

## **APPENDIX G**

### **IDW Disposal Letter Report**

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November 1, 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 (SI) and Remedial Investigation (RI) Work Plan (October 2012) SI and RI Work Plan Addendum (June 2013) were conducted from August 12, 2013 through August 14, 2013 and on September 10, 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 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),
- 2.) Final SI/RI Work Plan (ECC 2012), and
- 3.) Final SI/RI Work Plan Addendum (ECC 2013).

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 diluted hydrochloric/nitric acids), sampled on August 15, 2013, and
- One (1) 55-gallon drums containing soils from SI/RI sampling activities, sampled on August 15, 2012 and 10 September 2013, and

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

- Liquid IDW

The liquid sample (083SB-0021-0001-IDW TCLP) characterized one drum of decontamination fluid containing 2% hydrochloric/10% nitric acids, DI water, and Liquinox.

- Solid IDW

The solid samples (083SB-0022-0001-IDW TCLP and 075SB-0011-0001-SB TCLP) were collected from one, 55-gallon drum containing soil cuttings.

Table 1 summarizes the IDW samples collected.

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

Container Type and Size	Contents	Generation Dates	Sample ID
55-gallon closed top drum	De-con fluids from sampling equipment and decontamination	12 August 2013 through 14 August 2013	083SB-0021-0001-IDW TCLP
55-gallon closed top drum	Soil cuttings	12 August 2013 through 14 August 2013, and 10 September 2013	083SB-0022-0001-IDW TCLP and 075SB-0011-0001-SB TCLP

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), as presented in the FWSAP. The results of this review are summarized below.

#### IDW –FLUIDS

One liquid composite sample (083SB-0021-0001-IDW TCLP) was collected. **Attachment 1** presents the analytical laboratory data for TCLP analysis for IDW fluids generated during the August 12 through August 14, 2013 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 (083SB-0022-0001-IDW TCLP, and 075SB-0011-0001-SB TCLP) were collected. **Attachment 2** presents the analytical laboratory data for TCLP analysis for IDW solids generated during the August 12 through August 14, 2013 and September 10, 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**

Medium	Waste Criterion	Disposal Recommendation
Water	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 on 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**



Alexander Easterday  
Sr. Project Manager

Copy: Brett Merkel, ARNG  
Kevin Sedlak, ARNG  
Katie Tait, OHARNG  
Mark Patterson, RVAAP Facility Manager  
Nancy Zikmanis, Ohio EPA

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## **ATTACHMENTS**

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## Attachment 1 – IDW Analytical Results – Fluids

Analysis Type	Chemical	Units	Limit of Detection (mg/L)	TCLP Criteria (mg/L)	Results
					083SB-0021-0001-IDW TCLP
Semi-Volatile Organics	1,4-Dichlorobenzene	mg/L	0.0040	7.50	0.0040 U
Semi-Volatile Organics	2,4,5-Trichlorophenol	mg/L	0.020	400.00	0.020 U
Semi-Volatile Organics	2,4,6-Trichlorophenol	mg/L	0.020	2.00	0.020 U
Semi-Volatile Organics	2,4-Dinitrotoluene	mg/L	0.0040	0.13	0.0040 U
Semi-Volatile Organics	Hexachlorobenzene	mg/L	0.0040	0.13	0.0040 U
Semi-Volatile Organics	Hexachlorobutadiene	mg/L	0.0040	0.50	0.0040 U
Semi-Volatile Organics	Hexachloroethane	mg/L	0.0040	3.00	0.0040 U
Semi-Volatile Organics	3 & 4 Methylphenol	mg/L	0.360	200	0.360 U
Semi-Volatile Organics	2-Methylphenol	mg/L	0.020	200	0.020 U
Semi-Volatile Organics	Nitrobenzene	mg/L	0.0040	2.00	0.0040 U
Semi-Volatile Organics	Pentachlorophenol	mg/L	0.020	100.00	0.020 U
Semi-Volatile Organics	Pyridine	mg/L	0.010	5.00	0.010 U
TCLP Metals	Arsenic	mg/L	0.0120	5.00	0.010 J
TCLP Metals	Barium	mg/L	0.00090	100.00	0.19
TCLP Metals	Cadmium	mg/L	0.0010	1.00	0.0010 U
TCLP Metals	Chromium	mg/L	0.0020	5.00	0.019
TCLP Metals	Lead	mg/L	0.0020	5.00	0.013
TCLP Metals	Mercury	mg/L	0.000060	0.20	0.000060 U
TCLP Metals	Selenium	mg/L	0.0065	1.00	0.0028 J B
TCLP Metals	Silver	mg/L	0.0020	5.00	0.0018 J B
TCLP Herbicides	2,4,5-TP (Silvex)	mg/L	0.0010	1.00	0.0010 U
TCLP Herbicides	2,4-D	mg/L	0.010	10.00	0.010 U
TCLP Pesticides	Chlordane	mg/L	0.0030	0.03	0.0030 U
TCLP Pesticides	Endrin	mg/L	0.00010	0.02	0.00010 U
TCLP Pesticides	Gamma-BHC (Lindane)	mg/L	0.00010	0.40	0.00010 U
TCLP Pesticides	Heptachlor	mg/L	0.00010	0.0080	0.00038 P
TCLP Pesticides	Heptachlor Epoxide	mg/L	0.00010	0.0080	0.00010 U
TCLP Pesticides	Methoxychlor	mg/L	0.00010	10.00	0.00010 U
TCLP Pesticides	Toxaphene	mg/L	0.0030	0.50	0.0030 U
Volatile Organics	1,1-Dichloroethene	mg/L	0.025	0.7	0.025 U
Volatile Organics	1,2-Dichloroethane	mg/L	0.050	0.50	0.050 U
Volatile Organics	2-Butanone	mg/L	0.250	200	0.250 U
Volatile Organics	Benzene	mg/L	0.0250	0.50	0.0250 U
Volatile Organics	Carbon Tetrachloride	mg/L	0.0250	0.50	0.0250 U
Volatile Organics	Chlorobenzene	mg/L	0.0250	100.00	0.0250 U
Volatile Organics	Chloroform	mg/L	0.0250	6.00	0.0250 U
Volatile Organics	Tetrachloroethylene	mg/L	0.050	0.70	0.050 U
Volatile Organics	Trichloroethene	mg/L	0.0250	0.50	0.0250 U
Volatile Organics	Vinyl Chloride	mg/L	0.0250	0.2	0.0250 U

**Notes:**

J – Estimated value

B-Analyte detected in associated method blank

P-Concentration differs more than 40% between primary and confirmation analysis

mg/L – milligrams per liter

U- Undetected above laboratory limit of detection

## Attachment 2 – IDW Analytical Results – Solids

Analysis Type	Chemical	Units	Limit of Detection (mg/L)	TCLP Criteria (mg/L)	Results
					083SB-0022-0001-IDW
Semi-Volatile Organics	1,4-Dichlorobenzene	mg/L	0.0040	7.50	0.0040 U
Semi-Volatile Organics	2,4,5-Trichlorophenol	mg/L	0.020	400.00	0.020 U
Semi-Volatile Organics	2,4,6-Trichlorophenol	mg/L	0.020	2.00	0.020 U
Semi-Volatile Organics	2,4-Dinitrotoluene	mg/L	0.0040	0.13	0.0040 U
Semi-Volatile Organics	Hexachlorobenzene	mg/L	0.0040	0.13	0.0040 U
Semi-Volatile Organics	Hexachlorobutadiene	mg/L	0.0040	0.50	0.0040 U
Semi-Volatile Organics	Hexachloroethane	mg/L	0.0040	3.00	0.0040 U
Semi-Volatile Organics	Nitrobenzene	mg/L	0.0040	2.00	0.0040 U
Semi-Volatile Organics	Pentachlorophenol	mg/L	0.020	100.00	0.020 U
Semi-Volatile Organics	Pyridine	mg/L	0.010	5.00	0.010 U
TCLP Metals	Arsenic	mg/L	0.0120	5.00	0.0120 U
TCLP Metals	Barium	mg/L	0.0090	100.00	0.40
TCLP Metals	Cadmium	mg/L	0.0010	1.00	0.00062 J
TCLP Metals	Chromium	mg/L	0.0020	5.00	0.0012 J
TCLP Metals	Lead	mg/L	0.0020	5.00	0.0022 J
TCLP Metals	Mercury	mg/L	0.000060/0.00020*	0.20	0.000060 U/0.00020 U*
TCLP Metals	Selenium	mg/L	0.25	1.00	0.0042 J
TCLP Metals	Silver	mg/L	0.0050	5.00	0.0050 U
TCLP Herbicides	2,4,5-TP (Silvex)	mg/L	0.010	1.00	0.010 U
TCLP Herbicides	2,4-D	mg/L	0.0010	10.00	0.0010 U
TCLP Pesticides	Chlordane	mg/L	0.0030	0.03	0.0030 J
TCLP Pesticides	Endrin	mg/L	0.00010	0.02	0.00010 U
TCLP Pesticides	Gamma-BHC (Lindane)	mg/L	0.00010	0.40	0.00010 U
TCLP Pesticides	Heptachlor	mg/L	0.00010	0.01	0.00037 P
TCLP Pesticides	Heptachlor Epoxide	mg/L	0.00010	0.01	0.00010 U
TCLP Pesticides	Methoxychlor	mg/L	0.00010	10.00	0.00010 U
TCLP Pesticides	Toxaphene	mg/L	0.0030	0.50	0.0030 U
Volatile Organics	1,1-Dichloroethene	mg/L	0.0250	0.7	0.0250 U
Volatile Organics	1,2-Dichloroethane	mg/L	0.050	0.50	0.050 U
Volatile Organics	2-Butanone	mg/L	0.250	200	0.250 U
Volatile Organics	Benzene	mg/L	0.0250	0.50	0.0250 U
Volatile Organics	Carbon Tetrachloride	mg/L	0.0250	0.50	0.0250 U
Volatile Organics	Chlorobenzene	mg/L	0.0250	100.00	0.0250 U
Volatile Organics	Chloroform	mg/L	0.0250	6.00	0.0250 U
Volatile Organics	Tetrachloroethylene	mg/L	0.050	0.70	0.050 U
Volatile Organics	Trichloroethene	mg/L	0.0250	0.50	0.0250 U
Volatile Organics	Vinyl Chloride	mg/L	0.0250	0.20	0.0250 U

**Notes:**

\*- Mercury sample result for sample 075SB-0011-0001-SO

NA – Not Analyzed

J – Estimated Value

P-Concentration differs more than 40% between primary and confirmation analysis

mg/L – milligrams per liter

U- Undetected above laboratory limit of detection



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

November 27, 2013

**CERTIFIED MAIL**

7012 3050 0001 8837 5129

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

**Re: Investigation-Derived Waste Report 2011 Performance-Based Acquisition  
Environmental Investigation and Remediation 14 Compliance Restoration Sites,  
Ravenna Army Ammunition Plant (Ohio EPA ID # 267-000859-162)**

Dear Mr. Patterson:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the Investigation-Derived Waste Report 2011 Performance-Based Acquisition Environmental Investigation and Remediation 14 Compliance Restoration Sites, Ravenna Army Ammunition Plant. The document was received at Ohio EPA, Northeast District Office (NEDO), Division of Environmental Response and Revitalization (DERR) on November 15, 2013. The document was prepared for the U.S. Army Corps of Engineers (USACE), Louisville District by Environmental Chemical Corporation (ECC), under Contract No. W912QR-04-D-0039.

This report is approved and Ohio EPA concurs that the IDW (soil cuttings) from work conducted on August 12, 2013, August 14, 2013, and September 10, 2013, may be disposed of as contaminated, non-hazardous waste and that it be sent off-site for disposal to a permitted water treatment facility or permitted solid waste facility.

If you have any questions, please call me at (330) 963-1170.

Sincerely,

Edward D'Amato, Site Coordinator  
Division of Environmental Response and Revitalization

ED:NZ/nvr

cc: Cullen Grasty, USACE  
Katie Tait, OHNGB

Kevin Sedlak, ARNG  
Brett Merkel, ARNGD-Washington, DC

ec: Justin Burke, Ohio EPA, NEDO, DERR

Nancy Zikmanis, Ohio EPA, NEDO, DERR

**Scanned**

By: *AMH*  
Date: 12-02-2013

Northeast District Office • 2110 East Aurora Road • Twinsburg, OH 44087-1924  
www.epa.ohio.gov • (330) 963-1200 • (330) 487-0769 (fax)

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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mark Patterson  
Ravenna Army Ammunition Plant  
Building 1037  
8451 State Route 5  
Ravenna Oh 44266-9297

2. Article Number  
(Transfer from service label)

7012 3050 0001 8837 5129 NRAINES  
for ED 11/27/13

PS Form 3811, February 2004

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

*x Rebecca Haney*

☒ Agent

☐ Addressee

B. Received by (Printed Name)

*Rebecca Haney*

C. Date of Delivery

*12-2-2013*

D. Is delivery address different from item 1? ☐ Yes

If YES, enter delivery address below: ☒ No

3. Service Type

☒ Certified Mail

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☐ Registered

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☐ C.O.D.

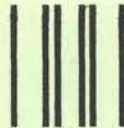
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OHIO EPA  
NORTHEAST DISTRICT OFFICE  
2110 EAST AURORA ROAD  
TWINSBURG OH 44087

COPY



<b>NON-HAZARDOUS WASTE MANIFEST</b>	1. Generator ID Number OH5 210 020 736	2. Page 1 of 1	3. Emergency Response Phone 330-677-0785	4. Waste Tracking Number 12232013-01-A		
	5. Generator's Name and Mailing Address Ravenna Army Ammunition Plant 8451 State Route 5 Ravenna, Ohio 44266 Generator's Phone: 330-338-2920					
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 Facility's Phone: 330-721-9773				U.S. EPA ID Number OHD 077 772 895		
<b>GENERATOR</b>	9. Waste Shipping Name and Description		10. Containers	11. Total Quantity	12. Unit Wt./Vol.	
			No.	Type		
	1. Non DOT Regulated, Non Hazardous Material (Purge Water) 1167850		1	DM	25 cals 200 lbs PAN	G
	2. Non DOT Regulated, Non Hazardous Material (Soil Cuttings) 1167851		1	DM	200 lbs	P
	3. W/og 12/1					
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 12 23 13		
<b>INT'L</b>	15. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:					
	16. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name FRED B McCULTY Transporter 2 Printed/Typed Name					
<b>TRANSPORTER</b>	Signature Fred B. McCulty		Signature Fred B. McCulty		Month Day Year 12 23 13	
					Month Day Year	
<b>DESIGNATED FACILITY</b>	17. Discrepancy					
	17a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> 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 Daniel Kindall		Signature Daniel Kindall		Month Day Year 12 24 13		

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