

## **APPENDIX J**

### **Regulatory Correspondence and Comment Response Tables**

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

July 18, 2013

**CERTIFIED MAIL**  
7012 3460 0002 1240 8383

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

**Re: Ravenna Army Ammunition Plant, Draft Site Inspection Compliance Restoration Site CC-RVAAP-72, Facility-Wide USTs, Portage/Trumbull Counties, OHIO EPA ID # 267-000-859-156**

Dear Mr. Patterson:

The Ohio Environmental Protection Agency (Ohio EPA) has reviewed the Site Inspection at Compliance Restoration Sites CC-RVAAP-78. The June 17, 2013 report was received by Ohio EPA on June 17, 2013, and was prepared for the Army Corps of Engineers, Louisville District, by ECC under contract number W912QR-04-P-0039.

Ohio EPA has the following comments:

1. Ohio EPA cannot evaluate parts of the report that cite or refer to risk assessment or Clean-Up Goal (CUG) criteria at this time, as these criteria are under review through the Technical Memorandum. Please note that when the new Technical Memorandum is finalized, Ohio EPA expects this report to be revised to reflect the changes and re-submitted for review.
2. **Lines 54-61:** Remove disclaimer statement.
3. **Section 2.1 ¶ 4:** Please include the details of rationale for sampling the nine former USTs located within the Depot Area for hexavalent chromium as part of this document.

The rationale for sampling RV-46 and CC-RVAAP-72-01 for TAL Metals is not clear. Please explain.

RV-4 and RV-5 were former gasoline tanks. CC-RVAAP-72-02 and CC-RVAAP-72-03 were former leaded gasoline tanks, yet, these areas were not sampled for lead. The period of time these tanks were in service indicates that they all would have contained leaded gasoline at some point. Due to the low volatility of tetraethyl lead compared to other gasoline constituents, these areas should have been sampled for lead. Investigation for lead in these areas is necessary.

**Scanned**

By: *RNH*  
Date: 07-22-2013

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

**RECEIVED**  
07-22-2013

**E-MAILED**  
07-22-2013 *RNH*

4. **Table 4-3:** Table 4-3 indicates that 67 field samples were analyzed for TAL Metals. However, the laboratory data in Appendix D indicates that 71 TAL Metals samples were analyzed, 8 of which are field duplicates. Please explain this discrepancy and revise Table 4-3 accordingly. Also, please go through the rest of the lab data in Appendix D and revise Table 4-3 as necessary, to accurately reflect the number samples that were actually taken and analyzed for all categories.
5. **Section 4.3.2, ¶2:** Paragraph 2 seems to imply that all subsurface soils in all former tank locations were analyzed for all of the constituents listed in this paragraph. Table 4-1 indicates this is not the case. This is confusing. Please clarify this paragraph.
6. **Section 7.2:** With respect to UST RV-46, please be advised that BUSTR rules must be followed with respect to this tank. There is no indication in this report that the tank will be removed. BUSTR rules require the owner of out-of-service USTs to remove them.
7. Exceedances for various compounds were identified in Section 5, but actions to be taken and justifications for those actions were not discussed anywhere in the report. Any actions to be taken as a result of exceedances (including no action) and the justifications for those actions should be discussed. This information should at least be summarized in the conclusions section of the report. Once this report is revised to incorporate the revised risk assessment and CUG criteria per revised Technical Memorandum, please include this information.
8. **Section 8.0:** Add the Director's Final Findings and Orders to Section 8.0 (references).
9. **Appendix A, pp. 24-43:** These field notes appear to contain notes from multiple RVAAP sites. Please explain. The field notes should also be labeled as to the author. Please provide this information.
10. **Appendix E: Laboratory Data, Case Narrative:**

A review of the Case Narrative [pp. 9-13 of Appendix E file: J18297-1 Std\_Tal\_L4\_Package\_Mini Final Report (1 of 2)] indicates multiple problems with surrogate recoveries and other issues. Please submit the USACE data validation report to Ohio EPA for review and comment. This report cannot be approved without review and verification of this information.
11. Any changes to the body of the report that affect the Executive Summary must also be made to the Executive Summary.
12. The samples from this project were not shipped on ice. While it is understood that the samples were taken in December and the sample receipt form indicates the sample temperatures were within acceptable limits, please be advised that shipping samples without ice, even in winter, is risky. The receiving temperature of one of the coolers was 5.7°C, which is very close to the acceptable limit of 6°C.

Pursuant to the June 14, 2004 Director's Final Findings and Orders (DFFOs), Ohio EPA has prepared this Notice of Deficiency for Site Inspection at Compliance Restoration Sites CC-RVAAP-70 under Paragraphs 39 and 41. Pursuant to DFFOs, Paragraph 41, and this notification, the "Respondent shall within thirty (30) days from the date of actual receipt of the disapproval, correct the deficiencies and submit revised page(s) to Ohio EPA for approval." "This time limitation may be extended by mutual written agreement of the Project Managers. The revised submission shall incorporate all of the uncontested changes, additions, and/or deletions specified by Ohio EPA in its notice of deficiency."

Paragraph 42 of the DFFOs provides for a meeting request by the Respondent to discuss and clarify issues. The DFFOs state, "... the meeting shall commence within fifteen (15) days of the close of the comment period" and again can be extended by mutual written agreement of the Project Managers.

Please contact me at (330) 963-1160 and let me know if the Army wants to request a meeting.

Sincerely,



Nancy Zikmanis, CHMM  
Environmental Supervisor  
Division of Environmental Response and Revitalization

ED:NZ/kss

cc: Katie Tait, OHARNG  
Ann Wood, ARNGD  
Cullen Grasty, USACE Louisville

ec: Justin Burke, Ohio EPA, CO, DERR  
Eileen Mohr, Ohio EPA, NEDO, DERR  
Todd Fisher, Ohio EPA, NEDO, DERR  
Ed D'Amato, Ohio EPA, NEDO, DERR

## SENDER: COMPLETE THIS SECTION

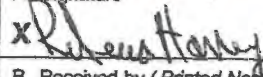
- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

MARK PATTERSON  
RAVENNA ARMY AMMUNITION PLANT  
8451 STATE ROUTE 5  
RAVENNA OH 44266

## COMPLETE THIS SECTION ON DELIVERY

A. Signature

☒ Agent☐ Addressee

B. Received by (Printed Name)

Rebecca Hanny

C. Date of Delivery

7-22-2013

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3. Service Type

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4. Restricted Delivery? (Extra Fee)

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(Transfer from service label)

PS Form 3811, February 2004

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

COPY





**Ravenna Army Ammunition Plant  
8451 State Route 5  
Ravenna, Ohio 44266**

August 22, 2013

Ms. Nancy Zikmanis  
Environmental Supervisor  
Ohio Environmental Protection Agency  
DERR-NEDO  
2110 East Aurora Road  
Twinsburg, OH 44087-1924

Subject: Ravenna Army Ammunition Plant, Draft Site Inspection Compliance Restoration  
Site CC RVAAP-72, Facility-Wide USTs, Portage/Trumbull Counties, OHIO EPA  
ID # 267-000-859-156

Dear Ms. Zikmanis,

On July 22, 2013, the Army received a NOD letter (Certified Mail #7012 3460 0002 1240 8383), dated July 18, 2013, which included comments from the Ohio Environmental Protection Agency (Ohio EPA) on the subject document. The first comment indicated Ohio EPA cannot evaluate parts of the report that cite or refer to risk assessment or Clean-Up Goal (CUG) criteria until the Technical Memorandum Risk Assessment – Land Use and Facility-Wide Cleanup Goals document (Tech Memo) is finalized. Ohio EPA had other comments on the Draft SI Report, and in accordance with the Director's Final Findings and Orders (DFFOs), Paragraph 42, the Army requested a meeting with Ohio EPA to discuss and clarify the comments. A comment clarification call was held on August 1, 2013. Responses to Ohio EPA comments on the draft document are attached.

The Army requests that Ohio EPA remove from consideration any further review of the subject document that was submitted in June 2013. A revised draft report will be prepared and submitted within 45 days following the final approval of the Tech Memo. The revised draft report will incorporate revised risk assessment and CUG criteria and will address preliminary comments provided by Ohio EPA. The Army requests a full review of the revised draft reports, which will supersede the previously submitted draft.

Please contact the undersigned at (330)358-7312 or [mark.c.patterson@us.army.mil](mailto:mark.c.patterson@us.army.mil) if there are issues or concerns with this request.

Sincerely,

A handwritten signature in cursive script that reads "Mark C. Patterson".

Mark C. Patterson  
RVAAP Facility Manager  
Base Realignment and Closure Division

cc: Rod Beals, Ohio EPA, NEDO, DERR  
Ed D'Amato, NEDO, DERR  
Brett Merkel, ARNG  
Kevin Sedlak, ARNG  
Katie Tait, OHARNG Camp Ravenna  
Glen Beckham, USACE Louisville  
Nat Peters, USACE Louisville  
Eric Cheng, USACE Louisville  
Scott Kelly, USACE Louisville  
Mark Patterson, RVAAP Facility Manager/Gail Harris, Vista Sciences



**DRAFT SITE INSPECTION  
CC RVAAP-72 FACILITY-WIDE USTS  
RAVENNA ARMY AMMUNITION PLANT, RAVENNA, OHIO  
RESPONSE TO COMMENTS  
Draft Site Inspection – Submitted 17 June 2013  
Ohio EPA Comments – Received 22 July 2013  
Comment Clarification Meeting – 1 August 2013  
ECC Response to Comments – Submitted 21 August 2013**

**Comment 1.** Ohio EPA cannot evaluate parts of the report that cite or refer to risk assessment or Clean-Up Goal (CUG) criteria at this time, as these criteria are under review through the Technical Memorandum. Please note that when the new Technical Memorandum is finalized, Ohio EPA expects this report to be revised to reflect the changes and re-submit for review.

**Response 1:** Comment noted. Once the Final Technical Memorandum is issued and Ohio EPA accepts the Final Technical Memorandum, a revised Draft Site Inspection report will be issued 45 days from the receipt of Ohio EPA's acceptance letter for the Final Technical Memorandum.

**Comment 2. Lines 54-61:** Remove disclaimer statement.

**Response 2:** In accordance with the March 23, 2012 Submission Format Guidelines for the Ravenna Army Ammunition Plant, the disclaimer statement is required for Draft versions of documents. The Disclaimer Statement will be removed for Final version of this document.

**Comment 3. Section 2.1 ¶ 4:** Please include the details of rationale for sampling the nine former USTs located within the Depot Area for hexavalent chromium as part of this document.

The rationale for sampling RV-46 and CC-RVAAP-72-01 for TAL Metals is not clear. Please explain.

RV-4 and RV-5 were gasoline tanks. CC-RVAAP-72-02 and CC-RVAAP-72-03 were former leaded gasoline tanks, yet, these areas were not sampled for lead. The period of time these tanks were in service indicates that they would have contained leaded gasoline at some point. Due to the low volatility of tetraethyl lead compared to other gasoline constituents, these areas should have been sampled for lead. Investigation for lead in these areas is necessary.

**Response 3:** The nine former USTs, located within the CC RVAAP-76 Depot Area, were sampled for hexavalent chromium and included in this report, which Ohio EPA requested this sampling be completed at these underground storage tanks (USTs). Please refer to Appendix E (Comment Response Table and Regulatory Concurrence), Ohio EPA comment number 0-14 and the response to O-14 for additional information regarding this request from Ohio EPA for hexavalent

chromium sampling at these 9 USTs. They were included in the CC RVAAP-72 report since these 9 USTs are included in the CC RVAAP-72 Facility-Wide USTs site. The following sentence will be inserted into the appropriate sections of the report to provide clarity of the hexavalent chromium sampling.

*“The hexavalent chromium sampling was requested by OhioEPA due to the report use of potassium dichromate to prevent corrosion in the USTs when they were not in use.”*

The rationale for sampling RV-46 and CC-RVAAP-72-02 for Target Analyte List (TAL) Metals was evaluate the subsurface at these USTs for the full list TAL Metals.

USTs RV-4, RV-5, CC-RVAAP-72-02 and CC-RVAAP-72-03 had samples collected and analyzed for TAL Metals. Note – In Table 2-1, TAL Metals will be added to the “Site Inspection Field Activities” column for RV-4, RV-5, and CC-RVAAP-72-02.

**Comment 4. Table 4-3:** Table 4-3 indicates that 67 field samples were analyzed for TAL Metals. However, the laboratory data in Appendix D indicates that 71 TAL Metals samples were analyzed, 8 of which are field duplicates. Please explain this discrepancy and revise Table 4-3 accordingly. Also, please go through the rest of the lab data in Appendix D and revise Table 4-3 as necessary, to accurately reflect the number of samples that were actually taken and analyzed for all categories.

**Response 4:** Table 4-3 Sampling Summary Fifteen CC RVAAP-72 Facility-Wide USTs and Nine Additional USTs will be reviewed and revised to make sure that it matches the numbers of samples in Appendix D of the Site Inspection (SI) report.

**Comment 5. Section 4.3.2 ¶ 2:** Paragraph 2 seems to imply that all subsurface soils in all former tank locations were analyzed for all of the constituents list in this paragraph. Table 4-1 indicates this is not the case. This is confusing. Please clarify this paragraph.

**Response 5:** Paragraph two in Section 4.3.2 will be revised in the revised Draft SI report version.

**Comment 6. Section 7.2:** With respect to UST RV-46, please be advised that BUSTR rules must be followed with respect to this tank. There is no indication in this report that the tank will be removed. BUSTR rules require the owner of out-of-service USTs to remove them.

**Response 6:** This comment was discussed and resolved during the 1 August 2013 clarification meeting.

**Comment 7.** Exceedances for various compounds were identified in Section 5, but actions to be taken and justifications for those actions were not discussed anywhere in this report. Any actions to be taken as a result of exceedances (including no action) and the justifications for those actions should be discussed. This information should at least be summarized in the conclusions section of the report. Once this report is revised to incorporate the revised risk assessment and CUG criteria per the revised Technical Memorandum, please include this information.

**Response 7:** This comment was discussed and resolved during the 1 August 2013 clarification meeting.

**Comment 8. Section 8.0:** Add the Director's Final Findings and Orders to Section 8.0 (references).

**Response 8:** The Director's Final Findings and Orders will be added to the references to Section 8.0.

**Comment 9. Appendix A, pp. 24-43:** These field notes appear to contain notes from multiple RVAAP sites. Please explain. The field notes should be also labeled as to the author. Please provide this information.

**Response 9:** Yes, there are some other sites in the log book, since the field team was conducting sampling at several of the CR sites and in some cases starting in the morning at one site and then moving to a CC RVAAP-72 USTs in the afternoon. The field notes will be labeled with the author's name (Tomas Hernandez, Geologist). Sites included in the log book pages that are not part of the site being presented in the report will be crossed out.

**Comment 10. Appendix E: Laboratory Data, Case Narrative:** A review of the Case Narrative [pp. 9-13 of Appendix E file J18297-1 Std\_Tal\_L4\_Package\_Mini Final Report (1 of 2) indicates multiple problems with surrogate recoveries and other issues. Please submit the USACE data validation report to Ohio EPA for review and comment. This report cannot be approved without review and verification of this information.

**Response 10:** The USACE data validation report will be provided to the Ohio EPA for review and comment.

**Comment 11.** Any changes to the body of the report that affect the Executive Summary must also be made to the Executive Summary.

**Response 11:** Changes to the report text will be carried into the Executive Summary.

**Comment 12.** The samples from this project were not shipped on ice. While it is understood that the samples were collected in December and the sample receipt form

indicates the sample temperatures were within acceptable limits, please be advised that shipping samples without ice, even in the winter, is risky. The receiving temperature of one of the coolers was 5.7°C, which is very close to the acceptable limit of 6°C.

**Response 12:** We agree that coolers should be shipped with ice regardless of the time of year. Please note that all samples were placed on ice in coolers immediately after sample collection by ECC and remained on ice until daily pick up by Test America at Building 1036 at Camp Ravenna.

The instance of shipping samples without ice occurred when Test America transferred samples for metals analysis from their Canton, OH laboratory to their Pittsburgh, PA laboratory. Test America Canton did not ship these samples with ice per their analytical method SOP which does not require soil samples for metals analysis to be shipped with ice. These are the samples where the receiving check lists did indicate that the samples were not packed in ice.

ECC notified Test America that all future samples being shipped for the Ravenna project, regardless of analysis or matrix, will be placed on ice for shipment.



John R. Kasich, Governor  
Mary Taylor, Lt. Governor  
Craig W. Butler, Director

May 13, 2015

**Re: US Army Ravenna Ammunition Plt RVAAP  
Assessment  
Remedial Response  
Portage County  
267000859219**

Mr. Mark Leeper, P.G., MBA  
Army National Guard Directorate  
Environmental Programs Division  
ARNG-ILE-CR  
111 South George Mason Drive  
Arlington, VA 22204

**Subject: Ohio EPA's Review of Draft Site Inspection Report, CC-RVAAP-72  
Facility-Wide Underground Storage Tanks (USTs), Project No. 267-  
000859-219; Notice of Deficiency (NOD)**

Dear Mr. Leeper:

The Ohio Environmental Protection Agency (Ohio EPA), Northeast District Office (NEDO) has reviewed the Draft Site Inspection Report for CC-RVAAP-72, Facility-wide USTs, dated April 9, 2015. The document was prepared by ECC, under contract no. W912QR-04-D-0039.

Ohio EPA has identified the following deficiencies in the report. Ohio EPA will review either a response to comments letter or Response to Comments (RTC) table. However, a revised report will need to be completed prior to final approval of the document.

**Comments:**

1. It is unclear what the approximate years were that each UST was in service. Please include this information, if available.
2. It is unclear why MTBE is a potential COC for USTs that, according to Table 2-1, were used for fuel oil, diesel fuel, kerosene, or leaded gasoline. According to U.S. EPA, MTBE has been used since 1979 to replace lead as an octane enhancer in gasoline only (see web page here: <http://www.epa.gov/mtbe/faq.htm>). If the use history of these tanks included unleaded gasoline, please revise Table 2-1 and other relevant parts of the document to include this information.
3. It is difficult to find where information resulting from some of the comments in Ohio EPA's July 22, 2013 comment letter, was incorporated into the revised document.

MR. MARK LEEPER  
ARMY NATIONAL GUARD DIRECTORATE  
MAY 13, 2015  
PAGE 2

For example, Table 4-3 in the current report contains completely different information from Table 4-3 in the 2013 draft report. There are similar issues with some of the other comments. Please review the Army's August 22, 2013 comment response letter, and explain where the changes and/or explanations have been incorporated in the latest report, so Ohio EPA can verify them.

If you have any questions or concerns related to this review or would like to schedule a meeting or conference call, please free feel to contact me at (330) 963-1170.

Sincerely,



Edward D'Amato

Project Coordinator

Ohio EPA - Division of Environmental Response and Revitalization

ED/nvr

ec: Rod Beals, DERR-NEDO, Manager  
Justin Burke, DERR-CO  
Katie Tait, OHARNG RTLS  
Kevin Sedlak, ARNG  
Gregory F. Moore, USACE  
Mark Nichter, USACE  
Rebecca Haney/Gail Harris, Vista Sciences Corp.  
Ohio EPA, VAP File, CO, DERR at: [records@epa.ohio.gov](mailto:records@epa.ohio.gov)



**NATIONAL GUARD BUREAU**  
111 SOUTH GEORGE MASON DRIVE  
ARLINGTON VA 22204-1373

June 22, 2015

Ohio Environmental Protection Agency  
DERR-NEDO  
Attn: Ed D'Amato  
2110 East Aurora Road  
Twinsburg, OH 44087-1924

Subject: Former Ravenna Army Ammunition Plant (RVAAP) Restoration Program  
Portage/Trumbull Counties, CC RVAAP-72 Facility-Wide Underground Storage Tanks (USTs), Draft Site Inspection Report, Ohio EPA ID # 267-000859-219

Dear Mr. D'Amato:

Enclosed, for your review, are responses to the Ohio EPA's comments from May 13, 2015 on the *Draft Site Inspection (SI) Report* for CC-RVAAP-72 Facility-Wide Underground Storage Tanks (USTs), dated April 9, 2015. The attached comment response table was prepared for the US Army Corps of Engineers (USACE) – Louisville District, by ECC under Contract No. W912QR-04-0039.

Originally, a Draft SI was submitted to your office in June 2013. The Draft SI was revised and resubmitted as the April 9, 2015 *Draft SI* that you reviewed. To address your Comment #4, we have included Ohio EPA's comments on the June 2013 (original) submittal. This attachment to the response to comments table includes responses to your comments developed in 2015 as well as current responses that explain where/or how the 2013 comments were incorporated in the May 13, 2015 *Draft SI*.

The Army respectfully requests Ohio EPA review and approval of these responses to comments in order to finalize the *Draft SI*. Please contact the undersigned at (703) 607-7955 or [mark.s.leeper.civ@mail.mil](mailto:mark.s.leeper.civ@mail.mil) if there are issues or concerns with this submission.

Sincerely,

A handwritten signature in black ink, appearing to read "M Leeper", is positioned above the typed name.

Mark Leeper  
RVAAP Restoration Program Manager  
Army National Guard Directorate

Attachment

cc: Justin Burke, Ohio EPA, DERR-CO  
Rod Beals, Ohio EPA, DERR-NEDO  
Katie Tait, OHARNG Camp Ravenna  
Kevin Sedlak, ARNG, Camp Ravenna



Former Ravenna Army Ammunition Plant (RVAAP) Portage/Trumbull Counties  
CC RVAAP-72 Facility-Wide Underground Storage Tanks (USTs), Draft Site Inspection Report, Ohio  
EPA ID # 267-000859-219

Greg Moore, USACE Louisville  
Eric Cheng, USACE Louisville  
Gail Harris, Vista Sciences

**DRAFT SITE INSPECTION REPORT, REVISION 0**  
**CC RVAAP-72 FACILITY-WIDE UNDERGROUND STORAGE TANKS**  
**FORMER RAVENNA ARMY AMMUNITION PLANT, PORTAGE AND TRUMBULL COUNTIES, OHIO**  
**COMMENT RESPONSE TABLE**

Draft Site Inspection Report Submitted – 9 April 2015

Ohio EPA Comments Received – 15 May 2015

Response to Comments Issued – 18 June 2015

Page 1 of 3

Comment Number	Page No. / Line No.	New Page or Sheet	Comment	Recommendation	Response
<i>Ohio EPA (Ed D'Amato)</i>					
1	General		Ohio EPA has identified the following deficiencies in the report. Ohio EPA will review either a response to comments letter or Response to Comments (RTC) table. However, a revised report will need to be completed prior to final approval of the document.		Agree. A Final Report will be submitted that includes the revisions as stated herein this RTC.
2	Table 2-1		It is unclear what the approximate years were that each UST was in service. Please include this information, if available.		Agree. In order to clarify the time of use for each UST (where known), Table 2-1, has been revised as follows: The "Date Removed" column header has been revised to read "Date Installed/Removed" and the UST installation dates, if known, have been added to this column for each UST. <i>Please see attached for revised Table 2-1.</i>
3	Table 2-1		It is unclear why MTBE is a potential COC for USTs that, according to Table 2-1, were used for fuel oil, diesel fuel, kerosene, or leaded gasoline. According to U.S. EPA, MTBE has been used since 1979 to replace lead as an octane		Agree. The history of this site does not indicate usage of products that would contain, or are suspected to contain MTBE. However, as stated and required in the Work Plan (in order to follow BUSTR rules) MTBE was included as an analyte where gasoline may have been used. As expected, the results of all subsurface soil

**DRAFT SITE INSPECTION REPORT, REVISION 0**  
**CC RVAAP-72 FACILITY-WIDE UNDERGROUND STORAGE TANKS**  
**FORMER RAVENNA ARMY AMMUNITION PLANT, PORTAGE AND TRUMBULL COUNTIES, OHIO**  
**COMMENT RESPONSE TABLE**

Draft Site Inspection Report Submitted – 9 April 2015

Ohio EPA Comments Received – 15 May 2015

Response to Comments Issued – 18 June 2015

Page 2 of 3

Comment Number	Page No. / Line No.	New Page or Sheet	Comment	Recommendation	Response
			enhancer in gasoline only (see web page here: <a href="http://www.epa.gov/mtbe/fag.htm">http://www.epa.gov/mtbe/fag.htm</a> ). If the use history of these tanks included unleaded gasoline, please revise Table 2-1 and other relevant parts of the document to include this information.		<p>samples collected as part of this SI were non-detect for MTBE.</p> <p>The Ohio Department of Commerce Bureau of Underground Storage Tank Regulations (BUSTR) requires testing for chemicals based upon the contents of the UST system. Under the BUSTR program, regulated substances are divided into five different analytical groups. The types of fuels included in BUSTR Analytical Group 1 included: light distillates, including unleaded gasoline, leaded gasoline, naphthalene, and aviation gasoline. BUSTR requires that Analytical Group 1 be tested for benzene, toluene, ethylbenzene, xylenes, and MTBE.</p> <p>CC RVAAP-72 soil samples collected were analyzed for MBTE, as part of this SI, as a BUSTR requirement. MTBE was included in the Final Work Plan as a substance to be sampled and analyzed for at CC RVAAP-72. Therefore, no text changes are recommended.</p>
4	General		It is difficult to find where information resulting from some of the comments in Ohio EPA's July		Agree. This version of the SI was significantly modified since the version submitted in 2013. Please see <b>Attachment 1</b> that identifies the

**DRAFT SITE INSPECTION REPORT, REVISION 0**  
**CC RVAAP-72 FACILITY-WIDE UNDERGROUND STORAGE TANKS**  
**FORMER RAVENNA ARMY AMMUNITION PLANT, PORTAGE AND TRUMBULL COUNTIES, OHIO**  
**COMMENT RESPONSE TABLE**

Draft Site Inspection Report Submitted – 9 April 2015

Ohio EPA Comments Received – 15 May 2015

Response to Comments Issued – 18 June 2015

Page 3 of 3

Comment Number	Page No. / Line No.	New Page or Sheet	Comment	Recommendation	Response
			<p>22, 2013 comment letter, was incorporated into the revised document.</p> <p>For example, Table 4-3 in the current report contains completely different information from Table 4-3 in the 2013 draft report. There are similar issues with some of the other comments. Please review the Army's August 22, 2013 comment response letter, and explain where the changes and/or explanations have been incorporated in the latest report, so Ohio EPA can verify them.</p>		<p>specific sections of the draft SI Report where comments from Ohio EPA letter dated July 18, 2013 were addressed in the text.</p>
<i>End of Comments</i>					

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Table 2-1: Summary of Known Information for 15 Former Underground Storage Tanks and 9 Hexavalent Chromium No Further Action Former Underground Storage Tanks

Former UST	Regulated under BUSTR	Date Installed/Removed	Summary of Removal Documentation Available from Field Notes and Reports	Available Soil Analytical Data	Location	Building	Size (gallons)	Stored Fuel Type	Further Action Recommended in HRR (SAIC 2011a)	Site Inspection Field Activities
Fifteen Former Underground Storage Tanks without Records of Soil Sampling										
RV-4	No	1941/1987	Not regulated under BUSTR (<110-gallon capacity). Documentation stating tank removed.	Unknown	Administration Area	Building 1026 Telephone Exchange	100	Gasoline	Yes	Subsurface soil sampling for PAHs, BTEX with MTBE, TPH GRO, TPH DRO, and TAL Metals. Geophysical survey <sup>(2)</sup>
RV-5	No	Unknown/ Prior to 1990	Not regulated under BUSTR (<110-gallon capacity). Documentation stating tank was removed and scrapped.	Unknown	Administration Area	Building 1048A	100	Gasoline	Yes	Subsurface soil sampling for PAHs, BTEX with MTBE, TPH GRO and TPH DRO, and TAL Metals.
RV-41	No	1981/June 1993	Tenant Tank (Physics International Company) Tank removal inspection report indicates no visible signs of soil contamination or visible holes upon tank removal.	Not available, may not exist	Load Line 6	Building 2F-11	6,000	No. 2 fuel oil/used for building and process heat	Yes	Subsurface soil sampling for PAHs, BTEX with MTBE, TPH GRO, TPH DRO, and TAL Metals. Geophysical survey <sup>(2)</sup>
RV-46	No	Pre-1941/1968	Nozzle News report from December 1991 indicates a 20- x 20-ft grid search in potential area of UST. No tank was found. Interviewees recall removal of tank from Bolton Mansion.	Not available, may not exist	Depot Area	Building EE-102 Bolton Mansion	1,500	No. 2 fuel oil for steam boiler	Yes	Subsurface soil sampling PAHs, BTEX with MTBE, TPH GRO, TPH DRO, and TAL Metals <sup>(3)</sup> . Geophysical survey <sup>(2)</sup>
RV-86	Unknown	1941/Unknown	Nozzle News report from December 1991 indicates a 20- x 20-ft grid search in potential area of each UST site. No tanks were found. No visual evidence of above grade tank components observed during 2010 property visit.	Not available	Administration Area	Building 1026 Telephone Building	Unknown	Unknown	Yes	Subsurface soil sampling for PAHs, BTEX with MTBE, TPH GRO, TPH DRO, and TAL Metals. Geophysical survey <sup>(2)</sup>
RV-87	Unknown	1941/Unknown	Nozzle News report from December 1991 indicates a 20- x 20-ft grid search in potential area of each UST site. No tanks were found. No visual evidence of above grade tank components observed during 2010 property visit.	Not available	Administration Area	Building 1026 Telephone Building	Unknown	Unknown	Yes	Subsurface soil sampling for PAHs, BTEX with MTBE, TPH GRO, TPH DRO, and TAL Metals. Geophysical survey <sup>(2)</sup>
RV-88	Unknown	1941/Unknown	Nozzle News report from December 1991 indicates a 20- x 20-ft grid search in potential area of each UST site. No tanks were found. No visual evidence of above grade tank components observed during 2010 property visit.	Not available	Building 1103	McClintocksburg Gate/Fire Station No. 2	Unknown	Diesel for boiler 19	Yes	Subsurface soil sampling for PAHs, BTEX with MTBE, TPH GRO, TPH DRO, and TAL Metals. Geophysical survey <sup>(2)</sup>
RV-89	Unknown	Pre-1992/ Unknown	Nozzle News report from December 1991 indicates a 20- x 20-ft grid search in potential area of each UST site. No tanks were found. No visual evidence of above grade tank components observed during 2010 property visit.	Unknown	South Service Road	George Road Sewage Treatment Plant – 100 yards south of South Service Road	Unknown	Fuel oil for generator	Yes	Subsurface soil sampling for PAHs, BTEX with MTBE, TPH GRO, TPH DRO, and TAL Metals. Geophysical survey <sup>(2)</sup>

Table 2-1: Summary of Known Information for 15 Former Underground Storage Tanks and 9 Hexavalent Chromium No Further Action Former Underground Storage Tanks (continued)

Former UST	Regulated Under BUSTR	Date Installed/Removed	Summary of Removal Documentation Available from Field Notes and Reports	Available Soil Analytical Data	Location	Building	Size (gallons)	Stored Fuel Type	Further Action Recommended in HRR (SAIC 2011a)	Site Inspection Field Activities
CC-RVAAP-72-01	Yes	1941/Unknown	Drawing 6698-RU A-10 indicates the presence of a kerosene tank at U-3. Some above grade piping was noticed at the U-3 during the property visit.	Not available	Depot	U-3	Unknown	Kerosene	Yes	Subsurface soil sampling for PAHs, BTEX with MTBE, TPH GRO, TPH DRO, and TAL Metals <sup>(3)</sup> .
CC -RVAAP-72-02	Yes	Unknown/Unknown	No tank was located during a geophysical survey performed by MKM in 2004. No visual evidence of above grade tank components observed during 2010 property visit.	Not available	Atlas Scrap Yard	Northern Service Station; Building T-15	1,000	Leaded gasoline; fueling station	Yes	Subsurface soil sampling for PAHs, BTEX with MTBE, TPH GROTPH DRO, and TAL Metals
CC-RVAAP-72-03	Yes	Unknown/Unknown	No tank was located during a geophysical survey performed by MKM in 2004. No sampling was performed. No visual evidence of above grade tank components observed during 2010 property visit.	Not available	Atlas Scrap Yard	Northern Service Station; Building T-15	1,000	Leaded gasoline; fueling station	Yes	Subsurface soil sampling for PAHs, BTEX with MTBE, TPH GRO, TPH DRO, and TAL Metals
CC-RVAAP-72-04	Yes	Unknown/Unknown	No tank was located during a geophysical survey performed by MKM in 2004. No visual evidence of above grade tank components observed during 2010 property visit.	Not available	Atlas Scrap Yard	Northern Service Station; Building T-15	1,000	Fuel oil	Yes	Subsurface soil sampling for PAHs, BTEX with MTBE, TPH GRO, TPH DRO, and TAL Metals
CC-RVAAP-72-05	Yes	Unknown/Unknown	No tank was located during a geophysical survey performed by MKM in 2004. No visual evidence of above grade tank components observed during 2010 property visit.	Not available	Atlas Scrap Yard	Northern Service Station; Building T-15	2,000	Kerosene	Yes	Subsurface soil sampling for PAHs, BTEX with MTBE, TPH GRO, TPH DRO, and TAL Metals
CC-RVAAP-72-06	Unknown	Unknown/Unknown	Map for Water Works 3 indicated the presence of a UST at the area of concern. It is unknown whether this UST has been removed.	Not available	Water Works 3	Water Works 3	280	Fuel oil	Yes	Subsurface soil sampling for PAHs, BTEX with MTBE, TPH GRO, TPH DRO, and TAL Metals
CC-RVAAP-72-08	No	October 1971/December 1971	Tank was installed in October 1971. UST was replaced with an aboveground storage tank in December 1971 due to a November malfunction causing a release of 400 gallons of fuel oil.	Not available	Inert Storage Area 8	Building 848	550	Fuel oil	Yes	Subsurface soil sampling for PAHs, BTEX with MTBE, TPH GRO, TPH DRO, and TAL Metals

Table 2-1: Summary of Known Information for 15 Former Underground Storage Tanks and 9 Hexavalent Chromium No Further Action Former Underground Storage Tanks (continued)



Former UST	Regulated Under BUSTR	Date Installed/Removed	Summary of Removal Documentation Available from Field Notes and Reports	Available Soil Analytical Data	Location	Building	Size (gallons)	Stored Fuel Type	Further Action Recommended in HRR (SAIC 2011a)	Site Inspection Field Activities
Nine Former Underground Storage Tanks Sampled for Hexavalent Chromium at the Request of Ohio EPA										
RV-13	Yes	1941/February 1990	1990 Closure Report by Cardamone Construction details tank removal and soil sampling.	Data tabulated in closure report	Depot Area	Building U-6, North Tank	12,000	Diesel	No <sup>(1)</sup>	Subsurface soil samples analyzed only for hexavalent chromium – USEPA Method 7196A
RV-14	Yes	1941/February 1990	1990 Closure Report by Cardamone Construction details tank removal and soil sampling.	Data tabulated in closure report	Depot Area	Building U-6, South Tank	12,000	Diesel	No <sup>(1)</sup>	Subsurface soil samples analyzed only for hexavalent chromium – USEPA Method 7196A
RV-15	Yes	1941/February 1990	1990 Closure Report by Cardamone Construction details tank removal and soil sampling.	Data tabulated in closure report	Depot Area	Building U-3, South Tank	12,000	Gasoline	No <sup>(1)</sup>	Subsurface soil samples analyzed only for hexavalent chromium – USEPA Method 7196A
RV-16	Yes	1941/February 1990	1990 Closure Report by Cardamone Construction details tank removal and soil sampling.	Data tabulated in closure report	Depot Area	Building U-3, North Tank	12,000	Gasoline	No <sup>(1)</sup>	Subsurface soil samples analyzed only for hexavalent chromium – USEPA Method 7196A
RV-17	Yes	1941/February 1990	1990 Closure Report by Cardamone Construction details tank removal and soil sampling.	Data tabulated in closure report	Depot Area	Building A-6, North Tank	3,900	Gasoline	No <sup>(1)</sup>	Subsurface soil samples analyzed only for hexavalent chromium – USEPA Method 7196A
RV-18	Yes	1941/February 1990	1990 Closure Report by Cardamone Construction details tank removal and soil sampling.	Data tabulated in closure report	Depot Area	Building A-6, Center Tank	3,900	Gasoline	No <sup>(1)</sup>	Subsurface soil samples analyzed only for hexavalent chromium – USEPA Method 7196A
RV-19	Yes	1941/February 1990	1990 Closure Report by Cardamone Construction details tank removal and soil sampling.	Data tabulated in closure report	Depot Area	Building A-6, South Tank	3,900	Gasoline	No <sup>(1)</sup>	Subsurface soil samples analyzed only for hexavalent chromium – USEPA Method 7196A
RV-37	No	1941/February 1990	1990 Closure Report by Cardamone Construction details tank removal and soil sampling.	Data tabulated in closure report	Depot Area	Building A-1	5,000	Heating oil	No <sup>(1)</sup>	Subsurface soil samples analyzed only for hexavalent chromium – USEPA Method 7196A
RV-97	No	1941/February 1990	1990 Closure Report by Cardamone Construction details tank removal and soil sampling.	Data tabulated in closure report	Depot Area	Building A-6	550	Heating oil	No <sup>(1)</sup>	Subsurface soil samples analyzed only for hexavalent chromium – USEPA Method 7196A

Notes:

1. Although the HRR (SAIC 2011a) recommended No Further Action, these former UST locations were added to this SI under CC RVAAP-72 FWUSTs in response to Ohio Environmental Protection Agency’s comment letter issued September 4, 2011 that requested additional subsurface soil sampling for hexavalent chromium only from these 9 former NFA USTs.

2. Two methods of surface geophysics were used; ground penetrating radar and electromagnetic at these noted UST locations.

3. TAL Metal analysis includes total chromium. Additional sample volume was collected at these locations and held at the laboratory. Metals sampled at all former UST locations per Final Work Plan (ECC 2012).

4. Table information was obtained from Table 5-1 of *the Final Historical Records Review Report for the 2010 Phase I Remedial Investigation Services at Compliance Restoration Sites (9 Areas of Concern), Ravenna Army Ammunition Plant, Ravenna, Ohio* (Science Applications International Corporation 2011a).

BTEX = Benzene, toluene, ethylbenzene, and total xylenes.

BUSTR = Bureau of Underground Storage Tank Regulations.

DRO = Diesel range organics.

ft = Feet.

GRO = Gasoline range organics.

HRR = Historical Records Review.

mg/kg = Milligrams per kilogram.

MTBE = Methyl tertiary-butyl ether.

PAH = Polycyclic aromatic hydrocarbon.

SAIC = Science Applications International Corporation.

TAL = Target Analyte List.

TPH = Total petroleum hydrocarbon.

USEPA = United States Environmental Protection Agency.

UST = Underground storage tank

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## ATTACHMENT 1

### DRAFT SITE INSPECTION REPORT CC RVAAP-72 FACILITY-WIDE UNDERGROUND STORAGE TANKS FORMER RAVENNA ARMY AMMUNITION PLANT, PORTAGE AND TRUMBULL COUNTIES, OHIO RESPONSE TO COMMENTS

Draft Site Inspection Report – Submitted 17 June 2013

Ohio EPA Comments – Received 22 July 2013

Responses to Ohio EPA Comments – Submitted 22 August 2013

*Comment Clarification Resubmitted in Response to Ohio EPA Comments dated 15 May 2015*

*The purpose of this Attachment is to address Comment Number 4 from the Ohio EPA received on 15 May 2015 and identifies the specific sections of the Draft SI Report (dated April 2015) where comments from Ohio EPA letter dated 18 July 2013 were previously addressed in the text. In some responses, clarifications were added (as shown in italics) to these Responses to Comments to address the 15 May 2015 comments from Ohio EPA. The original responses to the 18 July 2013 Ohio EPA comments were submitted on 22 August 2013 and are included below for completeness.*

**Comment 1.** Ohio EPA cannot evaluate parts of the report that cite or refer to risk assessment or Clean-Up Goal (CUG) criteria at this time, as these criteria are under review through the Technical Memorandum. Please note that when the new Technical Memorandum is finalized, Ohio EPA expects this report to be revised to reflect the changes and re-submit for review.

**Response 1 (June 2013):** Comment noted. Once the Final Technical Memorandum is issued and Ohio EPA accepts the Final Technical Memorandum, a revised Draft Site Inspection report will be issued 45 days from the receipt of Ohio EPA's acceptance letter for the Final Technical Memorandum.

**Response 2 (June 2015):** *The Final Technical Memorandum "FINAL TECHNICAL MEMORANDUM: Land Uses and Revised Risk Assessment Process for the Ravenna Army Ammunition Plant (RVAAP) Installation Restoration Program, Portage/Trumbull Counties, Ohio. February 2014" (Tech Memo) did not include an evaluation of the FWCUGs but an amendment to the RVAAP risk assessment process and the incorporation of a third Land Use Category of Commercial Industrial. The Tech Memo addresses only RIs and FSs and does not mention SIs. The FWCUGs and the process to use them in SIs follow the process described in the USACE Position Paper (2012). The revised SI still follows this process but uses the most current USEPA RSLs available at the time the comparison or screening was completed for this SI.*

**Comment 2.** **Lines 54-61:** Remove disclaimer statement.

**Response 2 (June 2013, June 2015):** *In accordance with the March 23, 2012 Submission Format Guidelines for the Ravenna Army Ammunition Plant, the disclaimer statement is required for Draft versions of documents. The Disclaimer Statement will be removed for Final version of this document.*

**Comment 3.** **Section 2.1 ¶ 4:** Please include the details of rationale for sampling the nine former USTs located within the Depot Area for hexavalent chromium as part of this document.

The rationale for sampling RV-46 and CC-RVAAP-72-01 for TAL Metals is not clear. Please explain.

RV-4 and RV-5 were gasoline tanks. CC-RVAAP-72-02 and CC-RVAAP-72-03 were former leaded gasoline tanks, yet, these areas were not sampled for lead. The period of time these tanks were in service indicates that they would have contained leaded gasoline at some point. Due to the low volatility of tetraethyl lead compared to other gasoline constituents, these areas should have been sampled for lead. Investigation for lead in these areas is necessary.

**Response 3 (June 2013):** a. The nine former USTs, located within the CC RVAAP-76 Depot Area, were sampled for hexavalent chromium and included in this report, which Ohio EPA requested this sampling

be completed at these underground storage tanks (USTs). Please refer to Appendix E (Comment Response Table and Regulatory Concurrence), Ohio EPA comment number 0-14 and the response to O-14 for additional information regarding this request from Ohio EPA for hexavalent chromium sampling at these 9 USTs. They were included in the CC RVAAP-72 report since these 9 USTs are included in the CC RVAAP-72 Facility-Wide USTs site. The following sentence will be inserted into the appropriate sections of the report to provide clarity of the hexavalent chromium sampling.

*“The hexavalent chromium sampling was requested by Ohio EPA due to the report use of potassium dichromate to prevent corrosion in the USTs when they were not in use.”*

The rationale for sampling RV-46 and CC-RVAAP-72-02 for Target Analyte List (TAL) Metals was evaluate the subsurface at these USTs for the full list TAL Metals.

- b. USTs RV-4, RV-5, CC-RVAAP-72-02 and CC-RVAAP-72-03 had samples collected and analyzed for TAL Metals. Note – In Table 2-1, TAL Metals will be added to the “Site Inspection Field Activities” column for RV-4, RV-5, and CC-RVAAP-72-02. Data for lead was collected for these UST’s and is presented in Table 5-5 of the report.

**Response 3 (June 2015):** *The rationale for sampling the nine former USTs for hexavalent chromium is presented in the fifth paragraph of Section 4.1 Sampling Rationale.*

*Soil samples from the UST locations listed below were analyzed for TAL Metals:*

- RV-89 (George Road Treatment Plant)
- CC-RVAAP-72-03 (Atlas Scrap Yard)
- CC-RVAAP-72-02 (Atlas Scrap Yard)
- CC-RVAAP-72-04 (Atlas Scrap Yard)
- CC-RVAAP-72-05 (Atlas Scrap Yard)
- RV-88 (Building 1103)
- RV-46 (Bolton Manor)
- CC-RVAAP-72-08 (Inert Storage Area 8, Building 848)
- CC-RVAAP-72-01 (Depot Area, Building U-3)
- RV-41 (Load Line 6, Building 2F-11)
- CC-RVAAP-72-06 (Water Works 3)
- RV-5
- RV-4
- RV-86
- RV-87

*Analysis of TAL metals was added to the Draft Work Plan based on comments received from Ohio EPA to evaluate the presence of chromium (total) in the subsurface soil in all UST locations with exception of the 9 Former NFA USTs sampled only for hexavalent chromium at Request of Ohio EPA. See Table 4-1: Summary of Samples Collected between November 2012 and August 2013 at CC RVAAP-72 Facility-Wide Underground Storage Tanks shows that USTs CC-RVAAP-72-02 and CC-RVAAP-72-03 were sampled for TAL Metals, which includes lead.*

**Comment 4.** **Table 4-3:** Table 4-3 indicates that 67 field samples were analyzed for TAL Metals. However, the laboratory data in Appendix D indicates that 71 TAL Metals samples were analyzed, 8 of which are field duplicates. Please explain this discrepancy and revise Table 4-3 accordingly. Also, please go through the rest of the lab data in Appendix D and revise Table 4-3 as necessary, to accurately reflect the number of samples that were actually taken and analyzed for all categories.

**Response 4 (June 2013):** Table 4-3 Sampling Summary Fifteen CC RVAAP-72 Facility-Wide USTs and Nine Additional USTs will be reviewed and revised to make sure that it matches the numbers of samples in Appendix D of the Site Inspection (SI) report.

**Response 4 (June 2015):** The original Table 4-3 was removed and was replaced with Table 4-1. Table 4-1 presents the list of all samples and their respective analyses which reflects laboratory data presented in Appendix D.

*A total of 84 subsurface soil samples were collected and analyzed for TAL metals, which includes 7 field duplicates. A total of 32 hexavalent chromium subsurface soil samples were collected, which includes 3 field duplicates.*

**Comment 5.** **Section 4.3.2 ¶ 2:** Paragraph 2 seems to imply that all subsurface soils in all former tank locations were analyzed for all of the constituents list in this paragraph. Table 4-1 indicates this is not the case. This is confusing. Please clarify this paragraph.

**Response 5 (June 2013):** Paragraph two in Section 4.3.2 will be revised in the revised Draft SI report version.

**Response 5 (June 2015):** Section 4.3 Field Sampling describes the samples collected and the analyses performed. Section 4.3 was completely revised based on several comments. The original text was modified to explicitly state that full-suite analysis were only collected at select locations and not project-wide. This same information is also presented in the revised Table 4-1, which shows sample analysis for each sample.

**Comment 6.** **Section 7.2:** With respect to UST RV-46, please be advised that BUSTR rules must be followed with respect to this tank. There is no indication in this report that the tank will be removed. BUSTR rules require the owner of out-of-service USTs to remove them.

**Response 6 (June 2013):** This comment was discussed and resolved during the 1 August 2013 clarification meeting.

**Response 6 (June 2015):** Recommendations for former UST RV-46 are presented in Section 7.2 Conclusions: further action is warranted at the location of the former UST RV-46 in the area of the EM and GPR anomalies to confirm or complete UST removal from the site in accordance with BUSTR UST closure requirements.

**Comment 7.** Exceedances for various compounds were identified in Section 5, but actions to be taken and justifications for those actions were not discussed anywhere in this report. Any actions to be taken as a result of exceedances (including no action) and the justifications for those actions should be discussed. This information should at least be summarized in the conclusions section of the report. Once this report is revised to incorporate the revised risk assessment and CUG criteria per the revised Technical Memorandum, please include this information.

**Response 7 (June 2013):** This comment was discussed and resolved during the 1 August 2013 clarification meeting.

**Response 7 (June 2015):** Justifications and actions to be taken are presented in Section 7.1 Summary of Results and Section 7.2 Conclusions, respectively, as well as in the last several paragraphs of the Executive Summary. The conclusions of the RI are as follows:

- No potential contamination has been identified in the subsurface soil sampled at the 24 former UST locations that are the subject of this SI at CC RVAAP-72 FWUSTs.
- The results of this SI indicate that the subsurface soil is not contaminated; therefore, soil is not a source of groundwater contamination at CC RVAAP-72 FWUSTs.

- *Twenty-three of the former 24 USTs (subject of this SI) have prior documentation, geophysical testing, or soil boring results showing that USTs no longer remain in-place.*

*Further action is warranted at the location of the former UST RV-46 in the area of the EM and GPR anomalies to confirm or complete UST removal from the site in accordance with BUSTR UST closure requirements.*

**Comment 8. Section 8.0:** Add the Director's Final Findings and Orders to Section 8.0 (references).

**Response 8 (June 2013, June 2015):** Section 8.0 lists the reference for the Director's Final Findings and Orders used for report preparation.

**Comment 9. Appendix A, pp. 24-43:** These field notes appear to contain notes from multiple RVAAP sites. Please explain. The field notes should be also labeled as to the author. Please provide this information.

**Response 9 (June 2013):** Yes, there are some other sites in the log book, since the field team was conducting sampling at several of the CR sites and in some cases starting in the morning at one site and then moving to a CC RVAAP-72 USTs in the afternoon. The field notes will be labeled with the author's name (Tomas Hernandez, Geologist). Sites included in the log book pages that are not part of the site being presented in the report will be crossed out.

**Response 9 (June 2015):** *Appendix A has been revised to only show field notes pertaining to sampling activities at UST site locations. The field notes are signed by the author at the end of each day's entries.*

**Comment 10. Appendix E: Laboratory Data, Case Narrative:** A review of the Case Narrative [pp. 9-13 of Appendix E file J18297-1 Std\_Tal\_L4\_Package\_Mini Final Report (1 Of 2)] indicates multiple problems with surrogate recoveries and other issues. Please submit the USACE data validation report to Ohio EPA for review and comment. This report cannot be approved without review and verification of this information.

**Response 10 (June 2013):** The USACE data validation report will be provided to the Ohio EPA for review and comment.

**Response 10 (June 2015):** *The USACE data validation report is provided in Appendix E.*

**Comment 11.** Any changes to the body of the report that affect the Executive Summary must also be made to the Executive Summary.

**Response 11 (June 2013, June 2015):** Changes to the report text will be carried into the Executive Summary.

**Comment 12.** The samples from this project were not shipped on ice. While it is understood that the samples were collected in December and the sample receipt form indicates the sample temperatures were within acceptable limits, please be advised that shipping samples without ice, even in the winter, is risky. The receiving temperature of one of the coolers was 5.7°C, which is very close to the acceptable limit of 6°C.

**Response 12 (June 2013, June 2015):** We agree that coolers should be shipped with ice regardless of the time of year. Please note that all samples were placed on ice in coolers immediately after sample collection by ECC and remained on ice until daily pick up by Test America at Building 1036 at Camp Ravenna.

The instance of shipping samples without ice occurred when Test America transferred samples for metals analysis from their Canton, OH laboratory to their Pittsburgh, PA laboratory. Test America Canton did not ship these samples with ice per their analytical method SOP which does not require soil samples for

metals analysis to be shipped with ice. These are the samples where the receiving check lists did indicate that the samples were not packed in ice.

ECC notified Test America that all future samples being shipped for the Ravenna project, regardless of analysis or matrix, will be placed on ice for shipment.



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June 23, 2015

Mr. Mark Leeper, P.G., MBA  
Program Manager  
Restoration/Cleanup  
ARNG Directorate  
111 S. George Mason Dr.  
Arlington, VA 22204

**Re: US Army Ravenna Ammunition Plt RVAAP  
Assessment  
Remedial Response  
Portage County  
267000859219**

**Subject: Ohio EPA's Review of the Response to Comments for Site Inspection  
Report, CC-RVAAP-72 Facility-wide USTs, Project No. 267-000859-219**

Dear Mr. Leeper:

The Ohio Environmental Protection Agency (Ohio EPA), Northeast District Office (NEDO) has reviewed the Army's response to Ohio EPA's April 16, 2015 comment letter, on the Draft Site Inspection Report for CC-RVAAP-72, Facility-wide USTs. The response was received on May 21, 2015. The document was prepared by ECC, under contract no. W912QR-04-D-0039.

Ohio EPA finds the response to be acceptable and has no further comments. Please revise the document accordingly and re-submit it for final approval.

If you have any questions or concerns related to this review or would like to schedule a meeting or conference call, please free feel to contact me at (330) 963-1170.

Sincerely,

Edward D'Amato  
Project Coordinator  
Ohio EPA - Division of Emergency and Remedial Response

ED/nvr

ec: Bob Princic, Supervisor, DERR, NEDO  
Katie Tait, OHARNG RTLS  
Gregory F. Moore, USACE  
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