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 176697**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

TestAmerica Canton

# QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

## Method: 6010B - Metals (ICP) (Continued)

**Lab Sample ID: LCS 240-176697/3-A**  
**Matrix: Solid**  
**Analysis Batch: 176918**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 176697**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	2.00	1.94		mg/L		97	80 - 120
Barium	2.00	1.83	J	mg/L		91	80 - 120
Cadmium	0.0500	0.0476	J	mg/L		95	80 - 120
Chromium	0.200	0.185	J	mg/L		92	80 - 120
Lead	0.500	0.449	J	mg/L		90	80 - 120
Selenium	2.00	1.96		mg/L		98	80 - 120

**Lab Sample ID: LB 240-176620/1-B**  
**Matrix: Solid**  
**Analysis Batch: 176918**

**Client Sample ID: Method Blank**  
**Prep Type: TCLP**  
**Prep Batch: 176697**

Analyte	LB Result	LB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	0.0050	U	0.50	0.00092	mg/L		04/16/15 09:57	04/17/15 08:22	1
Arsenic	0.00433	J	0.50	0.0029	mg/L		04/16/15 09:57	04/17/15 08:22	1
Barium	0.00472	J	10	0.0010	mg/L		04/16/15 09:57	04/17/15 08:22	1
Cadmium	0.0010	U	0.10	0.00014	mg/L		04/16/15 09:57	04/17/15 08:22	1
Chromium	0.00185	J	0.50	0.00055	mg/L		04/16/15 09:57	04/17/15 08:22	1
Lead	0.00212	J	0.50	0.0019	mg/L		04/16/15 09:57	04/17/15 08:22	1
Selenium	0.00653	J	0.25	0.0040	mg/L		04/16/15 09:57	04/17/15 08:22	1

**Lab Sample ID: 240-49236-1 MS**  
**Matrix: Solid**  
**Analysis Batch: 176918**

**Client Sample ID: 079SB-0383-0001-IDW**  
**Prep Type: TCLP**  
**Prep Batch: 176697**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	0.0027	J	1.00	1.01	J D	mg/L		101	80 - 120
Barium	0.38	J	50.0	49.1	J D	mg/L		98	80 - 120
Cadmium	0.0010	J	1.00	1.00	D	mg/L		100	80 - 120
Chromium	0.0039	J	5.00	4.93	D	mg/L		99	80 - 120
Lead	0.022	J	5.00	4.85	D	mg/L		96	80 - 120

**Lab Sample ID: 240-49236-1 MS**  
**Matrix: Solid**  
**Analysis Batch: 176918**

**Client Sample ID: 079SB-0383-0001-IDW**  
**Prep Type: TCLP**  
**Prep Batch: 176697**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.013	J D	5.00	5.10	D	mg/L		102	80 - 120
Selenium	0.018	J D	1.00	1.06	J D	mg/L		104	80 - 120

**Lab Sample ID: 240-49236-1 DU**  
**Matrix: Solid**  
**Analysis Batch: 176918**

**Client Sample ID: 079SB-0383-0001-IDW**  
**Prep Type: TCLP**  
**Prep Batch: 176697**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Silver	0.0027	J	0.00285	J	mg/L		5	20
Barium	0.38	J	0.385	J	mg/L		1	20
Cadmium	0.0010	J	0.000918	J	mg/L		13	20
Chromium	0.0039	J	0.00359	J	mg/L		9	20
Lead	0.022	J	0.0226	J	mg/L		1	20

TestAmerica Canton

## QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

### Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 240-49236-1 DU

Matrix: Solid

Analysis Batch: 176918

Client Sample ID: 079SB-0383-0001-IDW

Prep Type: TCLP

Prep Batch: 176697

Analyte	Sample		DU		Unit	D	RPD	
	Result	Qualifier	Result	Qualifier			RPD	Limit
Arsenic	0.013	J D	0.0164	J D	mg/L		22	20
Selenium	0.018	J D	0.040	U	mg/L		NC	20

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

Lab Sample ID: MB 240-176157/1-A

Matrix: Water

Analysis Batch: 176490

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 176157

Analyte	MB MB		LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Antimony	0.589	J	2.0	0.16	ug/L		04/13/15 10:08	04/14/15 11:09	1
Arsenic	0.744	J	5.0	0.18	ug/L		04/13/15 10:08	04/14/15 11:09	1
Barium	4.0	U	5.0	1.1	ug/L		04/13/15 10:08	04/14/15 11:09	1
Cadmium	0.592	J	2.0	0.061	ug/L		04/13/15 10:08	04/14/15 11:09	1
Calcium	1000	U	2000	240	ug/L		04/13/15 10:08	04/14/15 11:09	1
Chromium	1.20	J	6.0	0.20	ug/L		04/13/15 10:08	04/14/15 11:09	1
Cobalt	0.484	J	1.0	0.021	ug/L		04/13/15 10:08	04/14/15 11:09	1
Copper	1.17	J	4.0	0.75	ug/L		04/13/15 10:08	04/14/15 11:09	1
Iron	19.9	J	150	16	ug/L		04/13/15 10:08	04/14/15 11:09	1
Lead	0.367	J	1.0	0.11	ug/L		04/13/15 10:08	04/14/15 11:09	1
Magnesium	300	U	1000	48	ug/L		04/13/15 10:08	04/14/15 11:09	1
Nickel	0.413	J	5.0	0.23	ug/L		04/13/15 10:08	04/14/15 11:09	1
Potassium	150	U	1000	30	ug/L		04/13/15 10:08	04/14/15 11:09	1
Selenium	1.12	J	5.0	0.25	ug/L		04/13/15 10:08	04/14/15 11:09	1
Silver	0.25	U	1.0	0.020	ug/L		04/13/15 10:08	04/14/15 11:09	1
Sodium	400	U	1000	68	ug/L		04/13/15 10:08	04/14/15 11:09	1
Thallium	0.530	J	2.0	0.074	ug/L		04/13/15 10:08	04/14/15 11:09	1
Vanadium	0.515	J	5.0	0.23	ug/L		04/13/15 10:08	04/14/15 11:09	1
Zinc	50	U	50	7.3	ug/L		04/13/15 10:08	04/14/15 11:09	1

Lab Sample ID: MB 240-176157/1-A

Matrix: Water

Analysis Batch: 176660

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 176157

Analyte	MB MB		LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aluminum	60	U	60	9.0	ug/L		04/13/15 10:08	04/15/15 12:59	1
Magnesium	300	U	1000	48	ug/L		04/13/15 10:08	04/15/15 12:59	1
Manganese	10	U	10	1.1	ug/L		04/13/15 10:08	04/15/15 12:59	1
Sodium	400	U	1000	68	ug/L		04/13/15 10:08	04/15/15 12:59	1

Lab Sample ID: MB 240-176157/1-A

Matrix: Water

Analysis Batch: 177115

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 176157

Analyte	MB MB		LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Beryllium	0.405	J	1.0	0.053	ug/L		04/13/15 10:08	04/20/15 17:25	1

TestAmerica Canton

## QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

**Lab Sample ID: LCS 240-176157/2-A**

**Matrix: Water**

**Analysis Batch: 176490**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total Recoverable**

**Prep Batch: 176157**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	
							Limits	
Antimony	100	108		ug/L		108	80 - 120	
Arsenic	1000	991		ug/L		99	80 - 120	
Barium	1000	1120		ug/L		112	80 - 120	
Cadmium	1000	1140		ug/L		114	80 - 120	
Calcium	10000	9020		ug/L		90	80 - 120	
Chromium	1000	1060		ug/L		106	80 - 120	
Cobalt	1000	1090		ug/L		109	80 - 120	
Copper	1000	1110		ug/L		111	80 - 120	
Iron	10000	10600		ug/L		106	80 - 120	
Lead	1000	1030		ug/L		103	80 - 120	
Magnesium	10000	10300		ug/L		103	80 - 120	
Nickel	1000	1120		ug/L		112	80 - 120	
Potassium	10000	10100		ug/L		101	80 - 120	
Selenium	1000	996		ug/L		100	80 - 120	
Silver	100	103		ug/L		103	80 - 120	
Sodium	10000	10300		ug/L		103	80 - 120	
Thallium	250	256		ug/L		103	80 - 120	
Vanadium	1000	1040		ug/L		104	80 - 120	
Zinc	1000	1120		ug/L		112	80 - 120	

**Lab Sample ID: LCS 240-176157/2-A**

**Matrix: Water**

**Analysis Batch: 176660**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total Recoverable**

**Prep Batch: 176157**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	
							Limits	
Aluminum	10000	9640		ug/L		96	80 - 120	
Magnesium	10000	10200		ug/L		102	80 - 120	
Manganese	1000	1040		ug/L		104	80 - 120	
Sodium	10000	10100		ug/L		101	80 - 120	

**Lab Sample ID: LCS 240-176157/2-A**

**Matrix: Water**

**Analysis Batch: 177115**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total Recoverable**

**Prep Batch: 176157**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	
							Limits	
Beryllium	1000	1100		ug/L		110	80 - 120	

**Lab Sample ID: 240-49236-3 MS**

**Matrix: Water**

**Analysis Batch: 176490**

**Client Sample ID: 079SB-0385-0001-SW**

**Prep Type: Total Recoverable**

**Prep Batch: 176157**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.	
									Limits	
Antimony	0.43	J	100	103		ug/L		103	44 - 153	
Arsenic	0.93	J	100	102		ug/L		101	82 - 123	
Barium	18		100	119		ug/L		101	45 - 144	
Cadmium	0.38	J	100	104		ug/L		103	78 - 117	
Calcium	18000		10000	27900		ug/L		97	70 - 130	
Chromium	1.3	J	100	103		ug/L		102	72 - 110	
Cobalt	0.28	J	100	103		ug/L		103	67 - 114	

TestAmerica Canton



# QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

**Lab Sample ID: 240-49236-3 MS**

**Matrix: Water**

**Analysis Batch: 176490**

**Client Sample ID: 079SB-0385-0001-SW**

**Prep Type: Total Recoverable**

**Prep Batch: 176157**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier		Result	Qualifier				Limits
Copper	1.1	J	100	105		ug/L		104	60 - 123
Iron	30	J	10000	10200		ug/L		101	22 - 169
Lead	0.18	J	100	102		ug/L		102	73 - 115
Nickel	3.0	U	100	103		ug/L		103	72 - 111
Potassium	2700		10000	12500		ug/L		98	70 - 130
Selenium	0.62	J	100	97.8		ug/L		97	72 - 148
Silver	0.25	U	100	99.8		ug/L		100	10 - 139
Thallium	0.22	J	100	103		ug/L		103	69 - 117
Vanadium	0.35	J	100	100		ug/L		100	70 - 112
Zinc	50	U	100	108		ug/L		108	49 - 156

**Lab Sample ID: 240-49236-3 MS**

**Matrix: Water**

**Analysis Batch: 176660**

**Client Sample ID: 079SB-0385-0001-SW**

**Prep Type: Total Recoverable**

**Prep Batch: 176157**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier		Result	Qualifier				Limits
Aluminum	60	U	10000	9410		ug/L		94	63 - 128
Manganese	10	U	100	98.3		ug/L		98	10 - 172
Sodium	43000		10000	51200	4	ug/L		83	80 - 120

**Lab Sample ID: 240-49236-3 MS**

**Matrix: Water**

**Analysis Batch: 176660**

**Client Sample ID: 079SB-0385-0001-SW**

**Prep Type: Total Recoverable**

**Prep Batch: 176157**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier		Result	Qualifier				Limits
Magnesium	31000	D	10000	39900	D	ug/L		88	70 - 130

**Lab Sample ID: 240-49236-3 MS**

**Matrix: Water**

**Analysis Batch: 177115**

**Client Sample ID: 079SB-0385-0001-SW**

**Prep Type: Total Recoverable**

**Prep Batch: 176157**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier		Result	Qualifier				Limits
Beryllium	0.27	J	100	106		ug/L		106	77 - 124

**Lab Sample ID: 240-49236-3 DU**

**Matrix: Water**

**Analysis Batch: 176490**

**Client Sample ID: 079SB-0385-0001-SW**

**Prep Type: Total Recoverable**

**Prep Batch: 176157**

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD
	Result	Qualifier		Result				Qualifier
Antimony	0.43	J	0.328	J	ug/L		26	20
Arsenic	0.93	J	0.877	J	ug/L		5	20
Barium	18		17.1		ug/L		8	20
Cadmium	0.38	J	0.302	J	ug/L		23	20
Calcium	18000		17100		ug/L		7	20
Chromium	1.3	J	1.16	J	ug/L		12	20
Cobalt	0.28	J	0.193	J	ug/L		35	20
Copper	1.1	J	0.965	J	ug/L		12	20
Iron	30	J	26.7	J	ug/L		11	20
Lead	0.18	J	0.144	J	ug/L		22	20

TestAmerica Canton

## QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

Lab Sample ID: 240-49236-3 DU

Matrix: Water

Analysis Batch: 176490

Client Sample ID: 079SB-0385-0001-SW

Prep Type: Total Recoverable

Prep Batch: 176157

Analyte	Sample		DU		Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Nickel	3.0	U	3.0	U	ug/L		NC	20
Potassium	2700		2540		ug/L		5	20
Selenium	0.62	J	0.651	J	ug/L		5	20
Silver	0.25	U	0.25	U	ug/L		NC	20
Thallium	0.22	J	0.111	J	ug/L		66	20
Vanadium	0.35	J	1.5	U	ug/L		NC	20
Zinc	50	U	50	U	ug/L		NC	20

Lab Sample ID: 240-49236-3 DU

Matrix: Water

Analysis Batch: 176660

Client Sample ID: 079SB-0385-0001-SW

Prep Type: Total Recoverable

Prep Batch: 176157

Analyte	Sample		DU		Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Aluminum	60	U	60	U	ug/L		NC	20
Manganese	10	U	10	U	ug/L		NC	20
Sodium	43000		40800		ug/L		5	20

Lab Sample ID: 240-49236-3 DU

Matrix: Water

Analysis Batch: 176660

Client Sample ID: 079SB-0385-0001-SW

Prep Type: Total Recoverable

Prep Batch: 176157

Analyte	Sample		DU		Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Magnesium	31000	D	30400	D	ug/L		2	20

Lab Sample ID: 240-49236-3 DU

Matrix: Water

Analysis Batch: 177115

Client Sample ID: 079SB-0385-0001-SW

Prep Type: Total Recoverable

Prep Batch: 176157

Analyte	Sample		DU		Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Beryllium	0.27	J	0.303	J	ug/L		11	20

### Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-176162/1-A

Matrix: Water

Analysis Batch: 176385

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 176162

Analyte	MB		LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	0.20	U	0.20	0.090	ug/L		04/13/15 14:00	04/14/15 10:54	1

Lab Sample ID: LCS 240-176162/2-A

Matrix: Water

Analysis Batch: 176385

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 176162

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits

TestAmerica Canton

# QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

## Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: MB 240-176701/2-A  
Matrix: Solid  
Analysis Batch: 176894

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 176701

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	0.00020	U	0.0020	0.000090	mg/L		04/16/15 14:00	04/17/15 10:41	1

Lab Sample ID: LCS 240-176701/3-A  
Matrix: Solid  
Analysis Batch: 176894

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 176701

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	0.00500	0.00501		mg/L		100	50 - 150

Lab Sample ID: LB 240-176620/1-C  
Matrix: Solid  
Analysis Batch: 176894

Client Sample ID: Method Blank  
Prep Type: TCLP  
Prep Batch: 176701

Analyte	LB Result	LB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	0.00020	U	0.0020	0.000090	mg/L		04/16/15 14:00	04/17/15 10:40	1

Lab Sample ID: 240-49236-1 MS  
Matrix: Solid  
Analysis Batch: 176894

Client Sample ID: 079SB-0383-0001-IDW  
Prep Type: TCLP  
Prep Batch: 176701

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	0.00020	U	0.00500	0.00531		mg/L		106	50 - 150

Lab Sample ID: 240-49236-1 DU  
Matrix: Solid  
Analysis Batch: 176894

Client Sample ID: 079SB-0383-0001-IDW  
Prep Type: TCLP  
Prep Batch: 176701

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Hg	0.00020	U	0.00020	U	mg/L		NC	20

## Method: 1010 - Ignitability, Pensky-Martens Closed-Cup Method

Lab Sample ID: LCS 240-176597/1  
Matrix: Solid  
Analysis Batch: 176597

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Flashpoint	81.0	83.00		Degrees F		102	97 - 103

Lab Sample ID: 240-49236-2 DU  
Matrix: Water  
Analysis Batch: 176597

Client Sample ID: 079SB-0384-0001-IDW  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Flashpoint	>200		>200		Degrees F		NC	20

TestAmerica Canton

# QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

## Method: 9012A - Cyanide, Total and/or Amenable

**Lab Sample ID: MB 240-176155/1-A**  
**Matrix: Solid**  
**Analysis Batch: 176246**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 176155**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.50	U	0.50	0.30	mg/Kg		04/13/15 09:56	04/13/15 14:24	1

**Lab Sample ID: LCS 240-176155/2-A**  
**Matrix: Solid**  
**Analysis Batch: 176246**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 176155**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	9.21	9.00		mg/Kg		98	68 - 123

**Lab Sample ID: MB 240-177636/1-A**  
**Matrix: Water**  
**Analysis Batch: 177730**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 177636**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0020	mg/L		04/23/15 11:18	04/23/15 14:31	1

**Lab Sample ID: LCS 240-177636/2-A**  
**Matrix: Water**  
**Analysis Batch: 177730**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 177636**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0921	0.0719		mg/L		78	69 - 118

**Lab Sample ID: MRL 240-177730/52**  
**Matrix: Water**  
**Analysis Batch: 177730**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0100	0.00964	J	mg/L		96	70 - 130

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

**Lab Sample ID: MB 240-176308/14-A**  
**Matrix: Water**  
**Analysis Batch: 176391**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 176308**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	3.0	U	3.0	0.94	mg/L		04/14/15 08:03	04/14/15 13:05	1

**Lab Sample ID: MB 240-176308/1-A**  
**Matrix: Solid**  
**Analysis Batch: 176391**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 176308**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	29	U	30	22	mg/Kg		04/14/15 08:03	04/14/15 12:28	1

TestAmerica Canton

## QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

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

Lab Sample ID: LCS 240-176308/15-A  
Matrix: Water  
Analysis Batch: 176391

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 176308

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	8.86	7.39		mg/L		83	70 - 130

Lab Sample ID: LCS 240-176308/2-A  
Matrix: Solid  
Analysis Batch: 176391

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 176308

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	87.9	77.2		mg/Kg		88	70 - 130

Lab Sample ID: 240-49236-2 MS  
Matrix: Water  
Analysis Batch: 176391

Client Sample ID: 079SB-0384-0001-IDW  
Prep Type: Total/NA  
Prep Batch: 176308

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	3.0	U	8.86	7.39		mg/L		83	27 - 124

Lab Sample ID: 240-49236-2 MSD  
Matrix: Water  
Analysis Batch: 176391

Client Sample ID: 079SB-0384-0001-IDW  
Prep Type: Total/NA  
Prep Batch: 176308

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	3.0	U	8.86	7.00		mg/L		79	27 - 124	5	20

### Method: 9040C - pH

Lab Sample ID: LCS 240-176141/2  
Matrix: Water  
Analysis Batch: 176141

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Corrosivity	6.15	6.150		SU		100	97 - 103

### Method: 9045C - pH

Lab Sample ID: 240-49236-1 DU  
Matrix: Solid  
Analysis Batch: 176141

Client Sample ID: 079SB-0383-0001-IDW  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Corrosivity	6.26		6.490		SU		4	20

# QC Sample Results

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

## Method: WS-WC-0050 - Nitrocellulose

**Lab Sample ID: MB 320-71147/1-B**  
**Matrix: Water**  
**Analysis Batch: 71741**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 71630**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	0.48	mg/L		04/21/15 06:08	04/21/15 14:49	1

**Lab Sample ID: LCS 320-71147/2-B**  
**Matrix: Water**  
**Analysis Batch: 71741**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 71630**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrocellulose	5.07	4.09		mg/L		81	26 - 144

**Lab Sample ID: 240-49236-3 MS**  
**Matrix: Water**  
**Analysis Batch: 71741**

**Client Sample ID: 079SB-0385-0001-SW**  
**Prep Type: Total/NA**  
**Prep Batch: 71630**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrocellulose	1.0	U	5.07	3.89		mg/L		77	26 - 144

**Lab Sample ID: 240-49236-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 71741**

**Client Sample ID: 079SB-0385-0001-SW**  
**Prep Type: Total/NA**  
**Prep Batch: 71630**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrocellulose	1.0	U	5.07	4.57		mg/L		90	26 - 144	16	45

**Lab Sample ID: MRL 320-71741/11**  
**Matrix: Water**  
**Analysis Batch: 71741**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrocellulose	0.417	1.0	U	mg/L		108	70 - 130

# QC Association Summary

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

## GC/MS VOA

### Analysis Batch: 176298

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-3	079SB-0385-0001-SW	Total/NA	Water	8260B	
240-49236-5	079SB-0387-0001-RB	Total/NA	Water	8260B	
240-49236-6	079SB-0388-0001-TB	Total/NA	Water	8260B	
LCS 240-176298/4	Lab Control Sample	Total/NA	Water	8260B	
MB 240-176298/6	Method Blank	Total/NA	Water	8260B	
MRL 240-176298/15	Lab Control Sample	Total/NA	Water	8260B	
MRL 240-176298/5	Lab Control Sample	Total/NA	Water	8260B	

### Leach Batch: 176667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	TCLP	Solid	1311	
240-49236-2	079SB-0384-0001-IDW	TCLP	Water	1311	
240-49236-2 MS	079SB-0384-0001-IDW	TCLP	Water	1311	
240-49236-2 MSD	079SB-0384-0001-IDW	TCLP	Water	1311	
LB 240-176667/1-A MB	Method Blank	TCLP	Solid	1311	

### Analysis Batch: 177316

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	TCLP	Solid	8260B	176667
240-49236-2	079SB-0384-0001-IDW	TCLP	Water	8260B	176667
240-49236-2 MS	079SB-0384-0001-IDW	TCLP	Water	8260B	176667
240-49236-2 MSD	079SB-0384-0001-IDW	TCLP	Water	8260B	176667
LB 240-176667/1-A MB	Method Blank	TCLP	Solid	8260B	176667
LCS 240-177316/9	Lab Control Sample	Total/NA	Solid	8260B	
MRL 240-177316/14	Lab Control Sample	Total/NA	Solid	8260B	
MRL 240-177316/7	Lab Control Sample	Total/NA	Solid	8260B	

## GC/MS Semi VOA

### Prep Batch: 176086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-3	079SB-0385-0001-SW	Total/NA	Water	3520C	
LCS 240-176086/3-A	Lab Control Sample	Total/NA	Water	3520C	
MB 240-176086/2-A	Method Blank	Total/NA	Water	3520C	

### Leach Batch: 176620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	TCLP	Solid	1311	
240-49236-2	079SB-0384-0001-IDW	TCLP	Water	1311	

### Prep Batch: 176654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	TCLP	Solid	3520C	176620
240-49236-2	079SB-0384-0001-IDW	TCLP	Water	3520C	176620
LCS 240-176654/9-A	Lab Control Sample	Total/NA	Solid	3520C	
MB 240-176654/8-A	Method Blank	Total/NA	Solid	3520C	

### Analysis Batch: 177779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	TCLP	Solid	8270C	176654

TestAmerica Canton

## QC Association Summary

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

### GC/MS Semi VOA (Continued)

#### Analysis Batch: 177779 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-2	079SB-0384-0001-IDW	TCLP	Water	8270C	176654
240-49236-3	079SB-0385-0001-SW	Total/NA	Water	8270C	176086
LCS 240-176086/3-A	Lab Control Sample	Total/NA	Water	8270C	176086
LCS 240-176654/9-A	Lab Control Sample	Total/NA	Solid	8270C	176654
MB 240-176086/2-A	Method Blank	Total/NA	Water	8270C	176086
MB 240-176654/8-A	Method Blank	Total/NA	Solid	8270C	176654
MRL 240-177779/17	Lab Control Sample	Total/NA	Solid	8270C	
MRL 240-177779/3	Lab Control Sample	Total/NA	Solid	8270C	

### GC Semi VOA

#### Prep Batch: 176083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-3	079SB-0385-0001-SW	Total/NA	Water	3520C	
LCS 240-176083/4-A	Lab Control Sample	Total/NA	Water	3520C	
MB 240-176083/3-A	Method Blank	Total/NA	Water	3520C	

#### Analysis Batch: 176376

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-3	079SB-0385-0001-SW	Total/NA	Water	8082	176083
LCS 240-176083/4-A	Lab Control Sample	Total/NA	Water	8082	176083
MB 240-176083/3-A	Method Blank	Total/NA	Water	8082	176083
MRL 240-176376/10	Lab Control Sample	Total/NA	Water	8082	
MRL 240-176376/4	Lab Control Sample	Total/NA	Water	8082	

#### Prep Batch: 176509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-3 - RE	079SB-0385-0001-SW	Total/NA	Water	3520C	
LCS 240-176509/3-A	Lab Control Sample	Total/NA	Water	3520C	
MB 240-176509/2-A	Method Blank	Total/NA	Water	3520C	

#### Leach Batch: 176620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	TCLP	Solid	1311	
240-49236-1 MS	079SB-0383-0001-IDW	TCLP	Solid	1311	
240-49236-2	079SB-0384-0001-IDW	TCLP	Water	1311	
240-49236-2 - RE	079SB-0384-0001-IDW	TCLP	Water	1311	
240-49236-2 MS	079SB-0384-0001-IDW	TCLP	Water	1311	

#### Prep Batch: 176661

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	TCLP	Solid	3520C	176620
LCS 240-176661/6-A	Lab Control Sample	Total/NA	Solid	3520C	
MB 240-176661/5-A	Method Blank	Total/NA	Solid	3520C	

#### Prep Batch: 176663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	TCLP	Solid	8151A	176620
240-49236-1 MS	079SB-0383-0001-IDW	TCLP	Solid	8151A	176620
240-49236-2	079SB-0384-0001-IDW	TCLP	Water	8151A	176620

TestAmerica Canton



# QC Association Summary

Client: Environmental Chemical Corp.  
 Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

## GC Semi VOA (Continued)

### Prep Batch: 176663 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-176663/6-A	Lab Control Sample	Total/NA	Solid	8151A	
MB 240-176663/5-A	Method Blank	Total/NA	Solid	8151A	

### Analysis Batch: 176694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-3 - RE	079SB-0385-0001-SW	Total/NA	Water	8081A	176509
LCS 240-176509/3-A	Lab Control Sample	Total/NA	Water	8081A	176509
MB 240-176509/2-A	Method Blank	Total/NA	Water	8081A	176509
MRL 240-176694/15	Lab Control Sample	Total/NA	Water	8081A	
MRL 240-176694/16	Lab Control Sample	Total/NA	Water	8081A	
MRL 240-176694/30	Lab Control Sample	Total/NA	Water	8081A	
MRL 240-176694/31	Lab Control Sample	Total/NA	Water	8081A	

### Analysis Batch: 177258

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	TCLP	Solid	8081A	176661
LCS 240-176661/6-A	Lab Control Sample	Total/NA	Solid	8081A	176661
MB 240-176661/5-A	Method Blank	Total/NA	Solid	8081A	176661
MRL 240-177258/29	Lab Control Sample	Total/NA	Solid	8081A	
MRL 240-177258/30	Lab Control Sample	Total/NA	Solid	8081A	
MRL 240-177258/31	Lab Control Sample	Total/NA	Solid	8081A	
MRL 240-177258/47	Lab Control Sample	Total/NA	Solid	8081A	
MRL 240-177258/48	Lab Control Sample	Total/NA	Solid	8081A	
MRL 240-177258/49	Lab Control Sample	Total/NA	Solid	8081A	

### Analysis Batch: 177320

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	TCLP	Solid	8151A	176663
240-49236-1 MS	079SB-0383-0001-IDW	TCLP	Solid	8151A	176663
240-49236-2	079SB-0384-0001-IDW	TCLP	Water	8151A	176663
LCS 240-176663/6-A	Lab Control Sample	Total/NA	Solid	8151A	176663
MB 240-176663/5-A	Method Blank	Total/NA	Solid	8151A	176663
MRL 240-177320/15	Lab Control Sample	Total/NA	Solid	8151A	
MRL 240-177320/7	Lab Control Sample	Total/NA	Solid	8151A	

### Prep Batch: 177491

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-2 - RE	079SB-0384-0001-IDW	TCLP	Water	3520C	176620
240-49236-2 MS	079SB-0384-0001-IDW	TCLP	Water	3520C	176620
LCS 240-177491/4-A	Lab Control Sample	Total/NA	Water	3520C	
MB 240-177491/3-A	Method Blank	Total/NA	Water	3520C	

### Analysis Batch: 178086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-2 - RE	079SB-0384-0001-IDW	TCLP	Water	8081A	177491
240-49236-2 MS	079SB-0384-0001-IDW	TCLP	Water	8081A	177491
LCS 240-177491/4-A	Lab Control Sample	Total/NA	Water	8081A	177491
MB 240-177491/3-A	Method Blank	Total/NA	Water	8081A	177491
MRL 240-178086/10	Lab Control Sample	Total/NA	Water	8081A	
MRL 240-178086/11	Lab Control Sample	Total/NA	Water	8081A	
MRL 240-178086/12	Lab Control Sample	Total/NA	Water	8081A	

TestAmerica Canton

# QC Association Summary

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

## GC Semi VOA (Continued)

### Analysis Batch: 178086 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MRL 240-178086/17	Lab Control Sample	Total/NA	Water	8081A	
MRL 240-178086/18	Lab Control Sample	Total/NA	Water	8081A	
MRL 240-178086/19	Lab Control Sample	Total/NA	Water	8081A	

## HPLC/IC

### Prep Batch: 70962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-3	079SB-0385-0001-SW	Total/NA	Water	8330-Prep	
LCS 320-70962/2-A	Lab Control Sample	Total/NA	Water	8330-Prep	
MB 320-70962/1-A	Method Blank	Total/NA	Water	8330-Prep	

### Prep Batch: 71039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-3	079SB-0385-0001-SW	Total/NA	Water	Filtration	
240-49236-3 MS	079SB-0385-0001-SW	Total/NA	Water	Filtration	
240-49236-3 MSD	079SB-0385-0001-SW	Total/NA	Water	Filtration	
LCS 320-71039/2-A	Lab Control Sample	Total/NA	Water	Filtration	
MB 320-71039/1-A	Method Blank	Total/NA	Water	Filtration	

### Analysis Batch: 71173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-3	079SB-0385-0001-SW	Total/NA	Water	8330B	70962
LCS 320-70962/2-A	Lab Control Sample	Total/NA	Water	8330B	70962
MB 320-70962/1-A	Method Blank	Total/NA	Water	8330B	70962

### Analysis Batch: 71582

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-3	079SB-0385-0001-SW	Total/NA	Water	8330 Modified	71039
240-49236-3 MS	079SB-0385-0001-SW	Total/NA	Water	8330 Modified	71039
240-49236-3 MSD	079SB-0385-0001-SW	Total/NA	Water	8330 Modified	71039
LCS 320-71039/2-A	Lab Control Sample	Total/NA	Water	8330 Modified	71039
MB 320-71039/1-A	Method Blank	Total/NA	Water	8330 Modified	71039

### Analysis Batch: 71996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-3	079SB-0385-0001-SW	Total/NA	Water	8330B	70962

## Metals

### Prep Batch: 176157

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-3	079SB-0385-0001-SW	Total Recoverable	Water	3005A	
240-49236-3 DU	079SB-0385-0001-SW	Total Recoverable	Water	3005A	
240-49236-3 MS	079SB-0385-0001-SW	Total Recoverable	Water	3005A	
240-49236-4	079SB-0386-0001-RB	Total Recoverable	Water	3005A	
LCS 240-176157/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 240-176157/1-A	Method Blank	Total Recoverable	Water	3005A	

TestAmerica Canton

# QC Association Summary

Client: Environmental Chemical Corp.  
 Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

## Metals (Continued)

### Prep Batch: 176162

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-3	079SB-0385-0001-SW	Total/NA	Water	7470A	
240-49236-4	079SB-0386-0001-RB	Total/NA	Water	7470A	
LCS 240-176162/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 240-176162/1-A	Method Blank	Total/NA	Water	7470A	

### Analysis Batch: 176385

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-3	079SB-0385-0001-SW	Total/NA	Water	7470A	176162
240-49236-4	079SB-0386-0001-RB	Total/NA	Water	7470A	176162
LCS 240-176162/2-A	Lab Control Sample	Total/NA	Water	7470A	176162
MB 240-176162/1-A	Method Blank	Total/NA	Water	7470A	176162

### Analysis Batch: 176490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-3	079SB-0385-0001-SW	Total Recoverable	Water	6020	176157
240-49236-3 DU	079SB-0385-0001-SW	Total Recoverable	Water	6020	176157
240-49236-3 MS	079SB-0385-0001-SW	Total Recoverable	Water	6020	176157
240-49236-4	079SB-0386-0001-RB	Total Recoverable	Water	6020	176157
LCS 240-176157/2-A	Lab Control Sample	Total Recoverable	Water	6020	176157
MB 240-176157/1-A	Method Blank	Total Recoverable	Water	6020	176157

### Leach Batch: 176620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	TCLP	Solid	1311	
240-49236-1 DU	079SB-0383-0001-IDW	TCLP	Solid	1311	
240-49236-1 MS	079SB-0383-0001-IDW	TCLP	Solid	1311	
240-49236-2	079SB-0384-0001-IDW	TCLP	Water	1311	
LB 240-176620/1-B	Method Blank	TCLP	Solid	1311	
LB 240-176620/1-C	Method Blank	TCLP	Solid	1311	

### Analysis Batch: 176660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-3	079SB-0385-0001-SW	Total Recoverable	Water	6020	176157
240-49236-3	079SB-0385-0001-SW	Total Recoverable	Water	6020	176157
240-49236-3 DU	079SB-0385-0001-SW	Total Recoverable	Water	6020	176157
240-49236-3 DU	079SB-0385-0001-SW	Total Recoverable	Water	6020	176157
240-49236-3 MS	079SB-0385-0001-SW	Total Recoverable	Water	6020	176157
240-49236-3 MS	079SB-0385-0001-SW	Total Recoverable	Water	6020	176157
240-49236-4	079SB-0386-0001-RB	Total Recoverable	Water	6020	176157
LCS 240-176157/2-A	Lab Control Sample	Total Recoverable	Water	6020	176157
MB 240-176157/1-A	Method Blank	Total Recoverable	Water	6020	176157

### Prep Batch: 176697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	TCLP	Solid	3010A	176620
240-49236-1 DU	079SB-0383-0001-IDW	TCLP	Solid	3010A	176620
240-49236-1 MS	079SB-0383-0001-IDW	TCLP	Solid	3010A	176620
240-49236-2	079SB-0384-0001-IDW	TCLP	Water	3010A	176620
LB 240-176620/1-B	Method Blank	TCLP	Solid	3010A	176620
LCS 240-176697/3-A	Lab Control Sample	Total/NA	Solid	3010A	
MB 240-176697/2-A	Method Blank	Total/NA	Solid	3010A	

TestAmerica Canton

# QC Association Summary

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

## Metals (Continued)

### Prep Batch: 176701

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	TCLP	Solid	7470A	176620
240-49236-1 DU	079SB-0383-0001-IDW	TCLP	Solid	7470A	176620
240-49236-1 MS	079SB-0383-0001-IDW	TCLP	Solid	7470A	176620
240-49236-2	079SB-0384-0001-IDW	TCLP	Water	7470A	176620
LB 240-176620/1-C	Method Blank	TCLP	Solid	7470A	176620
LCS 240-176701/3-A	Lab Control Sample	Total/NA	Solid	7470A	
MB 240-176701/2-A	Method Blank	Total/NA	Solid	7470A	

### Analysis Batch: 176894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	TCLP	Solid	7470A	176701
240-49236-1 DU	079SB-0383-0001-IDW	TCLP	Solid	7470A	176701
240-49236-1 MS	079SB-0383-0001-IDW	TCLP	Solid	7470A	176701
240-49236-2	079SB-0384-0001-IDW	TCLP	Water	7470A	176701
LB 240-176620/1-C	Method Blank	TCLP	Solid	7470A	176701
LCS 240-176701/3-A	Lab Control Sample	Total/NA	Solid	7470A	176701
MB 240-176701/2-A	Method Blank	Total/NA	Solid	7470A	176701

### Analysis Batch: 176918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	TCLP	Solid	6010B	176697
240-49236-1	079SB-0383-0001-IDW	TCLP	Solid	6010B	176697
240-49236-1 DU	079SB-0383-0001-IDW	TCLP	Solid	6010B	176697
240-49236-1 DU	079SB-0383-0001-IDW	TCLP	Solid	6010B	176697
240-49236-1 MS	079SB-0383-0001-IDW	TCLP	Solid	6010B	176697
240-49236-1 MS	079SB-0383-0001-IDW	TCLP	Solid	6010B	176697
240-49236-2	079SB-0384-0001-IDW	TCLP	Water	6010B	176697
LB 240-176620/1-B	Method Blank	TCLP	Solid	6010B	176697
LCS 240-176697/3-A	Lab Control Sample	Total/NA	Solid	6010B	176697
MB 240-176697/2-A	Method Blank	Total/NA	Solid	6010B	176697

### Analysis Batch: 177115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-3	079SB-0385-0001-SW	Total Recoverable	Water	6020	176157
240-49236-3 DU	079SB-0385-0001-SW	Total Recoverable	Water	6020	176157
240-49236-3 MS	079SB-0385-0001-SW	Total Recoverable	Water	6020	176157
240-49236-4	079SB-0386-0001-RB	Total Recoverable	Water	6020	176157
LCS 240-176157/2-A	Lab Control Sample	Total Recoverable	Water	6020	176157
MB 240-176157/1-A	Method Blank	Total Recoverable	Water	6020	176157

## General Chemistry

### Pre Prep Batch: 71147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-3	079SB-0385-0001-SW	Total/NA	Water	353.2 (NCell)	
240-49236-3 MS	079SB-0385-0001-SW	Total/NA	Water	353.2 (NCell)	
240-49236-3 MSD	079SB-0385-0001-SW	Total/NA	Water	353.2 (NCell)	
LCS 320-71147/2-B	Lab Control Sample	Total/NA	Water	353.2 (NCell)	
MB 320-71147/1-B	Method Blank	Total/NA	Water	353.2 (NCell)	

TestAmerica Canton

# QC Association Summary

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

## General Chemistry (Continued)

### Prep Batch: 71630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-3	079SB-0385-0001-SW	Total/NA	Water	353 (NCell-Hyd)	71147
240-49236-3 MS	079SB-0385-0001-SW	Total/NA	Water	353 (NCell-Hyd)	71147
240-49236-3 MSD	079SB-0385-0001-SW	Total/NA	Water	353 (NCell-Hyd)	71147
LCS 320-71147/2-B	Lab Control Sample	Total/NA	Water	353 (NCell-Hyd)	71147
MB 320-71147/1-B	Method Blank	Total/NA	Water	353 (NCell-Hyd)	71147

### Analysis Batch: 71741

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-3	079SB-0385-0001-SW	Total/NA	Water	WS-WC-0050	71630
240-49236-3 MS	079SB-0385-0001-SW	Total/NA	Water	WS-WC-0050	71630
240-49236-3 MSD	079SB-0385-0001-SW	Total/NA	Water	WS-WC-0050	71630
LCS 320-71147/2-B	Lab Control Sample	Total/NA	Water	WS-WC-0050	71630
MB 320-71147/1-B	Method Blank	Total/NA	Water	WS-WC-0050	71630
MRL 320-71741/11	Lab Control Sample	Total/NA	Water	WS-WC-0050	

### Analysis Batch: 175905

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	Total/NA	Solid	Moisture	

### Analysis Batch: 176141

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	Total/NA	Solid	9045C	
240-49236-1 DU	079SB-0383-0001-IDW	Total/NA	Solid	9045C	
240-49236-2	079SB-0384-0001-IDW	Total/NA	Water	9040C	
LCS 240-176141/2	Lab Control Sample	Total/NA	Water	9040C	

### Prep Batch: 176155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	Total/NA	Solid	9012A	
LCS 240-176155/2-A	Lab Control Sample	Total/NA	Solid	9012A	
MB 240-176155/1-A	Method Blank	Total/NA	Solid	9012A	

### Analysis Batch: 176246

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	Total/NA	Solid	9012A	176155
LCS 240-176155/2-A	Lab Control Sample	Total/NA	Solid	9012A	176155
MB 240-176155/1-A	Method Blank	Total/NA	Solid	9012A	176155

### Prep Batch: 176308

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	Total/NA	Solid	9030B	
240-49236-2	079SB-0384-0001-IDW	Total/NA	Water	9030B	
240-49236-2 MS	079SB-0384-0001-IDW	Total/NA	Water	9030B	
240-49236-2 MSD	079SB-0384-0001-IDW	Total/NA	Water	9030B	
LCS 240-176308/15-A	Lab Control Sample	Total/NA	Water	9030B	
LCS 240-176308/2-A	Lab Control Sample	Total/NA	Solid	9030B	
MB 240-176308/14-A	Method Blank	Total/NA	Water	9030B	
MB 240-176308/1-A	Method Blank	Total/NA	Solid	9030B	

TestAmerica Canton

# QC Association Summary

Client: Environmental Chemical Corp.  
 Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

## General Chemistry (Continued)

### Analysis Batch: 176391

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	Total/NA	Solid	9034	176308
240-49236-2	079SB-0384-0001-IDW	Total/NA	Water	9034	176308
240-49236-2 MS	079SB-0384-0001-IDW	Total/NA	Water	9034	176308
240-49236-2 MSD	079SB-0384-0001-IDW	Total/NA	Water	9034	176308
LCS 240-176308/15-A	Lab Control Sample	Total/NA	Water	9034	176308
LCS 240-176308/2-A	Lab Control Sample	Total/NA	Solid	9034	176308
MB 240-176308/14-A	Method Blank	Total/NA	Water	9034	176308
MB 240-176308/1-A	Method Blank	Total/NA	Solid	9034	176308

### Analysis Batch: 176597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-1	079SB-0383-0001-IDW	Total/NA	Solid	1010	
240-49236-2	079SB-0384-0001-IDW	Total/NA	Water	1010	
240-49236-2 DU	079SB-0384-0001-IDW	Total/NA	Water	1010	
LCS 240-176597/1	Lab Control Sample	Total/NA	Solid	1010	

### Prep Batch: 177636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-2	079SB-0384-0001-IDW	Total/NA	Water	9012A	
LCS 240-177636/2-A	Lab Control Sample	Total/NA	Water	9012A	
MB 240-177636/1-A	Method Blank	Total/NA	Water	9012A	

### Analysis Batch: 177730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-49236-2	079SB-0384-0001-IDW	Total/NA	Water	9012A	177636
LCS 240-177636/2-A	Lab Control Sample	Total/NA	Water	9012A	177636
MB 240-177636/1-A	Method Blank	Total/NA	Water	9012A	177636
MRL 240-177730/52	Lab Control Sample	Total/NA	Water	9012A	

# Lab Chronicle

Client: Environmental Chemical Corp.  
 Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

**Client Sample ID: 079SB-0383-0001-IDW**

**Lab Sample ID: 240-49236-1**

**Date Collected: 04/10/15 08:00**

**Matrix: Solid**

**Date Received: 04/10/15 14:21**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			176667	04/15/15 18:45	DRJ	TAL CAN
TCLP	Analysis	8260B		1	177316	04/21/15 19:11	TJL1	TAL CAN
TCLP	Leach	1311			176620	04/15/15 17:00	DRJ	TAL CAN
TCLP	Prep	3520C			176654	04/16/15 08:13	CSC	TAL CAN
TCLP	Analysis	8270C		1	177779	04/24/15 12:18	MRU	TAL CAN
TCLP	Leach	1311			176620	04/15/15 17:00	DRJ	TAL CAN
TCLP	Prep	3520C			176661	04/16/15 08:22	CSC	TAL CAN
TCLP	Analysis	8081A		1	177258	04/22/15 04:55	BPM	TAL CAN
TCLP	Leach	1311			176620	04/15/15 17:00	DRJ	TAL CAN
TCLP	Prep	8151A			176663	04/16/15 08:24	CSC	TAL CAN
TCLP	Analysis	8151A		1	177320	04/21/15 20:53	DEB	TAL CAN
TCLP	Leach	1311			176620	04/15/15 17:00	DRJ	TAL CAN
TCLP	Prep	3010A			176697	04/16/15 09:57	WAL	TAL CAN
TCLP	Analysis	6010B		1	176918	04/17/15 08:35	KLC	TAL CAN
TCLP	Leach	1311			176620	04/15/15 17:00	DRJ	TAL CAN
TCLP	Prep	3010A			176697	04/16/15 09:57	WAL	TAL CAN
TCLP	Analysis	6010B		4	176918	04/17/15 09:10	KLC	TAL CAN
TCLP	Leach	1311			176620	04/15/15 17:00	DRJ	TAL CAN
TCLP	Prep	7470A			176701	04/16/15 14:00	WAL	TAL CAN
TCLP	Analysis	7470A		1	176894	04/17/15 10:44	BW	TAL CAN
Total/NA	Analysis	1010		1	176597	04/15/15 09:50	TPH	TAL CAN
Total/NA	Prep	9012A			176155	04/13/15 09:56	SEM	TAL CAN
Total/NA	Analysis	9012A		1	176246	04/13/15 14:29	SEM	TAL CAN
Total/NA	Prep	9030B			176308	04/14/15 08:03	BLW	TAL CAN
Total/NA	Analysis	9034		1	176391	04/14/15 13:02	BLW	TAL CAN
Total/NA	Analysis	9045C		1	176141	04/13/15 12:45	SEM	TAL CAN
Total/NA	Analysis	Moisture		1	175905	04/10/15 18:17	SEM	TAL CAN

**Client Sample ID: 079SB-0384-0001-IDW**

**Lab Sample ID: 240-49236-2**

**Date Collected: 04/10/15 08:30**

**Matrix: Water**

**Date Received: 04/10/15 14:21**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			176667	04/15/15 18:45	DRJ	TAL CAN
TCLP	Analysis	8260B		1	177316	04/21/15 19:36	TJL1	TAL CAN
TCLP	Leach	1311			176620	04/15/15 17:05	DRJ	TAL CAN
TCLP	Prep	3520C			176654	04/16/15 08:13	CSC	TAL CAN
TCLP	Analysis	8270C		4	177779	04/24/15 12:43	MRU	TAL CAN
TCLP	Leach	1311	RE		176620	04/15/15 17:05	DRJ	TAL CAN
TCLP	Prep	3520C	RE		177491	04/22/15 15:15	JDR	TAL CAN
TCLP	Analysis	8081A	RE	1	178086	04/27/15 15:27	BPM	TAL CAN
TCLP	Leach	1311			176620	04/15/15 17:05	DRJ	TAL CAN
TCLP	Prep	8151A			176663	04/16/15 08:24	CSC	TAL CAN
TCLP	Analysis	8151A		1	177320	04/21/15 21:41	DEB	TAL CAN

TestAmerica Canton

# Lab Chronicle

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

**Client Sample ID: 079SB-0384-0001-IDW**

**Lab Sample ID: 240-49236-2**

**Date Collected: 04/10/15 08:30**

**Matrix: Water**

**Date Received: 04/10/15 14:21**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			176620	04/15/15 17:05	DRJ	TAL CAN
TCLP	Prep	3010A			176697	04/16/15 09:57	WAL	TAL CAN
TCLP	Analysis	6010B		1	176918	04/17/15 09:06	KLC	TAL CAN
TCLP	Leach	1311			176620	04/15/15 17:05	DRJ	TAL CAN
TCLP	Prep	7470A			176701	04/16/15 14:00	WAL	TAL CAN
TCLP	Analysis	7470A		1	176894	04/17/15 10:49	BW	TAL CAN
Total/NA	Analysis	1010		1	176597	04/15/15 06:57	TPH	TAL CAN
Total/NA	Prep	9012A			177636	04/23/15 11:18	DTN	TAL CAN
Total/NA	Analysis	9012A		1	177730	04/23/15 14:37	SEM	TAL CAN
Total/NA	Prep	9030B			176308	04/14/15 08:03	BLW	TAL CAN
Total/NA	Analysis	9034		1	176391	04/14/15 13:11	BLW	TAL CAN
Total/NA	Analysis	9040C		1	176141	04/13/15 11:27	SEM	TAL CAN

**Client Sample ID: 079SB-0385-0001-SW**

**Lab Sample ID: 240-49236-3**

**Date Collected: 04/10/15 08:45**

**Matrix: Water**

**Date Received: 04/10/15 14:21**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	176298	04/14/15 12:04	RJQ	TAL CAN
Total/NA	Prep	3520C			176086	04/13/15 06:18	CSC	TAL CAN
Total/NA	Analysis	8270C		1	177779	04/24/15 11:53	MRU	TAL CAN
Total/NA	Prep	3520C	RE		176509	04/15/15 09:05	CSC	TAL CAN
Total/NA	Analysis	8081A	RE	1	176694	04/16/15 20:43	BPM	TAL CAN
Total/NA	Prep	3520C			176083	04/13/15 06:11	CSC	TAL CAN
Total/NA	Analysis	8082		1	176376	04/14/15 14:05	KMG	TAL CAN
Total/NA	Prep	Filtration			71039	04/13/15 19:24	JER	TAL SAC
Total/NA	Analysis	8330 Modified		1	71582	04/20/15 17:05	YPH	TAL SAC
Total/NA	Prep	8330-Prep			70962	04/13/15 09:25	HJA	TAL SAC
Total/NA	Analysis	8330B		1	71173	04/15/15 20:09	YPH	TAL SAC
Total/NA	Prep	8330-Prep			70962	04/13/15 09:25	HJA	TAL SAC
Total/NA	Analysis	8330B		1	71996	04/24/15 02:59	YPH	TAL SAC
Total Recoverable	Prep	3005A			176157	04/13/15 10:08	WAL	TAL CAN
Total Recoverable	Analysis	6020		1	176490	04/14/15 11:16	AS1	TAL CAN
Total Recoverable	Prep	3005A			176157	04/13/15 10:08	WAL	TAL CAN
Total Recoverable	Analysis	6020		1	176660	04/15/15 13:07	AS1	TAL CAN
Total Recoverable	Prep	3005A			176157	04/13/15 10:08	WAL	TAL CAN
Total Recoverable	Analysis	6020		5	176660	04/15/15 13:43	AS1	TAL CAN
Total Recoverable	Prep	3005A			176157	04/13/15 10:08	WAL	TAL CAN
Total Recoverable	Analysis	6020		1	177115	04/20/15 17:32	AS1	TAL CAN
Total/NA	Prep	7470A			176162	04/13/15 14:00	WAL	TAL CAN
Total/NA	Analysis	7470A		1	176385	04/14/15 11:15	BW	TAL CAN
Total/NA	Pre Prep	353.2 (NCell)			71147	04/15/15 08:50	HJA	TAL SAC
Total/NA	Prep	353 (NCell-Hyd)			71630	04/21/15 06:08	HJA	TAL SAC
Total/NA	Analysis	WS-WC-0050		1	71741	04/21/15 14:53	JCB	TAL SAC

TestAmerica Canton



# Lab Chronicle

Client: Environmental Chemical Corp.  
 Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

**Client Sample ID: 079SB-0386-0001-RB**

**Lab Sample ID: 240-49236-4**

**Date Collected: 04/10/15 08:50**

**Matrix: Water**

**Date Received: 04/10/15 14:21**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			176157	04/13/15 10:08	WAL	TAL CAN
Total Recoverable	Analysis	6020		1	176490	04/14/15 11:43	AS1	TAL CAN
Total Recoverable	Prep	3005A			176157	04/13/15 10:08	WAL	TAL CAN
Total Recoverable	Analysis	6020		1	176660	04/15/15 13:31	AS1	TAL CAN
Total Recoverable	Prep	3005A			176157	04/13/15 10:08	WAL	TAL CAN
Total Recoverable	Analysis	6020		1	177115	04/20/15 17:51	AS1	TAL CAN
Total/NA	Prep	7470A			176162	04/13/15 14:00	WAL	TAL CAN
Total/NA	Analysis	7470A		1	176385	04/14/15 11:16	BW	TAL CAN

**Client Sample ID: 079SB-0387-0001-RB**

**Lab Sample ID: 240-49236-5**

**Date Collected: 04/10/15 09:00**

**Matrix: Water**

**Date Received: 04/10/15 14:21**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	176298	04/14/15 12:27	RJQ	TAL CAN

**Client Sample ID: 079SB-0388-0001-TB**

**Lab Sample ID: 240-49236-6**

**Date Collected: 04/10/15 07:30**

**Matrix: Water**

**Date Received: 04/10/15 14:21**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	176298	04/14/15 12:50	RJQ	TAL CAN

**Laboratory References:**

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

## Certification Summary

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

### Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-15 *
Connecticut	State Program	1	PH-0590	12-31-15
Florida	NELAP	4	E87225	06-30-15 *
Georgia	State Program	4	N/A	06-30-15 *
Illinois	NELAP	5	200004	07-31-15
Kansas	NELAP	7	E-10336	04-30-15 *
Kentucky (UST)	State Program	4	58	06-30-15 *
Kentucky (WW)	State Program	4	98016	12-31-15
L-A-B	DoD ELAP		L2315	07-18-16
Minnesota	NELAP	5	039-999-348	12-31-15
Nevada	State Program	9	OH-000482008A	07-31-15
New Jersey	NELAP	2	OH001	06-30-15 *
New York	NELAP	2	10975	03-31-16 *
Ohio VAP	State Program	5	CL0024	10-31-15
Oregon	NELAP	10	4062	02-23-16
Pennsylvania	NELAP	3	68-00340	08-31-15
Texas	NELAP	6		08-31-15
USDA	Federal		P330-13-00319	11-26-16
Virginia	NELAP	3	460175	09-14-15
Washington	State Program	10	C971	01-12-16
West Virginia DEP	State Program	3	210	12-31-15
Wisconsin	State Program	5	999518190	08-31-15

### Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-16
Alaska (UST)	State Program	10	UST-055	12-18-15
Arizona	State Program	9	AZ0708	08-11-15
Arkansas DEQ	State Program	6	88-0691	06-17-15
California	State Program	9	2897	01-31-16
Colorado	State Program	8	N/A	08-31-15
Connecticut	State Program	1	PH-0691	06-30-15
Florida	NELAP	4	E87570	06-30-15
Hawaii	State Program	9	N/A	01-29-16
Illinois	NELAP	5	200060	03-17-16
Kansas	NELAP	7	E-10375	10-31-15
Louisiana	NELAP	6	30612	06-30-15
Michigan	State Program	5	9947	01-31-16
Nevada	State Program	9	CA44	07-31-15
New Jersey	NELAP	2	CA005	06-30-15
New York	NELAP	2	11666	04-01-16
Oregon	NELAP	10	CA200005	01-29-16
Oregon	NELAP Secondary AB	10	E87570	06-30-15
Pennsylvania	NELAP	3	9947	03-31-16
Texas	NELAP	6	T104704399-08-TX	05-31-15
US Fish & Wildlife	Federal		LE148388-0	02-28-16
USDA	Federal		P330-11-00436	12-30-17

\* Certification renewal pending - certification considered valid.

TestAmerica Canton

# Certification Summary

Client: Environmental Chemical Corp.  
Project/Site: Ravenna Army Ammunition Plant

TestAmerica Job ID: 240-49236-1

## Laboratory: TestAmerica Sacramento (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
USEPA UCMR	Federal	1	CA00044	11-06-16
Utah	NELAP	8	QUAN1	02-28-16
Washington	State Program	10	C581	05-05-15
West Virginia (DW)	State Program	3	9930C	12-31-15
Wyoming	State Program	8	8TMS-Q	01-29-16

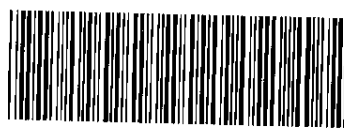
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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

**CHAIN OF CUSTODY  
AND  
RECEIVING DOCUMENTS**



240-49236 Chain of Custody

TestAmerica Canton

4101 Shuffel Street, N. W.

North Canton, OH 44720
phone 330.497.9396 fax 330.497.0772

Chain of Custody Record

Test America Project #: 24009157

Regulatory Program: [ ]DW [ ]NPDES [ ]RCRA [ ]Other:



THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Form with sections for Client Contact, Project Manager, Site Contact, Analysis Turnaround Time, Sample Identification, and Preservation Used.



TestAmerica Canton Sample Receipt Form/Narrative  
Canton Facility

Login #: 49230

Client ECC Site Name \_\_\_\_\_

Cooler unpacked by: [Signature]

Cooler Received on 4-10-15 Opened on 4-10-15

FedEx: 1<sup>st</sup> Grd Exp UPS FAS Stetson Client Drop Off TestAmerica Courier Other

Receipt After-hours: Drop-off Date/Time \_\_\_\_\_ Storage Location \_\_\_\_\_

TestAmerica Cooler # \_\_\_\_\_ Foam Box \_\_\_\_\_ Client Cooler \_\_\_\_\_ Box Other \_\_\_\_\_  
 Packing material used: Bubble Wrap Foam Plastic Bag None Other \_\_\_\_\_  
 COOLANT: Ver Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt  
 IR GUN# A (CF +4.0 °C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C  
 IR GUN# 4 (CF +0.5 °C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C  See Multiple Cooler-Form  
 IR GUN# 5 (CF +0.4 °C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C  
 IR GUN# 8 (CF -1.2 °C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 8 Yes No  
 -Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA  
 -Were custody seals on the bottle(s)? Yes NO
3. Shippers' packing slip attached to the cooler(s)? Yes NO
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the sampler(s) clearly identified on the COC? Yes NO
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Were sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC425511
12. Were VOAs on the COC? Yes NO AM 4/14/15
13. Were air bubbles >6 mm in any VOA vials? Yes NO NA
14. Was a trip blank present in the cooler(s)? Trip Blank Lot # \_\_\_\_\_ Yes No NO

Contacted PM \_\_\_\_\_ Date \_\_\_\_\_ by \_\_\_\_\_ via Verbal Voice Mail Other  
 Concerning \_\_\_\_\_

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by: [Signature]

Sample 07958-0385-0001-SW rec'd 3x40 for VOC's, not on COC. OK to log VOC's per client. gaj 4-14-15

15. SAMPLE CONDITION

Sample(s) \_\_\_\_\_ were received after the recommended holding time had expired.  
 Sample(s) \_\_\_\_\_ were received in a broken container.  
 Sample(s) \_\_\_\_\_ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) \_\_\_\_\_ were further preserved in the laboratory.  
 Time preserved: \_\_\_\_\_ Preservative(s) added/Lot number(s): \_\_\_\_\_

TestAmerica Multiple Cooler Receipt Form/Narrative  
 Canton Facility

Login #: 49236

Cooler #	IR Gun #	Observed Temp °C	Corrected Temp °C	Coolant
<u>client</u>	<u>4</u>	<u>3.6</u>	<u>4.1</u>	<u>ice</u>
		<u>4.8</u>	<u>5.3</u>	
		<u>3.0</u>	<u>3.5</u>	
		<u>3.2</u>	<u>3.7</u>	



Temperature readings: \_\_\_\_\_

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container pH</u>	<u>Preservative Added (mls)</u>	<u>Lot #</u>
079SB-0384-0001-IDW	240-49236-A-2	Plastic 250ml - with Sodium Hydroxide	>12	_____	_____
079SB-0384-0001-IDW	240-49236-B-2	Plastic 500ml - with Zn Acetate and	>9	_____	_____
079SB-0385-0001-SW	240-49236-D-3	Plastic 250ml - with Nitric Acid	<2	_____	_____
079SB-0386-0001-RB	240-49236-A-4	Plastic 250ml - with Nitric Acid	<2	_____	_____

## Login Sample Receipt Checklist

Client: Environmental Chemical Corp.

Job Number: 240-49236-1

**Login Number: 49236**

**List Number: 2**

**Creator: Hytrek, Cheryl**

**List Source: TestAmerica Sacramento**

**List Creation: 04/11/15 02:17 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	