

APPENDIX G
CORRESPONDENCE
&
COMMENT/RESPONSE TABLE



State of Ohio Environmental Protection Agency

Northeast District Office

2110 East Aurora Rd.
Twinsburg, Ohio 44087

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

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

March 17, 2009

RE: RAVENNA ARMY AMMUNITION PLANT,
PORTAGE/TRUMBULL COUNTIES,
FWGWMP, DRAFT, OCTOBER 2008
SAMPLING EVENT REPORT

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

CERTIFIED MAIL
7004 2510 0002 4075 0575

Dear Mr. Patterson:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the "Facility-Wide Ground Water Monitoring Program (FWGWMP) Draft October 2008 Sampling Event" document. The "Investigative Derived Waste and Characterization and Disposal Plan" (IDW) has been included as Appendix E. The document was received at Ohio EPA, Northeast District Office (NEDO), Division of Emergency and Remedial Response (DERR), on February 3, 2009. The document was prepared for the U.S. Army Corps of Engineers (USACE) – Louisville District, by Environmental Quality Management, Inc. (EQM), under contract no. W912QR-04-D-0036. This document was reviewed by Ohio EPA personnel in NEDO, DERR, and NEDO's Division of Drinking and Ground Waters (DDAGW).

The IDW plan, Appendix E, was approved in a November 12, 2008 letter from Ohio EPA. Enclosed are Ohio EPA's comments that need to be addressed before the entire document can be approved.

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

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

Sincerely,

Vicki Deppisch, Project Coordinator
Division of Emergency and Remedial Response

VD/kss

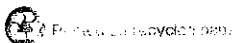
enclosure

cc: Bonnie Buthker, Ohio EPA, DERR, SWDO
Katie Elgin, OHARNG RTLS
Glen Beckham, USACE Louisville
Mark Krivansky, AEC
Conni McCambridge, Ohio EPA, DERR, NEDO

Eileen Mohr, Ohio EPA, DERR, NEDO
Maj. Ed Meade, OHARNG RTLS
Mark Nichter, USACE Louisville
John Miller, EQM

ec: Mike Eberle, Ohio EPA, DERR, NEDO

Todd Fisher, Ohio EPA, DERR, NEDO



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March 31, 2009

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

Re: Facility-Wide Groundwater Monitoring Program
October 2008 Sampling Event Response to Comments
Ravenna Army Ammunition Plant
Ravenna, Ohio

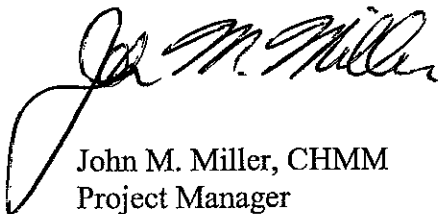
Dear Ms. Deppisch:

On behalf of the US Army Corps of Engineers (USACE) Environmental Quality Management, Inc. (EQM) is submitting to the Ohio EPA the responses to Ohio EPA comments (dated March 17, 2009) on the *Draft Facility-Wide Groundwater Monitoring Program Report on the October 2008 Sampling Event* at the Ravenna Army Ammunition Plant. Enclosed please find two (2) printed copies of the responses. An electronic copy of the responses has also been sent via email.

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

Sincerely,

ENVIRONMENTAL QUALITY MANAGEMENT, INC.



John M. Miller, CHMM
Project Manager

cc: M. Nichter - USACE
M. Patterson - RVAAP



Solving Problems...Creating Cost-Effective, Sustainable Solutions!

**PRELIMINARY DRAFT FACILITY-WIDE GROUNDWATER MONITORING PROGRAM
(REPORT ON THE OCTOBER 2008 SAMPLING EVENT)
RAVENNA ARMY AMMUNITION PLANT, RAVENNA OHIO
COMMENT RESPONSE TABLE**

March 17, 2009

Comment Number	Page or Sheet	New Page or Sheet	Comment	Recommendation	Response
O-1	Page 13/Line 30 (Section 3.1.1, Table 3-1)		<p>Table 3-1 indicates that many wells have total sediment accumulations of greater than 1 foot (or greater than 10% of the 10-ft screen length, 10 feet). Most notable wells are LL2mw-060 (accumulation of 3.81 feet), LL12mw-113 (6.75 feet), LL12mw-244 (2.30 feet), LL5mw-005 (2.92 feet), LL5mw-006 (3.26 feet) CBLmw-001 (1.98 feet), CBPmw-001 (2.2 feet), DA2mw-106 (1.31 feet, DA2mw-112 (1.81 feet), etc.</p> <p>Even though low-flow purging and sampling techniques were used, these sediment accumulations could be indicative of excessive silting in these wells (FWGWMPP, Section 4.1, pg. 4-1).</p>	<p>The issue of excessive silting in these wells should be addressed. Please provide a detailed discussion concerning the conclusion that "<i>despite the apparent sediment accumulation in these wells, there is still sufficient well screen exposed.</i>" Please also clarify what redevelopment activities will be conducted in these wells prior to the next sampling event.</p>	<p>The original response was intended to indicate that there was sufficient well screen open to the formation to allow collection of a sample directly from the formation.</p> <p>Note that the depths to bottom measurements for the January 2009 sampling event seem to indicate an error occurred in reading the depth to bottom for the following wells: LL2mw-060, LL5mw-005, LL5mw-006, and DA2mw-112. The measurements taken in January indicate less than 1-foot of sediment accumulation for all of those wells. This will be documented in the January 2009 report. However, the Army recognizes the need for redevelopment of some of the wells. Attached is a list of wells scheduled for redevelopment in 2009 (note that many of these wells have less than 1 ft (10%) of accumulated sediment). Redevelopment activities will occur during the May-June 2009 timeframe. EQM and the Army will notify the Ohio EPA prior to scheduling these activities. Please note that only wells scheduled for sampling during 2009 are included on the list for redevelopment. Wells not scheduled for sampling in 2009 will be redeveloped at a later date prior to any future sampling.</p> <p>Additionally it should be noted that the FWGWMPP does not contain specific language to suggest that 10% or greater accumulation of sediment in a well reflects an unacceptable</p>

PRELIMINARY DRAFT FACILITY-WIDE GROUNDWATER MONITORING PROGRAM
(REPORT ON THE OCTOBER 2008 SAMPLING EVENT)
RAVENNA ARMY AMMUNITION PLANT, RAVENNA OHIO
COMMENT RESPONSE TABLE
 March 17, 2009

Comment Number	Page or Sheet	New Page or Sheet	Comment	Recommendation	Response
				<i>Ohio EPA (V. Deppisch/C. McCambridge)</i>	
					<p>condition. The current OEPA Guidance (<i>Technical Guidance Manual for Ground Water Investigations, Chapter 8 – Monitoring Well Development, Maintenance, and Redevelopment</i>, February 2009) suggests on page 8-13 that “wells should be redeveloped when 20% of the well screen is occluded by sediments.” The OEPA guidance references the <i>USEPA Operation and Maintenance Inspection Guide</i> (1988) to support the 20% criterion (i.e., 2 ft of sediment in a 10-ft long well screen). The use of the 20% criterion may be a discussion topic for future meetings.</p>
O-2	Pages 50 to 67/(Section 3.2.2-Table 3-3)		<p>It was noted that Table 3-3 contains one parameter (arsenic), which exceeds its MCL in several wells. It is unclear what course of action will be implemented to address the exceedance of MCL in these wells.</p>	<p>Please provide a discussion of how MCL exceedance of arsenic will be addressed.</p>	<p>This comment pertains to potential remedial activities for groundwater at the facility. The following text will be inserted into Section 3.2.2: <i>The facility-wide groundwater conditions are still being evaluated, including background levels for all inorganic compounds. This will also include an evaluation of arsenic as it relates to exceedances of the MCL. No remedial activities associated with the groundwater are planned until all groundwater wells have completed a minimum of 4 quarters of sampling. It is suggested that this issue be further discussed at the annual groundwater summit meeting in 2009.</i></p>

PRELIMINARY DRAFT FACILITY-WIDE GROUNDWATER MONITORING PROGRAM
 (REPORT ON THE OCTOBER 2008 SAMPLING EVENT)
 RAVENNA ARMY AMMUNITION PLANT, RAVENNA OHIO
 COMMENT RESPONSE TABLE
 March 17, 2009

WELLS TO BE REDEVELOPED IN 2009

Well ID	Reported bottom (ft)	Jan-09 Depth to Bottom (ft)	Jan-09 sediment accumulation (ft)	July-08 sediment accumulation (ft)	October-07 sediment accumulation (ft)	July-08 Depth to Bottom (ft)	Oct-07 Depth to Bottom (ft)
ASYmw-001	23.7	23.05	0.65	0.40	0.52	23.30	23.18
ASYmw-003	23.5	22.90	0.60	-0.10	-0.02	23.60	23.52
B12mw-010	23.2	22.82	0.38	0.29	0.28	22.91	22.92
LL12mw-113	25.0	19.62	5.38	6.04	4.57	18.96	20.43
LL12mw-243	25.7	24.65	1.05	0.23	-0.10	25.47	25.8
LL12mw-244	32.1	29.34	2.76	1.13	0.43	30.97	31.67
LL12mw-245	30.5	29.98	0.52	0.31	0.05	30.19	30.45
LL6mw-004	25.1	24.50	0.60	0.40	0.49	24.70	24.61
LL7mw-002	27.8	27.14	0.66	0.43	0.52	27.37	27.28
LL7mw-003	33.6	33.32	0.28	-0.11	-0.04	33.71	33.64
LL7mw-004	32.5	32.17	0.33	0.12	0.16	32.38	32.34
LL7mw-005	30.6	30.31	0.29	0.07	0.16	30.53	30.44
LL8mw-002	32.8	32.53	0.27	0.06	0.14	32.74	32.66
LL8mw-003	23.3	22.95	0.35	0.10	0.17	23.20	23.13
LL8mw-004	23.0	22.60	0.40	0.13	0.26	22.87	22.74
LL9mw-004	34.9	34.62	0.28	-0.93	0.16	35.83	34.74
LL9mw-007	18.5	18.06	0.44	0.22	0.27	18.28	18.23



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

May 11, 2009

RE: RAVENNA ARMY AMMUNITION PLANT,
PORTAGE/TRUMBULL COUNTIES,
FWGWMP, DRAFT, RESPONSE TO
COMMENTS OCTOBER 2008
SAMPLING EVENT REPORT, DATED
MARCH 31, 2009

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

CERTIFIED MAIL
7004 2510 0002 4075 0513

Dear Mr. Patterson:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the "Facility-Wide Ground Water Monitoring Program (FWGWMP) Draft October 2008 Sampling Event, Response to Comments" document, dated March 29, 2009. The "Investigative Derived Waste and Characterization and Disposal Plan" (IDW) has been included as Appendix E. The document was received at Ohio EPA, Northeast District Office (NEDO), Division of Emergency and Remedial response (DERR), on April 1, 2009. The document was prepared for the U.S. Army Corps of Engineers (USACE) – Louisville District, by Environmental Quality Management, Inc. (EQM), under contract no. W912QR-04-D-0036. This document was reviewed by Ohio EPA personnel in NEDO's DERR and NEDO's Division of Drinking and Ground Waters (DDAGW). The IDW plan, Appendix E, was approved in a November 12, 2008 letter from Ohio EPA.

The first comment response was regarding sediment accumulations of greater than one foot in the well. Although the comment has been adequately addressed, the response states:

"The current Ohio EPA Guidance (Technical Guidance Manual for Ground Water Investigations, Chapter 8 – Monitoring Well Development, Maintenance, and Redevelopment, February 2009) suggests on page 8-13 that 'wells should be redeveloped when 20% of the well screen is occluded by sediments.' Ohio EPA's guidance references the U.S. EPA 'Operation and Maintenance Inspection Guide' (1988) to support the 20% criterion (i.e., 2 ft of sediment in a 10-foot long well screen). The use of the 20% criterion may be a discussion topic for future meetings."

The use of the 20% criterion has been added to the topic list for unresolved ground water issues, which will be discussed in detail at a later time.

MR. MARK PATTERSON
RAVENNA ARMY AMMUNITION PLANT
MAY 11, 2009
PAGE 2

The second comment response was regarding the MCL exceedance of arsenic and the path forward. The comment response was also adequately addressed and indicated this should be discussed at a later time. The exceedance of the arsenic MCL has also been added to the topic list for unresolved ground water issues.

Although not listed in the first round of comments, Ohio EPA noted that monitoring well LL12-187 nitrate was reported at 200B mg/L. Other "B" values were noted. Please verify and discuss.

The EQM responses from the first round of comments were adequately addressed; however, Ohio EPA cannot approve the document until the nitrate levels have been verified and discussed in more detail.

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

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

Sincerely,



Vicki Deppisch
Project Coordinator
Division of Emergency and Remedial Response

VD/kss

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

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

Environmental Quality Management, Inc.

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May 22, 2009

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

Re: Facility-Wide Groundwater Monitoring Program
October 2008 Sampling Event Response to Comments
Ravenna Army Ammunition Plant
Ravenna, Ohio

Dear Ms. Deppisch:

On behalf of the US Army Corps of Engineers (USACE) Environmental Quality Management, Inc. (EQM) is submitting this response to the Ohio EPA. This response pertains to the request for additional information on the *Draft Facility-Wide Groundwater Monitoring Program Report on the October 2008 Sampling Event* at the Ravenna Army Ammunition Plant. In a letter dated May 11, 2009, the Ohio EPA noted that nitrate/nitrite was reported at a concentration of 200mg/L in monitoring well LL12mmw-187. The reported concentration was flagged with a "B" qualifier indicating associated blank contamination. It should be noted that even though the blank contamination discussed in the data validation summaries may have impacted the results, the 200 mg/L detected concentration should be viewed as a "positive" hit for nitrate/nitrite. Past concentrations of nitrate/nitrite in this well have been as high as 1,800 mg/L (October 2007), with concentrations equal to, or greater than 200mg/L for the 4 sampling events immediately prior to the October 2008 event. In order to clarify this situation the following text will be added to Section 3.2.1 and Section 4 of the report.

The method blank associated with samples analyzed in nitrate/nitrite batch 8283294 had detected concentrations of nitrate/nitrite which may have contributed to the overall detected concentrations of nitrate/nitrite in each sample within that batch. FWGLL12mw-187c-0984-GW was diluted to bring the concentration of the sample within calibration range of the instrumentation, so that while the blank contamination is minimal compared to the actual sample concentration, the diluted sample may have been impacted by blank contamination. Based on past detected concentrations of

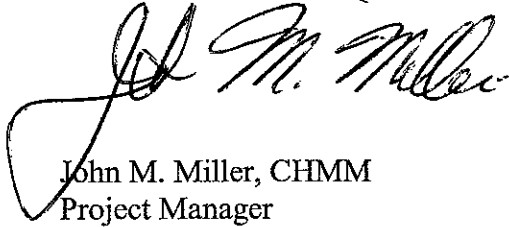


nitrate/nitrite in LL12mw-187 (as high as 1,800 mg/L), the 200 mg/L detection should be considered as being indicative of the presence of nitrate/nitrite in this well at a concentration of 200mg/L.

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

Sincerely,

ENVIRONMENTAL QUALITY MANAGEMENT, INC.



John M. Miller, CHMM
Project Manager

cc: M. Nichter – USACE
M. Patterson - RVAAP





State of Ohio Environmental Protection Agency

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

May 28, 2009

RE: RAVENNA ARMY AMMUNITION PLANT,
PORTAGE/TRUMBULL COUNTIES,
DRAFT, FWGWMP, OCTOBER 2008
SAMPLING EVENT REPORT,
RESPONSE TO OHIO EPA COMMENTS
DATED MAY 11, 2009

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

CERTIFIED MAIL
7005 3110 0001 0317 2292

Dear Mr. Patterson:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the "Response to Ohio EPA Comments, Facility-Wide Ground Water Monitoring Program (FWGWMP) Draft October 2008 Sampling Event" document. The "Investigative Derived Waste and Characterization and Disposal Plan" (IDW) has been included in Appendix E in this document. The document was received at Ohio EPA, Northeast District Office (NEDO), Division of Emergency and Remedial Response (DERR), on May 26, 2009. The document was prepared for the U.S. Army Corps of Engineers (USACE) – Louisville District, by Environmental Quality Management, Inc. (EQM), under contract no. W912QR-04-D-0036.

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

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

Sincerely,

Vicki Deppisch
Project Coordinator
Division of Emergency and Remedial Response

VD/kss

cc: Bonnie Buthker, Ohio EPA, DERR, SWDO
Katie Elgin, OHARNG RTLS
Glen Beckham, USACE Louisville
John Miller, EQM
Conni McCambridge, Ohio EPA, DERR, NEDO

Eileen Mohr, Ohio EPA, DERR, NEDO
Maj. Ed Meade, OHARNG RTLS
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Todd Fisher, Ohio EPA, DERR, NEDO