REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.
PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.

1. REPORT DATE *(DD-MM-YYYY)*	2. REPORT TYPE	3. DATES COVERED *(From - To)*
4 March 2010	Final	October 2008 through March 2010

4. TITLE AND SUBTITLE

Facility-Wide Groundwater Monitoring Program
Annual Report for 2009
Ravenna Army Ammunition Plant
Ravenna, Ohio

5a. CONTRACT NUMBER
W912QR-04-D-0036

5b. GRANT NUMBER
NA

5c. PROGRAM ELEMENT NUMBER
NA

6. AUTHOR(S)

Miller, John, M. - Environmental Quality Management, Inc.

5d. PROJECT NUMBER
NA

5e. TASK NUMBER
0006

5f. WORK UNIT NUMBER
NA

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

Environmental Quality Management, Inc
1800 Carillon Boulevard
Cincinnati, Ohio 45240

8. PERFORMING ORGANIZATION REPORT NUMBER
NA

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

US Army Corps of Engineers
600 Dr. Martin Luther King Jr. Place
Louisville, KY 40202-2232

10. SPONSOR/MONITOR'S ACRONYM(S)
USACE

11. SPONSOR/MONITOR'S REPORT NUMBER(S)
NA

12. DISTRIBUTION/AVAILABILITY STATEMENT

No Limitations

13. SUPPLEMENTARY NOTES

None

14. ABSTRACT

This document presents a summary of the facility-wide quarterly groundwater monitoring conducted during the October 2008 through July 2009 time frame. Included in the report are:

- Summary of the groundwater elevations and water level measurements taken for each of the wells sampled.
- Results of well inspections conducted in January 2009.
- Summary of well repair activities in 2008.
- Analytical summary tables.
- Discussion of analytes detected above the identified clean levels.

15. SUBJECT TERMS

Facility-wide, groundwater wells, monitoring, inspection, RVAAP, Annual 2009

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			John M. Miller
None	None	None	SAR	700	19b. TELEPHONE NUMBER *(Include area code)* 513-825-7500

FINAL
FACILITY-WIDE GROUNDWATER MONITORING PROGRAM

ANNUAL REPORT FOR 2009

RAVENNA ARMY AMMUNITION PLANT,
RAVENNA, OHIO

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

Prepared for:

U.S. Army Corps of Engineers
600 Martin Luther King Jr. Place
Louisville, Kentucky 40202

Prepared by:

Environmental Quality Management, Inc.
1800 Carillon Boulevard
Cincinnati Ohio 45240

March 4, 2010

FWGWMP Annual Report (Final) 2009 Distribution List

Organization	**Number of Printed Copies**	**Number of Electronic Copies**
RVAAP Facility Manager	2	2
USACE Project Manager	2	3
USAEC Program Manager	0	1
Ohio EPA	2	3
OHARNG – Camp Ravenna/ENV	1	1
NGB Cleanup Program Manager	0	1
EQM	1	1

Ohio EPA – Ohio EPA Twinsburg Office
OHARNG – Camp Ravenna/ENV – Ohio Army National Guard Site/Environmental
RVAAP – Ravenna Army Ammunition Plant
USACE – U.S. Army Corps of Engineers
USAEC – U.S. Army Environmental Center
NGB – National Guard Bureau
EQM – Environmental Quality Management, Inc.

TABLE OF CONTENTS

Section Page

Table of Contents i
List of General Acronyms vii
List of Area of Concern Acronyms viii

SECTION 1 INTRODUCTION 1
1.1 Facility Description 1
1.2 Project Description 1
1.3 Summary of the Scope of Work for 2008-09 5
1.4 Annual Report Requirements and Report Presentation 6
1.5 Changes to the FWGWMP in 2009 7
1.5.1 Changes to Wells Being Monitored 7
1.5.2 Perchlorate Analysis 8
1.6 Changes to the FWGWMP in 2009-10 8
1.6.1 Geochemical Study 8
1.6.2 2010 Sampling 8

SECTION 2 SUMMARY OF WELLS INSTALLED OR ABANDONED IN 2009 21

SECTION 3 SUMMARY OF 2008-09 FWGWMP EVENTS 22
3.1 Groundwater Elevation Monitoring 22
3.2 Monitoring Well Inspection/Repair Results 33
3.2.1 Inspection Results – January 2009 33
3.2.2 Well Repair and Maintenance – 2009 46
3.3 Sedimentation/Turbidity of the Wells – 2009 46
3.3.1 June 2009 Redevelopment 47
3.3.2 September 2009 Redevelopment 48
3.4 Summary of Groundwater Sampling Results 50
3.4.1 October 2008 50
3.4.2 January 2009 51
3.4.3 April 2009 53
3.4.4 July 2009 53

SECTION 4 SUMMARY/ASSESSMENT OF ANNUAL FWGWMP ANALYTICAL RESULTS 54
4.1 Introduction 54
4.2 Atlas Scrap Yard 92
4.3 Building 1200 105
4.3.1 Inorganics 105
4.3.2 Volatile Organic Compounds 105
4.3.3. Semi-Volatile Organic Compounds 105

Table of Contents (cont.)

Section Page

4.3.4 Pesticides and Herbicides 105
4.3.5 Explosives and Propellants 105
4.3.6 PCBs 105
4.4 C Block Quarry 105
4.4.1 Inorganics.....106
4.4.2 Volatile Organic Compounds 106
4.4.3. Semi-Volatile Organic Compounds.....106
4.4.4 Pesticides and Herbicides 106
4.4.5 Explosives and Propellants 106
4.4.6 PCBs 106
4.5 Central Burn Pits.....106
4.5.1 Inorganics.....107
4.5.2 Volatile Organic Compounds 107
4.5.3. Semi-Volatile Organic Compounds.....107
4.5.4 Pesticides and Herbicides 107
4.5.5 Explosives and Propellants 107
4.5.6 PCBs 107
4.6 Cobbs Pond 108
4.6.1 Inorganics.....108
4.6.2 Volatile Organic Compounds 108
4.6.3. Semi-Volatile Organic Compounds.....108
4.6.4 Pesticides and Herbicides 108
4.6.5 Explosives and Propellants 108
4.6.6 PCBs 108
4.7 Demolition Area #2.....109
4.7.1 Inorganics.....109
4.7.2 Volatile Organic Compounds 109
4.7.3. Semi-Volatile Organic Compounds.....109
4.7.4 Pesticides and Herbicides 109
4.7.5 Explosives and Propellants 109
4.7.6 PCBs 110
4.8 Erie Burning Grounds.....110
4.8.1 Inorganics.....110
4.8.2 Volatile Organic Compounds 110
4.8.3. Semi-Volatile Organic Compounds.....110
4.8.4 Pesticides and Herbicides 110
4.8.5 Explosives and Propellants 110
4.8.6 PCBs 111
4.9 Fuze and Booster Quarry 111
4.9.1 Inorganics.....111
4.9.2 Volatile and Semi-Volatile Organic Compounds 111
4.9.3. Semi-Volatile Organic Compounds.....111

Table of Contents (cont.)

Section Page

4.9.4 Pesticides and Herbicides 111
4.9.5 Explosives and Propellants 112
4.9.6 PCBs 112
4.10 Load Line 1 112
4.10.1 Inorganics....112
4.10.2 Volatile Organic Compounds 112
4.10.3. Semi-Volatile Organic Compounds....112
4.10.4 Pesticides and Herbicides 113
4.10.5 Explosives and Propellants 113
4.10.6 PCBs 113
4.11 Load Line 2 113
4.11.1 Inorganics....113
4.11.2 Volatile Organic Compounds 114
4.11.3. Semi-Volatile Organic Compounds....114
4.11.4 Pesticides and Herbicides 114
4.11.5 Explosives and Propellants 114
4.11.6 PCBs 114
4.12 Load Line 3 114
4.12.1 Inorganics....114
4.12.2 Volatile Organic Compounds 115
4.12.3. Semi-Volatile Organic Compounds....115
4.12.4 Pesticides and Herbicides 115
4.12.5 Explosives and Propellants 115
4.12.6 PCBs 115
4.13 Load Line 4 115
4.13.1 Inorganics....115
4.13.2 Volatile Organic Compounds 116
4.13.3. Semi-Volatile Organic Compounds....116
4.13.4 Pesticides and Herbicides 116
4.13.5 Explosives and Propellants 116
4.13.6 PCBs 116
4.14 Load Line 5 116
4.4.1 Inorganics....116
4.14.2 Volatile Organic Compounds 117
4.14.3. Semi-Volatile Organic Compounds....117
4.14.4 Pesticides and Herbicides 117
4.14.5 Explosives and Propellants 117
4.14.6 PCBs 117
4.15 Load Line 6 117
4.15.1 Inorganics....117
4.15.2 Volatile Organic Compounds 118
4.15.3. Semi-Volatile Organic Compounds....118

Table of Contents (cont.)

Section Page

4.15.4 Pesticides and Herbicides 118
4.15.5 Explosives and Propellants 118
4.15.6 PCBs 118
4.16 Load Line7 118
4.16.1 Inorganics 118
4.16.2 Volatile Organic Compounds 119
4.16.3. Semi-Volatile Organic Compounds 119
4.16.4 Pesticides and Herbicides 119
4.16.5 Explosives and Propellants 119
4.16.6 PCBs 119
4.17 Load Line 8 119
4.17.1 Inorganics 119
4.17.2 Volatile Organic Compounds 120
4.17.3. Semi-Volatile Organic Compounds 120
4.17.4 Pesticides and Herbicides 120
4.17.5 Explosives and Propellants 120
4.17.6 PCBs 120
4.18 Load Line 9 120
4.18.1 Inorganics 120
4.18.2 Volatile Organic Compounds 121
4.18.3. Semi-Volatile Organic Compounds 121
4.18.4 Pesticides and Herbicides 121
4.18.5 Explosives and Propellants 121
4.18.6 PCBs 121
4.19 Load Line 10 121
4.19.1 Inorganics 121
4.19.2 Volatile Organic Compounds 122
4.19.3. Semi-Volatile Organic Compounds 122
4.19.4 Pesticides and Herbicides 122
4.19.5 Explosives and Propellants 122
4.19.6 PCBs 122
4.20 Load Line 11 122
4.20.1 Inorganics 122
4.20.2 Volatile Organic Compounds 123
4.20.3. Semi-Volatile Organic Compounds 123
4.20.4 Pesticides and Herbicides 123
4.20.5 Explosives and Propellants 123
4.20.6 PCBs 123
4.21 Load Line 12 123
4.21.1 Inorganics 123
4.21.2 Volatile Organic Compounds 124
4.21.3. Semi-Volatile Organic Compounds 124

Table of Contents (cont.)

Section Page

4.21.4 Pesticides and Herbicides 124
4.21.5 Explosives and Propellants 124
4.21.6 PCBs 125
4.22 Landfill North of Winklepeck....125
4.22.1 Inorganics....125
4.22.2 Volatile Organic Compounds 125
4.22.3. Semi-Volatile Organic Compounds....125
4.22.4 Pesticides and Herbicides 125
4.22.5 Explosives and Propellants 125
4.22.6 PCBs 125
4.23 Suspected Mustard Agent Burial Grounds 126
4.23.1 Inorganics....126
4.23.2 Volatile Organic Compounds 126
4.23.3. Semi-Volatile Organic Compounds....126
4.23.4 Pesticides and Herbicides 126
4.23.5 Explosives and Propellants 126
4.23.6 PCBs 126
4.24 NACA Test Area....127
4.24.1 Inorganics....127
4.24.2 Volatile Organic Compounds 127
4.24.3. Semi-Volatile Organic Compounds....127
4.24.4 Pesticides and Herbicides 127
4.24.5 Explosives and Propellants 127
4.24.6 PCBs 128
4.25 Ramsdell Quarry Landfill 128
4.25.1 Inorganics....128
4.25.2 Volatile Organic Compounds 128
4.25.3. Semi-Volatile Organic Compounds....128
4.25.4 Pesticides and Herbicides 129
4.25.5 Explosives and Propellants 129
4.25.6 PCBs 129
4.26 Winklepeck Burning Grounds 129
4.26.1 Inorganics....129
4.26.2 Volatile Organic Compounds 129
4.26.3. Semi-Volatile Organic Compounds....129
4.26.4 Pesticides and Herbicides 129
4.26.5 Explosives and Propellants 130
4.26.6 PCBs 130
4.27 MCL and Region 9 PRG Exceedances....130
4.27.1 Inorganics....130
4.27.2 Semivolatile Organic Compounds....131
4.27.3 Pesticides and Herbicides 131

Table of Contents (cont.)

Section Page

4.27.4 Explosives and Propellants 131
4.27.5 PCBs 131

4.28 Assessment of Groundwater Remedial Action Effectiveness 131

SECTION 5 FWGWMP ANNUAL RECOMMENDATIONS/REVIEW 132
5.1 FWGWMP Recommendations 132
5.2 Background Well Issues 132
SECTION 6 REFERENCES.....134

Table of Contents (cont.)

Section Page

List of Figures

1-1 RVAAP General Location Map....2
1-2 RVAAP Facility Map....3

List of Tables

1-1 Proposed 2010 FWGWMP Well Schedule....9
2-1 Well Installation Summary....21
3-1 Depth to Water and Potentiometric Elevation (Jan 2009)....23
3-2 Well Construction Details Including Jan 2009 Depth to Bottom....33
3-3 Groundwater Elevations....34
3-4 Well Inspection Summary (July 2008)....43
3-5 Well Development (June 2009)....49
3-6 Well Development (September 2009)....52
4-1 Primary COPCs at the RVAAP Facility....54
4-2 Summary of Constituents Detected – October 2008-July 2009....56
4-3 RVAAP Facility-wide Background Criteria....90
4-4 Exceedances of MCLs and Region 9 PRGs....92
4-5 Wells and Constituents with Time-Trend Graphs....100

Appendices

Appendix A Correspondence Documenting the Change in Wells to be Sampled
Appendix B List of Wells Sampled
Appendix C Deep Bedrock Well Installation Report
Appendix D Water Level Measurement Field Sheets
Appendix E Well Inspection Sheets
Appendix F Time-Trend Graphs
Appendix G Maps of FWGWMP Study Areas
Appendix H Reporting Limits that Currently Do Not Meet the RVAAP QAPP PQLs and/or Region 9 PRGs
Appendix I Nitrate/Nitrite Correspondence and Case Narratives
Appendix J Correspondence & Comment/Response Table

Plates

Plate 1 Monitoring Wells at RVAAP
Plate 2 Potentiometric Map of Unconsolidated Aquifer (January 2009)
Plate 3 Potentiometric Surface of Bedrock – Homewood and Sharon Aquifer (January 2009)

LIST OF GENERAL ACRONYMS

AGS	Above Ground Surface
amsl	Above Mean Sea Level
AOC	Area of Concern
BGS	Below Ground Surface
BTOC	Bottom of Casing
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
DOD	Department of Defense
EPA	Environmental Protection Agency
EQM	Environmental Quality Management, Inc.
ºF	Degrees Fahrenheit
FWGWMP	Facility-wide Groundwater Monitoring Program
FWSAP	Facility-wide Sampling and Analysis Plan
GOCO	Government Owned, Contractor Operated
IRP	Installation Restoration Program
LCS	Laboratory Control Sample
LCG	Louisville Chemistry Guidelines
IDW	Investigation Derived Waste
µg/L	microgram per Liter
MARC	Multiple Award Remediation Contract
MCL	Maximum Contaminant Level
mw	Monitoring Well
NOAA	National Oceanographic and Atmospheric Administration
OHARNG	Ohio Army National Guard
PCB	Polychlorinated Biphenyl
PQLs	Practical Quantitation Limits
PRGs	Preliminary Remediation Goals
PVC	Polyvinyl Chloride
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
RIs	Remedial Investigations
RLs	Reporting Limits
RTLS	Ravenna Training and Logistics Site
RVAAP	Ravenna Army Ammunition Plant
SCF	Sharon Conglomerate Formation
SVOC	Semi-volatile Organic Compound
TA	TestAmerica
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USP&FO	United States Property and Fiscal Officer
VOC	Volatile organic compound

LIST OF AREA OF CONCERN ACRONYMS

B12	Building 1200
BKG	Background
CBL	C-Block
CBP	Central Burn Pits
CP	Cobbs Pond
DA2	Demolition Area #2
EBG	Erie Burning Grounds
FBQ	Fuze and Booster Quarry
LNW	Landfill North of Winklepeck
LL	Load Line
MBS	Mustard Burial Site
NACA	National Advisory Committee for Aeronautics
NTA	NACA Test Area
RQL	Ramsdale Quarry Landfill
WBG	Winklepeck Burning Grounds

SECTION 1

INTRODUCTION

1.1 Facility Description

Past Department of Defense (DOD) activities at the Ravenna Army Ammunition Plant (RVAAP) date to 1940 and include the manufacturing, loading, handling and storage of military explosives and ammunition. Until 1999, the RVAAP was identified as a 21,419-acre installation. The property boundary was resurveyed by the Ohio Army National Guard (OHARNG) over a two year period from 2002 and 2003 and the actual total acreage of the property was found to be 21,683.289 acres. As of February 2006, a total of 20,403 acres of the former 21,683 acre RVAAP have been transferred to the United States Property and Fiscal Officer (USP&FO) for Ohio for use by the OHARNG as a military training site. The current RVAAP consists of 1,280 acres in several distinct parcels scattered throughout the confines of the OHARNG Camp Ravenna Joint Military Training Center (Camp Ravenna). The RVAAP and Camp Ravenna are collocated on contiguous parcels of property and Camp Ravenna perimeter fence completely encloses the remaining parcels of the RVAAP. Camp Ravenna is in northeastern Ohio within Portage and Trumbull Counties, approximately 4.8 kilometers (3 miles) east-northeast of the city of Ravenna and approximately 1.6 kilometers (1 mile) northwest of the city of Newton Falls (Figure 1-1). The RVAAP portions of the property are solely located within Portage County. Camp Ravenna (inclusive of the RVAAP) is a parcel of property approximately 17.7 kilometers (11 miles) long and 5.6 kilometers (3.5 miles) wide bounded by State Route 5, the Michael J. Kirwan Reservoir, and the CSX System Railroad on the south; Garret, McCormick, and Berry roads on the west; the Norfolk Southern Railroad on the north; and State Route 534 on the east (see Figures 1-1 and 1-2). Camp Ravenna is surrounded by several communities: Windham on the north; Garrettsville 9.6 kilometers (6 miles) to the northwest; Newton Falls 1.6 kilometers (1 mile) to the southeast; Charlestown to the southwest; and Wayland 4.8 kilometers (3 miles) to the south. When the RVAAP was operational Camp Ravenna did not exist and the entire 21,683-acre parcel was a government-owned, contractor-operated (GOCO) industrial facility. The RVAAP Installation Restoration Program (IRP) encompasses investigation and cleanup of past activities over the entire 21,683 acres of the former RVAAP and therefore references to the RVAAP in this document are considered to be inclusive of the historical extent of the RVAAP, which is inclusive of the combined acreages of the current Camp Ravenna and RVAAP, unless otherwise specifically stated.

1.2 Project Description

In 2004 the U.S. Army and the Ohio EPA finalized the Facility-Wide Groundwater Monitoring Program (FWGWMP) Plan which details the requirements of the program. The FWGWMP was initiated in 2005 with three consecutive quarters of FWGWMP well sampling. Quarterly sampling has continued through the current monitoring event. The

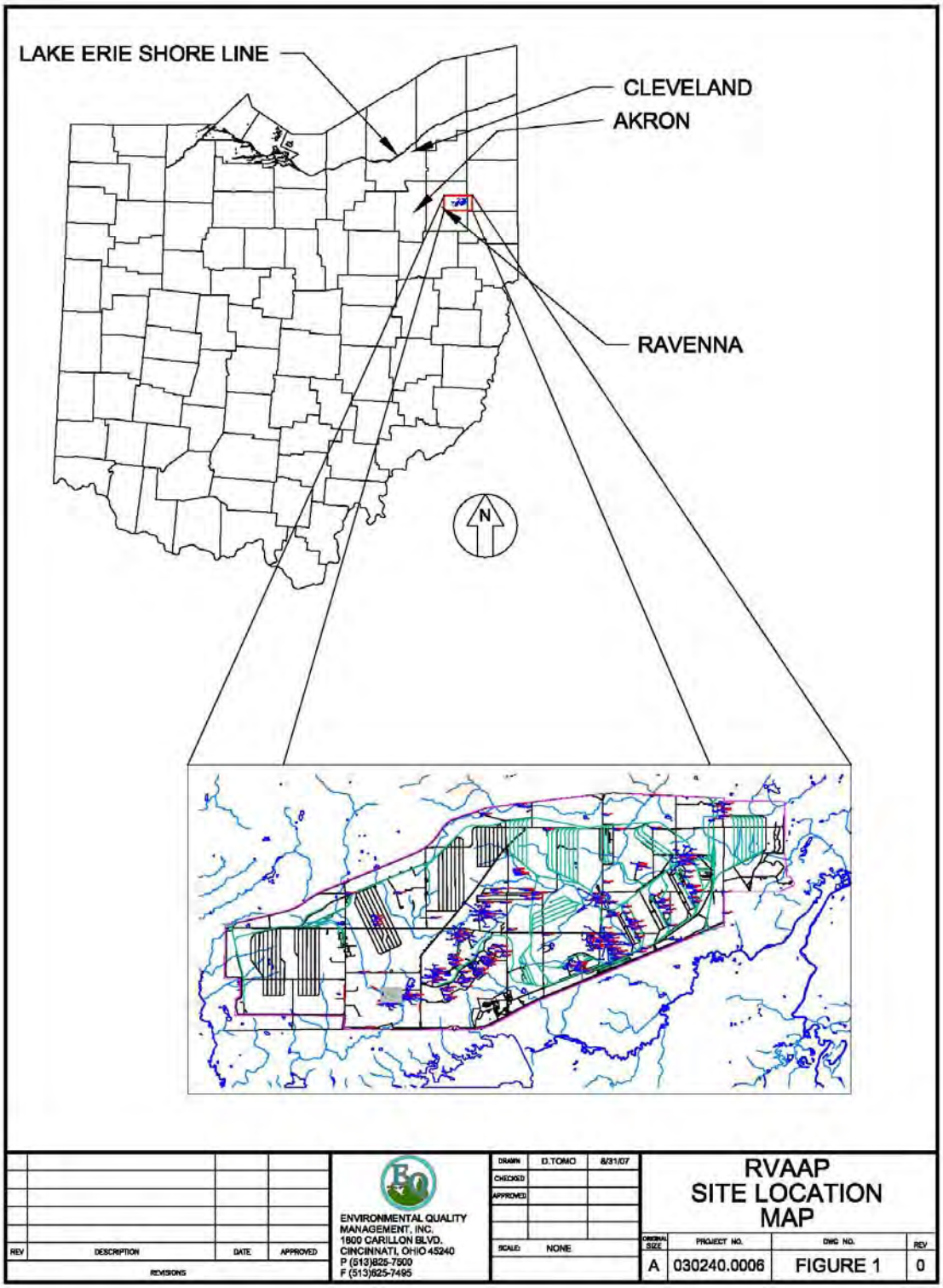


Figure 1-1 General Location Map

Figure 1-2 RVAAP Facility Map

initial FWGWMP wells identified for monitoring were sampled once every quarter, with the exception of the 5 Resource Conservation and Recovery Act (RCRA) wells that include Ramsdell Quarry Landfill (RQL) wells RQLmw-007, -008, and -009, and two Demolition (DA) Area 2 wells, DA2mw-DETmw-003 and DETmw-004. The RQL and DA2 wells are sampled twice a year, during the second (April) and fourth (October) sampling events.

Details of the program design and requirements are contained in the *RVAAP Facility-Wide Groundwater Monitoring Program Plan*, Portage Environmental, September 2004. This document contains the Facility-Wide Sampling and Analysis Plan (FWSAP), Site Safety and Health Plan, and Quality Assurance Project Plan addenda that pertain to the proposed work. Additional details pertaining to performance of field and laboratory activities are contained in the *RVAAP Facility-Wide Sampling and Analysis Plan/Quality Assurance Project Plan (FWSAP)*, SAIC, March 2001. As detailed in the FWGWMPP, the initial monitoring program consisted of the sampling of 36 wells specified in Table 4-1 of the FWGWMPP. Fourteen of these wells are "Background Wells"; the remainder are wells situated at various Areas of Concern (AOCs) at RVAAP. The first sampling event for this project was conducted in April 2005. The results of the previous FWGWMP sampling events are presented in the reports referenced in Section 4 of this report. The final assessment monitoring event for the initial well sampling and analysis was completed in October 2007. The current monitoring schedule and list of wells is presented in Section 1.5.

1.2.2 Annual Report

By agreement with the U.S. Army and the Ohio EPA and in accordance with Amendment No. 1 to the FWGWMP Plan, the Annual Report for 2009 summarizes the October 2008, as well as the January, April, and July, 2009 sampling events. Amendment No. 1 changed the annual reporting period from 1 January – 31 December to 1 October – 30 September. The change to the program was made so that the Annual Report for 2006 would include monitoring activities performed in the 4th quarter of 2005, and the 1st, 2nd, and 3rd quarters of 2006. Subsequent annual monitoring periods would also follow this pattern, such as the 2007 annual report, which covers the fourth quarter of 2006 and the first, second, and third quarters of 2007. This change was made because it was discovered that requiring the 4th quarter data to be included in the current years' Annual Report did not allow sufficient time to collect samples, analyze samples, verify and validate data, assess results and still make the December deadline (Milestone date) for including these results in the Annual Report.

The results of the sampling events covered under this Annual Report are presented in the following documents:

- *Facility- Wide Groundwater Monitoring Program, Report on the October 2008 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio* dated June 15, 2009.

- *Facility- Wide Groundwater Monitoring Program, Report on the January 2009 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio* dated July 21, 2009.

- *Facility- Wide Groundwater Monitoring Program, Report on the April 2009 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio* dated August 21, 2009.

- *Facility- Wide Groundwater Monitoring Program, Report on the July 2009 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio* dated November 2, 2009.

The results for the October 2009 sampling event will be submitted in a separate document and will be summarized in the Annual Report for 2010.

1.3 Summary of the Scope of Work for 2008-09

Environmental Quality Management, Inc. (EQM) was contracted (MARC Contract Number W912QR-04-D-0036) by the U.S. Army Corps of Engineers, Louisville District (USACE) to conduct the 2007 FWGWMP monitoring program beginning in April 2007. Prior to the April 2007 monitoring event, SpecPro conducted groundwater monitoring activities under the FWGWMP. The objective of this project is to continue quarterly monitoring 2008-09 under the RVAAP Facility-wide Groundwater Monitoring Program. The following tasks were performed in accordance with specifications contained in the FWGWMP Plan, the FWSAP, and the Scope of Work written by the USACE:

- Performed groundwater sampling of select wells for four consecutive quarters. The wells sampled are identified in Section 1.5.1 of this report. The wells were sampled by EQM. RQL (3 wells) and DA2 wells (DET-3 and DET-4) were only sampled in October 2007 and April 2008 as required under RCRA requirements.

- Water-level measurements from the 237 RVAAP monitoring wells were measured immediately prior to the January 2009 sampling event which were used to generate updated potentiometric maps. The next scheduled water level measurement event for all wells is January 2010.

- Performed laboratory analyses and data validation for the collected samples.

- Reduced quarterly data and preparation of individual sampling event reports.

- Prepared the requisite Investigation Derived Waste (IDW) characterization, and disposal report.

- Prepared the 2009 annual report, including the overall program review requirement.

- Performed maintenance on selected groundwater monitoring wells.

1.4 Annual Report Requirements and Report Presentation

This report presents the FWGWMP 2009 Annual Report. The report is structured in the following way:

- Section 1 – Introduction
- Section 2 – Summary of Monitoring Wells Installed or Abandoned in 2009
- Section 3 – Summary of Annual FWGWMP Events
- Section 4 – Summary and Assessment of Annual FWGWMP Analytical Results
- Section 5 – FWGWMP Annual Recommendations/Review
- Section 6 – References

The appendices contain the following items:

- Appendix A – Correspondence Documenting the Change in Wells to be Sampled
- Appendix B – List of Wells Sampled
- Appendix C – Deep Bedrock Well Installation Report
- Appendix D – Water Level Measurement Field Sheets
- Appendix E – Well Inspection Sheets
- Appendix F – Time-Trend Graphs
- Appendix G – Maps of FWGWMP Study Areas
- Appendix H - Reporting Limits that Currently Do Not Meet the RVAAP QAPP Practical Quantitation Limits (PQLs) and/or Region 9 Preliminary Remediation Goals (PRGs)
- Appendix I Nitrate/Nitrite Correspondence and Case Narratives
- Appendix J Correspondence & Comment/Response Table

The following lists the information required for the annual report as detailed in Section 5.2 of the FWGWMP Plan, as well as where this information is presented in this report:

- An evaluation of the current groundwater flow direction(s) based on water-level elevation data collected in January 2009 is discussed in Section 3.1.

- An evaluation of the trends of contamination detected in groundwater, as well as an assessment of the effectiveness of any groundwater remediation activities is presented in Section 4.0.

- The plots of concentration trends are presented in Appendix F, and are discussed in Section 4.0

- The facility map is presented in Section 1.0. The monitoring well network map and groundwater flow maps are presented in Plates 1, 2, and 3. Additional FWGWMP monitoring well locations are shown in Appendix G.

- The results of the monitoring well inspections are presented in Appendix E and summarized in Section 3.2.
- FWGWMP annual recommendations and review are presented in Section 5.0.

1.5 Changes to the FWGWMP in 2009

The following changes were made to the FWGWMP during sampling and analysis for the 2009 reporting period.

1.5.1 Changes to Wells Being Monitored

On October 22, 2007 the United State Army Corps of Engineers (USACE) submitted to the Ohio Environmental Protection Agency (EPA) the *Draft Proposal to Update the Facility-Wide Ground Water Monitoring Program* (USACE October 2007) at the Ravenna Army Ammunition Plant. This proposal presented recommendations for modifications to the FWGWMP, the Director's Final Findings and Orders, and the Conceptual Plan in Appendix F of the Findings and Orders as presented below.

Section 3.1.2.2 of the FWGWMP Plan establishes a protocol for adding and removing wells from the FWGWMP: "Future wells installed as part of individual AOC investigations conducted under the ongoing Comprehensive Environmental Response Compensation and Liability Act (CERCLA) process at RVAAP will be evaluated for incorporation into the FWGWMP upon completion of at least four quarterly groundwater sampling events to be conducted as part of the Remedial Investigation (RI) phase at each AOC. The frequency of the initial sampling events may be other than quarterly if agreed upon by the Army and Ohio EPA". Based on this protocol the USACE notified the Ohio EPA on December 12, 2007 that the wells to be sampled would be changed effective with the January 2008 monitoring event. The Ohio EPA provided concurrence with this change in an email dated January 8, 2008. The Ohio EPA was notified of an additional change on February 27, 2008 increasing the number of wells to be sampled for the April 2008 event. The Ohio EPA was notified on March 21, 2008 that the number of FWGWMP wells to be sampled in April 2008 (and the July 2008, October 2008, and January 2009 events) would be increased to 132 plus the 5 RCRA wells sampled semi-annually (in order to complete 4 quarters of sampling for each of the 132 wells). Copies of this correspondence are presented in Appendix A.

Beginning with the April 2009 sampling event the remaining wells on the list contained in the *Draft Proposal to Update the Facility-Wide Ground Water Monitoring Program* (USACE October 2007) were sampled. The lists of FWGWMP wells monitored for each of the four quarters (October 2008, January 2009, April 2009, and July 2009) are presented in Appendix B.

1.5.2 Perchlorate Analysis

Performed perchlorate analysis per the modification approved by the Ohio EPA on August 6, 2007. Perchlorate analysis was performed on the wells identified in Section 4 of this report.

No other changes to the FWGWMP were implemented during the 2008-09 reporting period.

1.6 Changes to the FWGWMP for 2009-10

1.6.1 Geochemical Study

The USACE recently determined that a specialized geochemical study is needed to better characterize the background ground water quality at the site. The geochemical study is also necessary for optimization of the FWGWMPP. An addendum dated September 10, 2009 presented additional sampling and analysis activities to be conducted in support of the geochemical study as described below.

During the quarterly monitoring event in October 2009 the 51 wells scheduled for regular groundwater sampling and analysis for filtered metals analysis will also be sampled and analyzed for unfiltered metals. In conjunction with the October 2009 groundwater monitoring event, metals sampling will also be conducted at the remaining 186 additional wells at the facility. Each well will be sampled for filtered metals and unfiltered metals. The list of metals to be analyzed is consistent with Table 3.8 of the *Quality Assurance Project Plan for Environmental Investigations at the Ravenna Army Ammunition Plant March 2001*. Sampling and analysis procedures will follow the *Facility-Wide Sampling and Analysis Plan for Environmental Investigations at the Ravenna Army Ammunition Plant March 2001* and the 7 December 2006 Scope of Work for the groundwater monitoring program.

1.6.2 2010 Sampling

The RVAAP facility now has 237 existing wells, and 6 new deep Sharon Conglomerate Formation (SCF) wells that were installed in 2009. As such, the number of wells at the facility now totals 243. Consistent with the 20% requirement specified above, the USACE proposes to include approximately 48 wells each quarter or 192 wells (total) in the 2010 monitoring schedule.

Table 1-1 presents a summary of monitoring wells selected/proposed for inclusion in the 2010 FWGWMP. The wells selected for addition/deletion are discussed below:

Table 1-1: Proposed 2010 FWGWMP Well Schedule
Ravenna Army Ammunition Plant
Ravenna, Ohio

RVAAP Area	Location / Well ID	Monitored Zone	Proposed Sample Frequency	Proposed Analytical Parameters							Rationale For / Against Selection
				VOCs	SVOCs	Explosives & Propellants	Pesticides / PCBs	Metals / Cyanide	Nitrate/ Nitrite	Perchlorate (added Aug 07)	
Background	BKGmw-004	Unconsolidated	None								Four quarters completed.
	BKGmw-005	Unconsolidated	None								Four quarters completed.
	BKGmw-006	Sharon	None								Four quarters completed.
	BKGmw-008	Sharon	None								Four quarters completed.
	BKGmw-010	Sharon	None								Four quarters completed.
	BKGmw-012	Sharon	None								Four quarters completed.
	BKGmw-013	Unconsolidated	None								Four quarters completed.
	BKGmw-015	Sharon	None								Four quarters completed.
	BKGmw-016	Unconsolidated	None								Four quarters completed.
	BKGmw-017	Unconsolidated	None								Four quarters completed.
	BKGmw-018	Sharon	None								Four quarters completed.
	BKGmw-019	Unconsolidated	None								Four quarters completed.
	BKGmw-020	Unconsolidated	None								Four quarters completed.
	BKGmw-021	Unconsolidated	None								Four quarters completed.
Load Line 1	LL1mw-063	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL1mw-064	Unconsolidated	None								Four quarters completed.
	LL1mw-065	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL1mw-067	Sharon	Quarterly	√	√	√	√	√		√	Well added to FWGWMP for 2010. Previously excluded from expanded FWGWMP.
	LL1mw-078	Sharon	Annual	√	√	√	√	√		√	Incorporated well from FWGWMP Plan. Added to 2010 program for annual monitoring.
	LL1mw-079	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL1mw-080	Sharon	Annual	√	√	√	√	√		√	Incorporated well from FWGWMP Plan. Added to 2010 program for annual monitoring.
	LL1mw-081	Sharon	Quarterly	√	√	√	√	√		√	Well added to FWGWMP for 2010. Previously excluded from expanded FWGWMP.
	LL1mw-082	Sharon	Quarterly	√	√	√	√	√		√	Well added to FWGWMP for 2010. Previously excluded from expanded FWGWMP.
	LL1mw-083	Sharon	Annual	√	√	√	√	√		√	Incorporated well from FWGWMP Plan. Added to 2010 program for annual monitoring.
	LL1mw-084	Sharon	Quarterly	√	√	√	√	√		√	Well added to FWGWMP for 2010. Previously excluded from expanded FWGWMP.
	LL1mw-085	Sharon	Quarterly	√	√	√	√	√		√	Well added to FWGWMP for 2010. Previously excluded from expanded FWGWMP.
Load Line 2	LL2mw-059	Sharon	Annual	√	√	√	√	√		√	Incorporated well from FWGWMP Plan. Added to 2010 program for annual monitoring.
	LL2mw-060	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL2mw-261	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.

Table 1-1: Proposed 2010 FWGWMP Well Schedule
Ravenna Army Ammunition Plant
Ravenna, Ohio

RVAAP Area	Location / Well ID	Monitored Zone	Proposed Sample Frequency	Proposed Analytical Parameters							Rationale For / Against Selection
				VOCs	SVOCs	Explosives & Propellants	Pesticides / PCBs	Metals / Cyanide	Nitrate/ Nitrite	Perchlorate (added Aug 07)	
Load Line 2	LL2mw-262	Sharon	Annual	√	√	√	√	√		√	Incorporated well from FWGWMP Plan. Added to 2010 program for annual monitoring.
	LL2mw-263	Sharon	Annual	√	√	√	√	√		√	Incorporated well from FWGWMP Plan. Possible COPCs detected in recent groundwater samples. Added to 2010 program for annual monitoring.
	LL2mw-264	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL2mw-265	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL2mw-266	Sharon	Quarterly	√	√	√	√	√		√	Well added to FWGWMP for 2010. Previously excluded from expanded FWGWMP.
	LL2mw-267	Sharon	Quarterly	√	√	√	√	√		√	Well added to FWGWMP for 2010. Previously excluded from expanded FWGWMP.
	LL2mw-268	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL2mw-269	Sharon	Quarterly	√	√	√	√	√		√	Well added to FWGWMP for 2010. Previously excluded from expanded FWGWMP.
	LL2mw-270	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
Load Line 3	LL3mw-232	Sharon	None								Four quarters completed.
	LL3mw-233	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL3mw-234	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL3mw-235	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL3mw-236	Sharon	Quarterly	√	√	√	√	√		√	Well added to FWGWMP for 2010. Previously excluded from expanded FWGWMP.
	LL3mw-237	Sharon	Annual	√	√	√	√	√		√	Four quarters completed.
	LL3mw-238	Sharon	Annual	√	√	√	√	√		√	Incorporated well from FWGWMP Plan. Added to 2010 program for annual monitoring.
	LL3mw-239	Sharon	Quarterly	√	√	√	√	√		√	Well added to FWGWMP for 2010. Previously excluded from expanded FWGWMP.
	LL3mw-240	Sharon	None								Four quarters completed.
	LL3mw-241	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL3mw-242	Sharon	Annual	√	√	√	√	√		√	Incorporated well from FWGWMP Plan. Added to 2010 program for annual monitoring.
	LL3mw-243	Sharon	None								Four quarters completed.

Table 1-1: Proposed 2010 FWGWMP Well Schedule
Ravenna Army Ammunition Plant
Ravenna, Ohio

RVAAP Area	Location / Well ID	Monitored Zone	Proposed Sample Frequency	Proposed Analytical Parameters							Rationale For / Against Selection
				VOCs	SVOCs	Explosives & Propellants	Pesticides / PCBs	Metals / Cyanide	Nitrate/ Nitrite	Perchlorate (added Aug 07)	
Load Line 4	LL4mw-193	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL4mw-194	Unconsolidated	None								Four quarters completed.
	LL4mw-195	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL4mw-196	Unconsolidated	Quarterly	√	√	√	√	√		√	Well added to FWGWMP for 2010. Previously excluded from expanded FWGWMP.
	LL4mw-197	Unconsolidated	Quarterly	√	√	√	√	√		√	Well added to FWGWMP for 2010. Previously excluded from expanded FWGWMP.
	LL4mw-198	Unconsolidated	Annual	√	√	√	√	√		√	Incorporated well from FWGWMP Plan. Possible COPCs detected in recent groundwater samples. Added to 2010 program for annual monitoring.
	LL4mw-199	Unconsolidated	Annual	√	√	√	√	√		√	Incorporated well from FWGWMP Plan. Added to 2010 program for annual monitoring.
	LL4mw-200	Unconsolidated	None								Four quarters completed.
Load Line 5	LL5mw-001	Homewood	None								Four quarters completed.
	LL5mw-002	Homewood	None								Four quarters completed.
	LL5mw-003	Unconsolidated	None								Four quarters completed.
	LL5mw-004	Homewood	None								Four quarters completed.
	LL5mw-005	Homewood	None								Four quarters completed.
	LL5mw-006	Homewood	None								Four quarters completed.
Load Line 6	LL6mw-001	Unconsolidated	None								Four quarters completed.
	LL6mw-002	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL6mw-003	Homewood	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL6mw-004	Homewood	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL6mw-005	Homewood	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL6mw-006	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL6mw-007	Homewood	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
Load Line 7	LL7mw-001	Homewood	None								
	LL7mw-002	Homewood	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL7mw-003	Homewood	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL7mw-004	Homewood	None								Four quarters completed.
	LL7mw-005	Homewood	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL7mw-006	Homewood	None								Four quarters completed.

Table 1-1: Proposed 2010 FWGWMP Well Schedule
Ravenna Army Ammunition Plant
Ravenna, Ohio

RVAAP Area	Location / Well ID	Monitored Zone	Proposed Sample Frequency	Proposed Analytical Parameters							Rationale For / Against Selection
				VOCs	SVOCs	Explosives & Propellants	Pesticides / PCBs	Metals / Cyanide	Nitrate/ Nitrite	Perchlorate (added Aug 07)	
Load Line 8	LL8mw-001	Unconsolidated	None								Four quarters completed.
	LL8mw-002	Unconsolidated	None								Four quarters completed.
	LL8mw-003	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL8mw-004	Unconsolidated	None								Four quarters completed.
	LL8mw-005	Homewood	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL8mw-006	Homewood	None								Four quarters completed.
Load Line 9	LL9mw-001	Homewood	None								Four quarters completed.
	LL9mw-002	Homewood	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL9mw-003	Homewood	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL9mw-004	Homewood	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL9mw-005	Homewood	None								Four quarters completed.
	LL9mw-006	Homewood	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL9mw-007	Homewood	None								Four quarters completed.
Load Line 10	LL10mw-001	Homewood	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL10mw-002	Homewood	None								Four quarters completed.
	LL10mw-003	Homewood	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL10mw-004	Homewood	None								Four quarters completed.
	LL10mw-005	Homewood	None								Four quarters completed.
	LL10mw-006	Unconsolidated	None								Four quarters completed.
Load Line 11	LL11mw-001	Unconsolidated	None								Four quarters completed.
	LL11mw-002	Unconsolidated	Annual	√	√	√	√	√		√	Incorporated well from FWGWMP Plan. Added to 2010 program for annual monitoring.
	LL11mw-003	Unconsolidated	None								Four quarters completed.
	LL11mw-004	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL11mw-005	Unconsolidated	None								Four quarters completed.
	LL11mw-006	Unconsolidated	None								Four quarters completed.
	LL11mw-007	Unconsolidated	Annual	√	√	√	√	√		√	Incorporated well from FWGWMP Plan. Possible COPCs detected in recent groundwater samples. Added to 2010 program for annual monitoring.
	LL11mw-008	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL11mw-009	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LL11mw-010	Unconsolidated	None								Four quarters completed.

Table 1-1: Proposed 2010 FWGWMP Well Schedule
Ravenna Army Ammunition Plant
Ravenna, Ohio

RVAAP Area	Location / Well ID	Monitored Zone	Proposed Sample Frequency	Proposed Analytical Parameters							Rationale For / Against Selection
				VOCs	SVOCs	Explosives & Propellants	Pesticides / PCBs	Metals / Cyanide	Nitrate/ Nitrite	Perchlorate (added Aug 07)	
Load Line 12	LL12mw-088	Unconsolidated	Annual	√	√	√	√	√	√	√	Well selected for annual sampling in 2010 program to support the anticipated RA process and LTM for Load Line 12. Possible COPCs in recent groundwater samples.
	LL12mw-107	Unconsolidated	Annual	√	√	√	√	√	√	√	Well selected for annual sampling in 2010 program to support the anticipated RA process and LTM for Load Line 12. Possible COPCs in recent groundwater samples.
	LL12mw-113	Sharon Shale	Annual	√	√	√	√	√	√	√	Well selected for annual sampling in 2010 program to support the anticipated RA process and LTM for Load Line 12. Possible COPCs in recent groundwater samples.
	LL12mw-128	Unconsolidated	Annual	√	√	√	√	√	√	√	Well selected for annual sampling in 2010 program to support the anticipated RA process and LTM for Load Line 12. Possible COPCs in recent groundwater samples.
	LL12mw-153	Unconsolidated	Annual	√	√	√	√	√	√	√	Incorporated well from FWGWMP Plan. Possible COPCs detected in recent groundwater samples. Added to 2010 program for annual monitoring.
	LL12mw-154	Unconsolidated	Annual	√	√	√	√	√	√	√	
	LL12mw-182	Unconsolidated	Annual	√	√	√	√	√	√	√	Incorporated well from FWGWMP Plan. Possible COPCs detected in recent groundwater samples. Added to 2010 program for annual monitoring.
	LL12mw-183	Sharon Shale	Annual	√	√	√	√	√	√	√	Incorporated well from FWGWMP Plan. Possible COPCs detected in recent groundwater samples. Added to 2010 program for annual monitoring.
	LL12mw-184	Unconsolidated	Annual	√	√	√	√	√	√	√	
	LL12mw-185	Unconsolidated	Annual	√	√	√	√	√	√	√	Well selected for annual sampling in 2010 program to support the anticipated RA process and LTM for Load Line 12. Possible COPCs in recent groundwater samples.
	LL12mw-186	Sharon Shale	Annual	√	√	√	√	√	√	√	Incorporated well from FWGWMP Plan. Possible COPCs detected in recent groundwater samples. Added to 2010 program for annual monitoring.
	LL12mw-187	Unconsolidated	Annual	√	√	√	√	√	√	√	Well selected for annual sampling in 2010 program to support the anticipated RA process and LTM for Load Line 12. Possible COPCs in recent groundwater samples.
	LL12mw-188	Unconsolidated	Annual	√	√	√	√	√	√	√	
	LL12mw-189	Sharon Shale	Annual	√	√	√	√	√	√	√	
	LL12mw-242	Unconsolidated	Annual	√	√	√	√	√	√	√	Well selected for annual sampling in 2010 program to support the anticipated RA process and LTM for Load Line 12.
	LL12mw-243	Unconsolidated	Annual	√	√	√	√	√	√	√	
	LL12mw-244	Unconsolidated	Annual	√	√	√	√	√	√	√	

Table 1-1: Proposed 2010 FWGWMP Well Schedule
Ravenna Army Ammunition Plant
Ravenna, Ohio

RVAAP Area	Location / Well ID	Monitored Zone	Proposed Sample Frequency	Proposed Analytical Parameters							Rationale For / Against Selection
				VOCs	SVOCs	Explosives & Propellants	Pesticides / PCBs	Metals / Cyanide	Nitrate/ Nitrite	Perchlorate (added Aug 07)	
Load Line 12 con't	LL12mw-245	Unconsolidated	Annual	√	√	√	√	√	√	√	Well selected for annual sampling in 2010 program to support the anticipated RA process and LTM for Load Line 12. Possible COPCs in recent groundwater samples.
	LL12mw-246	Unconsolidated	Annual	√	√	√	√	√	√	√	Well selected for annual sampling in 2010 program to support the anticipated RA process and LTM for Load Line 12. Possible COPCs in recent groundwater samples.
Atlas Scrap Yard	ASYmw-001	Sharon	None								Four quarters completed.
	ASYmw-002	Sharon	None								Four quarters completed.
	ASYmw-003	Sharon	None								Four quarters completed.
	ASYmw-004	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	ASYmw-005	Sharon	None								Four quarters completed.
	ASYmw-006	Sharon	None								Four quarters completed.
	ASYmw-007	Unconsolidated	None								Four quarters completed.
	ASYmw-008	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	ASYmw-009	Sharon	None								Four quarters completed.
	ASYmw-010	Unconsolidated	None								Four quarters completed.
Building 1200	B12mw-010	Sharon	None								Four quarters completed.
	B12mw-011	Sharon	None								Four quarters completed.
	B12mw-012	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
C-Block Quarry	CBLmw-001	Homewood	None								Four quarters completed.
	CBLmw-002	Homewood	None								Four quarters completed.
	CBLmw-003	Homewood	None								Four quarters completed.
	CBLmw-004	Homewood	None								Four quarters completed.
Central Burn Pits	CBPmw-001	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	CBPmw-002	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	CBPmw-003	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	CBPmw-004	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	CBPmw-005	Unconsolidated	Annual	√	√	√	√	√		√	Incorporated well from FWGWMP Plan. Added to 2010 program for annual monitoring.
	CBPmw-006	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	CBPmw-007	Unconsolidated	Annual	√	√	√	√	√		√	Incorporated well from FWGWMP Plan. Added to 2010 program for annual monitoring.
	CBPmw-008	Unconsolidated	None								Four quarters completed.
Cobbs Pond	CPmw-001	Unconsolidated	None								Four quarters completed.
	CPmw-002	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.

Table 1-1: Proposed 2010 FWGWMP Well Schedule
Ravenna Army Ammunition Plant
Ravenna, Ohio

RVAAP Area	Location / Well ID	Monitored Zone	Proposed Sample Frequency	Proposed Analytical Parameters							Rationale For / Against Selection
				VOCs	SVOCs	Explosives & Propellants	Pesticides / PCBs	Metals / Cyanide	Nitrate/ Nitrite	Perchlorate (added Aug 07)	
Cobbs Pond con't	CPmw-003	Unconsolidated	None								Four quarters completed.
	CPmw-004	Unconsolidated	None								Four quarters completed.
	CPmw-005	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	CPmw-006	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
Open Demolition Area 2	DET-001B	Unconsolidated	None								Four quarters completed.
	DET-002	Unconsolidated	None								Four quarters completed.
	DET-003	Unconsolidated	Semi-Annual	√	√	√	√	√		√	RCRA well. Bi-Annual monitoring required by DFF&Os.
	DET-004	Unconsolidated	Semi-Annual	√	√	√	√	√		√	RCRA well. Bi-Annual monitoring required by DFF&Os.
	DA2mw-104	Unconsolidated	None								Four quarters completed.
	DA2mw-105	Unconsolidated	None								Four quarters completed.
	DA2mw-106	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	DA2mw-107	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	DA2mw-108	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	DA2mw-109	Unconsolidated	Quarterly	√	√	√	√	√		√	Well added to FWGWMP for 2010. Previously excluded from expanded FWGWMP.
	DA2mw-110	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	DA2mw-111	Unconsolidated	None								Four quarters completed.
	DA2mw-112	Unconsolidated	None								Four quarters completed.
	DA2mw-113	Unconsolidated	None								Four quarters completed.
Erie Burning Grounds	EBGmw-123	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	EBGmw-124	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	EBGmw-125	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	EBGmw-126	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	EBGmw-127	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	EBGmw-128	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	EBGmw-129	Unconsolidated	None								Four quarters completed.
	EBGmw-130	Unconsolidated	None								Four quarters completed.
Fuze and Booster Quarry	FBQmw-166	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	FBQmw-167	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.

Table 1-1: Proposed 2010 FWGWMP Well Schedule
Ravenna Army Ammunition Plant
Ravenna, Ohio

RVAAP Area	Location / Well ID	Monitored Zone	Proposed Sample Frequency	Proposed Analytical Parameters							Rationale For / Against Selection
				VOCs	SVOCs	Explosives & Propellants	Pesticides / PCBs	Metals / Cyanide	Nitrate/ Nitrite	Perchlorate (added Aug 07)	
Fuze and Booster Quarry cont.	FBQmw-168	Homewood	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	FBQmw-169	Homewood	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	FBQmw-170	Homewood	None								Four quarters completed.
	FBQmw-171	Homewood	None								Four quarters completed.
	FBQmw-172	Homewood	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	FBQmw-173	Homewood	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	FBQmw-174	Homewood	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	FBQmw-175	Homewood	None	√	√	√	√	√		√	Four quarters completed.
	FBQmw-176	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	FBQmw-177	Homewood	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
Landfill North of Winklepeck	LNWmw-024	Unconsolidated	None								Four quarters completed.
	LNWmw-025	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	LNWmw-026	Unconsolidated	None								Four quarters completed.
	LNWmw-027	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
NACA Test Area	NTAmw-107	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	NTAmw-108	Unconsolidated	None								Four quarters completed.
	NTAmw-109	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	NTAmw-110	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	NTAmw-111	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	NTAmw-112	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	NTAmw-113	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	NTAmw-114	Unconsolidated	None								Four quarters completed.
	NTAmw-115	Unconsolidated	None								Four quarters completed.
	NTAmw-116	Unconsolidated	None								Four quarters completed.
	NTAmw-117	Unconsolidated	None								Four quarters completed.
	NTAmw-118	Unconsolidated	None								Four quarters completed.

Table 1-1: Proposed 2010 FWGWMP Well Schedule
Ravenna Army Ammunition Plant
Ravenna, Ohio

RVAAP Area	Location / Well ID	Monitored Zone	Proposed Sample Frequency	Proposed Analytical Parameters							Rationale For / Against Selection
				VOCs	SVOCs	Explosives & Propellants	Pesticides / PCBs	Metals / Cyanide	Nitrate/ Nitrite	Perchlorate (added Aug 07)	
Ramsdell Quarry Landfill	RQLmw-006	Sharon	None								Four quarters completed.
	RQLmw-007	Sharon	Semi-Annual	√	√	√	√	√		√	RCRA well. Bi-Annual monitoring required by DFF&Os.
	RQLmw-008	Sharon	Semi-Annual	√	√	√	√	√		√	RCRA well. Bi-Annual monitoring required by DFF&Os.
	RQLmw-009	Sharon	Semi-Annual	√	√	√	√	√		√	RCRA well. Bi-Annual monitoring required by DFF&Os.
	RQLmw-010	Sharon	None								Four quarters completed.
	RQLmw-011	Sharon	None								Four quarters completed.
	RQLmw-012	Sharon	None								Four quarters completed.
	RQLmw-013	Sharon	None								Four quarters completed.
	RQLmw-014	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	RQLmw-015	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	RQLmw-016	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	RQLmw-017	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
Winklepeck Burning Grounds	WBGmw-005	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	WBGmw-006	Unconsolidated	Annual	√	√	√	√	√		√	Incorporated well from FWGWMP Plan. Added to 2010 program for annual monitoring.
	WBGmw-007	Unconsolidated	Annual	√	√	√	√	√		√	Incorporated well from FWGWMP Plan. Added to 2010 program for annual monitoring.
	WBGmw-008	Unconsolidated	Annual	√	√	√	√	√		√	Incorporated well from FWGWMP Plan. Added to 2010 program for annual monitoring.
	WBGmw-009	Unconsolidated	Annual	√	√	√	√	√		√	Incorporated well from FWGWMP Plan. Added to 2010 program for annual monitoring.
	WBGmw-010	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	WBGmw-011	Unconsolidated	None								Four quarters completed.
	WBGmw-012	Unconsolidated	None								Four quarters completed.
	WBGmw-013	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	WBGmw-014	Unconsolidated	None								Four quarters completed.
	WBGmw-015	Unconsolidated	None								Four quarters completed.
	WBGmw-016	Unconsolidated	None								Four quarters completed.
	WBGmw-017	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.

Table 1-1: Proposed 2010 FWGWMP Well Schedule
Ravenna Army Ammunition Plant
Ravenna, Ohio

RVAAP Area	Location / Well ID	Monitored Zone	Proposed Sample Frequency	Proposed Analytical Parameters							Rationale For / Against Selection
				VOCs	SVOCs	Explosives & Propellants	Pesticides / PCBs	Metals / Cyanide	Nitrate/ Nitrite	Perchlorate (added Aug 07)	
Suspected Mustard Agent Burial Site	MBS-001	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	MBS-002	Unconsolidated	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. Potential COPCs detected in recent groundwater samples.
	MBS-003	Unconsolidated	None								Four quarters completed.
	MBS-004	Unconsolidated	None								Four quarters completed.
	MBS-005	Unconsolidated	None								Four quarters completed.
	MBS-006	Unconsolidated	None								Four quarters completed.
Facility-Wide Groundwater: Basal Sharon Conglomerate Wells	SCFmw-001	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. January 2011 monitoring event will represent first annual monitoring following initial characterization.
	SCFmw-002	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. January 2011 monitoring event will represent first annual monitoring following initial characterization.
	SCFmw-003	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. January 2011 monitoring event will represent first annual monitoring following initial characterization.
	SCFmw-004	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. January 2011 monitoring event will represent first annual monitoring following initial characterization.
	SCFmw-005	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. January 2011 monitoring event will represent first annual monitoring following initial characterization.
	SCFmw-006	Sharon	Annual	√	√	√	√	√		√	Well added to FWGWMP for 2010. January 2011 monitoring event will represent first annual monitoring following initial characterization.

FWGWMP CERCLA Wells - Highlighted Red
FWGWMP RCRA Wells - Highlighted Blue

Existing Wells

The existing wells in the FWGWMP consist of the former RCRA wells associated with the Ramsdell Quarry Landfill and Open Detonation Area #2, and select CERCLA wells. The wells are specified in the 2004 FWGWMP Plan. The USACE proposes to include the wells from the existing FWGWMP in the 2010 monitoring schedule.

Addition of New Wells

The six (6) new deep SCF wells will continue to be sampled through January 2010 under the PBA-2008 contract with SAIC. This will conclude four consecutive quarters of monitoring, and provide the data necessary for SAIC's evaluation of the Sharon Conglomerate. Separately from SAIC's PBA-2008 study, the USACE proposes to include the 6 new SCF wells in the 2010 monitoring schedule.

Addition of Wells Excluded from the Expanded FWGWMP

Upon review of the summary of well sampling events, it was noted that several existing wells at the RVAAP facility were excluded from the expanded monitoring program conducted in 2008 and 2009. These wells have not been included in four consecutive quarterly monitoring events, and there are no plans to include them in the remaining 2009 program. The excluded wells were originally scheduled for groundwater monitoring under a former USACE contract with Shaw. Shaw's groundwater monitoring task was de-scoped (reasons unknown) in 2008, and the wells were mistakenly left out of the 2008-2009 expanded FWGWMP schedule.

As a result of their exclusion from the monitoring program, the USACE now proposes to add these wells to the 2010 FWGWMP program. The applicable wells are listed as follows:

Load Line 1	Load Line 2
LL1mw-067	LL2mw-266
LL1mw-081	LL2mw-267
LL1mw-082	LL2mw-269
LL1mw-084	
LL1mw-085	

Load Line 3	Load Line 4
LL3mw-236	LL4mw-196
LL3mw-239	

Addition of Wells Proposed for LTM at Load Line 12

The draft *Feasibility Study (FS) for Groundwater at RVAAP-12 Load Line 12* , dated November 6, 2009, resulted in conclusions and recommendations for the use of Institution Controls with Monitored Natural Attenuation (MNA). As discussed in Section

6.2.2.3 of the FS document, the proposed monitoring for MNA included the annual sampling of the following existing groundwater monitoring wells for arsenic and nitrate:

- LL12mw-088 (Arsenic Source Well)
- LL12mw-107 (MNA Well)
- LL12mw-113 (Arsenic Source Well)
- LL12mw-128 (Arsenic Source Well)
- LL12mw-153 (Arsenic Source Well)
- LL12mw-182 (Arsenic Source Well)
- LL12mw-183 (Arsenic Source Well)
- LL12mw-185 (Arsenic Source Well)
- LL12mw-187 (Nitrate Source Well)
- LL12mw-189 (Arsenic Source Well)
- LL12mw-242 (Arsenic Source Well)
- LL12mw-245 (Arsenic Source Well)
- LL12mw-246 (Arsenic Source Well)

The USACE recommends and proposes “addition” of the above-listed existing wells for at least one quarterly monitoring event in the 2010 FWGWMP. The purpose is to continue the recommended annual sampling event (to maintain annual data continuity). This effort will support the anticipated RA process and LTM for Load Line 12.

Addition of Wells Exhibiting Possible COPCs

Section 4.0 of this report presents a summary of the COPCs currently identified in groundwater samples collected from specific wells at each AOC.

SECTION 2

SUMMARY OF WELLS INSTALLED OR ABANDONED IN 2009

During the 2009 reporting period six deep bedrock wells were installed in the Basal Sharon Conglomerate underlying the facility. This project was completed by SAIC. Table 2-1 presents the well installation information for these wells. The complete report detailing the well installations, including the boring logs, is presented in Appendix C.

Table 2-1. Well Installation Summary

Well Installation Information Well ID	Depth To Bedrock (ft bgs)	Depth of Outer Casing (ft bgs)	Borehole Depth (ft bgs)	Well Installation Depth (ft bgs)	Screened Interval (ft bgs)
SCFmw-001	32.5	35	230	211	201 - 211
SCFmw-002	24	30	153	147	137 - 147
SCFmw-003	10	15	140	135.5	125.5 – 135.5
SCFmw-004	50	60	120	110	100 - 110
SCFmw-005	4.75	10	160.1	154	139 - 154
SCFmw-006	53.7	60	90	86	76 - 86

SECTION 3

SUMMARY OF 2008-09 FWGWMP EVENTS

3.1 Groundwater Elevation Monitoring

Groundwater elevations were measured at 237 RVAAP monitoring wells on January 13-14, 19-20, and 27, 2009. The locations of monitoring wells at RVAAP are shown on Plate 1. The water level measurement field sheets are presented in Appendix D. Note that water levels and elevations for the SCF deep wells were conducted by SAIC during installation of the wells in 2009.

Water-level measurements were made in accordance with procedures in Section 4.3.3.1 of the RVAAP Facility-Wide Sampling and Analysis Plan (SAIC, 2001). Water-level measurements were made from the top of the inner casing to the top of the groundwater surface using an electronic measuring tape. The depth to the bottom of the well from the top of the inner casing also was measured with the electronic measuring tape. Depth-to-water and groundwater elevations for the RVAAP wells are presented in Table 3-1. Well construction details and depth to well bottom are presented in Table 3-2.

Each monitoring well was inspected at the time of water-level measurement and the results are discussed in Section 3.2. The monitoring well inspection sheets are presented in Appendix E**.**

Two RVAAP-wide potentiometric maps have been prepared. These maps represent the upper unconsolidated aquifer (Plate 2) and the deeper bedrock system (Plate 3) including the new deep wells. The bedrock system is differentiated by geologic formation to represent the Homewood Member of the Pennsylvania-age Pottsville Formation in the western half of the facility and the Sharon Member of the Pottsville Formation in the eastern half of the facility, per methods suggested by the USACE (Hockett, 2007). Note that 4 wells in Load Line 12 have been designated as being completed in the Sharon Shale. These four wells were not used to prepare the potentiometric maps. Additionally, the groundwater elevations from the new Sharon Conglomerate wells were evaluated and determined not to be representative of either the Homewood or the Sharon aquifers, therefore they were not used to determine the potentiometric contours. The groundwater elevations for these wells will be further evaluated after the next groundwater elevation monitoring event for all wells (January 2010).

Because of the variability of monitoring well density at RVAAP, the facility-wide potentiometric maps are general representations of groundwater flow patterns. If desired, the data collected in January 2009 and presented in Table 3-1 can be used to create a more detailed representation of potentiometric conditions for individual areas (e.g., southeastern (Load Lines 1 through 4 area) or central (Fuze and Booster Quarry, Demolition Area 2, and Winklepeck Burning Grounds, etc.) of RVAAP.

Table 3-1. Depth to Water and Potentiometric Elevation (January 2009)

RVAAP Area	Well ID	Monitored Zone	TOC Elevation (ft, amsl)	January 2009 Depth to Water (ft, BTOC)	Potentiometric Elevation January 2009 (ft, amsl)
Background	BKGmw-004	Unconsolidated	967.66	14.31	953.35
	BKGmw-005	Unconsolidated	1151.94	11.22	1140.72
	BKGmw-006	Sharon	1028.88	23.01	1005.87
	BKGmw-008	Sharon	972.90	18.81	954.09
	BKGmw-010	Sharon	1006.18	15.42	990.76
	BKGmw-012	Sharon	1000.07	8.50	991.57
	BKGmw-013	Unconsolidated	989.09	12.46	976.63
	BKGmw-015	Sharon	1040.40	48.90	991.50
	BKGmw-016	Unconsolidated	1100.92	5.72	1095.20
	BKGmw-017	Unconsolidated	1135.30	17.52	1117.78
	BKGmw-018	Sharon	1045.56	16.24	1029.32
	BKGmw-019	Unconsolidated	1110.74	21.22	1089.52
	BKGmw-020	Unconsolidated	1067.50	8.60	1058.90
	BKGmw-021	Unconsolidated	974.66	19.20	955.46
Load Line 1	LL1mw-063	Sharon	994.84	29.89	964.95
	LL1mw-064	Unconsolidated	935.10	2.15	932.95
	LL1mw-065	Unconsolidated	944.41	11.94	932.47
	LL1mw-067	Sharon	980.36	20.94	959.42
	LL1mw-078	Sharon	995.84	33.96	961.88
	LL1mw-079	Sharon	997.87	33.89	963.98
	LL1mw-080	Sharon	996.27	10.62	985.65
	LL1mw-081	Sharon	998.92	31.90	967.02
	LL1mw-082	Sharon	1006.45	31.35	975.10
	LL1mw-083	Sharon	995.20	35.00	960.20
	LL1mw-084	Sharon	998.73	29.25	969.48
	LL1mw-085	Sharon	996.84	36.17	960.67
Load Line 2	LL2mw-059	Sharon	966.67	14.58	952.09
	LL2mw-060	Sharon	961.57	9.96	951.61
	LL2mw-261	Sharon	1011.40	6.92	1004.48
	LL2mw-262	Sharon	1012.62	8.81	1003.81
	LL2mw-263	Sharon	1011.47	8.15	1003.32
	LL2mw-264	Sharon	1011.88	6.21	1005.67
	LL2mw-265	Sharon	961.24	9.82	951.42
	LL2mw-266	Sharon	1016.28	11.90	1004.38
	LL2mw-267	Sharon	1014.81	9.00	1005.81
	LL2mw-268	Sharon	1017.28	14.28	1003.00
	LL2mw-269	Sharon	1011.62	16.67	994.95
	LL2mw-270	Sharon	1010.18	7.62	1002.56
Load Line 3	LL3mw-232	Sharon	1000.41	22.13	978.28
	LL3mw-233	Sharon	1004.36	26.99	977.37
	LL3mw-234	Sharon	1006.56	10.11	996.45
	LL3mw-235	Sharon	1009.94	19.22	990.72
	LL3mw-236	Sharon	1011.17	17.29	993.88
	LL3mw-237	Sharon	1005.57	15.38	990.19
	LL3mw-238	Sharon	1006.91	15.52	991.39
	LL3mw-239	Sharon	1003.50	24.95	978.55
	LL3mw-240	Sharon	1007.52	28.71	978.81
	LL3mw-241	Sharon	994.65	9.65	985.00
	LL3mw-242	Sharon	999.32	15.42	983.90
	LL3mw-243	Sharon	991.16	12.98	978.18

Table 3-1. Depth to Water and Potentiometric Elevation (January 2009)

RVAAP Area	Well ID	Monitored Zone	TOC Elevation (ft, amsl)	January 2009 Depth to Water (ft, BTOC)	Potentiometric Elevation January 2009 (ft, amsl)
Load Line 4	LL4mw-193	Unconsolidated	982.92	6.72	976.20
	LL4mw-194	Unconsolidated	983.76	8.09	975.67
	LL4mw-195	Unconsolidated	982.59	10.36	972.23
	LL4mw-196	Unconsolidated	984.55	12.72	971.83
	LL4mw-197	Unconsolidated	985.46	14.16	971.30
	LL4mw-198	Unconsolidated	983.42	8.25	975.17
	LL4mw-199	Unconsolidated	977.28	7.49	969.79
	LL4mw-200	Unconsolidated	987.93	18.10	969.83
Load Line 5	LL5mw-001	Homewood	1127.92	20.03	1107.89
	LL5mw-002	Homewood	1128.68	20.85	1107.83
	LL5mw-003	Unconsolidated	1127.70	19.65	1108.05
	LL5mw-004	Homewood	1125.81	17.90	1107.91
	LL5mw-005	Homewood	1129.42	21.55	1107.87
	LL5mw-006	Homewood	1128.00	20.42	1107.58
Load Line 6	LL6mw-001	Unconsolidated	1124.16	13.51	1110.65
	LL6mw-002	Unconsolidated	1129.36	11.71	1117.65
	LL6mw-003	Homewood	1125.38	16.44	1108.94
	LL6mw-004	Homewood	1125.39	17.00	1108.39
	LL6mw-005	Homewood	1120.47	11.86	1108.61
	LL6mw-006	Unconsolidated	1124.37	15.22	1109.15
	LL6mw-007	Homewood	1115.62	5.50	1110.12
Load Line 7	LL7mw-001	Homewood	1129.64	20.35	1109.29
	LL7mw-002	Homewood	1129.55	15.62	1113.93
	LL7mw-003	Homewood	1120.84	11.23	1109.61
	LL7mw-004	Homewood	1126.32	14.75	1111.57
	LL7mw-005	Homewood	1135.87	21.64	1114.23
	LL7mw-006	Homewood	1123.56	10.38	1113.18
Load Line 8	LL8mw-001	Unconsolidated	1121.46	11.45	1110.01
	LL8mw-002	Unconsolidated	1124.51	18.27	1106.24
	LL8mw-003	Unconsolidated	1119.05	12.69	1106.36
	LL8mw-004	Unconsolidated	1115.75	10.87	1104.88
	LL8mw-005	Homewood	1115.73	13.78	1101.95
	LL8mw-006	Homewood	1117.17	19.70	1097.47
Load Line 9	LL9mw-001	Homewood	1134.62	15.01	1119.61
	LL9mw-002	Homewood	1127.30	10.69	1116.61
	LL9mw-003	Homewood	1135.76	11.43	1124.33
	LL9mw-004	Homewood	1131.83	21.21	1110.62
	LL9mw-005	Homewood	1130.93	16.10	1114.83
	LL9mw-006	Homewood	1129.88	18.92	1110.96
	LL9mw-007	Homewood	1119.99	9.30	1110.69
Load Line 10	LL10mw-001	Homewood	1132.77	25.10	1107.67
	LL10mw-002	Homewood	1127.13	17.80	1109.33
	LL10mw-003	Homewood	1130.28	20.95	1109.33
	LL10mw-004	Homewood	1122.39	13.42	1108.97
	LL10mw-005	Homewood	1125.67	15.75	1109.92
	LL10mw-006	Unconsolidated	1123.83	12.19	1111.64

Table 3-1. Depth to Water and Potentiometric Elevation (January 2009)

RVAAP Area	Well ID	Monitored Zone	TOC Elevation (ft, amsl)	January 2009 Depth to Water (ft, BTOC)	Potentiometric Elevation January 2009 (ft, amsl)
Load Line 11	LL11mw-001	Unconsolidated	1100.16	8.71	1091.45
	L L11mw-002	Unconsolidated	1080.00	1.59	1078.41
	LL11mw-003	Unconsolidated	1088.48	0.70	1087.78
	LL11mw-004	Unconsolidated	1084.72	0.40	1084.32
	LL11mw-005	Unconsolidated	1079.40	6.40	1073.00
	LL11mw-006	Unconsolidated	1086.50	3.49	1083.01
	LL11mw-007	Unconsolidated	1082.00	13.59	1068.41
	LL11mw-008	Unconsolidated	1087.74	3.68	1084.06
	LL11mw-009	Unconsolidated	1091.54	FROZEN	FROZEN
	LL11mw-010	Unconsolidated	1082.68	3.73	1078.95
Load Line 12	LL12mw-088	Unconsolidated	981.06	7.44	973.62
	LL12mw-107	Unconsolidated	980.15	9.85	970.30
	LL12mw-113	Sharon Shale	980.18	5.14	975.04
	LL12mw-128	Unconsolidated	978.24	10.12	968.12
	LL12mw-153	Unconsolidated	977.85	6.23	971.62
	LL12mw-154	Unconsolidated	979.06	8.94	970.12
	LL12mw-182	Unconsolidated	984.42	10.24	974.18
	LL12mw-183	Sharon Shale	982.98	12.63	970.35
	LL12mw-184	Unconsolidated	983.16	12.71	970.45
	LL12mw-185	Unconsolidated	981.31	8.24	973.07
	LL12mw-186	Sharon Shale	978.31	5.34	972.97
	LL12mw-187	Unconsolidated	979.94	9.52	970.42
	LL12mw-188	Unconsolidated	980.63	4.18	976.45
	LL12mw-189	Sharon Shale	978.04	3.42	974.62
	LL12mw-242	Unconsolidated	981.20	8.52	972.68
	LL12mw-243	Unconsolidated	980.79	9.63	971.16
	LL12mw-244	Unconsolidated	980.65	10.11	970.54
	LL12mw-245	Unconsolidated	980.04	8.93	971.11
	LL12mw-246	Unconsolidated	984.83	16.96	967.87
Atlas Scrap Yard	ASYmw-001	Sharon	981.13	12.65	968.48
	ASYmw-002	Sharon	985.24	16.36	968.88
	ASYmw-003	Sharon	982.21	13.60	968.61
	ASYmw-004	Sharon	979.66	10.02	969.64
	ASYmw-005	Sharon	979.80	8.28	971.52
	ASYmw-006	Sharon	983.01	14.76	968.25
	ASYmw-007	Unconsolidated	984.16	15.87	968.29
	ASYmw-008	Unconsolidated	978.85	5.11	973.74
	ASYmw-009	Sharon	982.70	13.51	969.19
	ASYmw-010	Unconsolidated	981.05	12.97	968.08
Building 1200	B12mw-010	Sharon	1005.92	19.15	986.77
	B12mw-011	Sharon	1006.70	23.43	983.27
	B12mw-012	Sharon	1006.32	24.72	981.60
C-Block Quarry	CBLmw-001	Homewood	1181.08	44.82	1136.26
	CBLmw-002	Homewood	1175.24	39.15	1136.09
	CBLmw-003	Homewood	1175.06	37.67	1137.39
	CBLmw-004	Homewood	1174.84	37.36	1137.48

Table 3-1. Depth to Water and Potentiometric Elevation (January 2009)

RVAAP Area	Well ID	Monitored Zone	TOC Elevation (ft, amsl)	January 2009 Depth to Water (ft, BTOC)	Potentiometric Elevation January 2009 (ft, amsl)
Central Burn Pits	CBPmw-001	Unconsolidated	975.84	13.85	961.99
	CBPmw-002	Unconsolidated	970.04	10.41	959.63
	CBPmw-003	Unconsolidated	974.67	12.69	961.98
	CBPmw-004	Unconsolidated	971.13	10.98	960.15
	CBPmw-005	Unconsolidated	971.59	12.21	959.38
	CBPmw-006	Unconsolidated	967.64	8.10	959.54
	CBPmw-007	Unconsolidated	976.37	16.29	960.08
	CBPmw-008	Unconsolidated	973.19	16.28	956.91
Cobbs Pond	CPmw-001	Unconsolidated	975.26	2.94	972.32
	CPmw-002	Unconsolidated	972.31	0.10	972.21
	CPmw-003	Unconsolidated	972.92	3.96	968.96
	CPmw-004	Unconsolidated	981.20	10.54	970.66
	CPmw-005	Unconsolidated	973.58	11.43	962.15
	CPmw-006	Unconsolidated	965.13	8.14	956.99
Demolition Area 2	DETmw-001B	Unconsolidated	1065.85	22.99	1042.86
	DETmw-002	Unconsolidated	1061.24	32.58	1028.66
	DETmw-003	Unconsolidated	1036.81	9.50	1027.31
	DETmw-004	Unconsolidated	1038.68	10.51	1028.17
	DA2mw-104	Unconsolidated	1073.89	21.62	1052.27
	DA2mw-105	Unconsolidated	1045.34	3.23	1042.11
	DA2mw-106	Unconsolidated	1043.79	3.65	1040.14
	DA2mw-107	Unconsolidated	1041.63	6.88	1034.75
	DA2mw-108	Unconsolidated	1032.36	5.79	1026.57
	DA2mw-109	Unconsolidated	1071.29	13.84	1057.45
	DA2mw-110	Unconsolidated	1063.78	8.15	1055.63
	DA2mw-111	Unconsolidated	1042.12	4.50	1037.62
	DA2mw-112	Unconsolidated	1037.44	7.28	1030.16
	DA2mw-113	Unconsolidated	1037.11	7.85	1029.26
Erie Burning Grounds	EBGmw-123	Unconsolidated	947.82	9.32	938.50
	EBGmw-124	Unconsolidated	941.39	2.98	938.41
	EBGmw-125	Unconsolidated	949.89	11.45	938.44
	EBGmw-126	Unconsolidated	940.61	1.99	938.62
	EBGmw-127	Unconsolidated	943.07	4.23	938.84
	EBGmw-128	Unconsolidated	945.13	6.31	938.82
	EBGmw-129	Unconsolidated	944.36	5.34	939.02
	EBGmw-130	Unconsolidated	944.00	6.09	937.91
Fuze and Booster Quarry	FBQmw-166	Unconsolidated	1108.86	4.71	1104.15
	FBQmw-167	Unconsolidated	1115.90	4.49	1111.41
	FBQmw-168	Homewood	1133.91	12.15	1121.76
	FBQmw-169	Homewood	1120.58	5.48	1115.10
	FBQmw-170	Homewood	1142.26	19.95	1122.31
	FBQmw-171	Homewood	1143.55	19.20	1124.35
	FBQmw-172	Homewood	1150.09	28.82	1121.27
	FBQmw-173	Homewood	1165.94	45.35	1120.59
	FBQmw-174	Homewood	1139.97	18.38	1121.59
	FBQmw-175	Homewood	1140.73	19.73	1121.00
	FBQmw-176	Unconsolidated	1131.91	9.53	1122.38
	FBQmw-177	Homewood	1128.57	13.31	1115.26

Table 3-1. Depth to Water and Potentiometric Elevation (January 2009)

RVAAP Area	Well ID	Monitored Zone	TOC Elevation (ft, amsl)	January 2009 Depth to Water (ft, BTOC)	Potentiometric Elevation January 2009 (ft, amsl)
Landfill North of Winklepeck	LNWmw-024	Unconsolidated	1038.00	12.42	1025.58
	LNWmw-025	Unconsolidated	1029.13	5.04	1024.09
	LNWmw-026	Unconsolidated	1027.80	3.87	1023.93
	LNWmw-027	Unconsolidated	1027.13	6.70	1020.43
NACA Test Area	NTAmw-107	Unconsolidated	1080.30	12.35	1067.95
	NTAmw-108	Unconsolidated	1085.62	17.46	1068.16
	NTAmw-109	Unconsolidated	1079.84	7.65	1072.19
	NTAmw-110	Unconsolidated	1082.62	13.98	1068.64
	NTAmw-111	Unconsolidated	1080.94	3.27	1077.67
	NTAmw-112	Unconsolidated	1078.33	8.70	1069.63
	NTAmw-113	Unconsolidated	1075.68	6.69	1068.99
	NTAmw-114	Unconsolidated	1078.71	5.92	1072.79
	NTAmw-115	Unconsolidated	1089.65	13.79	1075.86
	NTAmw-116	Unconsolidated	1094.33	4.79	1089.54
	NTAmw-117	Unconsolidated	1094.54	12.97	1081.57
	NTAmw-118	Unconsolidated	1081.44	8.55	1072.89
Ramsdell Quarry Landfill	RQLmw-006	Sharon	995.39	36.84	958.55
	RQLmw-007	Sharon	965.91	8.25	957.66
	RQLmw-008	Sharon	966.08	7.74	958.34
	RQLmw-009	Sharon	964.58	6.09	958.49
	RQLmw-010	Sharon	982.14	27.48	954.66
	RQLmw-011	Sharon	976.57	23.76	952.81
	RQLmw-012	Sharon	977.65	23.94	953.71
	RQLmw-013	Sharon	980.71	27.32	953.39
	RQLmw-014	Sharon	973.49	21.69	951.80
	RQLmw-015	Sharon	991.26	33.83	957.43
	RQLmw-016	Sharon	996.60	37.48	959.12
	RQLmw-017	Sharon	991.23	31.58	959.65
Winklepeck Burning Grounds	WBGmw-005	Unconsolidated	1054.70	5.59	1049.11
	WBGmw-006	Unconsolidated	1014.66	6.87	1007.79
	WBGmw-007	Unconsolidated	1000.59	14.45	986.14
	WBGmw-008	Unconsolidated	1008.21	14.49	993.72
	WBGmw-009	Unconsolidated	1047.53	13.80	1033.73
	WBGmw-010	Unconsolidated	1069.85	8.01	1061.84
	WBGmw-011	Unconsolidated	1072.38	10.70	1061.68
	WBGmw-012	Unconsolidated	1079.11	24.91	1054.20
	WBGmw-013	Unconsolidated	1071.70	12.11	1059.59
	WBGmw-014	Unconsolidated	996.78	16.02	980.76
	WBGmw-015	Unconsolidated	1011.60	11.40	1000.20
	WBGmw-016	Unconsolidated	997.03	17.29	979.74
	WBGmw-017	Unconsolidated	1006.62	8.39	998.23
Suspected Mustard Agent Burial Site	MBS-001	Unconsolidated	1082.20	17.49	1064.71
	MBS-002	Unconsolidated	1083.22	18.01	1065.21
	MBS-003	Unconsolidated	1084.45	18.85	1065.60
	MBS-004	Unconsolidated	1081.80	16.85	1064.95
	MBS-005	Unconsolidated	1082.42	17.75	1064.67
	MBS-006	Unconsolidated	1081.83	17.20	1064.63

TOC = top of casing
amsl = above mean sea level
BTOC = below top of casing

Table 3-2. Well Construction Details, Including January 2009 Depth to Bottom Measurements

RVAAP Area	Well ID	Ohio State Plane Easting	Ohio State Plane Northing	Ground Level Elevation[a]	Total Drilled Depth[b]	TOC Elevation[a]	Well Head Type[c]	Monitored Zone	Top of Screen (ft, BGS)	Bottom of Screen (ft, BGS)	Bottom of Inner Casing Plug or End Cap (ft, BGS)	Stickup height (ft, AGS)	Reported Bottom of Inner Casing (ft, BTOC)	Jan 2009 Measured Bottom of Inner Casing (ft, BTOC)	Sediment Accumulation (ft)	Description of Bottom
Background	BKGmw-004	2368852.97	569464.76	965.16	19.5	967.66	A	Unconsolidated	9.2	19.2	19.5	2.50	22.0	22.21	-0.21	hard
	BKGmw-005	2340835.86	562288.45	1,149.44	19.0	1,151.94	A	Unconsolidated	8.2	18.2	18.5	2.50	21.0	20.87	0.13	hard
	BKGmw-006	2358643.96	571910.47	1,026.38	35.1	1,028.88	A	Sharon	24.7	34.7	35.1	2.50	37.6	37.53	0.07	soft
	BKGmw-008	2372741.08	569654.23	970.40	25.0	972.90	A	Sharon	14.7	24.7	25.0	2.50	27.5	27.35	0.15	hard
	BKGmw-010	2371372.86	565540.54	1,003.80	22.0	1,006.18	A	Sharon	8.9	18.9	19.2	2.38	21.6	21.97	-0.37	hard
	BKGmw-012	2367795.23	563918.86	997.57	59.8	1,000.07	A	Sharon	38.6	59.6	59.8	2.50	62.3	62.11	0.19	soft
	BKGmw-013	2361627.39	558269.16	986.59	25.5	989.09	A	Unconsolidated	15.2	25.2	25.5	2.50	28.0	27.96	0.04	hard
	BKGmw-015	2361482.22	569339.87	1,037.90	51.0	1,040.40	A	Sharon	30.1	50.1	50.4	2.50	52.9	53.30	-0.40	hard
	BKGmw-016	2342407.08	553983.50	1,098.42	19.0	1,100.92	A	Unconsolidated	8.4	18.5	18.6	2.50	21.1	21.13	-0.03	hard
	BKGmw-017	2346115.35	562452.04	1,132.80	34.8	1,135.30	A	Unconsolidated	23.2	33.3	33.6	2.50	36.1	35.94	0.16	medium
	BKGmw-018	2354993.91	570873.35	1,043.06	24.7	1,045.56	A	Sharon	14.5	24.5	24.7	2.50	27.2	27.51	-0.31	hard
	BKGmw-019	2349882.14	559864.55	1,108.24	34.0	1,110.74	A	Unconsolidated	23.0	33.0	33.2	2.50	35.7	35.62	0.08	medium
	BKGmw-020	2357856.24	558756.24	1,065.00	30.7	1,067.50	A	Unconsolidated	20.5	30.5	30.7	2.50	33.2	33.17	0.03	hard
	BKGmw-021	2367622.95	571016.75	972.16	19.0	974.66	A	Unconsolidated	7.7	17.8	18.1	2.50	20.6	21.44	-0.84	hard
Load Line 1	LL1mw-063	2376841.36	563650.53	992.20	27.4	994.84	A	Sharon	17.1	27.1	27.4	2.64	30.0	30.04	-0.04	hard
	LL1mw-064	2380286.97	563118.74	932.32	18.4	935.10	A	Unconsolidated	8.0	18.0	18.4	2.78	21.1	21.05	0.05	hard, ice
	LL1mw-065	2380452.00	560916.92	941.53	20.5	944.41	A	Unconsolidated	10.2	20.2	20.5	2.88	23.4	23.05	0.35	medium
	LL1mw-067	2376545.30	565201.14	977.55	22.8	980.36	A	Sharon	12.8	22.5	22.8	2.81	25.6	25.68	-0.08	hard
	LL1mw-078	2376275.85	564623.87	993.40	38.7	995.84	A	Sharon	28.7	38.2	38.7	2.44	41.1	41.06	0.04	medium
	LL1mw-079	2376228.31	563739.63	995.30	29.5	997.87	A	Sharon	29.5	38.9	39.5	2.57	42.0	41.88	0.12	hard
	LL1mw-080	2376845.07	562479.73	993.70	19.5	996.27	A	Sharon	9.5	19.0	19.5	2.57	22.0	22.34	-0.34	hard
	LL1mw-081	2376672.66	563462.73	996.40	39.4	998.92	A	Sharon	29.4	38.9	39.4	2.52	41.9	41.91	-0.01	soft
	LL1mw-082	2376977.38	562956.86	1,003.70	39.0	1,006.45	A	Sharon	28.9	38.5	39.0	2.75	41.8	41.48	0.32	soft
	LL1mw-083	2377074.80	563612.75	992.80	39.3	995.20	A	Sharon	29.1	38.6	39.3	2.40	41.7	41.42	0.28	medium
	LL1mw-084	2377316.02	563160.44	996.40	37.0	998.73	A	Sharon	26.7	36.3	37.0	2.33	39.3	38.85	0.45	medium
	LL1mw-085	2377246.94	562046.25	994.30	42.1	996.84	A	Sharon	32.2	41.6	42.1	2.54	44.7	45.17	-0.47	hard
Load Line 2	LL2mw-059	2375453.00	558020.00	964.33	19.5	966.67	A	Sharon	9.3	19.1	19.5	2.34	21.8	21.86	-0.06	hard
	LL2mw-060	2375978.00	558022.00	958.93	18.3	961.57	A	Sharon	8.1	17.9	18.3	2.64	20.9	20.78	0.12	hard
	LL2mw-261	2373317.81	561898.25	1,009.55	22.5	1,011.40	A	Sharon	9.8	19.8	20.0	1.85	21.9	22.43	-0.53	hard
	LL2mw-262	2373970.79	562219.87	1,011.12	21.2	1,012.62	A	Sharon	10.6	20.6	20.8	1.50	22.3	22.61	-0.31	hard
	LL2mw-263	2374289.51	561591.19	1,009.42	22.2	1,011.47	A	Sharon	10.8	20.8	21.0	2.05	23.0	22.53	0.47	hard
	LL2mw-264	2374532.00	561173.60	1,010.10	20.5	1,011.88	A	Sharon	9.8	19.8	20.0	1.78	21.7	22.34	-0.64	hard
	LL2mw-265	2375594.06	557972.91	959.47	22.5	961.24	A	Sharon	11.8	21.8	22.0	1.77	23.8	24.39	-0.59	hard
	LL2mw-266	2373744.03	561981.86	1,014.09	20.5	1,016.28	A	Sharon	9.8	19.8	20.0	2.19	22.2	22.65	-0.45	hard
	LL2mw-267	2373715.04	561393.22	1,012.81	20.5	1,014.81	A	Sharon	9.8	19.8	20.0	2.00	22.0	22.67	-0.67	hard
	LL2mw-268	2374157.30	560831.04	1,015.47	28.8	1,017.28	A	Sharon	17.3	27.3	27.5	1.81	29.3	29.85	-0.55	hard
	LL2mw-269	2374756.07	559484.12	1,009.49	28.0	1,011.62	A	Sharon	17.1	27.1	27.3	2.13	29.4	30.23	-0.83	hard
	LL2mw-270	2372858.41	562655.93	1,009.93	20.5	1,010.18	A	Sharon	9.8	19.8	20.0	0.25	20.3	22.38	-2.08	hard
Load Line 3	LL3mw-232	2369862.96	561365.91	998.59	37.8	1,000.41	A	Sharon	26.8	36.8	37.0	1.82	38.8	39.77	-0.97	hard
	LL3mw-233	2369934.52	560750.41	1,002.47	31.1	1,004.36	A	Sharon	20.1	30.1	30.3	1.89	32.2	32.73	-0.53	medium
	LL3mw-234	2370297.47	560058.89	1,004.47	20.5	1,006.56	A	Sharon	9.8	19.8	20.0	2.09	22.1	22.60	-0.50	medium
	LL3mw-235	2370642.47	559812.63	1,008.05	21.2	1,009.94	A	Sharon	10.1	20.1	20.3	1.89	22.2	22.93	-0.73	hard
	LL3mw-236	2371178.58	559866.75	1,008.94	25.5	1,011.17	A	Sharon	13.8	23.8	24.0	2.23	26.2	26.55	-0.35	hard
	LL3mw-237	2371475.00	559328.09	1,003.57	23.9	1,005.57	A	Sharon	12.7	22.7	22.9	2.00	24.9	25.50	-0.60	hard
	LL3mw-238	2370625.34	559569.06	1,004.75	20.7	1,006.91	A	Sharon	10.5	20.5	20.7	2.16	22.9	23.32	-0.42	hard
	LL3mw-239	2370895.01	559101.39	1,001.70	35.7	1,003.50	A	Sharon	24.9	34.9	35.0	1.80	36.8	36.97	-0.17	soft
	LL3mw-240	2371309.57	558204.34	1,005.60	35.5	1,007.52	A	Sharon	24.4	34.4	34.6	1.92	36.5	36.65	-0.15	medium
	LL3mw-241	2370332.80	559298.09	992.41	23.8	994.65	A	Sharon	12.7	22.7	22.9	2.24	25.1	25.54	-0.44	hard
	LL3mw-242	2371993.30	557034.21	997.39	20.5	999.32	A	Sharon	9.8	19.8	20.0	1.93	21.9	22.49	-0.59	hard
	LL3mw-243	2371532.61	556688.92	989.36	24.5	991.16	A	Sharon	13.8	23.8	24.0	1.80	25.8	26.32	-0.52	hard

Table 3-2. Well Construction Details, Including January 2009 Depth to Bottom Measurements

RVAAP Area	Well ID	Ohio State Plane Easting	Ohio State Plane Northing	Ground Level Elevation[a]	Total Drilled Depth[b]	TOC Elevation[a]	Well Head Type[c]	Monitored Zone	Top of Screen (ft, BGS)	Bottom of Screen (ft, BGS)	Bottom of Inner Casing Plug or End Cap (ft, BGS)	Stickup height (ft, AGS)	Reported Bottom of Inner Casing (ft, BTOC)	Jan 2009 Measured Bottom of Inner Casing (ft, BTOC)	Sediment Accumulation (ft)	Description of Bottom
Load Line 4	LL4mw-193	2364237.44	554959.74	980.88	21.9	982.92	A	Unconsolidated	11.3	21.3	21.5	2.04	23.5	24.25	-0.75	hard
	LL4mw-194	2364584.76	555088.18	981.87	22.0	983.76	A	Unconsolidated	11.3	21.3	21.5	1.89	23.4	23.25	0.15	soft
	LL4mw-195	2365198.84	555045.69	980.83	21.0	982.59	A	Unconsolidated	10.3	20.3	20.5	1.76	22.3	22.87	-0.57	hard
	LL4mw-196	2365297.28	555212.59	982.56	20.0	984.55	A	Unconsolidated	9.2	19.2	19.4	1.99	21.4	21.75	-0.35	hard
	LL4mw-197	2365385.95	555396.55	983.79	21.7	985.46	A	Unconsolidated	10.8	20.8	21.0	1.67	22.7	23.55	-0.85	medium
	LL4mw-198	2364991.12	555440.99	981.61	22.0	983.42	A	Unconsolidated	10.3	20.3	20.5	1.81	22.3	20.72	1.58	medium
	LL4mw-199	2365421.66	554621.06	975.20	22.0	977.28	A	Unconsolidated	10.3	20.3	20.5	2.08	22.6	23.16	-0.56	hard
	LL4mw-200	2365904.12	554579.72	985.97	23.5	987.93	A	Unconsolidated	12.6	22.6	23.0	1.96	25.0	25.15	-0.15	hard
Load Line 5	LL5mw-001	2354625.07	554319.25	1,125.00	24.0	1,127.92	A	Homewood	14.0	24.0	24.0	2.92	26.9	26.97	-0.07	hard
	LL5mw-002	2354571.52	554604.01	1,125.80	25.0	1,128.68	A	Homewood	15.0	25.0	25.0	2.88	27.9	27.42	0.48	medium
	LL5mw-003	2354964.47	554535.41	1,124.70	21.0	1,127.70	A	Unconsolidated	11.0	21.0	21.0	3.00	24.0	23.92	0.08	hard
	LL5mw-004	2355006.44	554073.73	1,122.90	22.4	1,125.81	A	Homewood	12.0	22.0	22.0	2.91	24.9	25.34	-0.44	hard
	LL5mw-005	2354422.02	554152.73	1,126.50	27.8	1,129.42	A	Homewood	17.0	27.0	27.0	2.92	29.9	29.64	0.26	hard
	LL5mw-006	2354730.78	553984.82	1,125.10	24.5	1,128.00	A	Homewood	14.0	24.0	24.0	2.90	26.9	27.03	-0.13	hard
Load Line 6	LL6mw-001	2353153.23	554214.84	NA	18.0	1,124.16	F	Unconsolidated	7.0	17.0	17.0	0.00	17.0	17.55	-0.55	hard
	LL6mw-002	2353820.09	553589.88	NA	23.0	1,129.36	F	Unconsolidated	12.5	22.5	22.5	0.00	22.5	24.44	-1.94	hard
	LL6mw-003	2353048.68	553544.34	NA	23.4	1,125.38	A	Homewood	12.5	22.5	22.5	3.35	25.9	25.69	0.21	hard
	LL6mw-004	2353368.79	553431.82	NA	23.0	1,125.39	A	Homewood	12.5	22.5	22.5	2.58	25.1	24.50	0.60	hard
	LL6mw-005	2353194.52	553170.76	NA	19.9	1,120.47	A	Homewood	9.5	19.5	19.5	2.96	22.5	22.20	0.30	hard
	LL6mw-006	2352419.15	553165.28	NA	20.0	1,124.37	A	Unconsolidated	7.0	17.0	17.0	0.00	17.0	17.75	-0.75	hard
	LL6mw-007	2353354.89	552677.17	NA	20.0	1,115.62	F	Homewood	9.5	19.5	19.5	0.00	19.5	19.37	0.13	hard
Load Line 7	LL7mw-001	2352192.91	554925.77	1,126.90	30.0	1,129.64	A	Homewood	19.5	29.5	29.5	2.74	32.2	33.00	-0.80	hard
	LL7mw-002	2351918.23	555126.55	1,126.70	26.5	1,129.55	A	Homewood	15.0	25.0	25.0	2.85	27.8	27.14	0.66	hard
	LL7mw-003	2352351.04	555417.04	1,118.23	31.5	1,120.84	A	Homewood	21.0	31.0	31.0	2.61	33.6	33.32	0.28	hard
	LL7mw-004	2352035.20	555581.14	1,123.30	29.5	1,126.32	A	Homewood	19.5	29.5	29.5	3.02	32.5	32.17	0.33	hard
	LL7mw-005	2351741.47	555581.80	1,133.30	28.2	1,135.87	A	Homewood	18.0	28.0	28.0	2.57	30.6	30.31	0.29	hard
	LL7mw-006	2351879.92	555990.59	1,120.70	28.0	1,123.56	A	Homewood	17.5	27.5	27.5	2.86	30.4	30.25	0.15	hard
Load Line 8	LL8mw-001	2351666.10	552607.06	1,118.69	24.0	1,121.46	A	Unconsolidated	14.0	24.0	24.0	2.77	26.8	27.50	-0.70	soft
	LL8mw-002	2351010.33	552408.18	1,121.67	30.4	1,124.51	A	Unconsolidated	20.0	30.0	30.0	2.84	32.8	32.53	0.27	hard
	LL8mw-003	2351359.25	552231.14	1,116.30	21.0	1,119.05	A	Unconsolidated	10.5	20.5	20.5	2.75	23.3	22.95	0.35	hard
	LL8mw-004	2351261.83	551807.58	1,112.73	20.5	1,115.75	A	Unconsolidated	10.0	20.0	20.0	3.02	23.0	22.60	0.40	medium
	LL8mw-005	2351748.32	551522.48	1,112.51	24.0	1,115.73	A	Homewood	14.0	24.0	24.0	3.22	27.2	27.12	0.08	medium
	LL8mw-006	2351483.58	551296.77	1,114.33	24.2	1,117.17	A	Homewood	14.0	24.0	24.0	2.84	26.8	27.01	-0.21	hard
Load Line 9	LL9mw-001	2355817.04	556125.81	NA	21.6	1,134.62	A	Homewood	10.5	20.5	20.5	2.78	23.3	23.45	-0.15	hard
	LL9mw-002	2355907.76	556755.11	NA	21.0	1,127.30	A	Homewood	10.0	20.0	20.0	2.42	22.4	22.70	-0.30	hard
	LL9mw-003	2356635.21	556445.31	NA	22.0	1,135.76	A	Homewood	11.5	21.5	21.5	2.30	23.8	24.17	-0.37	hard
	LL9mw-004	2357338.76	556002.00	NA	33.0	1,131.83	A	Homewood	22.0	32.0	32.0	2.91	34.9	34.62	0.28	hard
	LL9mw-005	2356505.95	557063.36	NA	20.6	1,130.93	A	Homewood	10.0	20.0	20.0	3.30	23.3	23.45	-0.15	hard
	LL9mw-006	2357446.67	556434.79	NA	26.8	1,129.88	A	Homewood	16.0	26.0	26.0	2.90	28.9	28.80	0.10	hard
	LL9mw-007	2357024.34	557000.56	NA	19.0	1,119.99	F	Homewood	8.5	18.5	18.5	0.00	18.5	18.06	0.44	hard
Load Line 10	LL10mw-001	2355272.22	555816.25	1,130.00	28.0	1,132.77	A	Homewood	17.0	27.0	27.0	2.77	29.8	29.53	0.27	hard
	LL10mw-002	2355710.51	555523.36	1,124.40	28.0	1,127.13	A	Homewood	17.0	27.0	27.0	2.73	29.7	29.70	0.00	hard
	LL10mw-003	2355389.92	555494.71	1,127.40	26.4	1,130.28	A	Homewood	16.0	26.0	26.0	2.88	28.9	28.49	0.41	hard
	LL10mw-004	2355438.20	555236.59	1,119.60	31.2	1,122.39	A	Homewood	21.0	31.0	31.0	2.79	33.8	33.49	0.31	hard
	LL10mw-005	2355943.55	555380.53	1,122.90	27.0	1,125.67	A	Homewood	16.5	26.5	26.5	2.77	29.3	29.15	0.15	hard
	LL10mw-006	2355654.80	554995.25	1,121.20	24.0	1,123.83	A	Unconsolidated	13.5	23.5	23.5	2.63	26.1	26.47	-0.37	hard

Table 3-2. Well Construction Details, Including January 2009 Depth to Bottom Measurements

RVAAP Area	Well ID	Ohio State Plane Easting	Ohio State Plane Northing	Ground Level Elevation[a]	Total Drilled Depth[b]	TOC Elevation[a]	Well Head Type[c]	Monitored Zone	Top of Screen (ft, BGS)	Bottom of Screen (ft, BGS)	Bottom of Inner Casing Plug or End Cap (ft, BGS)	Stickup height (ft, AGS)	Reported Bottom of Inner Casing (ft, BTOC)	Jan 2009 Measured Bottom of Inner Casing (ft, BTOC)	Sediment Accumulation (ft)	Description of Bottom
Load Line 11	LL11mw-001	2352778.89	557505.03	1,097.46	23.0	1,100.16	A	Unconsolidated	11.4	21.4	21.4	2.70	24.1	21.45	2.65	hard
	L L11mw-002	2353354.28	558310.52	1,080.29	20.0	1,080.00	F	Unconsolidated	6.3	16.3	16.3	-0.29	16.0	16.42	-0.42	hard
	LL11mw-003	2352737.87	557999.62	1,088.45	17.0	1,088.48	F	Unconsolidated	5.9	15.9	15.9	0.03	15.9	16.02	-0.12	hard
	LL11mw-004	2352737.24	558164.36	1,084.60	17.0	1,084.72	F	Unconsolidated	6.1	16.1	16.1	0.12	16.2	16.14	0.06	hard
	LL11mw-005	2352847.56	558501.02	1,079.60	17.0	1,079.40	F	Unconsolidated	6.2	16.2	16.2	-0.20	16.0	16.39	-0.39	hard
	LL11mw-006	2352521.36	558263.28	1,086.61	17.0	1,086.50	F	Unconsolidated	5.6	15.6	15.6	-0.11	15.5	15.65	-0.15	hard
	LL11mw-007	2352094.81	558189.71	1,079.22	23.0	1,082.00	A	Unconsolidated	12.4	22.4	22.4	2.78	25.2	25.27	-0.07	hard
	LL11mw-008	2352388.60	557981.17	1,087.90	17.0	1,087.74	F	Unconsolidated	5.6	15.6	15.6	-0.16	15.4	15.70	-0.30	hard
	LL11mw-009	2352577.18	557901.18	1,088.38	17.0	1,091.54	F	Unconsolidated	6.7	16.7	16.7	-0.10	16.6	N/A	N/A	frozen solid
	LL11mw-010	2352039.00	557675.43	1,080.22	22.0	1,082.68	A	Unconsolidated	10.9	20.9	20.9	2.46	23.4	23.39	0.01	hard
Load Line 12	LL12mw-088	2368667.75	556393.79	978.94	29.0	981.06	A	Unconsolidated	14.8	24.8	25.0	2.12	27.1	27.34	-0.24	hard
	LL12mw-107	2368595.67	556759.02	978.03	33.0	980.15	A	Unconsolidated	20.7	30.7	31.0	2.12	33.1	33.64	-0.54	hard
	LL12mw-113	2368223.73	558345.37	977.67	23.0	980.18	A	Sharon Shale	12.3	22.3	22.5	2.51	25.0	19.62	5.38	soft
	LL12mw-128	2368293.20	557371.54	976.21	34.0	978.24	A	Unconsolidated	21.1	31.1	31.3	2.03	33.3	34.05	-0.75	hard
	LL12mw-153	2368138.87	557823.23	975.34	26.0	977.85	A	Unconsolidated	12.3	22.3	22.5	2.51	25.0	25.05	-0.05	hard
	LL12mw-154	2368183.88	557754.56	977.00	29.0	979.06	A	Unconsolidated	16.4	26.4	26.6	2.06	28.7	28.73	-0.03	hard
	LL12mw-182	2368853.20	555890.35	982.20	36.1	984.42	A	Unconsolidated	25.2	35.2	35.5	2.22	37.7	38.06	-0.36	hard
	LL12mw-183	2369224.36	556068.15	980.59	36.0	982.98	A	Sharon Shale	23.3	33.3	33.6	2.39	36.0	36.25	-0.25	hard
	LL12mw-184	2368997.48	556399.46	980.96	29.5	983.16	A	Unconsolidated	18.8	28.8	29.0	2.20	31.2	31.33	-0.13	hard
	LL12mw-185	2368829.86	556946.75	979.09	24.0	981.31	A	Unconsolidated	10.8	20.8	21.0	2.22	23.2	23.22	-0.02	hard
	LL12mw-186	2367912.39	559065.95	976.34	23.0	978.31	A	Sharon Shale	8.8	18.8	19.0	1.97	21.0	20.99	0.01	hard
	LL12mw-187	2368524.14	557633.10	977.90	29.0	979.94	A	Unconsolidated	17.2	27.2	27.4	2.04	29.4	29.90	-0.50	hard
	LL12mw-188	2367908.82	558132.59	978.46	20.5	980.63	A	Unconsolidated	9.8	19.8	20.0	2.17	22.2	22.03	0.17	medium
	LL12mw-189	2367945.92	558569.27	976.17	18.5	978.04	A	Sharon Shale	7.5	17.5	17.7	1.87	19.6	19.97	-0.37	hard
	LL12mw-242	2368545.29	558020.51	978.40	26.3	981.20	A	Unconsolidated	15.5	25.5	25.5	2.80	28.3	28.92	-0.62	soft
	LL12mw-243	2368190.04	557376.32	978.10	24.0	980.79	A	Unconsolidated	13.0	23.0	23.0	2.69	25.7	24.65	1.05	medium
	LL12mw-244	2368751.42	557377.17	978.10	30.0	980.65	A	Unconsolidated	19.5	29.5	29.5	2.55	32.1	29.34	2.76	soft
	LL12mw-245	2368370.74	557044.55	977.50	29.0	980.04	A	Unconsolidated	18.0	28.0	28.0	2.54	30.5	29.98	0.52	medium
	LL12mw-246	2369432.17	556658.89	982.00	32.0	984.83	A	Unconsolidated	21.5	31.5	31.5	2.83	34.3	35.00	-0.70	hard
Atlas Scrap Yard	ASYmw-001	2366260.85	558404.04	978.40	22.0	981.13	A	Sharon	11.0	21.0	21.0	2.73	23.7	23.05	0.65	medium
	ASYmw-002	2366170.86	557887.86	982.00	20.0	985.24	A	Sharon	10.0	19.5	19.5	3.24	22.7	22.90	-0.20	medium
	ASYmw-003	2366651.49	558015.94	979.70	21.5	982.21	A	Sharon	11.0	21.0	21.0	2.51	23.5	22.90	0.60	medium
	ASYmw-004	2367166.04	557640.81	977.10	27.8	979.66	A	Sharon	17.0	27.0	27.0	2.56	29.6	29.75	-0.15	hard
	ASYmw-005	2367448.16	557783.01	977.60	25.0	979.80	A	Sharon	14.0	24.0	24.0	2.20	26.2	27.01	-0.81	medium
	ASYmw-006	2366746.73	557257.72	980.20	27.0	983.01	A	Sharon	16.0	26.0	26.0	2.81	28.8	28.86	-0.06	hard
	ASYmw-007	2366834.49	556818.08	981.40	28.0	984.16	A	Unconsolidated	16.0	26.0	26.0	2.76	28.8	28.82	-0.02	hard
	ASYmw-008	2367475.07	557087.66	976.20	26.0	978.85	A	Unconsolidated	15.0	25.0	25.0	2.65	27.7	27.49	0.21	medium
	ASYmw-009	2366631.94	557603.68	979.90	22.0	982.70	A	Sharon	11.5	21.5	21.5	2.80	24.3	24.50	-0.20	hard
	ASYmw-010	2366985.37	557270.61	978.20	28.0	981.05	A	Unconsolidated	17.0	27.0	27.0	2.85	29.8	30.05	-0.25	medium
Building 1200	B12mw-010	2371292.81	565827.43	1,002.72	21.0	1,005.92	A	Sharon	10.0	20.0	20.0	3.20	23.2	22.82	0.38	hard
	B12mw-011	2371416.15	565687.82	1,003.76	24.7	1,006.70	A	Sharon	14.0	24.0	24.0	2.94	26.9	26.70	0.20	hard
	B12mw-012	2371430.41	565828.01	1,003.43	22.3	1,006.32	A	Sharon	12.0	22.0	22.0	2.89	24.9	24.80	0.10	hard
C-Block Quarry	CBLmw-001	2343657.08	559403.12	1,178.50	50.0	1,181.08	A	Homewood	39.0	49.0	49.0	2.58	51.6	49.70	1.90	hard
	CBLmw-002	2343845.22	559044.48	1,172.50	45.3	1,175.24	A	Homewood	34.5	44.5	44.5	2.74	47.2	47.32	-0.12	hard
	CBLmw-003	2343970.00	559695.52	1,172.22	44.0	1,175.06	A	Homewood	33.0	43.0	43.0	2.84	45.8	44.71	1.09	hard
	CBLmw-004	2343688.76	559951.58	1,172.08	45.0	1,174.84	A	Homewood	34.0	44.0	44.0	2.76	46.8	47.01	-0.21	hard
Central Burn Pits	CBPmw-001	2367095.37	561616.01	972.71	32.3	975.84	A	Unconsolidated	21.8	31.8	31.8	3.13	34.9	32.68	2.22	soft
	CBPmw-002	2367295.66	561865.83	967.33	30.0	970.04	A	Unconsolidated	19.5	29.5	29.5	2.71	32.2	31.94	0.26	medium
	CBPmw-003	2366768.68	561944.14	972.04	25.0	974.67	A	Unconsolidated	14.5	24.5	24.5	2.63	27.1	30.19	-3.09	hard
	CBPmw-004	2366978.80	562123.80	968.58	27.5	971.13	A	Unconsolidated	17.0	27.0	27.0	2.55	29.5	29.68	-0.18	medium
	CBPmw-005	2366919.66	562311.88	968.83	25.0	971.59	A	Unconsolidated	14.5	24.5	24.5	2.76	27.3	27.40	-0.10	medium
	CBPmw-006	2367243.68	562311.87	965.01	23.0	967.64	A	Unconsolidated	12.5	22.5	22.5	2.63	25.1	25.20	-0.10	medium
	CBPmw-007	2366512.62	562006.41	973.47	30.0	976.37	A	Unconsolidated	19.5	29.5	29.5	2.90	32.4	31.74	0.66	medium
	CBPmw-008	2366757.21	562668.84	970.57	25.5	973.19	A	Unconsolidated	15.0	25.0	25.0	2.62	27.6	27.90	-0.30	hard

Table 3-2. Well Construction Details, Including January 2009 Depth to Bottom Measurements

RVAAP Area	Well ID	Ohio State Plane Easting	Ohio State Plane Northing	Ground Level Elevation[a]	Total Drilled Depth[b]	TOC Elevation[a]	Well Head Type[c]	Monitored Zone	Top of Screen (ft, BGS)	Bottom of Screen (ft, BGS)	Bottom of Inner Casing Plug or End Cap (ft, BGS)	Stickup height (ft, AGS)	Reported Bottom of Inner Casing (ft, BTOC)	Jan 2009 Measured Bottom of Inner Casing (ft, BTOC)	Sediment Accumulation (ft)	Description of Bottom
Cobbs Pond	CPmw-001	2368948.81	560440.91	975.46	16.0	975.26	F	Unconsolidated	5.5	15.5	15.5	-0.20	15.3	14.74	0.56	hard
	CPmw-002	2368239.23	560311.26	972.72	16.0	972.31	F	Unconsolidated	5.5	15.5	15.5	-0.41	15.1	14.99	0.11	hard
	CPmw-003	2368796.49	560676.30	973.27	18.5	972.92	F	Unconsolidated	8.0	18.0	18.0	-0.35	17.6	17.10	0.50	hard
	CPmw-004	2368674.31	561843.46	978.51	20.0	981.20	A	Unconsolidated	9.5	19.5	19.5	2.69	22.2	22.52	-0.32	hatd
	CPmw-005	2367900.41	561846.78	970.71	40.0	973.58	A	Unconsolidated	29.5	39.5	39.5	2.87	42.4	43.16	-0.76	hard
	CPmw-006	2367727.13	562830.13	962.97	18.5	965.13	A	Unconsolidated	8.0	18.0	18.0	2.16	20.2	20.62	-0.42	hard
Demolition Area 2	DET-001B	2354959.47	560820.03	1,064.35	39.0	1,065.85	A	Unconsolidated	34.0	39.0	39.0	1.50	40.5	38.48	2.02	hard
	DET-002	2355360.33	560664.71	1,060.24	39.0	1,061.24	A	Unconsolidated	34.0	39.0	39.0	1.00	40.0	41.94	-1.94	hard
	DET-003	2355204.94	560456.10	1,035.81	15.0	1,036.81	A	Unconsolidated	7.0	12.0	12.0	1.00	13.0	15.00	-2.00	hard
	DET-004	2355072.36	560454.22	1,037.68	11.0	1,038.68	A	Unconsolidated	6.0	11.0	11.0	1.00	12.0	13.80	-1.80	hard
	DA2mw-104	2354773.79	561129.59	1,070.82	27.0	1,073.89	A	Unconsolidated	16.3	26.3	26.5	3.07	29.6	29.21	0.39	hard
	DA2mw-105	2354557.62	560572.58	1,042.66	14.0	1,045.34	A	Unconsolidated	8.3	13.3	13.5	2.68	16.2	16.20	0.00	medium
	DA2mw-106	2354848.85	560560.49	1,041.19	16.0	1,043.79	A	Unconsolidated	8.3	15.3	15.5	2.60	18.1	16.78	1.32	hard
	DA2mw-107	2354924.29	560480.05	1,039.18	15.0	1,041.63	A	Unconsolidated	8.8	13.8	14.0	2.45	16.5	16.82	-0.32	hard
	DA2mw-108	2355604.43	560181.78	1,029.92	15.0	1,032.36	A	Unconsolidated	9.3	14.3	14.5	2.44	16.9	17.16	-0.26	hard
	DA2mw-109	2354793.14	559897.89	1,068.66	24.0	1,071.29	A	Unconsolidated	11.3	21.3	21.5	2.63	24.1	24.32	-0.22	hard
	DA2mw-110	2355195.91	559927.02	1,061.39	20.0	1,063.78	A	Unconsolidated	9.3	19.3	19.5	2.39	21.9	22.34	-0.44	hard
	DA2mw-111	2354728.33	560222.94	1,039.63	12.6	1,042.12	A	Unconsolidated	7.1	12.1	12.3	2.49	14.8	14.78	0.02	medium
	DA2mw-112	2355018.98	560378.36	1,034.87	15.0	1,037.44	A	Unconsolidated	8.8	13.8	14.0	2.57	16.6	17.50	-0.90	hard
	DA2mw-113	2355153.13	560394.81	1,034.51	14.0	1,037.11	A	Unconsolidated	8.3	13.3	13.5	2.60	16.1	16.29	-0.19	hard
Erie Burning Grounds	EBGmw-123	2380049.21	571747.04	945.59	32.0	947.82	A	Unconsolidated	21.0	31.0	31.5	2.23	33.7	34.73	-1.03	medium
	EBGmw-124	2380030.24	571618.07	939.02	32.0	941.39	A	Unconsolidated	20.0	30.0	30.5	2.37	32.9	32.71	0.19	medium
	EBGmw-125	2379679.20	571655.63	947.55	25.0	949.89	A	Unconsolidated	14.0	24.0	24.5	2.34	26.8	27.43	-0.63	hard
	EBGmw-126	2380307.31	572348.81	938.20	28.0	940.61	A	Unconsolidated	15.2	25.2	25.5	2.41	27.9	27.81	0.09	medium
	EBGmw-127	2380172.16	571083.61	940.21	30.0	943.07	A	Unconsolidated	19.0	29.0	29.5	2.86	32.4	32.84	-0.44	hard
	EBGmw-128	2379892.79	570970.32	942.47	28.0	945.13	A	Unconsolidated	15.0	25.0	25.3	2.66	28.0	28.20	-0.20	hard
	EBGmw-129	2379240.52	572035.68	941.97	29.0	944.36	A	Unconsolidated	16.0	26.0	26.0	2.39	28.4	30.96	-2.56	medium
	EBGmw-130	2379220.69	570695.61	941.18	26.0	944.00	A	Unconsolidated	15.2	25.2	25.5	2.82	28.3	28.37	-0.07	hard
Fuze and Booster Quarry	FBQmw-166	2349584.33	553123.86	1,104.87	16.0	1,108.86	A	Unconsolidated	5.5	15.5	15.5	3.99	19.5	19.72	-0.22	hard
	FBQmw-167	2349675.45	553556.12	1,112.05	18.0	1,115.90	A	Unconsolidated	5.0	15.0	15.0	3.85	18.9	18.97	-0.07	hard
	FBQmw-168	2350066.87	553620.85	1,131.27	19.5	1,133.91	A	Homewood	9.0	19.0	19.0	2.64	21.6	21.21	0.39	medium
	FBQmw-169	2349730.90	553681.21	1,117.36	16.0	1,120.58	A	Homewood	5.0	15.0	15.0	3.22	18.2	18.57	-0.37	hard
	FBQmw-170	2350102.41	553975.40	1,139.67	30.5	1,142.26	A	Homewood	20.0	30.0	30.0	2.59	32.6	32.69	-0.09	hard
	FBQmw-171	2350072.44	554230.93	1,140.49	30.0	1,143.55	A	Homewood	18.0	28.0	28.0	3.06	31.1	31.39	-0.29	hard
	FBQmw-172	2349907.37	554322.17	1,145.71	33.0	1,150.09	A	Homewood	20.0	30.0	30.0	4.38	34.4	34.40	0.00	hard
	FBQmw-173	2350449.01	554491.35	1,162.43	50.0	1,165.94	A	Homewood	29.5	49.5	49.5	3.51	53.0	51.75	1.25	medium
	FBQmw-174	2350289.81	554142.44	1,135.78	22.5	1,139.97	A	Homewood	12.0	22.0	22.0	4.19	26.2	22.84	3.36	hard
	FBQmw-175	2350297.98	553989.24	1,137.16	22.5	1,140.73	A	Homewood	12.0	22.0	22.0	3.57	25.6	25.80	-0.20	hard
	FBQmw-176	2350219.45	553273.33	1,129.57	21.5	1,131.91	A	Unconsolidated	11.0	21.0	21.0	2.34	23.3	23.87	-0.57	soft
	FBQmw-177	2350112.18	553321.94	1,125.73	22.5	1,128.57	A	Homewood	12.0	22.0	22.0	2.84	24.8	24.74	0.06	medium
Landfill North of Winklepeck	LNWmw-024	2358403.21	564825.89	1,035.30	24.0	1,038.00	A	Unconsolidated	10.0	20.0	20.0	2.70	22.7	22.52	0.18	hard
	LNWmw-025	2358417.06	565071.92	1,027.20	19.0	1,029.13	A	Unconsolidated	8.0	18.0	18.0	1.93	19.9	20.30	-0.40	hard
	LNWmw-026	2358952.24	564658.16	1,025.00	24.0	1,027.80	A	Unconsolidated	13.0	23.0	23.0	2.80	25.8	25.97	-0.17	hard
	LNWmw-027	2358628.75	564517.41	1,024.40	25.0	1,027.13	A	Unconsolidated	14.0	24.0	24.0	2.73	26.7	26.86	-0.16	hard
NACA Test Area	NTAmw-107	2345433.40	551697.29	1,077.65	23.0	1,080.30	A	Unconsolidated	12.0	22.0	22.0	2.65	24.6	24.25	0.35	medium
	NTAmw-108	2345781.60	551916.22	1,083.22	23.0	1,085.62	A	Unconsolidated	12.0	22.0	22.0	2.40	24.4	24.48	-0.08	soft
	NTAmw-109	2345997.72	551293.25	1,076.89	19.0	1,079.84	A	Unconsolidated	8.0	18.0	18.0	2.95	20.9	20.89	0.01	soft
	NTAmw-110	2346438.94	551351.46	1,080.03	28.0	1,082.62	A	Unconsolidated	17.0	27.0	27.0	2.59	29.6	29.74	-0.14	medium
	NTAmw-111	2346638.01	551538.60	1,078.07	20.0	1,080.94	A	Unconsolidated	9.5	19.5	19.5	2.87	22.4	23.06	-0.66	hard
	NTAmw-112	2346889.48	551712.14	1,075.36	23.9	1,078.33	A	Unconsolidated	13.9	23.9	23.9	2.97	26.9	26.60	0.30	medium
	NTAmw-113	2347082.83	551488.52	1,072.61	27.5	1,075.68	A	Unconsolidated	17.0	27.0	27.5	3.07	30.6	29.30	1.30	soft
	NTAmw-114	2347301.57	551592.94	1,075.61	20.0	1,078.71	A	Unconsolidated	9.5	19.5	19.5	3.10	22.6	21.74	0.86	hard
	NTAmw-115	2347581.16	551791.78	1,086.91	24.0	1,089.65	A	Unconsolidated	12.5	22.5	22.5	2.74	25.2	25.27	-0.07	hard
	NTAmw-116	2348196.39	551748.00	1,091.68	22.0	1,094.33	A	Unconsolidated	10.0	20.0	20.0	2.65	22.6	21.53	1.07	hard*
	NTAmw-117	2347994.83	551584.57	1,091.67	25.0	1,094.54	A	Unconsolidated	14.5	24.5	24.5	2.87	27.4	27.50	-0.10	hard
	NTAmw-118	2347609.41	551335.04	1,078.86	22.5	1,081.44	A	Unconsolidated	12.0	22.0	22.0	2.58	24.6	24.09	0.51	hard

Table 3-2. Well Construction Details, Including January 2009 Depth to Bottom Measurements

RVAAP Area	Well ID	Ohio State Plane Easting	Ohio State Plane Northing	Ground Level Elevation[a]	Total Drilled Depth[b]	TOC Elevation[a]	Well Head Type[c]	Monitored Zone	Top of Screen (ft, BGS)	Bottom of Screen (ft, BGS)	Bottom of Inner Casing Plug or End Cap (ft, BGS)	Stickup height (ft, AGS)	Reported Bottom of Inner Casing (ft, BTOC)	Jan 2009 Measured Bottom of Inner Casing (ft, BTOC)	Sediment Accumulation (ft)	Description of Bottom
Ramsdell Quarry Landfill	RQLmw-006	2375927.71	566091.26	993.52	42.1	995.39	A	Sharon	19.4	39.4	39.6	1.87	41.4	41.97	-0.57	hard
	RQLmw-007	2375872.56	566544.36	963.86	18.7	965.91	A	Sharon	6.0	16.0	16.2	2.05	18.2	18.56	-0.36	hard
	RQLmw-008	2376011.08	566327.94	963.82	18.7	966.08	A	Sharon	6.0	16.0	16.2	2.26	18.5	18.60	-0.10	hard
	RQLmw-009	2376253.65	566351.20	962.60	18.8	964.58	A	Sharon	5.9	15.9	16.4	1.98	18.4	18.78	-0.38	hard
	RQLmw-010	2376048.58	566857.39	980.04	35.4	982.14	A	Sharon	12.5	32.5	33.0	2.10	35.1	35.25	-0.15	hard
	RQLmw-011	2376398.19	566819.66	974.60	35.4	976.57	A	Sharon	12.4	32.4	32.6	1.97	34.6	35.30	-0.70	hard
	RQLmw-012	2376558.19	566551.95	975.12	30.5	977.65	A	Sharon	19.8	29.8	30.0	2.53	32.5	32.61	-0.11	hard
	RQLmw-013	2376204.93	566928.09	978.04	34.4	980.71	A	Sharon	23.7	33.7	33.9	2.67	36.6	36.42	0.18	medium
	RQLmw-014	2376519.38	566941.29	970.83	29.4	973.49	A	Sharon	18.6	28.6	28.9	2.66	31.6	31.15	0.45	soft
	RQLmw-015	2375490.96	566560.90	989.19	40.1	991.26	A	Sharon	29.2	39.2	39.5	2.07	41.6	41.86	-0.26	hard
	RQLmw-016	2375649.55	566177.68	994.02	39.5	996.60	A	Sharon	28.5	38.5	39.0	2.58	41.6	41.59	0.01	medium
	RQLmw-017	2376124.18	565931.38	988.69	30.5	991.23	A	Sharon	19.8	29.8	30.0	2.54	32.5	32.71	-0.21	hard
Winklepeck Burning Grounds	WBGmw-005	2357163.55	563037.18	1,052.20	19.0	1,054.70	A	Unconsolidated	8.3	18.3	18.6	2.50	21.1	21.10	0.00	hard
	WBGmw-006	2359087.79	563008.87	1,012.16	19.0	1,014.66	A	Unconsolidated	7.6	17.6	17.9	2.50	20.4	20.14	0.26	hard
	WBGmw-007	2360420.44	562479.87	998.09	24.0	1,000.59	A	Unconsolidated	13.5	23.5	23.8	2.50	26.3	26.38	-0.08	hard
	WBGmw-008	2359700.57	562010.35	1,005.71	18.5	1,008.21	A	Unconsolidated	8.1	18.2	18.5	2.50	21.0	20.80	0.20	hard
	WBGmw-009	2357159.20	561603.54	1,045.03	24.0	1,047.53	A	Unconsolidated	11.4	21.4	21.5	2.50	24.0	24.28	-0.28	hard
	WBGmw-010	2356051.96	562893.20	1,067.10	21.0	1,069.85	A	Unconsolidated	10.5	20.5	20.8	2.75	23.6	23.30	0.30	medium
	WBGmw-011	2356187.29	562609.18	1,069.70	22.0	1,072.38	A	Unconsolidated	11.0	21.0	21.3	2.68	24.0	23.85	0.15	medium
	WBGmw-012	2354810.65	562240.90	1,076.50	30.0	1,079.11	A	Unconsolidated	19.0	29.0	29.4	2.61	32.0	31.55	0.45	medium
	WBGmw-013	2355223.25	561518.27	1,069.10	22.0	1,071.70	A	Unconsolidated	11.0	21.0	21.3	2.60	23.9	24.09	-0.19	medium
	WBGmw-014	2360439.22	562061.26	994.10	23.0	996.78	A	Unconsolidated	12.0	22.0	22.3	2.68	25.0	24.97	0.03	hard
	WBGmw-015	2359182.41	562340.12	1,009.10	22.0	1,011.60	A	Unconsolidated	11.0	21.0	21.3	2.50	23.8	23.51	0.29	hard
	WBGmw-016	2360645.88	562709.13	994.90	24.0	997.03	A	Unconsolidated	13.0	23.0	23.3	2.13	25.4	25.20	0.20	medium
	WBGmw-017	2359603.84	562913.24	1,004.00	22.0	1,006.62	A	Unconsolidated	11.0	21.0	21.3	2.62	23.9	23.72	0.18	hard
Suspected Mustard Agent Burial Site	MBS-001	2345323.00	550759.50	1,079.68	30.0	1,082.20	A	Unconsolidated	19	28.7	29	2.52	31.5	30.92	0.58	soft
	MBS-002	2345322.30	550886.20	1,080.50	30.0	1,083.22	A	Unconsolidated	18	27.3	28	2.72	30.7	30.33	0.37	medium
	MBS-003	2345172.40	550922.80	1,082.45	30.0	1,084.45	A	Unconsolidated	18.5	28.2	28.5	2.00	30.5	30.68	-0.18	hard
	MBS-004	2345134.20	550767.90	1,079.55	26.0	1,081.80	A	Unconsolidated	14.7	24.4	24.7	2.25	27.0	26.52	0.48	soft
	MBS-005	2345354.10	550800.70	1,080.50	30.0	1,082.42	A	Unconsolidated	18	28	28.08	1.92	30.2	29.99	0.21	soft
	MBS-006	2345282.30	550726.10	1,080.29	28.0	1,081.83	A	Unconsolidated	16.5	26.5	26.56	1.54	28.2	28.13	0.07	medium

* = NACAmw-116 historical depth readings have indicated -0.16 to -0.08 foot of sediment accumulation

a elevations are in feet above mean sea level (amsl)

b total drilled well borehole depth relative to ground surface.

c A = above grade completion; F = flush-mount completion

NA = Not available
AGS = above ground surface
BGS = below ground surface
BTOC = below top of casing

Plate 2 represents facility-wide groundwater flow in wells completed into the unconsolidated aquifer. The unconsolidated aquifer includes glacial till, glacial outwash, alluvium, and soil. Plate 2 illustrates that the potentiometric surface (i.e., water table) of the unconsolidated aquifer is a subdued expression of the surface topography of the RVAAP. Groundwater potentiometric elevation decreases approximately 207 ft from west to east across RVAAP; with a maximum measured elevation of 1,140.72 ft above mean sea level (amsl) at well BKGmw-005 in the northwest portion of the facility and a minimum measured elevation of 932.47 ft amsl southeast of Load Line 1 (well LL1mw-065). At the watershed scale (e.g., Hinkley Creek, Sand Creek, and Eagle Creek), groundwater flow patterns are influenced by topography and the drainage patterns of the streams. The influence of surface topography on groundwater flow is especially observed within the Hinkley Creek watershed (e.g., NACA Test Area, Suspected Mustard Agent Burial Site, and Demolition Area 1 vicinity) where groundwater flow is toward the southwestern RVAAP boundary.

Plate 3 represents facility-wide groundwater flow in wells completed into bedrock. Pre-glacial erosion has resulted in bedrock highs (i.e., islands) surrounded and topped by glacial and recent deposits (i.e., unconsolidated aquifer). At least three such islands have been interpreted to exist at RVAAP. Two are topped by the Homewood Member and one by the Sharon Member. These islands may not be in hydraulic communication with each other but there is hydraulic communication with the unconsolidated aquifer. Plate 3 illustrates that groundwater in bedrock of the Sharon Member flows radially outward from bedrock into the surrounding unconsolidated aquifer. The potentiometric high is located beneath Load Line 2. Plate 3 indicates that groundwater in bedrock of the Homewood Member flows through these bedrock islands from and to the unconsolidated aquifer. Groundwater flow of the Homewood member is to the southeast toward the Michael J. Kerwin Reservoir on the Mahoning River, which is a regional hydraulic sink.

Groundwater elevation measurements were collected each time a groundwater sample was collected as part of the FWGWMP. Through January 2008, 36 wells were sampled on a quarterly basis; starting in April 2008, 132 wells were sampled on a quarterly basis. Table 3-3 presents the water-level elevations taken between the October 2008 and July 2009 quarterly sampling events for all wells that have been sampled as a part of the FWGWMP.

3.2 Monitoring Well Inspection/Repair Results

3.2.1 Inspection Results – January 2009

All FWGWMP monitoring wells at RVAAP were inspected during the week of January 13-14, 19-20, and 27, 2009. Inspection of the physical condition of all existing facility monitoring wells was conducted at the same time potentiometric surface measurements were collected. The well inspection survey consisted of the following elements:

Table 3-3 Groundwater Elevations

Well	Monitoring Zone	Top of Casing (TOC) Elevation[a] (ft)	2008 4th Quarter Groundwater Elevation (Oct/2008) (ft)	2009 1st Quarter Groundwater Elevation (Jan/2009) (ft)	2009 2nd Quarter Groundwater Elevation (Apr/2009) (ft)	2009 3rd Quarter Groundwater Elevation (Jul/2009) (ft)
Loadline 1						
LL1mw-063	Sharon	994.84	966.36	NM	NM	NM
LL1mw-064	Unconsolidated	935.10	931.52	932.95	NM	NM
LL1mw-065	Unconsolidated	944.41	930.18	NM	NM	NM
LL1mw-079	Sharon	997.87	964.46	NM	NM	NM
Loadline 2						
LL2mw-060	Sharon	961.57	950.39	NM	NM	NM
LL2mw-261	Sharon	1,011.40	1,003.31	NM	NM	NM
LL2mw-264	Sharon	1,011.88	1,001.46	NM	NM	NM
LL2mw-265	Sharon	961.24	950.40	NM	NM	NM
LL2mw-268	Sharon	1,017.28	1,000.89	NM	NM	NM
LL2mw-270	Sharon	1,010.18	998.89	NM	NM	NM
Loadline 3						
LL3mw-232	Sharon	1,000.41	977.06	NM	NM	NM
LL3mw-233	Sharon	1,004.36	975.94	NM	NM	NM
LL3mw-234	Sharon	1,006.56	994.97	NM	NM	NM
LL3mw-235	Sharon	1,009.94	988.12	NM	NM	NM
LL3mw-237	Sharon	1,005.57	985.68	NM	NM	NM
LL3mw-240	Sharon	1,007.52	978.63	NM	NM	NM
LL3mw-241	Sharon	994.65	979.45	NM	NM	NM
LL3mw-243	Sharon	991.16	973.28	NM	NM	NM
Loadline 4						
LL4mw-193	Unconsolidated	982.92	974.39	NM	NM	NM
LL4mw-194	Unconsolidated	983.76	973.01	NM	NM	NM
LL4mw-195	Unconsolidated	982.59	970.70	NM	NM	NM
LL4mw-200	Unconsolidated	987.93	969.38	NM	NM	NM
Loadline 5						
LL5mw-001	Homewood	1,127.92	1,104.65	1,107.89	NM	NM
LL5mw-002	Homewood	1,128.68	1,106.81	1,107.83	NM	NM
LL5mw-003	Unconsolidated	1,127.70	1,108.00	1,108.05	NM	NM
LL5mw-004	Homewood	1,125.81	1,102.26	1,107.91	NM	NM
LL5mw-005	Homewood	1,129.42	1,107.67	1,107.87	NM	NM
LL5mw-006	Homewood	1,128.00	1,106.66	1,107.58	NM	NM

Table 3-3 Groundwater Elevations

Well	Monitoring Zone	Top of Casing (TOC) Elevation[a] (ft)	2008 4th Quarter Groundwater Elevation (Oct/2008) (ft)	2009 1st Quarter Groundwater Elevation (Jan/2009) (ft)	2009 2nd Quarter Groundwater Elevation (Apr/2009) (ft)	2009 3rd Quarter Groundwater Elevation (Jul/2009) (ft)
Loadline 6						
LL6mw-001	Unconsolidated	1,124.16	1,107.68	1,110.65	NM	NM
LL6mw-002	Unconsolidated	1,129.36	1,106.62	1,117.65	NM	NM
LL6mw-003	Homewood	1,125.38	1,107.43	1,108.94	NM	NM
LL6mw-004	Homewood	1,125.39	1,106.76	1,108.39	1,110.84	NM
LL6mw-005	Homewood	1120.47	NM	1,108.61	1,110.58	1,107.82
LL6mw-006	Unconsolidated	1124.37	NM	1,109.15	1,113.03	1,109.82
LL6mw-007	Homewood	1115.62	NM	1,110.12	1,113.33	1,108.11
Loadline 7						
LL7mw-001	Homewood	1129.64	NM	1,109.29	1,111.55	1,108.66
LL7mw-002	Homewood	1129.55	NM	1,113.93	1,116.57	1,111.97
LL7mw-003	Homewood	1120.84	NM	1,109.61	1,111.72	1,108.81
LL7mw-004	Homewood	1126.32	NM	1,111.57	1,113.52	1,110.75
LL7mw-005	Homewood	1135.87	NM	1,114.23	1,116.34	1,113.52
LL7mw-006	Homewood	1123.56	NM	1,113.18	1,115.04	1,111.55
Loadline 8						
LL8mw-001	Unconsolidated	1121.46	NM	1,110.01	1,113.54	1,109.52
LL8mw-002	Unconsolidated	1124.51	NM	1,106.24	1,109.76	1,105.78
LL8mw-003	Unconsolidated	1119.05	NM	1,106.36	1,109.85	1,105.88
LL8mw-004	Unconsolidated	1115.75	NM	1,104.88	1,108.06	1,104.26
LL8mw-005	Homewood	1115.73	NM	1,101.95	1,106.15	1,101.94
LL8mw-006	Homewood	1117.17	NM	1,097.47	1,100.08	1,096.97
Loadline 9						
LL9mw-001	Homewood	1134.62	NM	1,119.61	1,123.11	1,118.23
LL9mw-002	Homewood	1127.30	NM	1,116.61	1,113.43	1,113.49
LL9mw-003	Homewood	1135.76	NM	1,124.33	1,128.47	1,122.32
LL9mw-004	Homewood	1131.83	NM	1,110.62	1,111.08	1,110.72
LL9mw-005	Homewood	1130.93	NM	1,114.83	1,124.00	1,113.61
LL9mw-006	Homewood	1129.88	NM	1,110.96	1,111.76	1,110.13
LL9mw-007	Homewood	1119.99	NM	1,110.69	1,103.91	1,109.85

Table 3-3 Groundwater Elevations

Well	Monitoring Zone	Top of Casing (TOC) Elevation[a] (ft)	2008 4th Quarter Groundwater Elevation (Oct/2008) (ft)	2009 1st Quarter Groundwater Elevation (Jan/2009) (ft)	2009 2nd Quarter Groundwater Elevation (Apr/2009) (ft)	2009 3rd Quarter Groundwater Elevation (Jul/2009) (ft)
Loadline 10						
LL10mw-001	Homewood	1132.77	NM	1,107.67	1,110.61	1,108.28
LL10mw-002	Homewood	1127.13	NM	1,109.33	1,113.04	1,108.93
LL10mw-003	Homewood	1130.28	NM	1,109.33	1,113.06	1,108.77
LL10mw-004	Homewood	1122.39	NM	1,108.97	1,113.39	1,108.44
LL10mw-005	Homewood	1125.67	NM	1,109.92	1,113.48	1,109.48
LL10mw-006	Unconsolidated	1123.83	NM	1,111.64	1,114.38	1,110.63
Loadline 11						
LL11mw-001	Unconsolidated	1100.16	NM	1,091.45	1,092.44	1,089.06
LL11mw-003	Unconsolidated	1088.48	NM	1,087.78	1,087.98	1,085.39
LL11mw-004	Unconsolidated	1084.72	NM	1,084.32	1,084.63	1,082.08
LL11mw-005	Unconsolidated	1079.40	NM	1,073.00	1,075.63	1,070.52
LL11mw-006	Unconsolidated	1086.50	NM	1,083.01	1,085.08	1,080.48
LL11mw-008	Unconsolidated	1087.74	NM	1,084.06	1,087.05	1,083.72
LL11mw-009	Unconsolidated	1091.54	NM	NM	1,089.52	1,086.93
LL11mw-010	Unconsolidated	1082.68	NM	1,078.95	1,079.68	1,077.06
Loadline 12						
LL12mw-088	Unconsolidated	981.06	973.25	NM	NM	NM
LL12mw-107	Unconsolidated	980.15	969.04	NM	NM	NM
LL12mw-113	Sharon Shale	980.18	971.75	NM	NM	NM
LL12mw-128	Unconsolidated	978.24	967.14	NM	NM	NM
LL12mw-154	Unconsolidated	979.06	968.47	NM	NM	NM
LL12mw-184	Unconsolidated	983.16	969.38	NM	NM	NM
LL12mw-185	Unconsolidated	981.31	971.16	NM	NM	NM
LL12mw-187	Unconsolidated	979.94	968.23	NM	NM	NM
LL12mw-188	Unconsolidated	980.63	971.81	NM	NM	NM
LL12mw-189	Sharon Shale	978.04	967.22	NM	NM	NM
LL12mw-242	Unconsolidated	981.20	969.43	NM	NM	NM
LL12mw-243	Unconsolidated	980.79	970.39	NM	NM	NM
LL12mw-244	Unconsolidated	980.65	968.35	NM	NM	NM
LL12mw-245	Unconsolidated	980.04	970.80	NM	NM	NM
LL12mw-246	Unconsolidated	984.83	966.84	NM	NM	NM

Table 3-3 Groundwater Elevations

Well	Monitoring Zone	Top of Casing (TOC) Elevation[a] (ft)	2008 4th Quarter Groundwater Elevation (Oct/2008) (ft)	2009 1st Quarter Groundwater Elevation (Jan/2009) (ft)	2009 2nd Quarter Groundwater Elevation (Apr/2009) (ft)	2009 3rd Quarter Groundwater Elevation (Jul/2009) (ft)
Atlas Scrap Yard						
ASYmw-001	Sharon	981.13	NM	NM	970.52	968.89
ASYmw-002	Sharon	985.24	NM	NM	974.86	970.61
ASYmw-003	Sharon	982.21	NM	NM	970.89	969.01
ASYmw-004	Sharon	979.66	NM	NM	971.41	969.88
ASYmw-005	Sharon	979.8	NM	NM	973.03	971.57
ASYmw-006	Sharon	983.01	NM	NM	969.96	968.77
ASYmw-007	Unconsolidated	984.16	NM	NM	969.64	968.91
ASYmw-008	Unconsolidated	978.85	NM	NM	974.64	974.75
ASYmw-009	Sharon	982.7	NM	NM	971.73	969.65
ASYmw-010	Unconsolidated	981.05	NM	NM	969.72	968.63
Building 1200						
BL12mw-010	Unconsolidated	1,005.92	985.57	986.77	NM	NM
BL12mw-011	Unconsolidated	1,006.70	984.07	983.27	NM	NM
BL12mw-012	Unconsolidated	1,006.32	983.86	981.60	985.57	NM
C-Block Quarry						
CBLmw-001	Homewood	1,181.08	1,136.98	1,136.26	NM	NM
CBLmw-002	Homewood	1,175.24	1,136.56	1,136.09	NM	NM
CBLmw-003	Homewood	1,175.06	1,137.84	1,137.39	NM	NM
CBLmw-004	Homewood	1,174.84	1,137.92	1,137.48	NM	NM
Central Burn Pits						
CBPmw-001	Unconsolidated	975.84	961.10	961.99	NM	NM
CBPmw-002	Unconsolidated	970.04	958.98	959.63	NM	NM
CBPmw-003	Unconsolidated	974.67	959.94	961.98	NM	NM
CBPmw-004	Unconsolidated	971.13	958.76	960.15	NM	NM
CBPmw-008	Unconsolidated	973.19	955.59	956.91	NM	NM
Cobbs Pond						
CPmw-001	Unconsolidated	975.26	968.47	972.32	NM	NM
CPmw-002	Unconsolidated	972.31	967.71	972.21	NM	NM
CPmw-003	Unconsolidated	972.92	968.08	968.96	NM	NM
CPmw-004	Unconsolidated	981.20	967.84	970.66	NM	NM
CPmw-005	Unconsolidated	973.58	960.79	962.15	NM	NM
CPmw-006	Unconsolidated	965.13	955.82	956.99	NM	NM

Table 3-3 Groundwater Elevations

Well	Monitoring Zone	Top of Casing (TOC) Elevation[a] (ft)	2008 4th Quarter Groundwater Elevation (Oct/2008) (ft)	2009 1st Quarter Groundwater Elevation (Jan/2009) (ft)	2009 2nd Quarter Groundwater Elevation (Apr/2009) (ft)	2009 3rd Quarter Groundwater Elevation (Jul/2009) (ft)
Detonation Area 2						
DETmw-003	Unconsolidated	1036.81	1,027.02	NM	1,027.92	NM
DETmw-004	Unconsolidated	1038.68	1,027.69	NM	1,029.39	NM
DA2mw-104	Unconsolidated	1,073.89	1,051.79	1,052.27	NM	NM
DA2mw-105	Unconsolidated	1,045.34	1,041.85	1,042.11	NM	NM
DA2mw-106	Unconsolidated	1,043.79	1,036.32	1,040.14	NM	NM
DA2mw-108	Unconsolidated	1,032.36	1,025.79	1,026.57	NM	NM
DA2mw-109	Unconsolidated	1,071.29	1,054.12	1,057.45	NM	NM
DA2mw-110	Unconsolidated	1,063.78	1,051.56	1,055.63	NM	NM
DA2mw-111	Unconsolidated	1,042.12	1,023.42	1,037.62	NM	NM
DA2mw-112	Unconsolidated	1,037.44	1,032.96	1,030.16	NM	NM
DA2mw-113	Unconsolidated	1,037.11	1,029.31	1,029.26	NM	NM
Erie Burning Grounds						
EBGmw-123	Unconsolidated	947.82	937.62	938.50	NM	NM
EBGmw-124	Unconsolidated	941.39	937.58	938.41	NM	NM
EBGmw-125	Unconsolidated	949.89	937.44	938.44	NM	NM
EBGmw-126	Unconsolidated	940.61	937.62	938.62	NM	NM
EBGmw-127	Unconsolidated	943.07	937.47	938.84	NM	NM
EBGmw-128	Unconsolidated	945.13	937.29	938.82	NM	NM
EBGmw-129	Unconsolidated	944.36	936.99	939.02	NM	NM
EBGmw-130	Unconsolidated	944.00	936.44	937.91	NM	NM
Fuze & Booster Quarry						
FBQmw-166	Unconsolidated	1,108.86	1,102.54	1,104.15	NM	NM
FBQmw-167	Unconsolidated	1,115.90	1,109.67	1,111.41	NM	NM
FBQmw-168	Homewood	1,133.91	1,120.43	1,121.76	NM	NM
FBQmw-169	Homewood	1,120.58	1,112.16	1,115.10	NM	NM
FBQmw-170	Homewood	1,142.26	1,121.90	1,122.31	NM	NM
FBQmw-171	Homewood	1,143.55	1,122.16	1,124.35	NM	NM
FBQmw-172	Homewood	1,150.09	1,121.16	1,121.27	NM	NM
FBQmw-173	Homewood	1,165.94	1,121.34	1,120.59	NM	NM
FBQmw-174	Homewood	1,139.97	1,120.88	1,121.59	NM	NM
FBQmw-175	Homewood	1,140.73	1,120.97	1,121.00	NM	NM
FBQmw-176	Unconsolidated	1,131.91	1,120.73	1,122.38	NM	NM
FBQmw-177	Homewood	1,128.57	1,102.82	1,115.26	NM	NM

Table 3-3 Groundwater Elevations

Well	Monitoring Zone	Top of Casing (TOC) Elevation[a] (ft)	2008 4th Quarter Groundwater Elevation (Oct/2008) (ft)	2009 1st Quarter Groundwater Elevation (Jan/2009) (ft)	2009 2nd Quarter Groundwater Elevation (Apr/2009) (ft)	2009 3rd Quarter Groundwater Elevation (Jul/2009) (ft)
Landfill North of Winklepeck						
LNWmw-024	Unconsolidated	1,038.00	1,028.85	1,025.58	NM	NM
LNWmw-025	Unconsolidated	1,029.13	1,023.44	1,024.09	NM	NM
LNWmw-026	Unconsolidated	1,027.80	1,013.59	1,023.93	NM	NM
LNWmw-027	Unconsolidated	1,027.13	1,013.81	1,020.43	NM	NM
NACA Test Area						
NTAmw-107	Unconsolidated	1,080.30	1,066.82	1,067.95	NM	NM
NTAmw-108	Unconsolidated	1,085.62	1,067.12	1,068.16	NM	NM
NTAmw-109	Unconsolidated	1,079.84	1,067.01	1,072.19	NM	NM
NTAmw-110	Unconsolidated	1,082.62	1,067.33	1,068.64	NM	NM
NTAmw-111	Unconsolidated	1,080.94	1,073.84	1,077.67	NM	NM
NTAmw-112	Unconsolidated	1,078.33	1,068.32	1,069.63	NM	NM
NTAmw-113	Unconsolidated	1,075.68	1,067.63	1,068.99	NM	NM
NTAmw-114	Unconsolidated	1,078.71	1,070.86	1,072.79	NM	NM
NTAmw-115	Unconsolidated	1,089.65	1,073.90	1,075.86	NM	NM
NTAmw-116	Unconsolidated	1,094.33	1,086.44	1,089.54	NM	NM
NTAmw-117	Unconsolidated	1,094.54	1,078.77	1,081.57	NM	NM
NTAmw-118	Unconsolidated	1,081.44	1,071.06	1,072.89	NM	NM
Ramsdell Quarry						
RQLmw-007	Sharon	965.91	957.03	NM	960.16	NM
RQLmw-008	Sharon	966.08	957.35	NM	960.13	NM
RQLmw-009	Sharon	964.58	957.13	NM	960.08	NM
RQLmw-012	Sharon	977.65	953.63	953.71	NM	NM
RQLmw-013	Sharon	980.71	953.29	953.39	NM	NM
RQLmw-014	Sharon	973.49	951.56	951.80	NM	NM
RQLmw-015	Sharon	991.26	958.15	957.43	NM	NM
RQLmw-016	Sharon	996.6	965.15	959.12	NM	NM
RQLmw-017	Sharon	991.23	954.73	959.65	NM	NM
Winklepeck Burning Grounds						
WBGmw-005	Unconsolidated	1,054.70	1,046.70	1,049.11	NM	NM
WBGmw-008	Unconsolidated	1,008.21	992.05	993.72	NM	NM
WBGmw-010	Unconsolidated	1,069.85	1,060.22	1,061.84	NM	NM
WBGmw-011	Unconsolidated	1,072.38	1,060.44	1,061.68	NM	NM
WBGmw-012	Unconsolidated	1,079.11	1,054.81	1,054.20	NM	NM

Table 3-3 Groundwater Elevations

Well	Monitoring Zone	Top of Casing (TOC) Elevation[a] (ft)	2008 4th Quarter Groundwater Elevation (Oct/2008) (ft)	2009 1st Quarter Groundwater Elevation (Jan/2009) (ft)	2009 2nd Quarter Groundwater Elevation (Apr/2009) (ft)	2009 3rd Quarter Groundwater Elevation (Jul/2009) (ft)
Winklepeck Burning Grounds con't						
WBGmw-013	Unconsolidated	1,071.70	1,059.40	1,059.59	NM	NM
WBGmw-014	Unconsolidated	996.78	979.10	980.76	NM	NM
WBGmw-015	Unconsolidated	1,011.60	996.85	1,000.20	NM	NM
WBGmw-016	Unconsolidated	997.03	978.44	979.74	NM	NM
WBGmw-017	Unconsolidated	1,006.62	994.93	998.23	NM	NM
Suspected Mustard Agent Burial Site						
MBSmw-001	Unconsolidated	1,082.20	1,063.80	1,064.71	NM	NM
MBSmw-002	Unconsolidated	1,083.22	1,064.35	1,065.21	NM	NM
MBSmw-003	Unconsolidated	1,084.45	1,064.90	1,065.60	NM	NM
MBSmw-004	Unconsolidated	1,081.80	1,064.17	1,064.95	NM	NM
MBSmw-005	Unconsolidated	1,082.42	1,063.78	1,064.67	NM	NM
MBSmw-006	Unconsolidated	1,081.83	1,063.71	1,064.63	NM	NM

a = Elevations are in feet above mean sea level (amsl)
NM = New wells added to the sampling schedule, not measured in all quarters

- Following collection of water-level measurements, the total depth of each monitoring well was sounded using the water-level indicator. These data allow a determination of the degree of siltation and comparison of the constructed depths recorded in the well construction logs.

- Visual examination of the condition of the above-ground components of each well was performed. The examination included the condition of access roads to the well, well identification tags or markings, protective casing condition, traffic guard posts, protective covers and locks, protective pads, weep holes, and watertight inner casing caps.

- Recording of well inspection data and any maintenance needs were done using a well inspection/maintenance checklist.

The well inspections did not reveal irreparable damage to any specific monitoring wells. General well conditions include:

- Many of the outer well casings and guard posts are showing signs of rust and peeling paint. The following areas had a majority of the wells in need of painting:

    - Background Wells
    - LL's 5, 6, 7, 8, 9, 10
    - Atlas Scrap Yard
    - C-Block
    - Detonation Area 2
    - Landfill North of Winklepeck
    - NACA Test Area

- All of the FWGWMP wells should be considered for repainting within the next 2 years. It should be noted that while a majority of the wells will require repainting the most recent inspection (January 2009) revealed no issues related to the paint that would affect the integrity of the wells (i.e. excessive rusting of the outer casing). It is suggested that repainting of the wells be delayed until the quarterly monitoring for all wells has been completed (January 2010). At that time it is anticipated that decisions may be made to close certain wells not used for long-term monitoring. Only wells used for continued monitoring would then be repainted as soon as weather permits in 2010.

- The vegetation around the wells was cleared in late June, early July of 2009 [the Winklepeck Burning Ground wells were not cleared of vegetation at the request of the USACE, and the immediate (<3-foot area only) around the Demolition 2 Area wells were cleared]. Access roads were passable from a vegetation standpoint, however there was considerable snow (>1-foot) on the ground during the inspection period.

- At many of the wells (e.g., BKG 20, Central Burn Pit wells, Building 1200 wells, and Winklepeck Burning Ground wells) the guard posts were missing the concrete plugs at the top of the post. This does not appear to affect the integrity or life of the posts. Additionally as presented in the attached Table 1 several well posts were loose and in need of concrete repair at the base.

- Overall the locks associated with the wells were in good condition with the few exceptions noted on the attached table. Lock caps on some of the wells were missing. The lock cap is the small rubber covering at the bottom of the lock over the locking mechanism where the key is inserted. Over time some of these covers have been broken off. There is no way to replace the cover without replacing the lock. There is no structural or operating damage to the locks without covers. Since there is no damage to the lock as a result of the missing lock caps no action is planned at this time to replace the missing lock caps. The working condition of all locks at the facility is closely monitored and any locks not in good working condition will be replaced.

- As detailed in Table 3-4 several wells had pads that were either cracked or had stability issues (wobbling). The integrity of the wells did not, however appear to be compromised. These wells have, however been identified for repair.

Table 3-4 presents a list of specific wells that have conditions potentially requiring attention.

Table 3-4. Well Inspection Summary (January 2009)

Area	Well Number	Well Condition/Issue	Recommendation
Background	BKGmw-004	Lock cap is missing.	Lock is in good working condition. No action at this time.
	BKGmw-006	Concrete pad cracked, although still stable.	Repair cracks with concrete patch to prevent infiltration.
	BKGmw-016	Concrete around one of the guard posts is broken, post is still upright but not stable.	Well is not located in a high traffic area - there is no immediate danger to the well casing. Old concrete should be removed and new concrete should be installed.
Load Line 1	LL1mw-084	Lock cap is missing.	Lock is in good working condition. No action at this time.
	Ll1mw-080	Lock cap is missing.	Lock is in good working condition. No action at this time.
Load Line 3	LL3mw-233	Lock cap is missing.	Lock is in good working condition. No action at this time.
	LL3mw-238	Lock cap is missing.	Lock is in good working condition. No action at this time.
Load Line 4	LL4mw-197	One of guard posts is leaning, but secure.	No action at this time.
Load Line 5	LL5mw-003	Lock cap is missing.	Lock is in good working condition. No action at this time.
	LL5mw-006	Lock cap is missing.	Lock is in good working condition. No action at this time.
Load Line 6	LL6mw-003	Lock cap is missing.	Lock is in good working condition. No action at this time.
	LL6mw-004	Lock cap is missing.	Lock is in good working condition. No action at this time.
	LL6mw-006	Lock is hard to open.	Take lock in to be repaired or replaced.
	LL6mw-007	Lock is hard to open.	Take lock in to be repaired or replaced.
Load Line 8	LL8mw-003	The steel outer casing is dented but does not appear to be damaged. One of the guard posts has damaged concrete. The concrete is cracked and wobbles but is still stable.	There does not appear to be any structural damage to the inner casing or well - no action at this time.
	LL8mw-005	There are cracks between the outer casing and the concrete pad.	Repair cracks with concrete patch to prevent infiltration.
	LL8mw0006	Concrete pad is cracked, although still stable.	Repair crack with concrete patch to prevent infiltration.

Table 3-4. Well Inspection Summary (January 2009)

Area	Well Number	Well Condition/Issue	Recommendation
Load Line 9	LL9mw-003	Concrete around the guard posts is broken, posts are still upright but not stable.	Well is not located in a high traffic area - there is no immediate danger to the well casing. Old concrete should be removed an new concrete should be installed.
	LL9mw005	One of guard posts is leaning, and loose.	Secure post using concrete.
	LL9mw-007	There was no lock on the well cap.	Obtain new lock.
Load Line 10	LL10mw-004	Concrete pad cracked, although still stable.	Repair crack with concrete patch to prevent infiltration.
Load Line 11	LL11mw-004	1. Needs new well cap. 2. Lock is hard to open.	1.Well cap was replaced during sampling. 2.Take lock in to be repaired or replaced.
	LL11mw-006	1. Needs new well cap. 2. Lock is hard to open.	1.Replace well cap. 2.Lock was replaced during sampling.
Load Line 12	LL12mw-246	Lock cap is missing.	Lock is in good working condition. No action at this time.
	LL12mw1876	Lock cap is missing.	Lock is in good working condition. No action at this time.
Cobbs Pond	CPmw-003	Outer casing box was full of water. Flush-mounted well had no gasket around well cover	EQM replaced the gasket during the inspection.
	CPmw-006	Lock cap is missing.	Lock is in good working condition. No action at this time.
Detonation Area 2	DA2mw-106	Soil is eroded away from the concrete pad. Pad is stable at this time, although additional soil appears to have eroded away since the July 2008 inspection.	Stabilize pad using bentonite/gravel/concrete as necessary.
	DET-1	Concrete pad is not secure (wobbles).	Stabilize pad using bentonite/gravel/concrete as necessary.
Erie Burning Grounds	EBGmw-126	This well is consistently under water due to low topography and marshy conditions. The integrity of the pad and casing do not appear to be compromised.	Monitor the water during subsequent inspections for signs of deterioration of the pad. Additionally, monitor water levels inside the casing for evidence of infiltration of surface water.
Atlas Scrap Yard	ASYmw-004	Lock cap is missing.	Lock is in good working condition. No action at this time.
Fuze and Booster Quarry	FBQmw-176	Concrete around one of the guard posts is broken. Post is stable.	Monitor post during subsequent inspections.
Winklepeck Burning Grounds	WBGmw-012	One of the guard posts is leaning and appears to have been hit.	Post is secure. Monitor during future inspections.

Table 3-4. Well Inspection Summary (January 2009)

Area	Well Number	Well Condition/Issue	Recommendation
Ramsdell Quarry Landfill	RQLmw-007	Lock cap is missing.	Lock is in good working condition. No action at this time.
	RQLmw-006	1. Well cap showing wear, not closing tightly. 2. Minor erosion around pad. Pad is stable.	1. Replace cap. 2. Monitor erosion during future inspections.
	RQLmw-011	Hinge on the top of the outer casing is broken off.	Replace hinge/top of outer casing.
Mustard Agent Burial Site	MBSmw-001	This well is consistently under water due to low topography and marshy conditions. The integrity of the pad and casing do not appear to be compromised.	Monitor the water during subsequent inspections for signs of deterioration of the pad. Additionally, monitor water levels inside the casing for evidence of infiltration of surface water.
	MBSmw-004	Soil is eroded away from the concrete pad. Pad is stable at this time.	Stabilize pad using bentonite/gravel/concrete as necessary.

3.2.2 Well Repair and Maintenance - 2009

The following well maintenance/repair activities were conducted during 2009:

- Locks for several wells were replaced because they were becoming difficult to open.
- Well caps for several of the wells were replaced.
- Cracks in the pad at BKGmw-006, LL8mw-005, LL8mw-006, LL10mw-004 were repaired using caulk. Commercial concrete patch was applied to seal the cracks and prevent further deterioration.
- The top of the outer casing at RQLmw-011, was replaced with a new square top. The original top had become rusted and the hinge was broken.
- The guard posts at several wells were leaning and unstable. New concrete was installed around the guard posts at LL9mw-003, LL9mw-005, FBQmw-176, and BKGmw-016. One of the guard posts at WBGmw-012 was leaning but was stable. This post will be monitored during future inspections.
- Soil has eroded away at the concrete pads surrounding several of the wells other pads were wobbly. The pads at DA2mw-106, DET-001, and MBSmw-004 were stabilized using a combination of gravel, concrete and soil.
- The pads at two wells have been noted as being consistently under water. These wells (EBGmw-126 and MBSmw-001) are monitored for signs of deterioration. The pads for the wells that are underwater will be visually inspected during sampling/well inspection events to confirm that they are still intact and that the integrity of the wells is not compromised. Additionally, the water levels in the well will be closely monitored. If the water levels are found to be at ground surface it may be indicative of water entering the casing. Currently the water levels in these wells range between 2- and 7-feet below ground surface. It should also be noted that neither of these wells are flush-mounts, and the risers are well above the water level.

3.3 Sedimentation/Turbidity and Redevelopment of Wells - 2009

EQM has reviewed the historical sediment accumulation footages and the description of bottom for the wells currently being sampled. The majority of wells at RVAAP indicate a <0.20-foot accumulation of sediment with a hard well bottom indicated. However, some wells indicated a >0.20-foot of sediment accumulation and/or soft well bottoms. Based on this evaluation a number of wells were identified for redevelopment. There were two different redevelopment events during 2009 – one in June and one in

September. Redevelopment activities included surging and pumping using a surge block, and a centrifugal and/or submersible pump. This was performed to remove fines accumulating as sediment in the bottom well cap. Each well was developed by at least two methods (surge and pump) with the attempt to reach stability of hydraulic conditions according to the *Technical Guidance Manual for Hydraulic Investigations and Groundwater Monitoring OEPA*, February 1995.
It should be noted that in order to minimize turbid samples, low flow purging and sampling techniques are used. The pumps are suspended at least one foot above the bottom of the well to avoid agitation of the sediment potentially accumulating in the well sump. EQM will continue to monitor any high turbidity readings and make a determination for future redevelopment and other evaluation of any affected wells.

3.3.1 June 2009 Redevelopment

During the June 16-17, 2009 timeframe the following wells were redeveloped:

ASYmw-001	ASYmw-003	LL12mw-113
LL12mw-243	LL12mw-244	LL12mw-245
LL6mw-004	LL7mw-002	LL7mw-003
LL7mw-004	LL7mw-005	LL8mw-002
LL8mw-003	LL8mw-004	LL9mw-004
LL9mw-007	B12mw-010	

The results of the redevelopment activities are presented in Table 3-5. The following summarizes the results of the redevelopment activities:

- Six wells were redeveloped to remove significant (>0.10 feet) of sediment from the bottom of the wells. Of these five of them were redeveloped to depths equal to or greater than the reported construction depth (LL8mw-002, LL12mw-243, LL12mw-244, LL12mw-245, and LL12mw-113). The other well (LL7mw-002) was redeveloped and was reported to have a hard bottom, but the current (post redevelopment) depth of the well was 0.66 feet shallower than the reported construction depth (this issue is discussed below).
- Three of the wells were redeveloped with no significant change in the well depth measurement, and with reported hard bottoms. These three wells (LL7mw-003, LL8mw-003, and ASYmw-003 were also reported within <0.1 foot of the reported construction depth at the time of redevelopment. The January 2009 readings for depth to bottom for these wells appear to be anomalous (incorrect readings) when compared to the redevelopment as well as historical measurements.
- The remaining eight wells (LL7mw-004, LL7mw-005, LL8mw-004, LL6mw-004, ASYmw-001, LL9mw-007, LL9mw-004 and B12mw-010) were also redeveloped with no significant change in the well depth measurement, and with reported hard bottoms. These wells were all however 0.07 to 0.35 feet shallower than the reported construction depth. Based on the lack of sediment removed, and

the reported hard bottom of the wells, EQM believes there is no significant sediment accumulation in those wells.

- As described in Table 3-2 the LL12 wells all had purged water during the redevelopment activities that was described as grey-colored slurry. None of these wells cleared with redevelopment even after having reached or exceeded the reported construction depths. Additionally, LL12mw-113 had 5.3 feet of sediment removed during redevelopment activities in June 2009 (indicating -0.1 feet of sediment). When the well was re-measured in July 2009 the well depth indicated that 3.08 feet of sediment was present in the well. It appears that the clay solids penetrating the well screen have infiltrated back into the well. Despite the apparent sediment accumulation in LL12mw-113 there is still sufficient well screen open to the formation to allow collection of a sample directly from the formation. EQM will continue to monitor the sediment accumulation in LL12mw-113 as well as other LL12 wells in order to determine that there is sufficient screen interval in order to obtain a representative sample.

3.3.2 September 2009 Redevelopment

During the September 21-23, 2009 timeframe the following wells were redeveloped:

CBLmw-001	CBLmw-003	CBPmw-001
CPmw-001	DA2mw-106	DETmw-001
FBQmw-173	FBQmw-174	LL1mw-065
LL1mw-082	LL1mw-084	LL10mw-003
LL11mw-001	LL2mw-263	LL4mw-198
LL5mw-002	MBSmw-001	MBSmw-002
MBSmw-004	NTAmw-113	RQLmw-014
WBGmw-012		

CPmw-006 had no accumulated sediment but water is very turbid and was therefore identified for redevelopment.

The results of the redevelopment activities are presented in Table 3-6. The following summarizes the results of the redevelopment activities:

- Fourteen wells were redeveloped to remove significant (>0.10 feet) of sediment from the bottom of the wells. Of these, eight of them were redeveloped to depths equal to or greater than the reported construction depth (CBLmw-001, CBPmw-001, FBQmw-173, LL1mw-065, LL2mw-263, LL4mw-198, MBSmw-002, and MBSmw-004). The other wells (LL1mw-084, FBQmw-174, LL11mw-001, NTAmw-113, and RQLmw-014, WBGmw-012) was redeveloped and were reported to have a hard bottom, but the current (post redevelopment) depth of these wells are shallower than the reported construction depth as shown in Table 3-6. Based on the redevelopment activities conducted and the presence of hard well bottoms following redevelopment EQM believes there is no significant sediment accumulation in those wells.

Table 3-5. June 2009 Redevelopment Results

Well ID	Reported Construction Depth (ft)	January 2009 Well Depth Measurement (ft)	June 2009 Well Depth Measurement Pre-Redevelopment (ft)	June 2009 Well Depth Measurement Post-Redevelopment (ft)	July 2009 Well Depth Measurement (ft)	October 2007 Well Depth Measurement (ft)	Current Description of Bottom/Comments
LL7mw-002	27.80	27.14	26.92	27.14	27.20	27.28	Hard
LL7mw-003	33.60	33.32	33.67	33.67	33.53	33.64	Hard
LL7mw-004	32.50	32.17	32.17	32.17	32.20	32.34	Hard
LL7mw-005	30.60	30.31	30.47	30.47	30.29	30.44	Hard
LL8mw-003	23.30	22.95	22.95	22.95	23.00	23.13	Hard
LL8mw-002	32.80	32.53	32.68	32.78	32.59	32.66	Hard
LL8mw-004	23.00	22.60	22.63	22.66	22.69	22.74	Hard
LL6mw-004	25.10	24.50	24.45	24.45	Not measured	24.61	Hard
LL12mw-244	32.10	29.34	29.17	32.77	32.65	31.67	Hard. Development water was a slurry-like mixture containing grey clay. Water did not clear during redevelopment activities.
LL12mw-243	25.70	24.65	24.53	25.86	25.69	25.8	Hard. Development water was a slurry-like mixture containing grey clay. Water did not clear during redevelopment activities.
LL12mw-245	30.50	29.98	29.94	30.43	30.28	30.45	Hard. Development water was a slurry-like mixture containing grey clay. Water did not clear during redevelopment activities.
LL12mw-113	25.00	19.62	19.80	25.10	21.92	20.43	Hard. Development water was a slurry-like mixture containing grey clay. Water did not clear during redevelopment activities.
ASYmw-001	23.70	23.05	23.20	23.20	23.10	23.18	Hard
ASYmw-003	23.50	22.90	23.41	23.42	23.45	23.52	Hard
LL9mw-007	18.50	18.06	18.08	18.08	18.15	18.23	Hard
LL9mw-004	34.90	34.62	34.59	34.60	34.64	34.74	Hard
B12mw-010	23.20	22.82	22.76	22.76	Not measured	22.92	Hard

- The remaining eight wells (CBLmw-003, CPmw-001, DA2mw-106, DETmw-001, LL10mw-003, LL1mw-082, LL5mw-002, and MBSmw-001) were also redeveloped with no significant change in the well depth measurement, and with reported hard bottoms. These wells were all however 0.23 to 1.99 feet shallower than the reported construction depth. Based on the lack of sediment removed, and the reported hard bottom of the wells, EQM believes there is no significant sediment accumulation in those wells.
- CPmw-006 was redeveloped for turbidity issues. This well was redeveloped until all indicator parameters were stabilized and the water was clear.

3.4 Summary of Groundwater Sampling Results

Section 1.5.1 of this report addresses the wells sampled during this reporting period. The list of FWGWMP wells monitored for the October 2008 through July 2009 events are presented in Appendix B. Note that SAIC completed 2 rounds of sampling of the deep SCF wells in 2009, but a report and evaluation of the data as it relates to the inclusion of those wells into the FWGWMP will not be conducted until four quarters of monitoring has been completed ending in early 2010.

3.4.1 October 2008

The October 2008 FWGWMP sampling event was performed between October 6 through 15, 2008. One hundred and thirty seven wells, including the 5 RCRA wells, were sampled for this event. The results of this sampling event are reported in the *Facility-Wide Groundwater Monitoring Program, Report on the October 2008 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*, dated June 2008 (EQM). The results of this sampling event are summarized in Section 4.0 of this report.

Groundwater pH values of less than 5 were noted in several wells during the October 2008 and over past few sampling events. EQM reviewed the historical purge records for these wells dating back to the January 2008 (sampling of the referenced wells started in January 2008 or April 2008). The pH readings are presented below for these wells. The April 2008 pH measurements for 2 of the wells (LL3mw-237 and LL12mw-107) appeared to be anomalous and may be due to equipment error. The pH measurements for LL1mw-063 do appear to be declining over time. This well is centrally located to previous operations at Load Line 1. No other Load Line 1 wells are exhibiting low or declining pH levels. Conditions at this well will be closely monitored during future sampling events to determine if this trend is continuing. The pH measured during the purging of the other wells has remained consistently at or below 5 during the sampling timeframe. This could be indicative of groundwater contamination, however a full evaluation of the conditions at these wells will be conducted once all of the wells have been sampled. A complete discussion of the pH values can be found in the *Facility-Wide Groundwater Monitoring Program, Report on the October 2008 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*, dated June 2008 (EQM).

Additionally, as noted in a letter sent to the Ohio EPA on May 22, 2009 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. Copies of the letter and associated laboratory Case narratives are included in this report as Appendix I.

3.4.2 January 2009

The January 2009 FWGWMP sampling event was performed between January 19 through the 28, 2009. One hundred and thirty-one wells were sampled for this event. The results of this sampling event are reported in the *Facility-Wide Groundwater Monitoring Program, Report on the January 2009 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio,* dated July 2009 (EQM). The results of this sampling event are summarized in Section 4.0 of this report.

Additionally during this event depth to water from the top of the inner casing was measured in the 237 FWGWMP wells during January 13-14, 19-20, and 27, 2009. Water level measurements were taken with a Herron Dipper-T or Enviro Inspector electronic water-level indicator. The depth to the bottom of the well from the top of the inner casing was also measured with the electronic water level indicator. The results of the well inspections and the associated potentiometric map are included in this report as discussed in Section 3.2.

The water in LL11mw-009 was frozen and was not sampled during the January 2009 event. The ambient air temperatures during the sampling period were well below freezing with no temperature increase forecast until mid-February 2009. Therefore it was decided to begin the 4 quarters of sampling for this well in April 2009. Additionally, one of the wells (Building 1200mw-012) has always had very little water in the well (<1-foot) and has a very slow recharge rate. During the January 2009 sampling event the measured water in the well was less than 1-inch. Sampling of this well was attempted but there was sufficient water for only three 40-ml VOC bottles. As for past events EQM returned to the well but was getting less than 100ml recharge per day. At this point it was suggested to the Ohio EPA to resample the well during the April 2009 sampling event. The Ohio EPA and the USACE agreed with this suggestion.

Table 3-6. September 2009 Redevelopment Results

Well ID	Reported Construction Depth (ft)	October 2007 Well Depth Measurement (ft)	July 2008 Well Depth Measurement (ft)	January 2009 Well Depth Measurement (ft)	September 2009 Well Depth Measurement Pre-Redevelopment (ft)	September 2009 Well Depth Measurement Post-Redevelopment (ft)	Current Description of Bottom/Comments
CBLmw-001	51.6	49.79	49.95	49.70	49.63	50.81	dry sinks into sand
CBLmw-001	51.6	49.79	49.95	49.70	50.8	51.15	hard, Water cleared during redevelopment activities.
CBLmw-003	45.8	44.82	44.92	44.71	44.7	44.7	goes dry, hard, Water cleared during redevelopment activities.
CBPmw-001	34.9	32.84	32.81	32.68	32.58	34.89	goes dry
CPmw-001	15.3	14.8	14.81	14.74	14.7	14.73	hard goes dry
CPmw-006	20.2	20.74	20.75	20.62	20.62	20.62	hard, Water cleared during redevelopment activities.
CPmw-006	20.2	20.74	20.75	20.62	20.62	20.62	Hard. Development water was a slurry-like mixture containing grey clay. Water cleared during redevelopment activities.
DA2mw-106	18.1	16.9	16.97	16.78	16.78	16.78	hard, goes dry, Water cleared during redevelopment activities.
DET-001B	40.5	38.61	38.69	38.48	38.51	38.51	hard, Water cleared during redevelopment activities.
FBQmw-173	53.0	51.79	51.89	51.75	51.65	52.95	hard, Water cleared during redevelopment activities.
FBQmw-174	26.2	22.95	23.04	22.84	22.83	23.00	hard
LL10mw-003	28.9	28.62	28.7	28.49	28.5	28.5	hard
LL11mw-001	24.1	21.61	21.65	21.45	21.39	23.25	hard
LL1mw-065	23.4	23.14	23.01	23.05	23.11	23.37	hard
LL1mw-082	41.8	41.56	41.48	41.48	41.33	41.56	dry
LL1mw-082	41.8	41.56	41.48	41.48	41.56	41.57	goes dry
LL1mw-084	39.3	38.99	38.97	38.85	38.85	39.04	goes dry
LL2mw-263	23.0	22.66	22.65	22.53	22.48	23.40	hard, Water cleared during redevelopment activities.
LL4mw-198	22.3	21.04	20.90	20.72	20.66	22.71	Hard. Development water was a slurry-like mixture containing grey clay. Water did not clear during redevelopment activities.
LL5mw-002	27.9	27.6	27.04	27.42	27.4	27.49	goes dry 9/22/2009
LL5mw-002	27.9	27.6	27.04	27.42	27.49	27.51	goes dry 9/23/2009
MBS-001	31.5	31.03	31.10	30.92	30.92	30.97	hard, Water cleared during redevelopment activities.
MBS-002	30.7	30.44	30.52	30.33	30.31	31.12	hard
MBS-004	27.0	26.66	26.70	26.52	26.58	27.15	hard, Water cleared during redevelopment activities.
NTAmw-113	30.6	29.41	29.79	29.30	29.11	29.65	hard
RQLmw-014	31.6	31.44	31.25	31.15	31.13	31.49	hard, Water cleared during redevelopment activities.
WBGmw-012	32.0	31.73	31.75	31.55	31.5	31.63	goes dry , hard, Water cleared during redevelopment activities.

3.4.3 April 2009

The April 2009 FWGWMP sampling event was performed between April 22 and 29, 2009. Fifty-three wells, including the 5 RCRA wells, were sampled for this event. This also included sampling Building 12mw-012 which did not have sufficient water for sampling during the January 2009 event. The results of this sampling event are reported in the *Facility-Wide Groundwater Monitoring Program, Report on the April 2009 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohi*o, dated November 2009 (EQM). The results of this sampling event are summarized in Section 4.0 of this report.

During the January and April 2009 sampling events a number of wells were identified for redevelopment due to sediment accumulation. A discussion of the redevelopment activities is presented in Section 3.3 of this report.

3.4.4 July 2009

The July 2009 FWGWMP sampling event was performed between July 13 and 16, 2008. Forty-six wells were sampled for this event. The results of this sampling event are reported in the Draft *Facility-Wide Groundwater Monitoring Program, Report on the July 2098 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio,* dated November 2009 (EQM). The results of this sampling event are summarized in Section 4.0 of this report.

SECTION 4

SUMMARY/ASSESSMENT OF ANNUAL FWGWMP ANALYTICAL RESULTS

4.1 Introduction

A summary of the constituents detected above background levels or above RLs at each of the FWGWMP wells during the 2009 monitoring period is discussed in the following subsections. Table 4-1 presents the Chemicals of Potential Concern (COPCs) at the RVAAP Facility. Samples were collected on the following dates:

- October 6 through 15, 2008
- January 19 through 28, 2009
- April 22 through 29, 2009
- July 13 through 16, 2009

A summary of all compounds detected in 2009 are presented in Table 4-2. The Maximum Contaminant Levels (MCLs) are provided, where applicable, in the following sections. MCLs and United States EPA Region 9 Preliminary Remediation Goals (PRGs) are also provided where applicable in Table 4-2. RVAAP facility-wide background levels are presented in Table 4-3.

Table 4-1 Primary COPCs at the RVAAP Facility	
Dinitrotoluene-2,4	Dinitrotoluene-2,6
Trinitrotoluene-2,4,6	RDX (cyclotrimethylenetrinitramine)
Composition B [RDX + Trinitrotoluene (TNT)]	HMX [high melting point explosive (octogen)]
Nitrocellulose	Nitroglycerine
Nitroguanidine	Perchlorate
Aluminum	Arsenic
Barium	Cadmium
Chromium	Lead
Mercury	Selenium
Silver	Zinc
Other COPCs at the Facility	
1,3,5-trinitrobenzene	1,3-Dinitrobenzene
Nitrobenzene	o-Nitrotoluene
n-nitrotoluene	p-Nitrotoluene
Manganese	VOCs
SVOCs	PCBs

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Atlas Scrap Yard	ASYmw-001	Bedrock	1,3,5-Trinitrobenzene	NA	NA	0.063 JB	0.097 U	NS	1100	*
			Antimony	NA	NA	0.76 J	2.0 U	6	15	0
			Barium	NA	NA	*16.1 J*	*14.4*	2000	2600	256
			bis(2-Ethylhexyl) phthalate	NA	NA	10 UJ	1.7 JB	NS	4.8	*
			Calcium	NA	NA	174000 J	121000	NS	NS	53100
			Iron	NA	NA	50 U	*300 J*	300	11000	1430
			Magnesium	NA	NA	56800 J	38500	NS	NS	15000
			Manganese	NA	NA	*94.7 J*	*895*	50	880	1340
			Perchlorate	NA	NA	NA	0.022 J	NS	3.6	*
			Potassium	NA	NA	*1210 J*	*1090 J*	NS	NS	5770
			Sodium	NA	NA	*9220*	*5980*	NS	NS	51400
			Zinc	NA	NA	*5 JB*	*20.4 JB*	5000	11000	52.3
Atlas Scrap Yard	ASYmw-002	Bedrock	1,3,5-Trinitrobenzene	NA	NA	0.051 JB	0.096 U	NS	1100	*
			Barium	NA	NA	*9.2 J*	*8.6 J*	2000	2600	256
			bis(2-Ethylhexyl) phthalate	NA	NA	1.3 JB	1.3 JB	NS	4.8	*
			Calcium	NA	NA	83000 J	78700	NS	NS	53100
			Magnesium	NA	NA	19200 J	16700	NS	NS	15000
			Manganese	NA	NA	*0.54 JB*	*3.9 J*	50	880	1340
			Perchlorate	NA	NA	NA	0.064	NS	3.6	*
			Potassium	NA	NA	*911 J*	590 UJB	NS	NS	5770
			Sodium	NA	NA	*5570*	*2580*	NS	NS	51400
			Zinc	NA	NA	*4 JB*	10 U	5000	11000	52.3
Atlas Scrap Yard	ASYmw-003	Bedrock	1,3,5-Trinitrobenzene	NA	NA	0.058 JB	0.096 U	NS	1100	*
			Arsenic	NA	NA	5.0 U	4.9 J	10	0.045	0
			Barium	NA	NA	*17.6 J*	*19.8*	2000	2600	256
			bis(2-Ethylhexyl) phthalate	NA	NA	1.5 JB	1.5 JB	NS	4.8	*
			Calcium	NA	NA	167000 J	200000	NS	NS	53100
			Iron	NA	NA	50 U	2420 J	300	11000	1430
			Magnesium	NA	NA	53400 J	69900	NS	NS	15000
			Manganese	NA	NA	*49.2 J*	*532*	50	880	1340
			Perchlorate	NA	NA	NA	0.024 J	NS	3.6	*
			Potassium	NA	NA	*903 J*	*1490 J*	NS	NS	5770
			Sodium	NA	NA	*28200*	*27300*	NS	NS	51400
			Zinc	NA	NA	*4.4 JB*	*2.6 JB*	5000	11000	52.3
Atlas Scrap Yard	ASYmw-004	Bedrock	1,3,5-Trinitrobenzene	NA	NA	0.099 JB	0.096 U	NS	1100	*
			Antimony	NA	NA	0.27 J	2.0 U	6	15	0
			Arsenic	NA	NA	18.4	19	10	0.045	0
			Barium	NA	NA	13.1 J	10.6	2000	2600	256
			bis(2-Ethylhexyl) phthalate	NA	NA	1.6 JB	1.4 JB	NS	4.8	*
			Calcium	NA	NA	160000 J	139000	NS	NS	53100
			Cyanide	NA	NA	0.0059 J	0.01 UJB	0.2	0.73	0
			Iron	NA	NA	1650	1760 J	300	11000	1430
			Magnesium	NA	NA	81500 J	70200	NS	NS	15000
			Manganese	NA	NA	*244 J*	*200*	50	880	1340
			Perchlorate	NA	NA	NA	0.021 J	NS	3.6	*
			Potassium	NA	NA	*2900 J*	*4150 J*	NS	NS	5770
			Sodium	NA	NA	*49500*	*46400*	NS	NS	51400
			Zinc	NA	NA	*9.4 JB*	*4.6 JB*	5000	11000	52.3
Atlas Scrap Yard	ASYmw-005	Bedrock	1,3,5-Trinitrobenzene	NA	NA	0.062 JB	0.097 U	NS	1100	*
			Barium	NA	NA	*25.6 J*	*27.6*	2000	2600	256
			Benzoic acid	NA	NA	10 U	12	NS	150000	*
			bis(2-Ethylhexyl) phthalate	NA	NA	1.5 JB	1.9 JB	NS	4.8	*
			Calcium	NA	NA	138000 J	149000	NS	NS	53100
			Magnesium	NA	NA	41300 J	43700	NS	NS	15000
			Manganese	NA	NA	*132 J*	*194*	50	880	1340
			Nitrobenzene	NA	NA	1.0 U	0.053 J	NS	3.4	*
			Perchlorate	NA	NA	NA	0.06	NS	3.6	*
			Potassium	NA	NA	*2070 J*	*2080 J*	NS	NS	5770
			Sodium	NA	NA	*42800*	*41300*	NS	NS	51400
			Zinc	NA	NA	*4.7 JB*	*2.7 JB*	5000	11000	52.3
Atlas Scrap Yard	ASYmw-006	Bedrock	Aluminum	NA	NA	506	50 U	200	36000	0
			Arsenic	NA	NA	20.1	15.2	10	0.045	0
			Barium	NA	NA	*16.5 J*	*13.5*	2000	2600	256
			beta-BHC	NA	NA	0.019 J	0.03 UJ	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	NA	NA	2.1 JB	1.7 JB	NS	4.8	*
			Calcium	NA	NA	120000 J	113000	NS	NS	53100
			Iron	NA	NA	1960	*1250*	300	11000	1430
			Magnesium	NA	NA	77300 J	70700	NS	NS	15000
			Manganese	NA	NA	*195 J*	*167*	50	880	1340
			Perchlorate	NA	NA	NA	0.022 J	NS	3.6	*
			Potassium	NA	NA	*2940 J*	*2930 J*	NS	NS	5770
			Sodium	NA	NA	*40500*	*38200*	NS	NS	51400

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Atlas Scrap Yard	ASYmw-006	Bedrock	Zinc	NA	NA	12.6 B	4.3 JB	5000	11000	52.3
Atlas Scrap Yard	ASYmw-007	Unconsolidated	1,3,5-Trinitrobenzene	NA	NA	0.061 JB	0.10 U	NS	1100	*
			Antimony	NA	NA	0.2 J	2.0 U	6	15	0
			Barium	NA	NA	19.2 J	20.4	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	NA	NA	10 U	1.1 JB	NS	4.8	*
			Calcium	NA	NA	134000 J	134000	NS	NS	115000
			Iron	NA	NA	50 U	160	300	11000	279
			Magnesium	NA	NA	52200 J	52900	NS	NS	43300
			Manganese	NA	NA	149 J	186	50	880	1020
			Perchlorate	NA	NA	NA	0.039 J	NS	3.6	*
			Potassium	NA	NA	1140 J	1290 J	NS	NS	2890
			Sodium	NA	NA	31600	37100	NS	NS	45700
			Zinc	NA	NA	3.9 JB	6.2 JB	5000	11000	60.9
Atlas Scrap Yard	ASYmw-008	Unconsolidated	1,3,5-Trinitrobenzene	NA	NA	0.063 JB	0.097 U	NS	1100	*
			Aluminum	NA	NA	7700 J	50 U	200	36000	0
			Antimony	NA	NA	1.1 J	0.32 UJ	6	15	0
			Arsenic	NA	NA	24.6	15.5	10	0.045	11.7
			Barium	NA	NA	42.2 J	17.7	2000	2600	82.1
			beta-BHC	NA	NA	0.03 UJ	0.019 J	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	NA	NA	10 U	1.1 JB	NS	4.8	*
			Calcium	NA	NA	189000 J	201000	NS	NS	115000
			Chromium	NA	NA	10.2	5.0 U	100	110	7.3
			Cobalt	NA	NA	7.4	5.0 U	NS	730	0
			Copper	NA	NA	12.5	5.0 U	1300	1500	0
			Iron	NA	NA	17300	357	300	11000	279
			Lead	NA	NA	5.3	3.0 U	15	NS	0
			Magnesium	NA	NA	90200 J	94200	NS	NS	43300
			Manganese	NA	NA	375 J	136	50	880	1020
			Nickel	NA	NA	15.8	10 U	NS	730	0
			Nitrobenzene	NA	NA	1 U	0.084 J	NS	3.4	*
			Perchlorate	NA	NA	NA	0.031 J	NS	3.6	*
			Potassium	NA	NA	5340 J	4290 J	NS	NS	2890
			Sodium	NA	NA	32200	37400	NS	NS	45700
			Vanadium	NA	NA	11.7	10 U	NS	36	0
			Zinc	NA	NA	40.8 J	3.8 JB	5000	11000	60.9
Atlas Scrap Yard	ASYmw-009	Bedrock	1,3,5-Trinitrobenzene	NA	NA	0.061 JB	0.096 U	NS	1100	*
			Antimony	NA	NA	1.2 J	2.0 U	6	15	0
			Barium	NA	NA	26.5 J	24.1	2000	2600	256
			beta-BHC	NA	NA	0.03 U	0.016 J	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	NA	NA	2.3 JB	2.2 JB	NS	4.8	*
			Calcium	NA	NA	198000 J	196000	NS	NS	53100
			Magnesium	NA	NA	75400 J	72600	NS	NS	15000
			Manganese	NA	NA	580 J	596	50	880	1340
			Perchlorate	NA	NA	NA	0.024 J	NS	3.6	*
			Potassium	NA	NA	1340 J	1760 J	NS	NS	5770
			Sodium	NA	NA	23600	23600	NS	NS	51400
			Zinc	NA	NA	6.1 JB	3.5 JB	5000	11000	52.3
Atlas Scrap Yard	ASYmw-010	Unconsolidated	1,3,5-Trinitrobenzene	NA	NA	0.07 JB	0.099 U	NS	1100	*
			Arsenic	NA	NA	37.2	43	10	0.045	11.7
			Barium	NA	NA	54.4 J	52.9	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	NA	NA	10 U	2.8 JB	NS	4.8	*
			Calcium	NA	NA	109000 J	112000	NS	NS	115000
			Iron	NA	NA	1950	2250	300	11000	279
			Magnesium	NA	NA	97500 J	90600	NS	NS	43300
			Manganese	NA	NA	65.3 J	96.8	50	880	1020
			Perchlorate	NA	NA	NA	0.028 J	NS	3.6	*
			Potassium	NA	NA	2820 J	2720 J	NS	NS	2890
			Sodium	NA	NA	51200	48300	NS	NS	45700
			Zinc	NA	NA	3.8 JB	5.5 JB	5000	11000	60.9
Building 1200	B12mw-010	Bedrock	2-Butanone	10 U	0.69 J	NA	NA	NS	7000	*
			Acetone	3.7 JB	10 UJ	NA	NA	NS	5500	*
			Aluminum	30.2 J	92.7	NA	NA	200	36000	0
			Barium	10 U	1.9 J	NA	NA	2000	2600	256
			beta-BHC	0.023 J	0.03 UJ	NA	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	4.5 J	11 B	NA	NA	NS	4.8	*
			Calcium	9570	5110 J	NA	NA	NS	NS	53100
			Iron	50 U	153	NA	NA	300	11000	1430
			Magnesium	7870	3960	NA	NA	NS	NS	15000
			Manganese	58.8 J	34.8 J	NA	NA	50	880	1340
			Nickel	18.2	15.8	NA	NA	NS	730	83.4
			Nitrocellulose	0.5 U	0.13 JB	NA	NA	NS	NS	*
			Perchlorate	0.049 J	NA	NA	NA	NS	3.6	*

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Building 1200	B12mw-010	Bedrock	Phenanthrene	0.26	0.2 U	NA	NA	NS	NS	*
			Potassium	1070 J	523 UJ	NA	NA	NS	NS	5770
			Selenium	4.7 J	5.0 UJ	NA	NA	50	180	0
			Sodium	5200	3120	NA	NA	NS	NS	51400
			Zinc	26.2 J	23.8 J	NA	NA	5000	11000	52.3
Building 1200	B12mw-011	Bedrock	Barium	2.1 J	10 U	NA	NA	2000	2600	256
			Benzo(g,h,i)perylene	0.2 U	0.3	NA	NA	NS	NS	*
			bis(2-Ethylhexyl) phthalate	0.96 J	2 JB	NA	NA	NS	4.8	*
			Calcium	13700	12700	NA	NA	NS	NS	53100
			Magnesium	10400	9670	NA	NA	NS	NS	15000
			Manganese	70.7	10.9	NA	NA	50	880	1340
			Mercury	0.2	0.2 U	NA	NA	2	11	0
			Perchlorate	0.05	NA	NA	NA	NS	3.6	*
			Potassium	1590 J	1400 J	NA	NA	NS	NS	5770
			Sodium	5550	5170	NA	NA	NS	NS	51400
			Zinc	10	4.6 JB	NA	NA	5000	11000	52.3
Building 1200	B12mw-012	Bedrock	2-Butanone	0.86 J	10 U	10 U	NA	NS	7000	*
			Acetone	6.3 JB	10 U	10 U	NA	NS	5500	*
			Barium	7 J	NA	8.2 J	NA	2000	2600	256
			beta-BHC	0.018 JB	NA	0.03 U	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	10 U	NA	1.8 JB	NA	NS	4.8	*
			Calcium	38800	NA	37500	NA	NS	NS	53100
			Chromium	5.0 U	NA	2.4 J	NA	100	110	0
			HMX	0.1 U	NA	0.16 J	NA	NS	1800	*
			Magnesium	28800	NA	27700	NA	NS	NS	15000
			Manganese	1.5 JB	NA	163 J	NA	50	880	1340
			Nickel	10 U	NA	9.9 J	NA	NS	730	83.4
			Perchlorate	0.055	NA	NA	NA	NS	3.6	*
			Potassium	1980 J	NA	1850 J	NA	NS	NS	5770
			Sodium	17300	NA	18100	NA	NS	NS	51400
			Zinc	13.4 JB	NA	8.9 JB	NA	5000	11000	52.3
C-Block Quarry	CBLmw-001	Bedrock	Acetone	6.6 JB	10 U	NA	NA	NS	5500	*
			Aluminum	23.1 J	20.3 J	NA	NA	200	36000	0
			Barium	34.5	35.6	NA	NA	2000	2600	256
			bis(2-Ethylhexyl) phthalate	10 U	1.8 JB	NA	NA	NS	4.8	*
			Calcium	2840	2970 J	NA	NA	NS	NS	53100
			Cyanide	0.007 J	0.01 U	NA	NA	0.2	0.73	0
			Magnesium	1830	1940	NA	NA	NS	NS	15000
			Manganese	5.2 J	8.6 J	NA	NA	50	880	1340
			Mercury	0.13 J	0.2 U	NA	NA	2	11	0
			Nickel	5.2 J	4.7 J	NA	NA	NS	730	83.4
			Potassium	780 JB	854 UJ	NA	NA	NS	NS	5770
			Zinc	8.7 JB	8.7 JB	NA	NA	5000	11000	52.3
C-Block Quarry	CBLmw-002	Bedrock	Acetone	3.9 JB	10 U	NA	NA	NS	5500	*
			Aluminum	21.6 J	19.2 J	NA	NA	200	36000	0
			Barium	62	62.6	NA	NA	2000	2600	256
			bis(2-Ethylhexyl) phthalate	10 U	2.5 JB	NA	NA	NS	4.8	*
			Cadmium	0.17 J	0.2 J	NA	NA	5	18	0
			Calcium	7020	7150 J	NA	NA	NS	NS	53100
			Magnesium	4590	4660	NA	NA	NS	NS	15000
			Manganese	10.5 JB	12 J	NA	NA	50	880	1340
			Nickel	9.9 J	8.4 J	NA	NA	NS	730	83.4
			Potassium	1330 J	1400 J	NA	NA	NS	NS	5770
			Sodium	1630	1740	NA	NA	NS	NS	51400
			Zinc	34.9 J	34 J	NA	NA	5000	11000	52.3
C-Block Quarry	CBLmw-003	Bedrock	Acetone	4.2 JB	10 U	NA	NA	NS	5500	*
			Aluminum	21.6 J	50 U	NA	NA	200	36000	0
			Barium	52.4 J	57.6	NA	NA	2000	2600	256
			bis(2-Ethylhexyl) phthalate	0.82 JB	1.9 JB	NA	NA	NS	4.8	*
			Cadmium	0.5 U	0.13 J	NA	NA	5	18	0
			Calcium	7740 J	7890 J	NA	NA	NS	NS	53100
			Magnesium	4290	4610	NA	NA	NS	NS	15000
			Manganese	4.4 JB	3.7 J	NA	NA	50	880	1340
			Mercury	0.18 J	0.2 U	NA	NA	2	11	0
			Nickel	7.4 J	7 J	NA	NA	NS	730	83.4
			Potassium	999 J	1070 J	NA	NA	NS	NS	5770
			Sodium	996 J	1450	NA	NA	NS	NS	51400
			Zinc	11.8 B	14.6 B	NA	NA	5000	11000	52.3
C-Block Quarry	CBLmw-004	Bedrock	1,3,5-Trinitrobenzene	0.11 U	0.048 J	NA	NA	NS	1100	*
			Acetone	3.8 JB	10 U	NA	NA	NS	5500	*
			Aluminum	50 U	50 JB	NA	NA	200	36000	0
			Barium	13.4 J	11.7 J	NA	NA	2000	2600	256

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
C-Block Quarry	CBLmw-004	Bedrock	beta-BHC	0.01 J	0.0088 J	NA	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	1.8 JB	1.1 JB	NA	NA	NS	4.8	*
			Calcium	*7700 J*	*6440 J*	NA	NA	NS	NS	53100
			Magnesium	*2760*	*2460 J*	NA	NA	NS	NS	15000
			Manganese	*9.2 J*	*33.7 J*	NA	NA	50	880	1340
			Nickel	10 U	*3.3 J*	NA	NA	NS	730	83.4
			Nitrobenzene	0.056 J	0.11 U	NA	NA	NS	3.4	*
			PCB- 1248	0.11 J	0.5 U	NA	NA	0.5	0.034	*
			Potassium	*1770 J*	*1370 J*	NA	NA	NS	NS	5770
			Sodium	*1940*	*1930*	NA	NA	NS	NS	51400
			Zinc	*9.4 JB*	*5.8 JB*	NA	NA	5000	11000	52.3
Central Burn Pits	CBPmw-001	Unconsolidated	1,2-Dichloroethane	1.0	1 U	NA	NA	5	0.12	*
			1,3,5-Trinitrobenzene	0.046 J	0.095 U	NA	NA	NS	1100	*
			Acetone	1.5 JB	10 U	NA	NA	NS	5500	*
			Aluminum	50 U	50 JB	NA	NA	200	36000	0
			Arsenic	78.6	85	NA	NA	10	0.045	11.7
			Barium	*6.6 J*	*7.4 J*	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	10 U	1.4 JB	NA	NA	NS	4.8	*
			Calcium	329000	350000 J	NA	NA	NS	NS	115000
			Chromium	5.0 U	8.3	NA	NA	100	110	7.3
			Iron	8520	8620 J	NA	NA	300	11000	279
			Magnesium	171000	186000 J	NA	NA	NS	NS	43300
			Manganese	*92.2*	*106 J*	NA	NA	50	880	1020
			Nickel	10 U	5.1 J	NA	NA	NS	730	0
			Nitroglycerin	0.65 U	0.38 J	NA	NA	NS	4.8	*
			PCB- 1248	0.11 J	0.5 UJ	NA	NA	0.5	0.034	*
			Perchlorate	0.03 J	NA	NA	NA	NS	3.6	*
			Potassium	7360 J	20500 J	NA	NA	NS	NS	2890
			Sodium	59400	77600	NA	NA	NS	NS	45700
			Zinc	*3.8 JB*	*3.9 JB*	NA	NA	5000	11000	60.9
Central Burn Pits	CBPmw-002	Unconsolidated	1,2-Dichloroethane	1	1 U	NA	NA	5	0.12	*
			Aluminum	72.4	474 J	NA	NA	200	36000	0
			Antimony	2.0 U	0.38 J	NA	NA	6	15	0
			Arsenic	20.4	24.8	NA	NA	10	0.045	11.7
			Barium	*9.2 J*	*13.4 J*	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	1.6 JB	1.2 JB	NA	NA	NS	4.8	*
			Calcium	162000	164000 J	NA	NA	NS	NS	115000
			Carbon disulfide	0.65 J	1.0 U	NA	NA	NS	1000	*
			Chloromethane	0.33 J	1.0 U	NA	NA	NS	160	*
			Chromium	5.0 U	*3.4 J*	NA	NA	100	110	7.3
			Cobalt	5.0 U	2.3 J	NA	NA	NS	730	0
			Iron	1470	3720 J	NA	NA	300	11000	279
			Lead	3.0 U	2.6 J	NA	NA	15	NS	0
			Magnesium	103000	101000 J	NA	NA	NS	NS	43300
			Manganese	*138*	*222 J*	NA	NA	50	880	1020
			Nickel	10 U	5 J	NA	NA	NS	730	0
			PCB- 1248	0.22 J	0.5 UJ	NA	NA	0.5	0.034	*
			Perchlorate	0.019 J	NA	NA	NA	NS	3.6	*
			Potassium	3220 J	3300 J	NA	NA	NS	NS	2890
			Sodium	49700	49900	NA	NA	NS	NS	45700
			Vanadium	10	0.81 J	NA	NA	NS	36	0
			Zinc	*3.8 JB*	*10.5 B*	NA	NA	5000	11000	60.9
Central Burn Pits	CBPmw-003	Unconsolidated	1,2-Dichloroethane	1	1.0 U	NA	NA	5	0.12	*
			1,3,5-Trinitrobenzene	0.099 U	0.035 J	NA	NA	NS	1100	*
			Arsenic	26.3	26.2	NA	NA	10	0.045	11.7
			Barium	*14*	*12.5 J*	NA	NA	2000	2600	82.1
			beta-BHC	0.03 U	0.01 J	NA	NA	NS	0.037	*
			bis(2-Chloroethyl) ether	1.0 U	10 JB	NA	NA	NS	0.001	*
			bis(2-Ethylhexyl) phthalate	10 U	2.2 JB	NA	NA	NS	4.8	*
			Calcium	142000	153000 J	NA	NA	NS	NS	115000
			Chloromethane	1.2	1.0 U	NA	NA	NS	160	*
			Iron	2400	2220 J	NA	NA	300	11000	279
			Magnesium	83600	90300 J	NA	NA	NS	NS	43300
			Manganese	*153*	*85.3 J*	NA	NA	50	880	1020
			Perchlorate	0.025 J	NA	NA	NA	NS	3.6	*
			Potassium	4340 J	3760 J	NA	NA	NS	NS	2890
			Sodium	83200	89000	NA	NA	NS	NS	45700
			Zinc	*5.9 JB*	*3.5 JB*	NA	NA	5000	11000	60.9
Central Burn Pits	CBPmw-004	Unconsolidated	1,2-Dichloroethane	1	1.0 U	NA	NA	5	0.12	*
			Arsenic	50.1	39.1	NA	NA	10	0.045	11.7
			Barium	*62.7*	*61.6 J*	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	10 U	2.1 JB	NA	NA	NS	4.8	*

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Central Burn Pits	CBPmw-004	Unconsolidated	Calcium	68300	70600 J	NA	NA	NS	NS	115000
			Iron	1760	962 J	NA	NA	300	11000	279
			Magnesium	32200	30800 J	NA	NA	NS	NS	43300
			Manganese	40.7	49.2 J	NA	NA	50	880	1020
			PCB- 1248	0.1 J	0.5 UJ	NA	NA	0.5	0.034	*
			Potassium	1730 J	1660 J	NA	NA	NS	NS	2890
			Sodium	16400	15900	NA	NA	NS	NS	45700
			Zinc	4.3 JB	3 JB	NA	NA	5000	11000	60.9
Central Burn Pits	CBPmw-005	Unconsolidated	Perchlorate	0.034 J	NA	NA	NA	NS	3.6	*
Central Burn Pits	CBPmw-008	Unconsolidated	Acetone	10 U	2 JB	NA	NA	NS	5500	*
			Arsenic	5.0 U	7.2	NA	NA	10	0.045	11.7
			Barium	10.6	10.1 J	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	8 J	1.4 JB	NA	NA	NS	4.8	*
			Calcium	204000	234000 J	NA	NA	NS	NS	115000
			Cobalt	5.0 U	2.7 J	NA	NA	NS	730	0
			Heptachlor	0.014 J	0.03 U	NA	NA	0.4	0.015	*
			Iron	97.8	840 J	NA	NA	300	11000	279
			Magnesium	88300	108000 J	NA	NA	NS	NS	43300
			Manganese	27.5	241 J	NA	NA	50	880	1020
			Perchlorate	0.029 J	NA	NA	NA	NS	3.6	*
			Potassium	4140 J	4390 J	NA	NA	NS	NS	2890
			Sodium	94300	90800	NA	NA	NS	NS	45700
			Zinc	5.2 JB	2.8 JB	NA	NA	5000	11000	60.9
Cobbs Pond	CPmw-001	Unconsolidated	1,2-Dichloroethane	1	1.0 U	NA	NA	5	0.12	*
			Aluminum	50 U	24 J	NA	NA	200	36000	0
			Antimony	0.49 J	2 U	NA	NA	6	15	0
			Barium	73.6	8.7 J	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	10 U	1.3 JB	NA	NA	NS	4.8	*
			Calcium	73000	33800 J	NA	NA	NS	NS	115000
			Chloromethane	0.51 J	1.0 U	NA	NA	NS	160	*
			Iron	50 U	44.6 J	NA	NA	300	11000	279
			Magnesium	16200	7880	NA	NA	NS	NS	43300
			Manganese	7.1 JB	1.8 JB	NA	NA	50	880	1020
			Potassium	826 J	248 UJB	NA	NA	NS	NS	2890
			Selenium	4.6 J	5.0 U	NA	NA	50	180	0
			Sodium	7380	4040	NA	NA	NS	NS	45700
			Zinc	2.4 JB	5.1 JB	NA	NA	5000	11000	60.9
Cobbs Pond	CPmw-002	Unconsolidated	Acetone	3.4 JB	10 U	NA	NA	NS	5500	*
			Aluminum	20.1 J	50 U	NA	NA	200	36000	0
			Barium	38.2	49.9	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	1.2 J	2 JB	NA	NA	NS	4.8	*
			Calcium	81000	107000 J	NA	NA	NS	NS	115000
			Iron	74.1	50 U	NA	NA	300	11000	279
			Magnesium	24400	31600	NA	NA	NS	NS	43300
			Manganese	241	288 J	NA	NA	50	880	1020
			Perchlorate	0.035 J	NA	NA	NA	NS	3.6	*
			Sodium	16900	14100	NA	NA	NS	NS	45700
			Zinc	10.2 B	5 JB	NA	NA	5000	11000	60.9
Cobbs Pond	CPmw-003	Unconsolidated	1,2-Dichloroethane	1	1.0 U	NA	NA	5	0.12	*
			Acetone	1.5 JB	10 U	NA	NA	NS	5500	*
			Aluminum	50 U	41.5 J	NA	NA	200	36000	0
			Arsenic	9.5	5.0 U	NA	NA	10	0.045	11.7
			Barium	83.7	42.7	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	1.4 J	1.4 JB	NA	NA	NS	4.8	*
			Calcium	42700	26100 J	NA	NA	NS	NS	115000
			Iron	600	82.1	NA	NA	300	11000	279
			Magnesium	7700	3920	NA	NA	NS	NS	43300
			Manganese	216	73.1 J	NA	NA	50	880	1020
			Perchlorate	0.031 J	NA	NA	NA	NS	3.6	*
			Potassium	1520 J	1080 J	NA	NA	NS	NS	2890
			Sodium	16100	5060	NA	NA	NS	NS	45700
			Zinc	4.4 JB	4.3 JB	NA	NA	5000	11000	60.9
Cobbs Pond	CPmw-004	Unconsolidated	Acetone	3.8 JB	10 U	NA	NA	NS	5500	*
			Barium	27	11.2	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	10 U	3.3 JB	NA	NA	NS	4.8	*
			Calcium	74800	40400 J	NA	NA	NS	NS	115000
			Magnesium	27500	14400	NA	NA	NS	NS	43300
			Manganese	89.5 J	2.7 J	NA	NA	50	880	1020
			Perchlorate	0.036 J	NA	NA	NA	NS	3.6	*
			Potassium	1470 J	694 UJB	NA	NA	NS	NS	2890
			Sodium	13000	4270	NA	NA	NS	NS	45700
			Zinc	40.8 J	10 U	NA	NA	5000	11000	60.9

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Cobbs Pond	CPmw-005	Unconsolidated	Acetone	3.9 JB	10 U	NA	NA	NS	5500	*
			Arsenic	35.9	53.9	NA	NA	10	0.045	11.7
			Barium	142	149	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	10 U	3.8 JB	NA	NA	NS	4.8	*
			Calcium	57100	60400 J	NA	NA	NS	NS	115000
			Iron	683	956	NA	NA	300	11000	279
			Magnesium	24100	25400	NA	NA	NS	NS	43300
			Manganese	40 J	41.4 J	NA	NA	50	880	1020
			Perchlorate	0.028 J	NA	NA	NA	NS	3.6	*
			Potassium	2200 J	2310 J	NA	NA	NS	NS	2890
			Sodium	33900	36500	NA	NA	NS	NS	45700
			Zinc	2.7 JB	4.2 JB	NA	NA	5000	11000	60.9
Cobbs Pond	CPmw-006	Unconsolidated	1,2-Dichloroethane	1	1.0 U	NA	NA	5	0.12	*
			1,3,5-Trinitrobenzene	0.1 U	0.097 JB	NA	NA	NS	1100	*
			2-Methylnaphthalene	0.2 U	0.71 J	NA	NA	NS	NS	*
			Acetone	4.5 JB	10 U	NA	NA	NS	5500	*
			Aluminum	51.9	468 J	NA	NA	200	36000	0
			Arsenic	8.3	9.6	NA	NA	10	0.045	11.7
			Barium	75.3	76.8	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	1.5 J	1.4 JB	NA	NA	NS	4.8	*
			Calcium	87400	98400 J	NA	NA	NS	NS	115000
			Cobalt	5.0 U	1.7 J	NA	NA	NS	730	0
			Iron	6300	9190	NA	NA	300	11000	279
			Magnesium	24800	20000	NA	NA	NS	NS	43300
			Manganese	1770	3260 J	NA	NA	50	880	1020
			Naphthalene	0.2 U	0.34 J	NA	NA	NS	6.2	*
			Phenanthrene	0.2 U	0.22 J	NA	NA	NS	NS	*
			Potassium	3210 J	2370 J	NA	NA	NS	NS	2890
			Sodium	29000	29800	NA	NA	NS	NS	45700
			Zinc	5.4 JB	7.5 JB	NA	NA	5000	11000	60.9
Demolition Area 2	DA2mw-104	Unconsolidated	1,3,5-Trinitrobenzene	0.11 U	0.046 J	NA	NA	NS	1100	*
			Acetone	1.9 JB	10 U	NA	NA	NS	5500	*
			Barium	16.5	17.1	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	1.7 J	10 U	NA	NA	NS	4.8	*
			Calcium	48700	48600	NA	NA	NS	NS	115000
			Chromium	3.6 J	5.0 U	NA	NA	100	110	7.3
			Cobalt	3.3 J	5.0 U	NA	NA	NS	730	0
			Magnesium	13700	14000	NA	NA	NS	NS	43300
			Manganese	0.51 JB	1.5 J	NA	NA	50	880	1020
			Nickel	5 J	10 U	NA	NA	NS	730	0
			Perchlorate	0.24	NA	NA	NA	NS	3.6	*
			Potassium	760 JB	689 UJB	NA	NA	NS	NS	2890
			Silver	4.9 J	5.0 U	NA	NA	100	180	0
			Sodium	5200	4190	NA	NA	NS	NS	45700
Demolition Area 2	DA2mw-105	Unconsolidated	1,3,5-Trinitrobenzene	0.11 U	0.054 J	NA	NA	NS	1100	*
			2,6-Dinitrotoluene	0.074 J	0.06 J	NA	NA	NS	36	*
			Acetone	1.5 JB	10 U	NA	NA	NS	5500	*
			Aluminum	22.2 J	50 U	NA	NA	200	36000	0
			Antimony	2.0 U	0.14 JB	NA	NA	6	15	0
			Arsenic	6.3 J	3.3 J	NA	NA	10	0.045	11.7
			Barium	59.3	53.2	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	1.3 J	1.1 JB	NA	NA	NS	4.8	*
			Calcium	83900	87100 J	NA	NA	NS	NS	115000
			Iron	1160	116	NA	NA	300	11000	279
			Magnesium	23200	24600	NA	NA	NS	NS	43300
			Manganese	223 J	212 J	NA	NA	50	880	1020
			Potassium	1210 J	1050 J	NA	NA	NS	NS	2890
			Sodium	8470	8230	NA	NA	NS	NS	45700
			Zinc	6.4 UJB	4.1 JB	NA	NA	5000	11000	60.9
Demolition Area 2	DA2mw-106	Unconsolidated	Acetone	2.9 JB	10 U	NA	NA	NS	5500	*
			Aluminum	50 U	19.8 J	NA	NA	200	36000	0
			Antimony	2 U	0.19 JB	NA	NA	6	15	0
			Barium	43.2	47.3	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	1.3 J	0.98 JB	NA	NA	NS	4.8	*
			Calcium	166000 J	165000 J	NA	NA	NS	NS	115000
			Cobalt	3.6 J	8.8	NA	NA	NS	730	0
			Heptachlor	0.03 U	0.0081 J	NA	NA	0.4	0.015	*
			Iron	132	1270	NA	NA	300	11000	279
			Magnesium	56900	58400	NA	NA	NS	NS	43300
			Manganese	3180	4720 J	NA	NA	50	880	1020
			Nickel	9.9 J	8.8 J	NA	NA	NS	730	0
			Potassium	2410 J	1700 J	NA	NA	NS	NS	2890

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Demolition Area 2	DA2mw-106	Unconsolidated	Sodium	35400	41100	NA	NA	NS	NS	45700
			Thallium	0.19 U	0.2 J	NA	NA	2	2.4	0
			Zinc	7.9 UJB	6.4 JB	NA	NA	5000	11000	60.9
Demolition Area 2	DA2mw-108	Unconsolidated	2,6-Dinitrotoluene	0.065 J	5.0 U	NA	NA	NS	36	*
			Acetone	7.2 JB	10 U	NA	NA	NS	5500	*
			alpha-BHC	0.011 J	0.03 U	NA	NA	NS	0.011	*
			Barium	35.6	33.1	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	1.4 J	1.3 JB	NA	NA	NS	4.8	*
			Butyl benzyl phthalate	1.1	1.0 U	NA	NA	NS	7300	*
			Calcium	93800	88100 J	NA	NA	NS	NS	115000
			Iron	5090	978	NA	NA	300	11000	279
			Magnesium	33900	32500	NA	NA	NS	NS	43300
			Manganese	342	326 J	NA	NA	50	880	1020
			Potassium	2820 J	2670 J	NA	NA	NS	NS	2890
			Sodium	11400	10400	NA	NA	NS	NS	45700
			Zinc	7.1 UJB	3.5 JB	NA	NA	5000	11000	60.9
Demolition Area 2	DA2mw-109	Unconsolidated	1,3,5-Trinitrobenzene	0.043 J	0.049 J	NA	NA	NS	1100	*
			2-Butanone	0.68 J	10 U	NA	NA	NS	7000	*
			Acetone	3 JB	10 U	NA	NA	NS	5500	*
			Barium	25.4	26.1	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	2.8 J	1.4 JB	NA	NA	NS	4.8	*
			Calcium	96800	107000	NA	NA	NS	NS	115000
			Magnesium	36300	40400	NA	NA	NS	NS	43300
			Manganese	386 J	7 J	NA	NA	50	880	1020
			Nitrobenzene	0.051 J	0.1 U	NA	NA	NS	3.4	*
			Potassium	1280 J	1020 J	NA	NA	NS	NS	2890
			Sodium	7640	16700	NA	NA	NS	NS	45700
Demolition Area 2	DA2mw-110	Unconsolidated	Acetone	1.6 JB	10 U	NA	NA	NS	5500	*
			Aluminum	50 U	45 J	NA	NA	200	36000	0
			Barium	12.2	5.9 J	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	18 J	2.6 JB	NA	NA	NS	4.8	*
			Calcium	59600	57100 J	NA	NA	NS	NS	115000
			Iron	50 U	52.2 J	NA	NA	300	11000	279
			Magnesium	17700	17200	NA	NA	NS	NS	43300
			Manganese	0.61 JB	9 J	NA	NA	50	880	1020
			Potassium	1110 J	826 J	NA	NA	NS	NS	2890
			Sodium	4680	4820	NA	NA	NS	NS	45700
			Zinc	3.3 UJB	6.1 JB	NA	NA	5000	11000	60.9
Demolition Area 2	DA2mw-111	Unconsolidated	1,3,5-Trinitrobenzene	0.099 U	0.075 J	NA	NA	NS	1100	*
			2,6-Dinitrotoluene	0.099 U	0.05 J	NA	NA	NS	36	*
			Acetone	2.1 JB	10 U	NA	NA	NS	5500	*
			Barium	21.5	22.3	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	3.4 J	1.4 JB	NA	NA	NS	4.8	*
			Calcium	102000	105000 J	NA	NA	NS	NS	115000
			Chromium	2.3 J	5.0 U	NA	NA	100	110	7.3
			Magnesium	37900	40800	NA	NA	NS	NS	43300
			Manganese	362 J	241 J	NA	NA	50	880	1020
			Nickel	11.2	10 U	NA	NA	NS	730	0
			Potassium	3490 J	2970 J	NA	NA	NS	NS	2890
			Sodium	22500	26200	NA	NA	NS	NS	45700
			Zinc	13.5 JB	15.1 B	NA	NA	5000	11000	60.9
Demolition Area 2	DA2mw-112	Unconsolidated	Barium	26	22.8	NA	NA	2000	2600	82.1
			beta-BHC	0.03 U	0.0098 J	NA	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	2.9 J	1.1 JB	NA	NA	NS	4.8	*
			Calcium	99600	92000 J	NA	NA	NS	NS	115000
			Chloromethane	0.35 J	1.0 U	NA	NA	NS	160	*
			Iron	4290	4350	NA	NA	300	11000	279
			Magnesium	25400	21100	NA	NA	NS	NS	43300
			Manganese	629	782 J	NA	NA	50	880	1020
			Nitrobenzene	0.1 J	0.056 J	NA	NA	NS	3.4	*
			Potassium	2070 J	1400 J	NA	NA	NS	NS	2890
			Sodium	8740	4480	NA	NA	NS	NS	45700
			Zinc	6.5 UJB	7.7 JB	NA	NA	5000	11000	60.9
Demolition Area 2	DA2mw-113	Unconsolidated	2,6-Dinitrotoluene	0.11 U	0.054 J	NA	NA	NS	36	*
			Arsenic	3.3 J	5.0 U	NA	NA	10	0.045	11.7
			Barium	40.9	43.6	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	1.6 J	1.2 JB	NA	NA	NS	4.8	*
			Calcium	72600	77100 J	NA	NA	NS	NS	115000
			Iron	4030	2610	NA	NA	300	11000	279
			Magnesium	17600	19100	NA	NA	NS	NS	43300
			Manganese	319	442 J	NA	NA	50	880	1020
			Potassium	1350 J	1040 J	NA	NA	NS	NS	2890

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Demolition Area 2	DA2mw-113	Unconsolidated	Sodium	3760	3260	NA	NA	NS	NS	45700
			Zinc	6.6 UJB	7.7 JB	NA	NA	5000	11000	60.9
Demolition Area 2	DETmw-003	Unconsolidated	1,3,5-Trinitrobenzene	0.1 U	NA	0.071 J	NA	NS	1100	*
			Acetone	1.4 JB	NA	10 U	NA	NS	5500	*
			Arsenic	11.3 J	NA	10.5	NA	10	0.045	11.7
			Barium	53.5	NA	48.6	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	1.3 J	NA	5.5 JB	NA	NS	4.8	*
			Calcium	93200 J	NA	90300	NA	NS	NS	115000
			Iron	1750	NA	1770	NA	300	11000	279
			Magnesium	34200	NA	33900	NA	NS	NS	43300
			Manganese	287	NA	281 J	NA	50	880	1020
			Potassium	1760 J	NA	1610 J	NA	NS	NS	2890
			Sodium	12900	NA	12800	NA	NS	NS	45700
			Tetryl	0.1 U	NA	0.44	NA	NS	360	*
			Zinc	10 U	NA	7 JB	NA	5000	11000	60.9
Demolition Area 2	DETmw-004	Unconsolidated	4-Amino-2,6-Dinitrotoluene	0.1 U	NA	0.52 J	NA	NS	NS	*
			Acetone	1.6 JB	NA	10 U	NA	NS	5500	*
			Aluminum	24.4 J	NA	50 U	NA	200	36000	0
			Antimony	0.16 J	NA	0.34 JB	NA	6	15	0
			Barium	52.2	NA	50.7	NA	2000	2600	82.1
			beta-BHC	0.028 J	NA	0.03 U	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	2.2 JB	NA	1.5 JB	NA	NS	4.8	*
			Calcium	125000	NA	119000	NA	NS	NS	115000
			Gamma-BHC	0.012 J	NA	0.03 U	NA	0.2	0.052	*
			HMX	1	NA	2.1	NA	NS	1800	*
			Iron	260	NA	50 U	NA	300	11000	279
			Magnesium	24800	NA	24800	NA	NS	NS	43300
			Manganese	21	NA	1.2 JB	NA	50	880	1020
			Nickel	3.5 J	NA	10 U	NA	NS	730	0
			Potassium	1870 J	NA	1450 J	NA	NS	NS	2890
			RDX	0.16	NA	2.4	NA	NS	0.61	*
			Sodium	4090	NA	2890	NA	NS	NS	45700
			Zinc	32.6 JB	NA	12.4 B	NA	5000	11000	60.9
Erie Burning Grounds	EBGmw-123	Unconsolidated	Arsenic	51.7 J	55.4	NA	NA	10	0.045	11.7
			Barium	186	182	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	13	1.6 JB	NA	NA	NS	4.8	*
			Calcium	94800	96200 J	NA	NA	NS	NS	115000
			Iron	5940	6040	NA	NA	300	11000	279
			Magnesium	16700	16900	NA	NA	NS	NS	43300
			Manganese	116	121 J	NA	NA	50	880	1020
			Nitrobenzene	0.065 J	0.096 U	NA	NA	NS	3.4	*
			Perchlorate	0.031 J	NA	NA	NA	NS	3.6	*
			Potassium	1010 J	965 J	NA	NA	NS	NS	2890
			Sodium	7950	8310	NA	NA	NS	NS	45700
			Vanadium	2.5 J	10 U	NA	NA	NS	36	0
			Zinc	6.6 UJB	2.4 JB	NA	NA	5000	11000	60.9
Erie Burning Grounds	EBGmw-124	Unconsolidated	Acetone	1.3 JB	10 U	NA	NA	NS	5500	*
			Arsenic	58 J	37.6	NA	NA	10	0.045	11.7
			Barium	178	172	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	1.4 JB	1.2 JB	NA	NA	NS	4.8	*
			Calcium	83700	88600 J	NA	NA	NS	NS	115000
			Chromium	6.2	5.0 U	NA	NA	100	110	7.3
			Cobalt	6.6	5.0 U	NA	NA	NS	730	0
			Iron	4680	2950	NA	NA	300	11000	279
			Magnesium	16800	18300	NA	NA	NS	NS	43300
			Manganese	73.6	63.7 J	NA	NA	50	880	1020
			Nickel	10.4	10 U	NA	NA	NS	730	0
			Perchlorate	0.031 J	NA	NA	NA	NS	3.6	*
			Potassium	1340 J	1230 J	NA	NA	NS	NS	2890
			Silver	9.9	5.0 U	NA	NA	100	180	0
			Sodium	14200	16100	NA	NA	NS	NS	45700
			Vanadium	0.65 J	10 U	NA	NA	NS	36	0
			Zinc	5.5 UJB	3.4 JB	NA	NA	5000	11000	60.9
Erie Burning Grounds	EBGmw-125	Unconsolidated	Arsenic	17.5 J	13.5	NA	NA	10	0.045	11.7
			Barium	52.6	53.5	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	10 U	2.2 JB	NA	NA	NS	4.8	*
			Calcium	41300	45100 J	NA	NA	NS	NS	115000
			Iron	5540	5430	NA	NA	300	11000	279
			Magnesium	7120	7840	NA	NA	NS	NS	43300
			Manganese	385	353 J	NA	NA	50	880	1020
			Potassium	1030 J	1010 J	NA	NA	NS	NS	2890
			Sodium	2680	2790	NA	NA	NS	NS	45700

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Erie Burning Grounds	EBGmw-125	Unconsolidated	Zinc	4.7 UJB	6.2 JB	NA	NA	5000	11000	60.9
Erie Burning Grounds	EBGmw-126	Unconsolidated	Aluminum	50 U	152	NA	NA	200	36000	0
			Arsenic	23 J	17.9	NA	NA	10	0.045	11.7
			Barium	237	213	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	0.81 JB	10 U	NA	NA	NS	4.8	*
			Calcium	94100	93900	NA	NA	NS	NS	115000
			Carbon disulfide	0.29 J	1.0 U	NA	NA	NS	1000	*
			Iron	7300	4700	NA	NA	300	11000	279
			Magnesium	16100	16600	NA	NA	NS	NS	43300
			Manganese	189	170 J	NA	NA	50	880	1020
			Nitrobenzene	0.097 U	0.096 J	NA	NA	NS	3.4	*
			Potassium	1130 J	1250 J	NA	NA	NS	NS	2890
			Sodium	6040	7360	NA	NA	NS	NS	45700
			Vanadium	0.68 J	0.69 J	NA	NA	NS	36	0
			Zinc	2.6 UJB	13.5	NA	NA	5000	11000	60.9
Erie Burning Grounds	EBGmw-127	Unconsolidated	Aluminum	50 U	1060 J	NA	NA	200	36000	0
			Arsenic	15 J	11.2 J	NA	NA	10	0.045	11.7
			Barium	371	324	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	1.4 J	1.4 JB	NA	NA	NS	4.8	*
			Calcium	81900	76100 J	NA	NA	NS	NS	115000
			Chloromethane	0.41 J	1.0 U	NA	NA	NS	160	*
			Chromium	5.0 U	2.5 J	NA	NA	100	110	7.3
			Iron	672	3060 J	NA	NA	300	11000	279
			Magnesium	18300	17400	NA	NA	NS	NS	43300
			Manganese	27	66.3 J	NA	NA	50	880	1020
			Potassium	1490 J	1640 J	NA	NA	NS	NS	2890
			Sodium	4430	4650	NA	NA	NS	NS	45700
			Vanadium	10 U	1.5 J	NA	NA	NS	36	0
			Zinc	3.8 UJB	11.3 B	NA	NA	5000	11000	60.9
Erie Burning Grounds	EBGmw-128	Unconsolidated	Arsenic	18 J	9.4	NA	NA	10	0.045	11.7
			Barium	69	62.3	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	0.99 JB	1.8 JB	NA	NA	NS	4.8	*
			Calcium	57500	53500 J	NA	NA	NS	NS	115000
			Iron	1380	766	NA	NA	300	11000	279
			Magnesium	9760	9370	NA	NA	NS	NS	43300
			Manganese	290	192 J	NA	NA	50	880	1020
			Nitrobenzene	0.07 J	0.1 U	NA	NA	NS	3.4	*
			Nitrocellulose	0.5 UJB	0.13 JB	NA	NA	NS	NS	*
			Potassium	926 J	725 UJB	NA	NA	NS	NS	2890
			Sodium	4440	4100	NA	NA	NS	NS	45700
			Zinc	3.1 UJB	3.8 JB	NA	NA	5000	11000	60.9
Erie Burning Grounds	EBGmw-129	Unconsolidated	Arsenic	5.1 J	3.6 J	NA	NA	10	0.045	11.7
			Barium	29.8	24.9	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	1.1 J	1.7 JB	NA	NA	NS	4.8	*
			Calcium	48400	50900 J	NA	NA	NS	NS	115000
			Chloromethane	0.34 J	1.0 U	NA	NA	NS	160	*
			Iron	7450	5770	NA	NA	300	11000	279
			Magnesium	11100	11900	NA	NA	NS	NS	43300
			Manganese	560	563 J	NA	NA	50	880	1020
			Nitrobenzene	0.06 J	0.096 U	NA	NA	NS	3.4	*
			Potassium	967 J	890 J	NA	NA	NS	NS	2890
			Sodium	3410	3550	NA	NA	NS	NS	45700
Erie Burning Grounds	EBGmw-130	Unconsolidated	1,3,5-Trinitrobenzene	0.1 U	0.044 J	NA	NA	NS	1100	*
			Arsenic	5.0 U	5	NA	NA	10	0.045	11.7
			Barium	71	52.2	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	2.8 J	10 U	NA	NA	NS	4.8	*
			Calcium	78800	76100	NA	NA	NS	NS	115000
			Chloromethane	0.37 J	1.0 U	NA	NA	NS	160	*
			Chromium	5.0 U	27.5	NA	NA	100	110	7.3
			Cobalt	5.0 U	1.9 J	NA	NA	NS	730	0
			Iron	4430	3610	NA	NA	300	11000	279
			Magnesium	17600	16300	NA	NA	NS	NS	43300
			Manganese	658	694	NA	NA	50	880	1020
			Nickel	10 U	19.3	NA	NA	NS	730	0
			Potassium	2440 J	3530 J	NA	NA	NS	NS	2890
			Sodium	5530	5800	NA	NA	NS	NS	45700
			Zinc	2.9 UJB	6.7 JB	NA	NA	5000	11000	60.9
Fuze and Booster Quarry	FBQmw-166	Unconsolidated	2,6-Dinitrotoluene	0.094 J	0.099 U	NA	NA	NS	36	*
			Acetone	2 JB	10 U	NA	NA	NS	5500	*
			Arsenic	6.1 J	5.0 U	NA	NA	10	0.045	11.7
			Barium	28.7	30.8	NA	NA	2000	2600	82.1
			beta-BHC	0.03 U	0.015 J	NA	NA	NS	0.037	*

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Fuze and Booster Quarry	FBQmw-166	Unconsolidated	bis(2-Ethylhexyl) phthalate	1 J	1.7 JB	NA	NA	NS	4.8	*
			Calcium	142000	111000	NA	NA	NS	NS	115000
			Iron	466 J	541	NA	NA	300	11000	279
			Magnesium	49800	40000	NA	NA	NS	NS	43300
			Manganese	436	60.5 J	NA	NA	50	880	1020
			Mercury	0.2	0.2 U	NA	NA	2	11	0
			Potassium	1830 J	1080 J	NA	NA	NS	NS	2890
			Sodium	17200	15500	NA	NA	NS	NS	45700
			Zinc	10 U	3 JB	NA	NA	5000	11000	60.9
Fuze and Booster Quarry	FBQmw-167	Unconsolidated	Acetone	3.7 JB	10 U	NA	NA	NS	5500	*
			Barium	59.3	50.6	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	1.3 J	1.8 JB	NA	NA	NS	4.8	*
			Calcium	28600	29400	NA	NA	NS	NS	115000
			Cobalt	7.0 U	5.5	NA	NA	NS	730	0
			Iron	15100 J	12300	NA	NA	300	11000	279
			Magnesium	12900	12900	NA	NA	NS	NS	43300
			Manganese	2050	1760 J	NA	NA	50	880	1020
			Nickel	10.3	9.5 J	NA	NA	NS	730	0
			Potassium	1670 J	1550 J	NA	NA	NS	NS	2890
			Sodium	35000	33500	NA	NA	NS	NS	45700
			Zinc	19.2	16.1	NA	NA	5000	11000	60.9
Fuze and Booster Quarry	FBQmw-168	Bedrock	1,3,5-Trinitrobenzene	0.099 U	0.046 J	NA	NA	NS	1100	*
			2-Amino-4,6-dinitrotoluene	0.099 U	0.31 J	NA	NA	NS	NS	*
			4-Amino-2,6-Dinitrotoluene	0.099 U	0.36 J	NA	NA	NS	NS	*
			Acetone	3.9 JB	10 U	NA	NA	NS	5500	*
			Antimony	0.034 UJB	0.38 J	NA	NA	6	15	0
			Arsenic	5	5.0 U	NA	NA	10	0.045	0
			Barium	29.7	33.8	NA	NA	2000	2600	256
			bis(2-Ethylhexyl) phthalate	10 U	1.2 JB	NA	NA	NS	4.8	*
			Calcium	46700	57900 J	NA	NA	NS	NS	53100
			Iron	50	34.1 JB	NA	NA	300	11000	1430
			Magnesium	8330	10500 J	NA	NA	NS	NS	15000
			Manganese	50.1	5.9 JB	NA	NA	50	880	1340
			Nitrobenzene	0.06 JB	0.1 U	NA	NA	NS	3.4	*
			Potassium	978 J	950 J	NA	NA	NS	NS	5770
			Sodium	27400	2010	NA	NA	NS	NS	51400
			Zinc	10 U	2.9 JB	NA	NA	5000	11000	52.3
Fuze and Booster Quarry	FBQmw-169	Bedrock	Acetone	1.1 JB	10 U	NA	NA	NS	5500	*
			Aluminum	50 U	26.4 JB	NA	NA	200	36000	0
			Barium	59.2	43.9	NA	NA	2000	2600	256
			bis(2-Ethylhexyl) phthalate	1.1 J	1.6 JB	NA	NA	NS	4.8	*
			Cadmium	0.81 J	0.78	NA	NA	5	18	0
			Calcium	27000	22900	NA	NA	NS	NS	53100
			Cobalt	14.7	10.4	NA	NA	NS	730	0
			Iron	955 J	448	NA	NA	300	11000	1430
			Magnesium	18900	15700	NA	NA	NS	NS	15000
			Manganese	7680	5440 J	NA	NA	50	880	1340
			Mercury	0.2	0.2 U	NA	NA	2	11	0
			Nickel	19.3	13.8	NA	NA	NS	730	83.4
			Potassium	2190 J	1880 J	NA	NA	NS	NS	5770
			Sodium	36000	29400	NA	NA	NS	NS	51400
			Zinc	13	9.1 JB	NA	NA	5000	11000	52.3
Fuze and Booster Quarry	FBQmw-170	Bedrock	1,3,5-Trinitrobenzene	0.095 U	0.042 J	NA	NA	NS	1100	*
			Acetone	1.9 JB	10 U	NA	NA	NS	5500	*
			Aluminum	27.8 J	22.5 JB	NA	NA	200	36000	0
			Arsenic	5	5.0 U	NA	NA	10	0.045	0
			Barium	34.4	36.4	NA	NA	2000	2600	256
			bis(2-Ethylhexyl) phthalate	10 U	1.6 JB	NA	NA	NS	4.8	*
			Calcium	8040	7260 J	NA	NA	NS	NS	53100
			Iron	50 U	167 J	NA	NA	300	11000	1430
			Magnesium	2890	2660 J	NA	NA	NS	NS	15000
			Manganese	64	63.1 J	NA	NA	50	880	1340
			Nickel	6.3 J	4.9 J	NA	NA	NS	730	83.4
			Nitrobenzene	0.056 JB	0.1 U	NA	NA	NS	3.4	*
			Potassium	840 J	729 UJB	NA	NA	NS	NS	5770
			Sodium	9000	10600	NA	NA	NS	NS	51400
			Toluene	0.28 J	1.0 U	NA	NA	1000	720	*
			Zinc	16.6	17.1 B	NA	NA	5000	11000	52.3
Fuze and Booster Quarry	FBQmw-171	Bedrock	1,3,5-Trinitrobenzene	0.1 U	0.052 J	NA	NA	NS	1100	*
			Acetone	2.2 JB	10 U	NA	NA	NS	5500	*
			Barium	33.7	28.3	NA	NA	2000	2600	256
			bis(2-Ethylhexyl) phthalate	0.83 JB	1 JB	NA	NA	NS	4.8	*

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Fuze and Booster Quarry	FBQmw-171	Bedrock	Calcium	18300	16400 J	NA	NA	NS	NS	53100
			HMX	0.57	0.1 U	NA	NA	NS	1800	*
			Iron	50 U	57.4 J	NA	NA	300	11000	1430
			Magnesium	5840	5540 J	NA	NA	NS	NS	15000
			Manganese	20.1	34.7 J	NA	NA	50	880	1340
			Mercury	0.14 J	0.2 U	NA	NA	2	11	0
			Nickel	4.3 J	4.9 J	NA	NA	NS	730	83.4
			Potassium	865 J	863 J	NA	NA	NS	NS	5770
			Sodium	891 J	1120	NA	NA	NS	NS	51400
			Zinc	14.8	14.5 B	NA	NA	5000	11000	52.3
Fuze and Booster Quarry	FBQmw-172	Bedrock	Aldrin	0.03 U	0.029 J	NA	NA	NS	0.004	*
			Barium	40.1	38	NA	NA	2000	2600	256
			bis(2-Ethylhexyl) phthalate	10 U	1.6 JB	NA	NA	NS	4.8	*
			Calcium	90700	84600	NA	NA	NS	NS	53100
			Iron	50 U	188	NA	NA	300	11000	1430
			Magnesium	40500	37800	NA	NA	NS	NS	15000
			Manganese	2460	1170 J	NA	NA	50	880	1340
			Nickel	3.9 J	4.3 J	NA	NA	NS	730	83.4
			Potassium	798 J	710 UJB	NA	NA	NS	NS	5770
			Sodium	7120	6930	NA	NA	NS	NS	51400
			Zinc	3.5 J	8.2 JB	NA	NA	5000	11000	52.3
Fuze and Booster Quarry	FBQmw-173	Bedrock	2,4,6-Trinitrolouene	0.085 J	0.099 U	NA	NA	NS	2.2	*
			4-Amino-2,6-Dinitrotoluene	0.16	0.099 U	NA	NA	NS	NS	*
			Acetone	3.6 JB	10 U	NA	NA	NS	5500	*
			Aluminum	50 U	50 JB	NA	NA	200	36000	0
			Barium	10	8.7 J	NA	NA	2000	2600	256
			bis(2-Ethylhexyl) phthalate	10 U	1.4 JB	NA	NA	NS	4.8	*
			Calcium	8560	8100	NA	NA	NS	NS	53100
			Chromium	3.6 J	5.0 U	NA	NA	100	110	0
			Cobalt	2.8 J	1.9 J	NA	NA	NS	730	0
			Iron	75.7 J	362	NA	NA	300	11000	1430
			Magnesium	3360	3210	NA	NA	NS	NS	15000
			Manganese	1210	1130 J	NA	NA	50	880	1340
			Nickel	7.4 J	10 U	NA	NA	NS	730	83.4
			Nitrobenzene	0.073 JB	0.099 U	NA	NA	NS	3.4	*
			Potassium	1230 J	1260 J	NA	NA	NS	NS	5770
			Sodium	3150	1610	NA	NA	NS	NS	51400
			Toluene	0.32 J	1.0 U	NA	NA	1000	720	*
			Zinc	5.9 J	6.2 JB	NA	NA	5000	11000	52.3
Fuze and Booster Quarry	FBQmw-174	Bedrock	2,4,6-Trinitrolouene	27 J	49	NA	NA	NS	2.2	*
			2,4-Dinitrotoluene	0.52 U	0.33 J	NA	NA	NS	73	*
			2-Amino-4,6-dinitrotoluene	27 J	28	NA	NA	NS	NS	*
			4,4-DDE	0.011 J	0.03 U	NA	NA	NS	NS	*
			4-Amino-2,6-Dinitrotoluene	30 J	30	NA	NA	NS	NS	*
			Acetone	3.9 JB	10 U	NA	NA	NS	5500	*
			Barium	17.5	15.7	NA	NA	2000	2600	256
			bis(2-Ethylhexyl) phthalate	10 U	1.2 JB	NA	NA	NS	4.8	*
			Calcium	8960	8290 J	NA	NA	NS	NS	53100
			HMX	0.2 J	0.23 J	NA	NA	NS	1800	*
			Iron	50 U	33.1 J	NA	NA	300	11000	1430
			Magnesium	2730	2620 J	NA	NA	NS	NS	15000
			Manganese	2.2 J	2.2 JB	NA	NA	50	880	1340
			Potassium	999 J	907 J	NA	NA	NS	NS	5770
			Zinc	5.1 J	4 JB	NA	NA	5000	11000	52.3
Fuze and Booster Quarry	FBQmw-175	Bedrock	1,3,5-Trinitrobenzene	0.1 U	0.056 J	NA	NA	NS	1100	*
			Acetone	1.1 JB	10 U	NA	NA	NS	5500	*
			Aluminum	50 U	51.7 JB	NA	NA	200	36000	0
			Barium	8.7 J	12.2	NA	NA	2000	2600	256
			bis(2-Ethylhexyl) phthalate	10 U	1 JB	NA	NA	NS	4.8	*
			Calcium	11100 J	11600 J	NA	NA	NS	NS	53100
			Cyanide	0.01 JB	0.01 U	NA	NA	0.2	0.73	0
			Iron	50 U	126 J	NA	NA	300	11000	1430
			Magnesium	5870	6180 J	NA	NA	NS	NS	15000
			Manganese	8.7 J	6.9 JB	NA	NA	50	880	1340
			Nickel	14	10.1	NA	NA	NS	730	83.4
			Potassium	735 J	755 UJB	NA	NA	NS	NS	5770
			Sodium	2850 J	2050	NA	NA	NS	NS	51400
			Toluene	0.18 J	1.0 U	NA	NA	1000	720	*
			Zinc	12 J	11.6 B	NA	NA	5000	11000	52.3
Fuze and Booster Quarry	FBQmw-176	Unconsolidated	1,3,5-Trinitrobenzene	0.1 U	0.058 J	NA	NA	NS	1100	*
			Acetone	3.9 JB	10 U	NA	NA	NS	5500	*
			Aluminum	50 U	906 J	NA	NA	200	36000	0

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Fuze and Booster Quarry	FBQmw-176	Unconsolidated	Arsenic	3.6 J	5.0 U	NA	NA	10	0.045	11.7
			Barium	60.8	57.5	NA	NA	2000	2600	82.1
			Calcium	9670	8760 J	NA	NA	NS	NS	115000
			Cobalt	3.4 UJ	2.8 J	NA	NA	NS	730	0
			Iron	9800 J	8910 J	NA	NA	300	11000	279
			Magnesium	3430 J	3320 J	NA	NA	NS	NS	43300
			Manganese	1500	1360 J	NA	NA	50	880	1020
			Mercury	0.2	0.2 U	NA	NA	2	11	0
			Potassium	941 UJ	1130 J	NA	NA	NS	NS	2890
			Selenium	5.0 U	4.7 J	NA	NA	50	180	0
			Sodium	2230	1900	NA	NA	NS	NS	45700
			Vanadium	10 U	1.7 JB	NA	NA	NS	36	0
			Zinc	4.2 J	8.8 JB	NA	NA	5000	11000	60.9
Fuze and Booster Quarry	FBQmw-177	Bedrock	Acetone	2 JB	10 U	NA	NA	NS	5500	*
			Barium	11.1	9.9 J	NA	NA	2000	2600	256
			bis(2-Ethylhexyl) phthalate	10 U	1.2 JB	NA	NA	NS	4.8	*
			Calcium	42000	42100 J	NA	NA	NS	NS	53100
			Iron	50 U	81.4 J	NA	NA	300	11000	1430
			Magnesium	11200	11600 J	NA	NA	NS	NS	15000
			Manganese	1340	1170 J	NA	NA	50	880	1340
			Nitrobenzene	0.099 JB	0.1 U	NA	NA	NS	3.4	*
			Potassium	1250 J	1220 J	NA	NA	NS	NS	5770
			Sodium	2670	2790	NA	NA	NS	NS	51400
			Zinc	2.6 J	3.7 JB	NA	NA	5000	11000	52.3
Load Line 10	LL10mw-001	Bedrock	1,3,5-Trinitrobenzene	NA	0.1 U	0.052 JB	0.039 JB	NS	1100	*
			Barium	NA	2.1 J	4.4 J	2.3 J	2000	2600	256
			beta-BHC	NA	0.03 U	0.0085 J	0.015 J	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	NA	1.1 J	5.5 JB	1.8 JB	NS	4.8	*
			Calcium	NA	71800	77200 J	74800	NS	NS	53100
			Carbon tetrachloride	NA	1.0 U	0.94 J	1.3	5	0.17	*
			Chloroform	NA	1.0 U	1.0 U	0.22 J	NS	0.17	*
			Cyanide	NA	0.01 U	0.0071 J	0.01 U	0.2	0.73	0
			Magnesium	NA	26100	28600 J	27400	NS	NS	15000
			Manganese	NA	10 U	0.59 JB	1.5 J	50	880	1340
			Nitrobenzene	NA	0.061 J	0.099 U	0.073 J	NS	3.4	*
			Perchlorate	NA	NA	NA	0.069	NS	3.6	*
			Potassium	NA	1030 J	1070 J	1030 J	NS	NS	5770
			Sodium	NA	7960	9940	7860	NS	NS	51400
			Vanadium	NA	10 U	0.84 J	10 U	NS	36	0
			Zinc	NA	10 U	5.3 JB	10 U	5000	11000	52.3
Load Line 10	LL10mw-002	Bedrock	2,6-Dinitrotoluene	NA	0.089 J	0.097 U	0.096 U	NS	36	*
			Barium	NA	17.4	16.5	59.9	2000	2600	256
			bis(2-Ethylhexyl) phthalate	NA	10 U	1.5 JB	4 JB	NS	4.8	*
			Calcium	NA	29800	26900 J	25000	NS	NS	53100
			Cobalt	NA	5.0 U	5.0 U	3.9 J	NS	730	0
			Iron	NA	50 U	50 U	5800	300	11000	1430
			Magnesium	NA	8210	7390	8140	NS	NS	15000
			Manganese	NA	1.2 J	0.91 UJB	1620	50	880	1340
			Nickel	NA	10 U	10 U	6.5 J	NS	730	83.4
			Perchlorate	NA	NA	NA	0.014 J	NS	3.6	*
			Potassium	NA	877 J	822 UJB	950 J	NS	NS	5770
			Sodium	NA	5330	4110	10300	NS	NS	51400
Load Line 10	LL10mw-003	Bedrock	Barium	NA	2.2 J	3.8 J	2.6 J	2000	2600	256
			bis(2-Ethylhexyl) phthalate	NA	10 U	0.88 JB	0.83 JB	NS	4.8	*
			Calcium	NA	54500	70400 J	53200	NS	NS	53100
			Carbon tetrachloride	NA	3.7	0.63 J	2.4	5	0.17	*
			Chloroform	NA	0.4 JB	1.0 U	0.29 J	NS	0.17	*
			Magnesium	NA	16000	23800	15500	NS	NS	15000
			Perchlorate	NA	NA	NA	0.075	NS	3.6	*
			Sodium	NA	8530	5840	9950	NS	NS	51400
			Zinc	NA	10 U	4.5 JB	2.6 JB	5000	11000	52.3
Load Line 10	LL10mw-004	Bedrock	1,3,5-Trinitrobenzene	NA	0.096 U	0.089 JB	0.099 U	NS	1100	*
			Barium	NA	3.3 J	3.2 JB	3.1 J	2000	2600	256
			bis(2-Ethylhexyl) phthalate	NA	1.3 J	3.9 JB	2.2 JB	NS	4.8	*
			Calcium	NA	70300	72300 J	64600	NS	NS	53100
			Iron	NA	50 U	51.4	50 U	300	11000	1430
			Magnesium	NA	21200	21800 J	18900	NS	NS	15000
			Manganese	NA	10 J	11.2 J	9.7 J	50	880	1340
			Sodium	NA	4180	4080	4150	NS	NS	51400
			Zinc	NA	10 U	5.7 JB	5.3 JB	5000	11000	52.3
Load Line 10	LL10mw-005	Bedrock	Barium	NA	3.8 J	4.6 J	4.2 J	2000	2600	256
			bis(2-Ethylhexyl) phthalate	NA	0.97 J	4.1 JB	3.5 JB	NS	4.8	*

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Load Line 10	LL10mw-005	Bedrock	Calcium	NA	61900	62000 J	64000	NS	NS	53100
			Magnesium	NA	14500	14700	14800	NS	NS	15000
			Manganese	NA	23.7	9.7 J	5.6 J	50	880	1340
			Perchlorate	NA	NA	NA	0.052	NS	3.6	*
			Sodium	NA	3200	3220	3520	NS	NS	51400
			Zinc	NA	4.5 J	2.7 JB	2.6 JB	5000	11000	52.3
Load Line 10	LL10mw-006	Unconsolidated	1,3,5-Trinitrobenzene	NA	0.096 U	0.097 U	0.035 JB	NS	1100	*
			Aluminum	NA	50 U	50 U	21.2 J	200	36000	0
			Barium	NA	13.2	12.2	12.5	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	NA	10 U	1.2 JB	0.98 JB	NS	4.8	*
			Calcium	NA	18200	17800 J	18200	NS	NS	115000
			Magnesium	NA	7160	7050	7070	NS	NS	43300
			Manganese	NA	3.8 J	2.1 JB	1.6 J	50	880	1020
			Mercury	NA	0.12 J	0.2 U	0.2 U	2	11	0
			Perchlorate	NA	NA	NA	0.054	NS	3.6	*
			Potassium	NA	913 J	876 J	940 J	NS	NS	2890
			Sodium	NA	2730	2470	2620	NS	NS	45700
			Zinc	NA	10 U	4 JB	3.3 JB	5000	11000	60.9
Load Line 11	LL11mw-001	Unconsolidated	1,3,5-Trinitrobenzene	NA	0.059 J	0.063 J	0.097 U	NS	1100	*
			Barium	NA	31.7	25.5	27.4	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	NA	1 JB	1.6 JB	1.1 JB	NS	4.8	*
			Calcium	NA	78700	73100	81400	NS	NS	115000
			Magnesium	NA	28000	26300	27800	NS	NS	43300
			Manganese	NA	207	146 J	575	50	880	1020
			Perchlorate	NA	NA	NA	0.019 J	NS	3.6	*
			Potassium	NA	804 UJ	823 J	818 J	NS	NS	2890
			Sodium	NA	19100	19600	17900	NS	NS	45700
			Zinc	NA	10 U	6 JB	2.4 JB	5000	11000	60.9
Load Line 11	LL11mw-003	Unconsolidated	1,3,5-Trinitrobenzene	NA	0.05 J	0.1 U	0.096 U	NS	1100	*
			Barium	NA	30.7	29.1	29.5	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	NA	1 JB	0.93 J	1.2 JB	NS	4.8	*
			Cadmium	NA	0.5 U	0.32 J	0.5 U	5	18	0
			Calcium	NA	103000	93900	104000	NS	NS	115000
			Magnesium	NA	32600	26700	31000	NS	NS	43300
			Manganese	NA	184	333 J	690	50	880	1020
			Perchlorate	NA	NA	NA	0.019 J	NS	3.6	*
			Potassium	NA	916 J	1270 J	1030 J	NS	NS	2890
			Sodium	NA	10600	8880	10700	NS	NS	45700
			Zinc	NA	10 U	47.2 B	19.5 JB	5000	11000	60.9
Load Line 11	LL11mw-004	Unconsolidated	1,3,5-Trinitrobenzene	NA	0.043 J	0.098 U	0.1 U	NS	1100	*
			4-Amino-2,6-Dinitrotoluene	NA	0.061 J	0.098 U	0.1 U	NS	NS	*
			Barium	NA	33.6	54.7	57.6	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	NA	0.98 JB	1 J	1.3 JB	NS	4.8	*
			Cadmium	NA	9.7	5.1	3.2	5	18	0
			Calcium	NA	64400	79400	81600	NS	NS	115000
			HMX	NA	0.083 J	0.098 U	0.1 U	NS	1800	*
			Iron	NA	50 U	43.9 JB	157 J	300	11000	279
			Magnesium	NA	18900	26800	27000	NS	NS	43300
			Manganese	NA	6.2 J	572 J	609	50	880	1020
			Potassium	NA	1070 J	1010 J	1140 J	NS	NS	2890
			Sodium	NA	8340	12400	13000	NS	NS	45700
			Zinc	NA	235	66.6 J	36.9 J	5000	11000	60.9
Load Line 11	LL11mw-005	Unconsolidated	1,3,5-Trinitrobenzene	NA	0.043 J	0.1 U	0.097 U	NS	1100	*
			Acetone	NA	10 U	10 U	1.2 JB	NS	5500	*
			Aluminum	NA	65.9	46.6 J	66.2	200	36000	0
			Antimony	NA	2.0 U	0.15 JB	2.0 U	6	15	0
			Barium	NA	36.9	33.3	29.7	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	NA	1.2 JB	10	1 JB	NS	4.8	*
			Cadmium	NA	O.23 U	0.22 J	5.0 U	5	18	0
			Calcium	NA	8990	8400	8580	NS	NS	115000
			HMX	NA	0.083 J	0.1 U	0.097 U	NS	1800	*
			Magnesium	NA	4560	4010	4410	NS	NS	43300
			Manganese	NA	51.2	41.8 J	35.6	50	880	1020
			Nickel	NA	8.6 J	7.2 J	9.9 J	NS	730	0
			Nitrobenzene	NA	0.1 JB	0.1 U	0.097 U	NS	3.4	*
			Perchlorate	NA	NA	NA	0.045 J	NS	3.6	*
			Sodium	NA	2680	2470	2550	NS	NS	45700
			Zinc	NA	9 J	12.1 B	17 JB	5000	11000	60.9
Load Line 11	LL11mw-006	Unconsolidated	1,3,5-Trinitrobenzene	NA	0.057 J	0.12 U	0.096 U	NS	1100	*
			2,6-Dinitrotoluene	NA	0.1 U	0.084 J	0.096 U	NS	36	*
			Barium	NA	19.6	19.1	22.4	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	NA	1.4 JB	10 U	2.9 JB	NS	4.8	*

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Load Line 11	LL11mw-006	Unconsolidated	Calcium	NA	77700	75200	76300	NS	NS	115000
			Magnesium	NA	16900	16200	15600	NS	NS	43300
			Manganese	NA	10 U	0.85 JB	0.56 J	NS	NS	43300
			Perchlorate	NA	NA	NA	0.17	NS	3.6	*
			Sodium	NA	7490	7240	6800	NS	NS	45700
			Vanadium	NA	0.71 J	10 U	10 U	NS	36	0
			Zinc	NA	10 U	9.4 JB	5.1 JB	5000	11000	60.9
Load Line 11	LL11mw-008	Unconsolidated	1,3,5-Trinitrobenzene	NA	0.059 J	0.073 J	0.1 U	NS	1100	*
			Antimony	NA	2.0 U	0.15 JB	2.0 U	6	15	0
			Barium	NA	28.4	32.9	32	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	NA	9.4 JB	1 JB	3.5 JB	NS	4.8	*
			Calcium	NA	109000	114000	111000	NS	NS	115000
			Chloromethane	NA	1.0 U	1.0 U	0.69 J	NS	160	*
			Magnesium	NA	32000	32300	31700	NS	NS	43300
			Manganese	NA	9.6 J	14 J	37.7	50	880	1020
			Perchlorate	NA	NA	NA	0.035 J	NS	3.6	*
			Potassium	NA	833 J	771 UJ	878 J	NS	NS	2890
			Sodium	NA	4790	4210	5390	NS	NS	45700
			Zinc	NA	10 U	8.8 JB	10 U	5000	11000	60.9
Load Line 11	LL11mw-009	Unconsolidated	Antimony	NA	NA	0.13 JB	2.0 U	6	15	0
			Barium	NA	NA	77.6	75.2	2000	2600	82.1
			beta-BHC	NA	NA	0.03 U	0.029 J	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	NA	NA	10 U	5.9 JB	NS	4.8	*
			Calcium	NA	NA	90200	84400	NS	NS	115000
			Magnesium	NA	NA	29600	27700	NS	NS	43300
			Manganese	NA	NA	900 J	804	50	880	1020
			Perchlorate	NA	NA	NA	0.0089 J	NS	3.6	*
			Potassium	NA	NA	935 J	954 J	NS	NS	2890
			Sodium	NA	NA	12300	12400	NS	NS	45700
			Tetrachloroethene	NA	NA	3.6	3.8	5	0.1	*
			Zinc	NA	NA	3.8 JB	10 U	5000	11000	60.9
Load Line 11	LL11mw-010	Unconsolidated	1,3,5-Trinitrobenzene	NA	0.043 J	0.12 U	0.04 JB	NS	1100	*
			2,6-Dinitrotoluene	NA	0.097 J	0.11 J	0.12 U	NS	36	*
			Aluminum	NA	20.1 J	50 U	59	200	36000	0
			Arsenic	NA	5.0 U	5.0 U	5.8	10	0.045	11.7
			Barium	NA	60.1	74.4	96.3	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	NA	1.5 JB	10 U	1.1 JB	NS	4.8	*
			Calcium	NA	76600	76900	80200	NS	NS	115000
			HMX	NA	0.041 J	0.12 U	0.12 U	NS	1800	*
			Iron	NA	138	50 U	1420 J	300	11000	279
			Magnesium	NA	31100	30500	31500	NS	NS	43300
			Manganese	NA	178	130 J	967 J	50	880	1020
			Nitrobenzene	NA	0.097 U	0.12 U	0.077 J	NS	3.4	*
			Potassium	NA	1180 J	1320 J	1380 J	NS	NS	2890
			Sodium	NA	24100	14400	17900	NS	NS	45700
			Zinc	NA	10 U	5.3 JB	7.8 JB	5000	11000	60.9
Load Line 12	LL12mw-088	Unconsolidated	Acetone	1.6 JB	NA	NA	NA	NS	5500	*
			Arsenic	13.8	NA	NA	NA	10	0.045	11.7
			Barium	383	NA	NA	NA	2000	2600	82.1
			Benzene	0.32 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	1.8 JB	NA	NA	NA	NS	4.8	*
			Calcium	163000	NA	NA	NA	NS	NS	115000
			Iron	1700	NA	NA	NA	300	11000	279
			Magnesium	57200	NA	NA	NA	NS	NS	43300
			Manganese	392	NA	NA	NA	50	880	1020
			Nickel	3.8 J	NA	NA	NA	NS	730	0
			Nitrate-Nitrite*	0.06* J	NA	NA	NA	1	1	*
			Potassium	2890 J	NA	NA	NA	NS	NS	2890
			Sodium	13800	NA	NA	NA	NS	NS	45700
			Zinc	5.4 JB	NA	NA	NA	5000	11000	60.9
Load Line 12	LL12mw-107	Unconsolidated	Acetone	4.4 JB	NA	NA	NA	NS	5500	*
			Arsenic	15.1	NA	NA	NA	10	0.045	11.7
			Barium	30.6	NA	NA	NA	2000	2600	82.1
			beta-BHC	0.022 J	NA	NA	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	1.2 JB	NA	NA	NA	NS	4.8	*
			Calcium	186000	NA	NA	NA	NS	NS	115000
			Cobalt	2.7 J	NA	NA	NA	NS	730	0
			Iron	2700	NA	NA	NA	300	11000	279
			Magnesium	77500	NA	NA	NA	NS	NS	43300
			Manganese	311	NA	NA	NA	50	880	1020
			Nitrobenzene	0.076 J	NA	NA	NA	NS	3.4	*
			Potassium	2280 J	NA	NA	NA	NS	NS	2890

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Load Line 12	LL12mw-107	Unconsolidated	Sodium	18500	NA	NA	NA	NS	NS	45700
			Zinc	3.2 JB	NA	NA	NA	5000	11000	60.9
Load Line 12	LL12mw-113	Unconsolidated	Acetone	1.7 JB	NA	NA	NA	NS	5500	*
			Antimony	0.35 J	NA	NA	NA	6	15	0
			Arsenic	7.3	NA	NA	NA	10	0.045	11.7
			Barium	25	NA	NA	NA	2000	2600	82.1
			Benzene	0.31 JB	NA	NA	NA	5	0.35	*
			beta-BHC	0.011 J	NA	NA	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	0.97 JB	NA	NA	NA	NS	4.8	*
			Cadmium	0.28 J	NA	NA	NA	5	18	0
			Calcium	293000	NA	NA	NA	NS	NS	115000
			Cobalt	7.1	NA	NA	NA	NS	730	0
			Iron	371	NA	NA	NA	300	11000	279
			Magnesium	125000	NA	NA	NA	NS	NS	43300
			Manganese	2800	NA	NA	NA	50	880	1020
			Nickel	14.1	NA	NA	NA	NS	730	0
			Potassium	8330 J	NA	NA	NA	NS	NS	2890
			Sodium	29600	NA	NA	NA	NS	NS	45700
			Zinc	8.1 JB	NA	NA	NA	5000	11000	60.9
Load Line 12	LL12mw-128	Unconsolidated	Aluminum	546 J	NA	NA	NA	200	36000	0
			Arsenic	47.6	NA	NA	NA	10	0.045	11.7
			Barium	52.8	NA	NA	NA	2000	2600	82.1
			Benzene	0.24 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	1.1 JB	NA	NA	NA	NS	4.8	*
			Calcium	179000	NA	NA	NA	NS	NS	115000
			Chloromethane	1.4	NA	NA	NA	NS	160	*
			Iron	5650	NA	NA	NA	300	11000	279
			Magnesium	106000	NA	NA	NA	NS	NS	43300
			Manganese	192	NA	NA	NA	50	880	1020
			Nitrate-Nitrite*	0.02* J	NA	NA	NA	1	1	*
			Nitrobenzene	0.067 J	NA	NA	NA	NS	3.4	*
			Potassium	2010 J	NA	NA	NA	NS	NS	2890
			Sodium	21600	NA	NA	NA	NS	NS	45700
			Zinc	17.4 B	NA	NA	NA	5000	11000	60.9
Load Line 12	LL12mw-154	Unconsolidated	Arsenic	24.7	NA	NA	NA	10	0.045	11.7
			Barium	51.5	NA	NA	NA	2000	2600	82.1
			Benzene	0.32 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	1.1 JB	NA	NA	NA	NS	4.8	*
			Calcium	145000	NA	NA	NA	NS	NS	115000
			Iron	2440	NA	NA	NA	300	11000	279
			Magnesium	66800	NA	NA	NA	NS	NS	43300
			Manganese	80.7	NA	NA	NA	50	880	1020
			Nitrate-Nitrite*	0.1* B	NA	NA	NA	1	1	*
			Potassium	1820 J	NA	NA	NA	NS	NS	2890
			Sodium	22400	NA	NA	NA	NS	NS	45700
			Zinc	3.6 JB	NA	NA	NA	5000	11000	60.9
Load Line 12	LL12mw-184	Unconsolidated	Arsenic	18.4	NA	NA	NA	10	0.045	11.7
			Barium	8.4 J	NA	NA	NA	2000	2600	82.1
			Benzene	0.28 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	2.6 JB	NA	NA	NA	NS	4.8	*
			Cadmium	0.16 J	NA	NA	NA	5	18	0
			Calcium	210000	NA	NA	NA	NS	NS	115000
			Chloromethane	0.33 J	NA	NA	NA	NS	160	*
			Iron	2940	NA	NA	NA	300	11000	279
			Magnesium	155000	NA	NA	NA	NS	NS	43300
			Manganese	498	NA	NA	NA	50	880	1020
			Potassium	2390 J	NA	NA	NA	NS	NS	2890
			Sodium	37600	NA	NA	NA	NS	NS	45700
			Zinc	6.6 JB	NA	NA	NA	5000	11000	60.9
Load Line 12	LL12mw-185	Unconsolidated	Aluminum	61.3 JB	NA	NA	NA	200	36000	0
			Barium	53.3	NA	NA	NA	2000	2600	82.1
			Benzene	0.3 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	3.2 JB	NA	NA	NA	NS	4.8	*
			Cadmium	0.23 JB	NA	NA	NA	5	18	0
			Calcium	667000	NA	NA	NA	NS	NS	115000
			Chloromethane	1.6	NA	NA	NA	NS	160	*
			Cobalt	3 J	NA	NA	NA	NS	730	0
			Magnesium	298000	NA	NA	NA	NS	NS	43300
			Manganese	1640	NA	NA	NA	50	880	1020
			Nickel	6.8 J	NA	NA	NA	NS	730	0
			Nitrate-Nitrite*	230* J	NA	NA	NA	1	1	*
			Nitrobenzene	0.079 J	NA	NA	NA	NS	3.4	*

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Load Line 12	LL12mw-185	Unconsolidated	Potassium	*7720 J*	NA	NA	NA	NS	NS	2890
			Sodium	*54800*	NA	NA	NA	NS	NS	45700
			Zinc	*21.2 B*	NA	NA	NA	5000	11000	60.9
Load Line 12	LL12mw-187	Unconsolidated	Barium	*339*	NA	NA	NA	2000	2600	82.1
			Benzene	0.27 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	1.7 JB	NA	NA	NA	NS	4.8	*
			Calcium	1020000	NA	NA	NA	NS	NS	115000
			Chloromethane	0.32 J	NA	NA	NA	NS	160	*
			Cobalt	10.9	NA	NA	NA	NS	730	0
			Magnesium	328000	NA	NA	NA	NS	NS	43300
			Manganese	2260	NA	NA	NA	50	880	1020
			Nickel	16.9	NA	NA	NA	NS	730	0
			Nitrate-Nitrite*	200* B	NA	NA	NA	1	1	*
			Nitrocellulose	2.3 J	NA	NA	NA	NS	NS	*
			Potassium	52700 J	NA	NA	NA	NS	NS	2890
			Sodium	*37100*	NA	NA	NA	NS	NS	45700
			Zinc	*7.7 JB*	NA	NA	NA	5000	11000	60.9
Load Line 12	LL12mw-188	Unconsolidated	Aluminum	121 JB	NA	NA	NA	200	36000	0
			Arsenic	*4.5 J*	NA	NA	NA	10	0.045	11.7
			Barium	*40.1*	NA	NA	NA	2000	2600	82.1
			Benzene	0.4 JB	NA	NA	NA	5	0.35	*
			beta-BHC	0.012 J	NA	NA	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	1.3 JB	NA	NA	NA	NS	4.8	*
			Calcium	194000	NA	NA	NA	NS	NS	115000
			Chromium	*2.6 J*	NA	NA	NA	100	110	7.3
			Cobalt	2.2 J	NA	NA	NA	NS	730	0
			Iron	1640	NA	NA	NA	300	11000	279
			Magnesium	124000	NA	NA	NA	NS	NS	43300
			Manganese	*1010 J*	NA	NA	NA	50	880	1020
			Nickel	4.8 J	NA	NA	NA	NS	730	0
			Nitrate-Nitrite*	0.08* JB	NA	NA	NA	1	1	*
			Nitrobenzene	0.078 J	NA	NA	NA	NS	3.4	*
			Potassium	*2560 J*	NA	NA	NA	NS	NS	2890
			Sodium	*33200*	NA	NA	NA	NS	NS	45700
			Zinc	*5.9 JB*	NA	NA	NA	5000	11000	60.9
Load Line 12	LL12mw-189	Unconsolidated	Acetone	1.5 JB	NA	NA	NA	NS	5500	*
			Arsenic	*11.1 J*	NA	NA	NA	10	0.045	11.7
			Barium	*16.7*	NA	NA	NA	2000	2600	82.1
			Calcium	145000	NA	NA	NA	NS	NS	115000
			Chloromethane	2.5	NA	NA	NA	NS	160	*
			HMX	0.07 J	NA	NA	NA	NS	1800	*
			Iron	1960 J	NA	NA	NA	300	11000	279
			Magnesium	67700	NA	NA	NA	NS	NS	43300
			Manganese	*283*	NA	NA	NA	50	880	1020
			Mercury	0.2	NA	NA	NA	2	11	0
			Nitrobenzene	0.08 JB	NA	NA	NA	NS	3.4	*
			Potassium	*1840 J*	NA	NA	NA	NS	NS	2890
			Sodium	48100	NA	NA	NA	NS	NS	45700
Load Line 12	LL12mw-242	Unconsolidated	Aluminum	922 J	NA	NA	NA	200	36000	0
			Arsenic	18.3	NA	NA	NA	10	0.045	11.7
			Barium	*31.7*	NA	NA	NA	2000	2600	82.1
			Benzene	0.49 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	2.6 JB	NA	NA	NA	NS	4.8	*
			Calcium	*69100*	NA	NA	NA	NS	NS	115000
			Chloromethane	0.64 J	NA	NA	NA	NS	160	*
			Iron	3950	NA	NA	NA	300	11000	279
			Magnesium	45400	NA	NA	NA	NS	NS	43300
			Manganese	*98.2*	NA	NA	NA	50	880	1020
			Nitrate-Nitrite*	0.2* B	NA	NA	NA	1	1	*
			Nitrobenzene	0.051 J	NA	NA	NA	NS	3.4	*
			o-xylene	0.28 J	NA	NA	NA	NS	NS	*
			Potassium	*1910 J*	NA	NA	NA	NS	NS	2890
			Sodium	*26000*	NA	NA	NA	NS	NS	45700
			Toluene	0.29 J	NA	NA	NA	1000	720	*
			Total Xylenes	0.28 J	NA	NA	NA	10000	210	*
			Zinc	10.2 B	NA	NA	NA	5000	11000	60.9
Load Line 12	LL12mw-243	Unconsolidated	Antimony	0.15 J	NA	NA	NA	6	15	0
			Arsenic	12	NA	NA	NA	10	0.045	11.7
			Barium	*31.7*	NA	NA	NA	2000	2600	82.1
			Benzene	0.24 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	1.2 JB	NA	NA	NA	NS	4.8	*
			Calcium	134000	NA	NA	NA	NS	NS	115000

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Load Line 12	LL12mw-243	Unconsolidated	Iron	1150	NA	NA	NA	300	11000	279
			Magnesium	90100	NA	NA	NA	NS	NS	43300
			Manganese	*813*	NA	NA	NA	50	880	1020
			Nitrate-Nitrite*	0.3* J	NA	NA	NA	1	1	*
			Potassium	3080 J	NA	NA	NA	NS	NS	2890
			Sodium	*24000*	NA	NA	NA	NS	NS	45700
			Zinc	*6.1 JB*	NA	NA	NA	5000	11000	60.9
Load Line 12	LL12mw-244	Unconsolidated	Antimony	0.33 J	NA	NA	NA	6	15	0
			Arsenic	*8.2*	NA	NA	NA	10	0.045	11.7
			Barium	120	NA	NA	NA	2000	2600	82.1
			Benzene	0.46 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	1.1 JB	NA	NA	NA	NS	4.8	*
			Calcium	*88100*	NA	NA	NA	NS	NS	115000
			Chloromethane	1.8	NA	NA	NA	NS	160	*
			Iron	*46.3 JB*	NA	NA	NA	300	11000	279
			Magnesium	*27400*	NA	NA	NA	NS	NS	43300
			Manganese	*148*	NA	NA	NA	50	880	1020
			Nitrate-Nitrite*	0.3	NA	NA	NA	1	1	*
			Potassium	*1800 J*	NA	NA	NA	NS	NS	2890
			Sodium	*9080*	NA	NA	NA	NS	NS	45700
			Zinc	*7.9 JB*	NA	NA	NA	5000	11000	60.9
Load Line 12	LL12mw-245	Unconsolidated	Acetone	2.7 JB	NA	NA	NA	NS	5500	*
			Arsenic	20.4	NA	NA	NA	10	0.045	11.7
			Barium	*33.7*	NA	NA	NA	2000	2600	82.1
			Benzene	0.25 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	3.2 JB	NA	NA	NA	NS	4.8	*
			Calcium	134000	NA	NA	NA	NS	NS	115000
			Cobalt	2 J	NA	NA	NA	NS	730	0
			Iron	994	NA	NA	NA	300	11000	279
			Magnesium	65700	NA	NA	NA	NS	NS	43300
			Manganese	*163*	NA	NA	NA	50	880	1020
			Potassium	*2700 J*	NA	NA	NA	NS	NS	2890
			Sodium	*21600*	NA	NA	NA	NS	NS	45700
			Zinc	*3.9 JB*	NA	NA	NA	5000	11000	60.9
Load Line 12	LL12mw-246	Unconsolidated	Acetone	4.3 JB	NA	NA	NA	NS	5500	*
			Arsenic	14.6	NA	NA	NA	10	0.045	11.7
			Barium	*37.8*	NA	NA	NA	2000	2600	82.1
			Benzene	0.58 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	5 JB	NA	NA	NA	NS	4.8	*
			Calcium	*92300*	NA	NA	NA	NS	NS	115000
			Magnesium	50900	NA	NA	NA	NS	NS	43300
			Manganese	*28*	NA	NA	NA	50	880	1020
			Nitrate-Nitrite*	0.1* B	NA	NA	NA	1	1	*
			Nitrobenzene	0.074 J	NA	NA	NA	NS	3.4	*
			o-xylene	0.29 J	NA	NA	NA	NS	NS	*
			Perchlorate	0.033 J	NA	NA	NA	NS	3.6	*
			Potassium	6140 J	NA	NA	NA	NS	NS	2890
			Sodium	*23300*	NA	NA	NA	NS	NS	45700
			Toluene	0.23 J	NA	NA	NA	1000	720	*
			Total Xylenes	0.29 J	NA	NA	NA	10000	210	*
Load Line 1	LL1mw-063	Bedrock	1,3,5-Trinitrobenzene	0.09 JB	NA	NA	NA	NS	1100	*
			2,4-Dinitrotoluene	0.24	NA	NA	NA	NS	73	*
			2,6-Dinitrotoluene	0.37	NA	NA	NA	NS	36	*
			2-Amino-4,6-dinitrotoluene	0.42	NA	NA	NA	NS	NS	*
			4-Amino-2,6-Dinitrotoluene	1.2	NA	NA	NA	NS	NS	*
			Acetone	9 JB	NA	NA	NA	NS	5500	*
			alpha-BHC	0.01 J	NA	NA	NA	NS	0.011	*
			Aluminum	2700	NA	NA	NA	200	36000	0
			Antimony	0.48 J	NA	NA	NA	6	15	0
			Arsenic	5.6	NA	NA	NA	10	0.045	0
			Benzene	0.37 JB	NA	NA	NA	5	0.35	*
			Cadmium	0.2 J	NA	NA	NA	5	18	0
			Chromium	6.6	NA	NA	NA	100	110	0
			Cobalt	11.1	NA	NA	NA	NS	730	0
			Copper	6.1	NA	NA	NA	1300	1500	0
			HMX	1.2	NA	NA	NA	NS	1800	*
			Iron	*6180*	NA	NA	NA	300	11000	1430
			Lead	9.4	NA	NA	NA	15	NS	0
			Magnesium	*5380*	NA	NA	NA	NS	NS	15000
			Nickel	*44.2*	NA	NA	NA	NS	730	83.4
			Nitrobenzene	0.12 J	NA	NA	NA	NS	3.4	*
			Potassium	*1870 J*	NA	NA	NA	NS	NS	5770

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Load Line 1	LL1mw-063	Bedrock	RDX	0.16	NA	NA	NA	NS	0.61	*
			Sodium	5090	NA	NA	NA	NS	NS	51400
			Vanadium	3.5 J	NA	NA	NA	NS	36	0
Load Line 1	LL1mw-064	Unconsolidated	Acetone	3 JB	10 U	NA	NA	NS	5500	*
			Arsenic	4.9 J	5 U	NA	NA	10	0.045	11.7
			Barium	50.4	48.2	NA	NA	2000	2600	82.1
			Benzene	0.34 JB	1 U	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	2.2 JB	10 U	NA	NA	NS	4.8	*
			Calcium	57000	56400	NA	NA	NS	NS	115000
			Iron	601 J	564	NA	NA	300	11000	279
			Magnesium	9730	9760	NA	NA	NS	NS	43300
			Manganese	129	121 J	NA	NA	50	880	1020
			Potassium		694 JB	NA	NA	NS	NS	2890
			Sodium	10700	5050	NA	NA	NS	NS	45700
Load Line 1	LL1mw-065	Unconsolidated	Acetone	3.3 JB	NA	NA	NA	NS	5500	*
			Arsenic	4.7 J	NA	NA	NA	10	0.045	11.7
			Barium	55.6	NA	NA	NA	2000	2600	82.1
			Benzene	0.26 JB	NA	NA	NA	5	0.35	*
			Calcium	84900	NA	NA	NA	NS	NS	115000
			Iron	150 JB	NA	NA	NA	300	11000	279
			Magnesium	20200	NA	NA	NA	NS	NS	43300
			Manganese	348	NA	NA	NA	50	880	1020
			Potassium	957 J	NA	NA	NA	NS	NS	2890
			Sodium	10200	NA	NA	NA	NS	NS	45700
			Zinc	5 JB	NA	NA	NA	5000	11000	60.9
Load Line 1	LL1mw-079	Bedrock	2-Amino-4,6-dinitrotoluene	0.91	NA	NA	NA	NS	NS	*
			4-Amino-2,6-Dinitrotoluene	1.1	NA	NA	NA	NS	NS	*
			Acetone	6.9 JB	NA	NA	NA	NS	5500	*
			Barium	4.4 J	NA	NA	NA	2000	2600	256
			Benzene	0.29 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	2.5 JB	NA	NA	NA	NS	4.8	*
			Calcium	31200	NA	NA	NA	NS	NS	53100
			Cobalt	2.4 J	NA	NA	NA	NS	730	0
			HMX	0.42	NA	NA	NA	NS	1800	*
			Magnesium	16400	NA	NA	NA	NS	NS	15000
			Manganese	89.7	NA	NA	NA	50	880	1340
			Nickel	12.9 J	NA	NA	NA	NS	730	83.4
			Nitrobenzene	0.054 J	NA	NA	NA	NS	3.4	*
			Potassium	2680 J	NA	NA	NA	NS	NS	5770
			RDX	0.98	NA	NA	NA	NS	0.61	*
			Sodium	6750	NA	NA	NA	NS	NS	51400
			Zinc	37.7 J	NA	NA	NA	5000	11000	52.3
Load Line 2	LL2mw-060	Bedrock	1,3,5-Trinitrobenzene	0.062 J	NA	NA	NA	NS	1100	*
			2-Amino-4,6-dinitrotoluene	0.62	NA	NA	NA	NS	NS	*
			4-Amino-2,6-Dinitrotoluene	0.91	NA	NA	NA	NS	NS	*
			Acetone	4.6 JB	NA	NA	NA	NS	5500	*
			Barium	20.9	NA	NA	NA	2000	2600	256
			Benzene	0.42 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	2.8 JB	NA	NA	NA	NS	4.8	*
			Calcium	37100	NA	NA	NA	NS	NS	53100
			Magnesium	9900	NA	NA	NA	NS	NS	15000
			Manganese	9.2 J	NA	NA	NA	50	880	1340
			Sodium	2190	NA	NA	NA	NS	NS	51400
			Zinc	4.2 JB	NA	NA	NA	5000	11000	52.3
Load Line 2	LL2mw-261	Bedrock	Acetone	5.5 JB	NA	NA	NA	NS	5500	*
			Arsenic	19.1	NA	NA	NA	10	0.045	0
			Barium	20	NA	NA	NA	2000	2600	256
			Benzene	0.28 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	1.9 JB	NA	NA	NA	NS	4.8	*
			Calcium	59200	NA	NA	NA	NS	NS	53100
			Iron	2570 J	NA	NA	NA	300	11000	1430
			Magnesium	21500	NA	NA	NA	NS	NS	15000
			Manganese	370	NA	NA	NA	50	880	1340
			Nickel	4.4 J	NA	NA	NA	NS	730	83.4
			Potassium	1140 J	NA	NA	NA	NS	NS	5770
			Sodium	11100	NA	NA	NA	NS	NS	51400
Load Line 2	LL2mw-264	Bedrock	Acetone	5.1 JB	NA	NA	NA	NS	5500	*
			Arsenic	5.4	NA	NA	NA	10	0.045	0
			Barium	7.2 J	NA	NA	NA	2000	2600	256
			Benzene	0.4 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	2.8 JB	NA	NA	NA	NS	4.8	*
			Calcium	48400	NA	NA	NA	NS	NS	53100

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Load Line 2	LL2mw-264	Bedrock	Iron	458 JB	NA	NA	NA	300	11000	1430
			Magnesium	17300	NA	NA	NA	NS	NS	15000
			Manganese	304	NA	NA	NA	50	880	1340
			Sodium	7310	NA	NA	NA	NS	NS	51400
			Zinc	3.2 JB	NA	NA	NA	5000	11000	52.3
Load Line 2	LL2mw-265	Bedrock	Acetone	8.7 JB	NA	NA	NA	NS	5500	*
			Barium	8.5 J	NA	NA	NA	2000	2600	256
			Benzene	0.36 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	7 JB	NA	NA	NA	NS	4.8	*
			Calcium	65400	NA	NA	NA	NS	NS	53100
			Cobalt	7	NA	NA	NA	NS	730	0
			Iron	4250 J	NA	NA	NA	300	11000	1430
			Magnesium	22900	NA	NA	NA	NS	NS	15000
			Manganese	831	NA	NA	NA	50	880	1340
			Nickel	18.4 J	NA	NA	NA	NS	730	83.4
			Sodium	8450	NA	NA	NA	NS	NS	51400
Load Line 2	LL2mw-268	Bedrock	Acetone	3.9 JB	NA	NA	NA	NS	5500	*
			Arsenic	5.2	NA	NA	NA	10	0.045	0
			Barium	34.1	NA	NA	NA	2000	2600	256
			Benzene	0.44 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	2.2 JB	NA	NA	NA	NS	4.8	*
			Calcium	53200	NA	NA	NA	NS	NS	53100
			Chromium	2.2 J	NA	NA	NA	100	110	0
			Iron	2790 J	NA	NA	NA	300	11000	1430
			Magnesium	22900	NA	NA	NA	NS	NS	15000
			Manganese	331	NA	NA	NA	50	880	1340
			Potassium	1300 J	NA	NA	NA	NS	NS	5770
			RDX	0.19 B	NA	NA	NA	NS	0.61	*
			Sodium	10300	NA	NA	NA	NS	NS	51400
			Zinc	9.7 JB	NA	NA	NA	5000	11000	52.3
Load Line 2	LL2mw-270	Bedrock	Acetone	5.7 JB	NA	NA	NA	NS	5500	*
			Barium	12.7	NA	NA	NA	2000	2600	256
			Benzene	0.34 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	1.2 JB	NA	NA	NA	NS	4.8	*
			Cadmium	0.25 J	NA	NA	NA	5	18	0
			Calcium	43900	NA	NA	NA	NS	NS	53100
			Cobalt	5.9	NA	NA	NA	NS	730	0
			Iron	765 J	NA	NA	NA	300	11000	1430
			Magnesium	16700	NA	NA	NA	NS	NS	15000
			Manganese	407	NA	NA	NA	50	880	1340
			Mercury	0.18 J	NA	NA	NA	2	11	0
			Nickel	11.6 J	NA	NA	NA	NS	730	83.4
			Potassium	1120 J	NA	NA	NA	NS	NS	5770
			Sodium	2460	NA	NA	NA	NS	NS	51400
			Zinc	6.2 JB	NA	NA	NA	5000	11000	52.3
Load Line 3	LL3mw-232	Bedrock	Acetone	5.7 JB	NA	NA	NA	NS	5500	*
			Barium	27.2	NA	NA	NA	2000	2600	256
			Benzene	0.37 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	1 JB	NA	NA	NA	NS	4.8	*
			Calcium	59200	NA	NA	NA	NS	NS	53100
			Iron	150 JB	NA	NA	NA	300	11000	1430
			Magnesium	38500	NA	NA	NA	NS	NS	15000
			Manganese	345	NA	NA	NA	50	880	1340
			Nickel	8 J	NA	NA	NA	NS	730	83.4
			Potassium	3670 J	NA	NA	NA	NS	NS	5770
			Sodium	8130	NA	NA	NA	NS	NS	51400
			Zinc	8.8 JB	NA	NA	NA	5000	11000	52.3
Load Line 3	LL3mw-233	Bedrock	Acetone	6.4 JB	NA	NA	NA	NS	5500	*
			Barium	30	NA	NA	NA	2000	2600	256
			Benzene	0.44 JB	NA	NA	NA	5	0.35	*
			Calcium	40300	NA	NA	NA	NS	NS	53100
			Cobalt	3.6 J	NA	NA	NA	NS	730	0
			Iron	6660 J	NA	NA	NA	300	11000	1430
			Magnesium	16300	NA	NA	NA	NS	NS	15000
			Manganese	1410	NA	NA	NA	50	880	1340
			Nickel	28.5 J	NA	NA	NA	NS	730	83.4
			Potassium	1820 J	NA	NA	NA	NS	NS	5770
			Sodium	7330	NA	NA	NA	NS	NS	51400
			Zinc	18.8 J	NA	NA	NA	5000	11000	52.3
Load Line 3	LL3mw-234	Bedrock	2,6-Dinitrotoluene	0.1 J	NA	NA	NA	NS	36	*
			2-Amino-4,6-dinitrotoluene	0.28 J	NA	NA	NA	NS	NS	*
			4-Amino-2,6-Dinitrotoluene	0.5 J	NA	NA	NA	NS	NS	*

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Load Line 3	LL3mw-234	Bedrock	Acetone	6 JB	NA	NA	NA	NS	5500	*
			Barium	10.5	NA	NA	NA	2000	2600	256
			Benzene	0.32 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	1.2 JB	NA	NA	NA	NS	4.8	*
			Calcium	50700	NA	NA	NA	NS	NS	53100
			HMX	0.056 J	NA	NA	NA	NS	1800	*
			Iron	748 J	NA	NA	NA	300	11000	1430
			Magnesium	20500	NA	NA	NA	NS	NS	15000
			Manganese	2180	NA	NA	NA	50	880	1340
			Nickel	8.6 J	NA	NA	NA	NS	730	83.4
			Potassium	1810 J	NA	NA	NA	NS	NS	5770
			RDX	0.48 JB	NA	NA	NA	NS	0.61	*
			Sodium	8870	NA	NA	NA	NS	NS	51400
Load Line 3	LL3mw-235	Bedrock	Acetone	9.4 JB	NA	NA	NA	NS	5500	*
			alpha-BHC	0.02 J	NA	NA	NA	NS	0.011	*
			Aluminum	69.9	NA	NA	NA	200	36000	0
			Barium	3.4 J	NA	NA	NA	2000	2600	256
			Calcium	33200	NA	NA	NA	NS	NS	53100
			Endrin	0.018 J	NA	NA	NA	2	11	*
			Iron	234	NA	NA	NA	300	11000	1430
			Magnesium	14800	NA	NA	NA	NS	NS	15000
			Manganese	29.7 J	NA	NA	NA	50	880	1340
			Potassium	888 J	NA	NA	NA	NS	NS	5770
			Sodium	9010	NA	NA	NA	NS	NS	51400
			Zinc	16.2 JB	NA	NA	NA	5000	11000	52.3
Load Line 3	LL3mw-237	Bedrock	2,4,6-Trinitrolouene	0.57	NA	NA	NA	NS	2.2	*
			2,4-Dinitrotoluene	0.058 J	NA	NA	NA	NS	73	*
			2-Amino-4,6-dinitrotoluene	2.5	NA	NA	NA	NS	NS	*
			4-Amino-2,6-Dinitrotoluene	3.7	NA	NA	NA	NS	NS	*
			Acetone	4.4 JB	NA	NA	NA	NS	5500	*
			Barium	2.2 JB	NA	NA	NA	2000	2600	256
			Benzene	0.24 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	1.5 JB	NA	NA	NA	NS	4.8	*
			Calcium	35900	NA	NA	NA	NS	NS	53100
			HMX	0.066 J	NA	NA	NA	NS	1800	*
			Magnesium	12500	NA	NA	NA	NS	NS	15000
			Manganese	26.7	NA	NA	NA	50	880	1340
			Potassium	1690 J	NA	NA	NA	NS	NS	5770
			RDX	0.14	NA	NA	NA	NS	0.61	*
			Sodium	4070	NA	NA	NA	NS	NS	51400
			Zinc	6.1 JB	NA	NA	NA	5000	11000	52.3
Load Line 3	LL3mw-240	Bedrock	Acetone	2.8 JB	NA	NA	NA	NS	5500	*
			Antimony	0.52 J	NA	NA	NA	6	15	0
			Barium	11.1	NA	NA	NA	2000	2600	256
			Benzene	0.4 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	1 JB	NA	NA	NA	NS	4.8	*
			Calcium	24100	NA	NA	NA	NS	NS	53100
			Magnesium	8340	NA	NA	NA	NS	NS	15000
			Manganese	3 JB	NA	NA	NA	50	880	1340
			Nickel	4.4 J	NA	NA	NA	NS	730	83.4
			Potassium	790 JB	NA	NA	NA	NS	NS	5770
			Sodium	3850	NA	NA	NA	NS	NS	51400
			Tetrachloroethene	0.29 J	NA	NA	NA	5	0.1	*
			Zinc	2.4 JB	NA	NA	NA	5000	11000	52.3
Load Line 3	LL3mw-241	Bedrock	1,3,5-Trinitrobenzene	4.5	NA	NA	NA	NS	1100	*
			1,3-Dinitrobenzene	0.051 J	NA	NA	NA	NS	3.6	*
			2,4,6-Trinitrolouene	2.5	NA	NA	NA	NS	2.2	*
			2,4-Dinitrotoluene	0.071 J	NA	NA	NA	NS	73	*
			2,6-Dinitrotoluene	0.076 J	NA	NA	NA	NS	36	*
			2-Amino-4,6-dinitrotoluene	1.7	NA	NA	NA	NS	NS	*
			4-Amino-2,6-Dinitrotoluene	1.6	NA	NA	NA	NS	NS	*
			Acetone	8.7 JB	NA	NA	NA	NS	5500	*
			Barium	2.3 JB	NA	NA	NA	2000	2600	256
			Benzene	0.28 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	0.88 JB	NA	NA	NA	NS	4.8	*
			Calcium	19600	NA	NA	NA	NS	NS	53100
			HMX	0.2	NA	NA	NA	NS	1800	*
			Magnesium	8600	NA	NA	NA	NS	NS	15000
			Manganese	1.5 JB	NA	NA	NA	50	880	1340
			RDX	1.1	NA	NA	NA	NS	0.61	*
			Sodium	3700	NA	NA	NA	NS	NS	51400
			Zinc	5.9 JB	NA	NA	NA	5000	11000	52.3

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Load Line 3	LL3mw-243	Bedrock	Acetone	6 JB	NA	NA	NA	NS	5500	*
			Antimony	0.32 J	NA	NA	NA	6	15	0
			Barium	17.8	NA	NA	NA	2000	2600	256
			Benzene	0.32 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	1.1 JB	NA	NA	NA	NS	4.8	*
			Calcium	17400	NA	NA	NA	NS	NS	53100
			Magnesium	6850	NA	NA	NA	NS	NS	15000
			Manganese	0.91 JB	NA	NA	NA	50	880	1340
			Nickel	3.5 J	NA	NA	NA	NS	730	83.4
			Nitrobenzene	0.073 J	NA	NA	NA	NS	3.4	*
			Potassium	1130 J	NA	NA	NA	NS	NS	5770
			Sodium	2710	NA	NA	NA	NS	NS	51400
			Zinc	7.5 JB	NA	NA	NA	5000	11000	52.3
Load Line 4	LL4mw-193	Unconsolidated	Arsenic	5.4	NA	NA	NA	10	0.045	11.7
			Barium	49.6	NA	NA	NA	2000	2600	82.1
			Benzene	0.47 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	5 JB	NA	NA	NA	NS	4.8	*
			Calcium	112000	NA	NA	NA	NS	NS	115000
			Magnesium	34700	NA	NA	NA	NS	NS	43300
			Manganese	344	NA	NA	NA	50	880	1020
			Nitrobenzene	0.059 J	NA	NA	NA	NS	3.4	*
			o-xylene	0.29 J	NA	NA	NA	NS	NS	*
			Potassium	994 J	NA	NA	NA	NS	NS	2890
			Sodium	10100	NA	NA	NA	NS	NS	45700
			Toluene	0.31 J	NA	NA	NA	1000	720	*
			Total Xylenes	0.29 J	NA	NA	NA	10000	210	*
			Zinc	2.5 JB	NA	NA	NA	5000	11000	60.9
Load Line 4	LL4mw-194	Unconsolidated	Acetone	3.5 JB	NA	NA	NA	NS	5500	*
			Barium	49	NA	NA	NA	2000	2600	82.1
			Benzene	0.36 JB	NA	NA	NA	5	0.35	*
			Calcium	107000	NA	NA	NA	NS	NS	115000
			Chloromethane	0.4 J	NA	NA	NA	NS	160	*
			Iron	93.3 B	NA	NA	NA	300	11000	279
			Magnesium	32500	NA	NA	NA	NS	NS	43300
			Manganese	374	NA	NA	NA	50	880	1020
			Potassium	1650 J	NA	NA	NA	NS	NS	2890
			Sodium	14400	NA	NA	NA	NS	NS	45700
			Zinc	4.2 JB	NA	NA	NA	5000	11000	60.9
Load Line 4	LL4mw-195	Unconsolidated	2-Nitrotoluene	0.096 J	NA	NA	NA	NS	0.049	*
			Acetone	1.8 JB	NA	NA	NA	NS	5500	*
			Barium	32.6	NA	NA	NA	2000	2600	82.1
			Benzene	0.31 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	1.1 JB	NA	NA	NA	NS	4.8	*
			Calcium	231000	NA	NA	NA	NS	NS	115000
			Cobalt	3.7 J	NA	NA	NA	NS	730	0
			Iron	8330 J	NA	NA	NA	300	11000	279
			Magnesium	62800	NA	NA	NA	NS	NS	43300
			Manganese	3800	NA	NA	NA	50	880	1020
			Potassium	1190 J	NA	NA	NA	NS	NS	2890
			Sodium	9460	NA	NA	NA	NS	NS	45700
			Zinc	5.5 JB	NA	NA	NA	5000	11000	60.9
Load Line 4	LL4mw-200	Unconsolidated	Acetone	3.6 JB	NA	NA	NA	NS	5500	*
			Barium	11	NA	NA	NA	2000	2600	82.1
			Benzene	0.45 JB	NA	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	1.7 JB	NA	NA	NA	NS	4.8	*
			Calcium	167000	NA	NA	NA	NS	NS	115000
			Magnesium	51400	NA	NA	NA	NS	NS	43300
			Manganese	13.3	NA	NA	NA	50	880	1020
			Sodium	7810	NA	NA	NA	NS	NS	45700
Load Line 5	LL5mw-001	Bedrock	Aluminum	50 U	7320 J	NA	NA	200	36000	0
			Arsenic	5.0 U	6.6	NA	NA	10	0.045	0
			Barium	28.5	71.9 J	NA	NA	2000	2600	256
			Beryllium	1.0 U	0.45 J	NA	NA	4	73	0
			Calcium	61400	51200 J	NA	NA	NS	NS	53100
			Chromium	5.0 U	12.2	NA	NA	100	110	0
			Cobalt	5.0 U	7.3	NA	NA	NS	730	0
			Copper	5.0 U	7.4	NA	NA	1300	1500	0
			Iron	50 U	22300 J	NA	NA	300	11000	1430
			Lead	3 U	7.3	NA	NA	15	NS	0
			Magnesium	24300	21600 J	NA	NA	NS	NS	15000
			Manganese	1.5 JB	661 J	NA	NA	50	880	1340
			Nickel	10 U	13.3	NA	NA	NS	730	83.4

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Load Line 5	LL5mw-001	Bedrock	PCB- 1248	0.41 J	0.5 U	NA	NA	0.5	0.034	*
			Perchlorate	0.033 J	NA	NA	NA	NS	3.6	*
			Potassium	1300 J	3200 J	NA	NA	NS	NS	5770
			Sodium	8830	4440	NA	NA	NS	NS	51400
			Vanadium	10 U	13.7	NA	NA	NS	36	0
			Zinc	8.2 JB	50.8 J	NA	NA	5000	11000	52.3
Load Line 5	LL5mw-002	Bedrock	Acetone	2 JB	10 U	NA	NA	NS	5500	*
			Aluminum	20.3 J	50 U	NA	NA	200	36000	0
			Arsenic	3.2 JB	3.4 J	NA	NA	10	0.045	0
			Barium	53	50.3 J	NA	NA	2000	2600	256
			Calcium	64100	66700 J	NA	NA	NS	NS	53100
			Chloromethane	0.37 J	1.0 U	NA	NA	NS	160	*
			Cyanide	0.0079 J	0.01 U	NA	NA	0.2	0.73	0
			Iron	176	217 J	NA	NA	300	11000	1430
			Magnesium	20700	21900 J	NA	NA	NS	NS	15000
			Manganese	158	114 J	NA	NA	50	880	1340
			Perchlorate	0.031 J	NA	NA	NA	NS	3.6	*
			Potassium	1110 B	1160 J	NA	NA	NS	NS	5770
			Selenium	4.7 J	5.0 U	NA	NA	50	180	0
			Sodium	11900	6790	NA	NA	NS	NS	51400
			Zinc	7.2 JB	4.6 JB	NA	NA	5000	11000	52.3
Load Line 5	LL5mw-003	Unconsolidated	Barium	23.6	21.5 J	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	10 U	1.7 JB	NA	NA	NS	4.8	*
			Calcium	109000	102000 J	NA	NA	NS	NS	115000
			Magnesium	26700	24700 J	NA	NA	NS	NS	43300
			Perchlorate	0.056	NA	NA	NA	NS	3.6	*
			Sodium	3610	3580	NA	NA	NS	NS	45700
			Zinc	3.3 JB	10 U	NA	NA	5000	11000	60.9
Load Line 5	LL5mw-004	Bedrock	1,3,5-Trinitrobenzene	0.098 U	0.042 J	NA	NA	NS	1100	*
			Aluminum	50 U	149 J	NA	NA	200	36000	0
			Barium	24.1	22.2 J	NA	NA	2000	2600	256
			Calcium	69000	78400 J	NA	NA	NS	NS	53100
			Chromium	5.0 U	4.9 J	NA	NA	100	110	0
			Iron	50 U	258 J	NA	NA	300	11000	1430
			Magnesium	26500	28300 J	NA	NA	NS	NS	15000
			Manganese	10 U	8 J	NA	NA	50	880	1340
			Nickel	10 U	3.5 J	NA	NA	NS	730	83.4
			Nitrobenzene	0.074 J	0.1 U	NA	NA	NS	3.4	*
			Perchlorate	0.069	NA	NA	NA	NS	3.6	*
			Sodium	8480	3320	NA	NA	NS	NS	51400
			Zinc	10 U	17.7 B	NA	NA	5000	11000	52.3
Load Line 5	LL5mw-005	Bedrock	1,3,5-Trinitrobenzene	0.095 U	0.048 J	NA	NA	NS	1100	*
			Barium	10.7	11	NA	NA	2000	2600	256
			bis(2-Ethylhexyl) phthalate	1.4 JB	10 U	NA	NA	NS	4.8	*
			Calcium	69900	68700	NA	NA	NS	NS	53100
			Magnesium	28800	27900	NA	NA	NS	NS	15000
			Manganese	333	444	NA	NA	50	880	1340
			Perchlorate	0.031 J	NA	NA	NA	NS	3.6	*
			Potassium	1780 J	1590 J	NA	NA	NS	NS	5770
			Sodium	7670	7810	NA	NA	NS	NS	51400
Load Line 5	LL5mw-006	Bedrock	Barium	17.2	17.5	NA	NA	2000	2600	256
			beta-BHC	0.03 U	0.012 J	NA	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	10 U	2.5 JB	NA	NA	NS	4.8	*
			Calcium	66000	67400	NA	NA	NS	NS	53100
			Chloromethane	0.31 J	1.0 U	NA	NA	NS	160	*
			Chromium	3.3 JB	5.0 U	NA	NA	100	110	0
			Magnesium	36300	36600	NA	NA	NS	NS	15000
			Manganese	7 J	16.5	NA	NA	50	880	1340
			Nitrobenzene	0.095 J	0.099 U	NA	NA	NS	3.4	*
			Perchlorate	0.013 J	NA	NA	NA	NS	3.6	*
			Potassium	1060 J	1140 J	NA	NA	NS	NS	5770
			Sodium	6080	6150	NA	NA	NS	NS	51400
			Zinc	11.5 JB	3.1 JB	NA	NA	5000	11000	52.3
Load Line 6	LL6mw-001	Unconsolidated	Acetone	7.9 JB	10 U	NA	NA	NS	5500	*
			Barium	15.3	14.8	NA	NA	2000	2600	82.1
			beta-BHC	0.025 J	0.03 U	NA	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	1.7 JB	10 U	NA	NA	NS	4.8	*
			Calcium	68800	71700 J	NA	NA	NS	NS	115000
			Magnesium	36400	38400 J	NA	NA	NS	NS	43300
			Manganese	0.55 J	0.61 JB	NA	NA	50	880	1020
			Potassium	1430 J	1520 J	NA	NA	NS	NS	2890
			Sodium	7720	7090	NA	NA	NS	NS	45700

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Load Line 6	LL6mw-001	Unconsolidated	Zinc	11.2 B	8.7 JB	NA	NA	5000	11000	60.9
Load Line 6	LL6mw-002	Unconsolidated	1,3,5-Trinitrobenzene	0.044 J	0.046 J	NA	NA	NS	1100	*
			Acetone	5.5 JB	10 U	NA	NA	NS	5500	*
			Barium	22.7	21.1 J	NA	NA	2000	2600	82.1
			beta-BHC	0.03 UJ	0.015 J	NA	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	1.4 JB	1.2 JB	NA	NA	NS	4.8	*
			Calcium	134000	130000 J	NA	NA	NS	NS	115000
			Gamma-BHC	0.0089 J	0.03 UJ	NA	NA	0.2	0.052	*
			Magnesium	29000	29100 J	NA	NA	NS	NS	43300
			Manganese	1.3 JB	10 U	NA	NA	50	880	1020
			Nitrocellulose	0.13 J	0.5 UJ	NA	NA	NS	NS	*
			Potassium	939 J	851 J	NA	NA	NS	NS	2890
			Sodium	2930	3770	NA	NA	NS	NS	45700
			Zinc	13.7 B	10 U	NA	NA	5000	11000	60.9
Load Line 6	LL6mw-003	Bedrock	1,3,5-Trinitrobenzene	0.071 J	0.047 J	NA	NA	NS	1100	*
			Acetone	3.7 JB	10 UJ	NA	NA	NS	5500	*
			Barium	6.7 J	10 J	NA	NA	2000	2600	256
			bis(2-Ethylhexyl) phthalate	1.5 JB	10 U	NA	NA	NS	4.8	*
			Calcium	70200	82000 J	NA	NA	NS	NS	53100
			Magnesium	33400	39300 J	NA	NA	NS	NS	15000
			Manganese	84.7	32.8 J	NA	NA	50	880	1340
			Nitrocellulose	0.13 J	0.5 UJ	NA	NA	NS	NS	*
			Potassium	2130 J	1800 J	NA	NA	NS	NS	5770
			Sodium	13100	13000	NA	NA	NS	NS	51400
			Zinc	10 U	3.7 JB	NA	NA	5000	11000	52.3
Load Line 6	LL6mw-004	Bedrock	1,3,5-Trinitrobenzene	0.066 J	0.046 J	0.074 J	NA	NS	1100	*
			Acetone	3.7 JB	10	10 U	NA	NS	5500	*
			Barium	37.3	34.2 J	36.4	NA	2000	2600	256
			Benzene	1 U	1	1.0 U	NA	5	0.35	*
			Benzoic Acid	10 U	10	10 U	NA	NS	150000	*
			beta-BHC	0.03 UJ	0.0094 J	0.03 UJ	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	10 U	1.1 JB	69 B	NA	NS	4.8	*
			Calcium	78500	73100 J	72100	NA	NS	NS	53100
			Iron	50 U	642 J	1310 B	NA	300	11000	1430
			Magnesium	39400	32100 J	32500	NA	NS	NS	15000
			Manganese	0.9 JB	113 J	183 J	NA	50	880	1340
			Potassium	1270 J	1260 J	1200 J	NA	NS	NS	5770
			Sodium	13400	11900	12000	NA	NS	NS	51400
			Zinc	4.2 UJB	2.4 JB	4.9 JB	NA	5000	11000	52.3
Load Line 6	LL6mw-005	Bedrock	1,3,5-Trinitrobenzene	NA	0.038 J	0.1 U	0.035 JB	NS	1100	*
			Aluminum	NA	50 U	50 U	143	200	36000	0
			Arsenic	NA	13.7	14.9	45.2	10	0.045	0
			Barium	NA	63.4 J	66.1	71.3	2000	2600	256
			beta-BHC	NA	0.011 J	0.03 UJ	0.03 UJ	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	NA	10 U	0.97 J	10 UJ	NS	4.8	*
			Calcium	NA	73900 J	79800	78500	NS	NS	53100
			Iron	NA	824 J	949 B	2520	300	11000	1430
			Magnesium	NA	23400 J	25200	24600	NS	NS	15000
			Manganese	NA	557 J	579 J	583	50	880	1340
			Perchlorate	NA	NA	NA	0.022 J	NS	3.6	*
			Potassium	NA	949 J	1010 J	1060 J	NS	NS	5770
			Sodium	NA	7890	8760	8770	NS	NS	51400
			Zinc	NA	10 U	4.3 JB	3.2 JB	5000	11000	52.3
Load Line 6	LL6mw-006	Unconsolidated	Aluminum	NA	22 J	50 U	195	200	36000	0
			Barium	NA	21.9 J	17.8	20.1	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	NA	10 U	5.9 J	10 U	NS	4.8	*
			Cadmium	NA	0.43 J	0.36 J	0.5	5	18	0
			Calcium	NA	73900 J	72900	71800	NS	NS	115000
			Iron	NA	50 U	50 U	174	300	11000	279
			Magnesium	NA	27500 J	26900	27900	NS	NS	43300
			Manganese	NA	14.8 J	0.86 JB	97.6	50	880	1020
			Perchlorate	NA	NA	NA	0.027 J	NS	3.6	*
			Potassium	NA	1330 J	1180 J	1300 J	NS	NS	2890
			Sodium	NA	7380	7220	6620	NS	NS	45700
			Zinc	NA	2.3 JB	6 JB	5.1 JB	5000	11000	60.9
Load Line 6	LL6mw-007	Bedrock	Barium	NA	15 J	13.8	14.7	2000	2600	256
			bis(2-Ethylhexyl) phthalate	NA	10 U	6.7 JB	1.1 JB	NS	4.8	*
			Cadmium	NA	0.66	0.24 J	2.8	5	18	0
			Calcium	NA	59200 J	56200	54600	NS	NS	53100
			Magnesium	NA	25000 J	23800	22400	NS	NS	15000
			Manganese	NA	442 J	393 J	395	50	880	1340
			Perchlorate	NA	NA	NA	0.096	NS	3.6	*

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Load Line 6	LL6mw-007	Bedrock	Potassium	NA	798 UJB	757 UJB	1160 J	NS	NS	5770
			Sodium	NA	8580	7930	7940	NS	NS	51400
			Zinc	NA	10 U	3.8 JB	3.7 JB	5000	11000	52.3
Load Line 7	LL7mw-001	Bedrock	1,1,1-Trichloroethane	NA	13	8.8	10	NS	3200	*
			1,1-Dichloroethane	NA	3.5	3.1	2.9	NS	810	*
			1,1-Dichloroethene (total)	NA	7.6	6.5	6.4	7	340	*
			1,3,5-Trinitrobenzene	NA	0.039 J	0.11 U	0.034 JB	NS	1100	*
			Barium	NA	21	22.8	20.5	2000	2600	256
			bis(2-Ethylhexyl) phthalate	NA	1.1 J	4.1 J	3.6 JB	NS	4.8	*
			Calcium	NA	33300	33200	37200	NS	NS	53100
			Cobalt	NA	6.6	6.9	6	NS	730	0
			Iron	NA	7820	8240 J	7850	300	11000	1430
			Magnesium	NA	11500	11700	12300	NS	NS	15000
			Manganese	NA	446	488 J	454	50	880	1340
			Nickel	NA	8.5 J	10 B	8.8 J	NS	730	83.4
			Perchlorate	NA	NA	NA	0.017 J	NS	3.6	*
			Potassium	NA	962 J	1030 J	921 J	NS	NS	5770
			Sodium	NA	5580	5160	5680	NS	NS	51400
			Zinc	NA	47.4	56.7 J	53.9 J	5000	11000	52.3
Load Line 7	LL7mw-002	Bedrock	1,3,5-Trinitrobenzene	NA	0.043 J	0.06 J	0.044 JB	NS	1100	*
			Barium	NA	53.5	56.2	62.6	2000	2600	256
			beta-BHC	NA	0.03 U	0.03 U	0.027 J	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	NA	1.1 JB	10 U	5.8 JB	NS	4.8	*
			Cadmium	NA	0.5 U	0.5 U	0.18 J	5	18	0
			Calcium	NA	34300	33100	34500	NS	NS	53100
			Magnesium	NA	6930	6800	7040	NS	NS	15000
			Manganese	NA	1.4 J	2.4 JB	32.4	50	880	1340
			Nickel	NA	10 U	4.2 J	4.2 J	NS	730	83.4
			Perchlorate	NA	NA	NA	0.11	NS	3.6	*
			Potassium	NA	1460 J	1620 J	1820 J	NS	NS	5770
			Sodium	NA	2000	2040	2280	NS	NS	51400
			Zinc	NA	10 U	14.3 B	8.1 JB	5000	11000	52.3
Load Line 7	LL7mw-003	Bedrock	1,3,5-Trinitrobenzene	NA	0.043 J	0.067 J	0.041 JB	NS	1100	*
			Barium	NA	49.2	50.2	48.1	2000	2600	256
			bis(2-Ethylhexyl) phthalate	NA	1.3 JB	1.8 JB	3.3 JB	NS	4.8	*
			Calcium	NA	16400	16400	15900	NS	NS	53100
			Cobalt	NA	4.2 J	4.2 J	5.2	NS	730	0
			Iron	NA	17000	22100	20200	300	11000	1430
			Magnesium	NA	6060	5910	5630	NS	NS	15000
			Manganese	NA	1420	1430 J	1430	50	880	1340
			Nickel	NA	5 J	5.9 J	6.1 J	NS	730	83.4
			Perchlorate	NA	NA	NA	0.009 J	NS	3.6	*
			PETN	NA	0.64 U	0.059 JB	0.62 U	NS	NS	*
			Potassium	NA	1150 J	1190 J	1190 J	NS	NS	5770
			Sodium	NA	4940	5200	5610	NS	NS	51400
			Zinc	NA	10.3	15.8 B	16.2 JB	5000	11000	52.3
Load Line 7	LL7mw-004	Bedrock	1,3,5-Trinitrobenzene	NA	0.048 J	0.1 U	0.049 JB	NS	1100	*
			Barium	NA	38.9	43.2	39.8	2000	2600	256
			beta-BHC	NA	0.03 U	0.03 U	0.022 J	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	NA	2.4 JB	1 J	1.2 JB	NS	4.8	*
			Calcium	NA	9130	9230	8160	NS	NS	53100
			Cobalt	NA	7	7.1	6.7	NS	730	0
			Iron	NA	15900	20000 J	19000	300	11000	1430
			Magnesium	NA	7200	7070	6110	NS	NS	15000
			Manganese	NA	1270	1340 J	1240	50	880	1340
			Nickel	NA	8.6 J	9.8 JB	7.4 J	NS	730	83.4
			Perchlorate	NA	NA	NA	0.023 J	NS	3.6	*
			Potassium	NA	1340 J	1270 J	1240 J	NS	NS	5770
			Sodium	NA	15700	15700	14500	NS	NS	51400
			Zinc	NA	15.4	18.6 B	16.8 JB	5000	11000	52.3
Load Line 7	LL7mw-005	Bedrock	1,3,5-Trinitrobenzene	NA	0.057 J	0.064 J	0.099 U	NS	1100	*
			Barium	NA	95.8	119	151	2000	2600	256
			beta-BHC	NA	0.0087 J	0.03 UJ	0.03 UJ	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	NA	1.2 JB	2 JB	1.3 JB	NS	4.8	*
			Calcium	NA	8260	6690	7010	NS	NS	53100
			Cobalt	NA	10.2	11.3	7	NS	730	0
			Iron	NA	1600	211 B	50 U	300	11000	1430
			Magnesium	NA	4710	3220	3750	NS	NS	15000
			Manganese	NA	2500	1650 J	1660	50	880	1340
			Nickel	NA	12.7	12.1	8.8 J	NS	730	83.4
			Nitrocellulose	NA	0.5 UJ	0.5 U	0.12 J	NS	NS	*
			Perchlorate	NA	NA	NA	0.023 J	NS	3.6	*

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Load Line 7	LL7mw-005	Bedrock	Potassium	NA	1020 J	984 J	992 J	NS	NS	5770
			Sodium	NA	2330	5450	3070	NS	NS	51400
			Zinc	NA	5.8 J	14.1 B	11.4 JB	5000	11000	52.3
Load Line 7	LL7mw-006	Bedrock	1,3,5-Trinitrobenzene	NA	0.11 U	0.12 U	0.038 JB	NS	1100	*
			Aluminum	NA	27.4 J	50 U	50 U	200	36000	0
			Barium	NA	15.1	17.6	16.7	2000	2600	256
			beta-BHC	NA	0.03 U	0.03 U	0.017 J	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	NA	1.2 J	10 U	1.4 JB	NS	4.8	*
			Cadmium	NA	0.27 J	0.36 J	0.31 J	5	18	0
			Calcium	NA	9790	10700	8680	NS	NS	53100
			Cobalt	NA	5.0 U	5.0 U	1.8 J	NS	730	0
			HMX	NA	0.056 J	0.062 J	0.058 J	NS	1800	*
			Iron	NA	1160	1030 B	2210	300	11000	1430
			Magnesium	NA	6440	6860	5560	NS	NS	15000
			Manganese	NA	1200	1210 J	1280	50	880	1340
			Nickel	NA	7.4 J	8.3 J	8.5 J	NS	730	83.4
			Perchlorate	NA	NA	NA	0.031 J	NS	3.6	*
			Potassium	NA	814 J	858 J	856 J	NS	NS	5770
			RDX	NA	0.25 J	0.48	0.57	NS	0.61	*
			Sodium	NA	6480	6580	7550	NS	NS	51400
			Zinc	NA	10.5	17.5 B	14 JB	5000	11000	52.3
Load Line 8	LL8mw-001	Unconsolidated	1,3,5-Trinitrobenzene	NA	0.096 U	0.096 U	0.031 JB	NS	1100	*
			Aluminum	NA	29.4 J	103	50 U	200	36000	0
			Barium	NA	20.4	22.6	34.2	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	NA	1.1 J	3.9 JB	2.9 JB	NS	4.8	*
			Calcium	NA	74200	72400 J	93600	NS	NS	115000
			Cyanide	NA	0.01 U	0.0057 J	0.01 U	0.2	0.73	0
			Iron	NA	69.5	238	82.3 U	300	11000	279
			Magnesium	NA	41500	40700	50800	NS	NS	43300
			Manganese	NA	39.6	62.3	192	50	880	1020
			Perchlorate	NA	NA	NA	0.019 J	NS	3.6	*
			Potassium	NA	1300 J	1280 J	1750 J	NS	NS	2890
			Sodium	NA	12000	11700	49900	NS	NS	45700
			Zinc	NA	10 U	3 JB	4.5 JB	5000	11000	60.9
Load Line 8	LL8mw-002	Unconsolidated	1,3,5-Trinitrobenzene	NA	0.043 J	0.031 JB	0.037 JB	NS	1100	*
			Aluminum	NA	76.9	5.5	5.6	200	36000	0
			Barium	NA	31.1	34.3	40.9	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	NA	10 U	1.7 JB	1.5 JB	NS	4.8	*
			Calcium	NA	101000	99100 J	102000	NS	NS	115000
			Iron	NA	3070	3390	3320	300	11000	279
			Magnesium	NA	45300	44500	40800	NS	NS	43300
			Manganese	NA	489	315	344	50	880	1020
			Nickel	NA	10 U	7.7 J	10 U	NS	730	0
			Perchlorate	NA	NA	NA	0.025 J	NS	3.6	*
			Potassium	NA	7190 J	4540 J	2420 J	NS	NS	2890
			Sodium	NA	33200	31800	31100	NS	NS	45700
			Zinc	NA	10 U	2.9 JB	10 U	5000	11000	60.9
Load Line 8	LL8mw-003	Unconsolidated	Aluminum	NA	22.6 J	50 U	25.9 J	200	36000	0
			Arsenic	NA	5.0 U	5.0 U	3.5 J	10	0.045	11.7
			Barium	NA	20.3	23.7	24.9	2000	2600	82.1
			beta-BHC	NA	0.023 J	0.03 U	0.015 J	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	NA	30	1.1 JB	4.3 JB	NS	4.8	*
			Calcium	NA	130000	137000 J	136000	NS	NS	115000
			Iron	NA	416	515	422	300	11000	279
			Magnesium	NA	46800	49400	50300	NS	NS	43300
			Manganese	NA	246	367	389	50	880	1020
			Nitrobenzene	NA	0.5 U	0.066 J	0.096 U	NS	3.4	*
			Perchlorate	NA	NA	NA	0.019 J	NS	3.6	*
			Potassium	NA	2600 J	3800 J	3230 J	NS	NS	2890
			Sodium	NA	46300	44900	46500	NS	NS	45700
			Zinc	NA	10 U	2.3 JB	3.9 JB	5000	11000	60.9
Load Line 8	LL8mw-004	Unconsolidated	1,3,5-Trinitrobenzene	NA	0.044 J	0.096 U	0.097 U	NS	1100	*
			Barium	NA	9.4 J	10.4	12.9	2000	2600	82.1
			beta-BHC	NA	0.03 UJ	0.03 UJ	0.0099 J	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	NA	1 J	3.1 JB	2.9 JB	NS	4.8	*
			Calcium	NA	76100	78900 J	84100	NS	NS	115000
			Magnesium	NA	38800	38800	40800	NS	NS	43300
			Manganese	NA	16.9	23.5	45.7	50	880	1020
			Perchlorate	NA	NA	NA	0.013 J	NS	3.6	*
			Potassium	NA	1050 J	1050 J	1170 J	NS	NS	2890
			Sodium	NA	18800	19100	24200	NS	NS	45700
			Zinc	NA	10 U	2.5 JB	5.4 JB	5000	11000	60.9

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Load Line 8	LL8mw-005	Bedrock	1,3,5-Trinitrobenzene	NA	0.11 U	0.097 U	0.044 JB	NS	1100	*
			Barium	NA	9.7 J	11.4	11	2000	2600	256
			beta-BHC	NA	0.03 UJ	0.03 UJ	0.015 J	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	NA	5.3 J	1.2 JB	10 U	NS	4.8	*
			Calcium	NA	62300	63100 J	64400	NS	NS	53100
			Iron	NA	451	790	760	300	11000	1430
			Magnesium	NA	21500	21900	22000	NS	NS	15000
			Manganese	NA	2800	2760	2780	50	880	1340
			Nickel	NA	10 U	3.4 J	10 U	NS	730	83.4
			Sodium	NA	11800	11200	11300	NS	NS	51400
			Zinc	NA	10 U	5.2 JB	2.9 JB	5000	11000	52.3
Load Line 8	LL8mw-006	Bedrock	1,3,5-Trinitrobenzene	NA	0.11 U	0.032 JB	0.043 JB	NS	1100	*
			Barium	NA	15	14.1	16.2	2000	2600	256
			bis(2-Ethylhexyl) phthalate	NA	2.3 J	1.6 JB	0.83 JB	NS	4.8	*
			Calcium	NA	70500	71100 J	73600	NS	NS	53100
			Magnesium	NA	29000	28600	29800	NS	NS	15000
			Manganese	NA	0.7 JB	0.88 UJB	5.2 J	50	880	1340
			Perchlorate	NA	NA	NA	0.05	NS	3.6	*
			Potassium	NA	1520 J	1380 J	1560 J	NS	NS	5770
			Sodium	NA	4160	5460	4610	NS	NS	51400
			Zinc	NA	10 U	2.6 JB	5.6 JB	5000	11000	52.3
Load Line 9	LL9mw-001	Bedrock	1,3,5-Trinitrobenzene	NA	0.038 J	0.1 U	0.096 U	NS	1100	*
			Barium	NA	9 J	9.9 J	11.6	2000	2600	256
			beta-BHC	NA	0.03 U	0.014 J	0.03 U	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	NA	0.93 J	1.1 JB	1.2 JB	NS	4.8	*
			Calcium	NA	30200	34300	46100	NS	NS	53100
			Magnesium	NA	9120	9630	13100	NS	NS	15000
			Manganese	NA	1.6 J	1.6 J	0.68 J	50	880	1340
			Perchlorate	NA	NA	NA	0.081	NS	3.6	*
			Potassium	NA	778 UJ	859 J	963 J	NS	NS	5770
			Sodium	NA	3040	3360	3390	NS	NS	51400
			Vanadium	NA	1.5 J	10 U	1.1 J	NS	36	0
			Zinc	NA	10 U	8.7 JB	2.5 JB	5000	11000	52.3
Load Line 9	LL9mw-002	Bedrock	1,3,5-Trinitrobenzene	NA	0.1 U	0.1 U	0.039 JB	NS	1100	*
			2,6-Dinitrotoluene	NA	0.061 J	0.1 U	0.1 U	NS	36	*
			Aluminum	NA	160	122	103	200	36000	0
			Barium	NA	1.1 J	1.2 J	4.2 J	2000	2600	256
			bis(2-Ethylhexyl) phthalate	NA	20	1 JB	1 JB	NS	4.8	*
			Calcium	NA	16900	18100	17300	NS	NS	53100
			Magnesium	NA	6460	6950	7030	NS	NS	15000
			Manganese	NA	109	121	52.6	50	880	1340
			Nickel	NA	19.4	20.7	13.1	NS	730	83.4
			Perchlorate	NA	NA	NA	0.092	NS	3.6	*
			Phenanthrene	NA	0.2 U	0.57 B	0.2 U	NS	NS	*
			Potassium	NA	982 J	1130 J	1330 J	NS	NS	5770
			Sodium	NA	1930	2530	2050	NS	NS	51400
			Zinc	NA	16.2	11.5 B	5.5 JB	5000	11000	52.3
Load Line 9	LL9mw-003	Bedrock	2,6-Dinitrotoluene	NA	0.097 U	0.085 J	0.099 U	NS	36	*
			Barium	NA	13.7	10.2	13.9	2000	2600	256
			beta-BHC	NA	0.03 U	0.03 UJ	0.014 J	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	NA	0.87 J	2.6 JB	1.8 JB	NS	4.8	*
			Calcium	NA	21400	38200	27300	NS	NS	53100
			Magnesium	NA	5410	9390	6790	NS	NS	15000
			Manganese	NA	21.4 J	9.4 J	20.4	50	880	1340
			Nitrocellulose	NA	0.5 U	0.5 U	0.13 J	NS	NS	*
			Perchlorate	NA	NA	NA	0.095	NS	3.6	*
			Potassium	NA	2000 J	2750 J	2680 J	NS	NS	5770
			Sodium	NA	3280	5420	3770	NS	NS	51400
			Zinc	NA	15.8	6.8 JB	7.3 JB	5000	11000	52.3
Load Line 9	LL9mw-004	Bedrock	1,3,5-Trinitrobenzene	NA	0.095 U	0.1 U	0.031 JB	NS	1100	*
			Aluminum	NA	29.1 J	50	50 U	200	36000	0
			Antimony	NA	2.0 U	0.18 J	2 U	6	15	0
			Barium	NA	22.6	35.2	28.8	2000	2600	256
			beta-BHC	NA	0.03 UJ	0.03 UJ	0.013 J	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	NA	1.1 J	1.3 JB	0.94 JB	NS	4.8	*
			Calcium	NA	10900	12600	12400	NS	NS	53100
			Cobalt	NA	4.5 J	6.2	5.1	NS	730	0
			Iron	NA	11000	8160	10600	300	11000	1430
			Magnesium	NA	10800	10600	10600	NS	NS	15000
			Manganese	NA	2430	2330	2450	50	880	1340
			Nickel	NA	6.3 J	8.7 J	5.7 J	NS	730	83.4
			Phenanthrene	NA	0.2 U	0.26 JB	0.2 U	NS	NS	*

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Load Line 9	LL9mw-004	Bedrock	Sodium	NA	3880	4810	4130	NS	NS	51400
			Zinc	NA	12.8	21.8 B	15.9 JB	5000	11000	52.3
Load Line 9	LL9mw-005	Bedrock	1,3,5-Trinitrobenzene	NA	0.052 J	0.11 U	0.037 JB	NS	1100	*
			Aluminum	NA	50 U	84	50 U	200	36000	0
			Barium	NA	2.6 J	3.1 JB	2.8 J	2000	2600	256
			beta-BHC	NA	0.03 UJ	0.03 U	0.0088 J	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	NA	1.4 JB	2.3 JB	1.2 JB	NS	4.8	*
			Calcium	NA	12400	7880 J	11200	NS	NS	53100
			Iron	NA	50 U	168	50 U	300	11000	1430
			Magnesium	NA	5640	3320 J	4910	NS	NS	15000
			Manganese	NA	8.9 J	2.5 JB	1.8 J	50	880	1340
			Perchlorate	NA	NA	NA	0.044 J	NS	3.6	*
			Sodium	NA	3530	2200	3430	NS	NS	51400
			Zinc	NA	36.1	22.8 B	31 JB	5000	11000	52.3
Load Line 9	LL9mw-006	Bedrock	1,3,5-Trinitrobenzene	NA	0.097 U	0.1 UJ	0.037 JB	NS	1100	*
			Aluminum	NA	37.7 J	28.7 J	24 J	200	36000	0
			Barium	NA	59	68.3 J	55.7	2000	2600	256
			beta-BHC	NA	0.03 UJ	0.0086 J	0.15 J	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	NA	1.3 J	2.3 JB	0.95 JB	NS	4.8	*
			Calcium	NA	4290	4660 J	4360	NS	NS	53100
			Cobalt	NA	5.0 U	5 U	2.2 J	NS	730	0
			Iron	NA	428	519	1480	300	11000	1430
			Magnesium	NA	5120	5290 J	5200	NS	NS	15000
			Manganese	NA	203	96.9 J	371	50	880	1340
			Nickel	NA	10.7	11	10.1	NS	730	83.4
			Nitrocellulose	NA	0.5 U	0.5 JB	0.5 U	NS	NS	*
			Perchlorate	NA	NA	NA	0.051	NS	3.6	*
			Potassium	NA	1260 J	1260 J	1230 J	NS	NS	5770
			RDX	NA	0.097 U	0.074 J	0.11 U	NS	0.61	*
			Sodium	NA	1900	1990	1840	NS	NS	51400
			Zinc	NA	18.1	20.2 B	12.7 JB	5000	11000	52.3
Load Line 9	LL9mw-007	Bedrock	1,3,5-Trinitrobenzene	NA	0.1 U	0.069 JB	0.044 JB	NS	1100	*
			2,6-Dinitrotoluene	NA	0.084 J	0.099 U	0.1 U	NS	36	*
			Aluminum	NA	20.1 J	50 U	50 U	200	36000	0
			Barium	NA	15.6	14.5 J	12.3	2000	2600	256
			beta-BHC	NA	0.03 U	0.03 U	0.016 J	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	NA	10 U	1.9 JB	4.1 JB	NS	4.8	*
			Calcium	NA	7800	8410 J	10400	NS	NS	53100
			Cobalt	NA	5	2.9 J	6.5	NS	730	0
			Iron	NA	2720	2380	7300	300	11000	1430
			Magnesium	NA	5980	6310 J	6470	NS	NS	15000
			Manganese	NA	497	306 J	800	50	880	1340
			Nickel	NA	16.8	11.3	15.6	NS	730	83.4
			Perchlorate	NA	NA	NA	0.025 J	NS	3.6	*
			Potassium	NA	1430 J	1400 J	1330 J	NS	NS	5770
			Sodium	NA	2060	2810	2730	NS	NS	51400
			Zinc	NA	44	43.4 J	28.6 JB	5000	11000	52.3
Landfill North of Winklepeck	LNWmw-024	Unconsolidated	Acetone	6.9 JB	10 U	NA	NA	NS	5500	*
			Aluminum	27.9 J	297 J	NA	NA	200	36000	0
			Barium	34.5	38.5	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	4.1 J	1.7 JB	NA	NA	NS	4.8	*
			Calcium	90400	89300	NA	NA	NS	NS	115000
			Iron	50 U	415	NA	NA	300	11000	279
			Magnesium	37100	41400	NA	NA	NS	NS	43300
			Manganese	31.4	64.6 J	NA	NA	50	880	1020
			Mercury	0.2	0.2 U	NA	NA	2	11	0
			Nitrobenzene	0.054 JB	0.1 U	NA	NA	NS	3.4	*
			Perchlorate	0.054	NA	NA	NA	NS	3.6	*
			Potassium	1270 J	1290 J	NA	NA	NS	NS	2890
			Sodium	10200	12900	NA	NA	NS	NS	45700
			Zinc	3.3 J	4.1 JB	NA	NA	5000	11000	60.9
Landfill North of Winklepeck	LNWmw-025	Unconsolidated	1,3,5-Trinitrobenzene	0.099 U	0.11 JB	NA	NA	NS	1100	*
			Acetone	4.7 JB	10 U	NA	NA	NS	5500	*
			Arsenic	7 J	5.0 U	NA	NA	10	0.045	11.7
			Barium	34.9	28.7	NA	NA	2000	2600	82.1
			beta-BHC	0.03 U	0.012 J	NA	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	1.3 J	1.6 JB	NA	NA	NS	4.8	*
			Calcium	38800	39200	NA	NA	NS	NS	115000
			Cobalt	1.9 J	5.0 U	NA	NA	NS	730	0
			Iron	1030 J	463	NA	NA	300	11000	279
			Magnesium	11600	11800	NA	NA	NS	NS	43300
			Manganese	822	822 J	NA	NA	50	880	1020

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Landfill North of Winklepeck	LNWmw-025	Unconsolidated	Mercury	0.2	0.2 U	NA	NA	2	11	0
			Nitrobenzene	0.052 JB	0.11 U	NA	NA	NS	3.4	*
			Perchlorate	0.032 J	NA	NA	NA	NS	3.6	*
			Potassium	921 J	879 J	NA	NA	NS	NS	2890
			Sodium	6750	6740	NA	NA	NS	NS	45700
			Zinc	2.7 JB	2.7 JB	NA	NA	5000	11000	60.9
Landfill North of Winklepeck	LNWmw-026	Unconsolidated	1,3,5-Trinitrobenzene	0.1 U	0.049 J	NA	NA	NS	1100	*
			2,6-Dinitrotoluene	0.07 J	0.057 J	NA	NA	NS	36	*
			Aluminum	50 U	42.9 JB	NA	NA	200	36000	0
			Arsenic	5	5.0 U	NA	NA	10	0.045	11.7
			Barium	101	104	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	10 U	1.7 JB	NA	NA	NS	4.8	*
			Calcium	42500	44600 J	NA	NA	NS	NS	115000
			Iron	50	421 J	NA	NA	300	11000	279
			Magnesium	10200	10200 J	NA	NA	NS	NS	43300
			Manganese	50.7	13.2 J	NA	NA	50	880	1020
			Mercury	0.2	0.2 U	NA	NA	2	11	0
			Nitrobenzene	0.093 JB	0.07 J	NA	NA	NS	3.4	*
			Perchlorate	0.041 J	NA	NA	NA	NS	3.6	*
			Potassium	1170 J	1290 J	NA	NA	NS	NS	2890
			Sodium	12200	11700	NA	NA	NS	NS	45700
			Zinc	3.8 J	3.2 JB	NA	NA	5000	11000	60.9
Landfill North of Winklepeck	LNWmw-027	Unconsolidated	1,3,5-Trinitrobenzene	0.099 U	0.065 J	NA	NA	NS	1100	*
			Barium	32.7	28.2	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	10 U	2.3 JB	NA	NA	NS	4.8	*
			Calcium	59300	62100 J	NA	NA	NS	NS	115000
			Iron	50 U	159 J	NA	NA	300	11000	279
			Magnesium	18000	19100 J	NA	NA	NS	NS	43300
			Manganese	111 J	57.4 J	NA	NA	50	880	1020
			Potassium	1990 J	1750 J	NA	NA	NS	NS	2890
			Sodium	7150	7960	NA	NA	NS	NS	45700
			Zinc	10 U	2.7 JB	NA	NA	5000	11000	60.9
Suspected Mustard Agent Burial Site	MBSmw-001	Unconsolidated	Acetone	5 JB	10 U	NA	NA	NS	5500	*
			Arsenic	5.0 U	3.3 J	NA	NA	10	0.045	11.7
			Barium	112	110	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	2 JB	1.2 JB	NA	NA	NS	4.8	*
			Calcium	76000	81500	NA	NA	NS	NS	115000
			Iron	137	377	NA	NA	300	11000	279
			Magnesium	20500	22600	NA	NA	NS	NS	43300
			Manganese	362	412	NA	NA	50	880	1020
			Perchlorate	0.021 J	NA	NA	NA	NS	3.6	*
			Potassium	1160 J	1160 J	NA	NA	NS	NS	2890
			Sodium	13200	12900	NA	NA	NS	NS	45700
			Zinc	6.5 UJB	3.9 JB	NA	NA	5000	11000	60.9
Suspected Mustard Agent Burial Site	MBSmw-002	Unconsolidated	Acetone	3.5 JB	10 U	NA	NA	NS	5500	*
			Aluminum	23.4 J	36.3 J	NA	NA	200	36000	0
			Arsenic	7.8	9.9	NA	NA	10	0.045	11.7
			Barium	113	105	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	10 U	1.9 JB	NA	NA	NS	4.8	*
			Calcium	72300	69600	NA	NA	NS	NS	115000
			Iron	478	535	NA	NA	300	11000	279
			Magnesium	18300	17700	NA	NA	NS	NS	43300
			Manganese	233	208	NA	NA	50	880	1020
			Perchlorate	0.029 J	NA	NA	NA	NS	3.6	*
			Potassium	1440 J	1150 J	NA	NA	NS	NS	2890
			Sodium	10600	7500	NA	NA	NS	NS	45700
			Zinc	5.5 UJB	4.1 JB	NA	NA	5000	11000	60.9
Suspected Mustard Agent Burial Site	MBSmw-003	Unconsolidated	Acetone	4.6 JB	10 U	NA	NA	NS	5500	*
			Aluminum	25.3 J	50 U	NA	NA	200	36000	0
			Barium	17.3	15.9	NA	NA	2000	2600	82.1
			beta-BHC	0.03 U	0.014 J	NA	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	2.2 JB	2.7 JB	NA	NA	NS	4.8	*
			Calcium	84700	83500	NA	NA	NS	NS	115000
			Chromium	5.0 U	8.1	NA	NA	100	110	7.3
			Magnesium	25300	25600	NA	NA	NS	NS	43300
			Manganese	2.1 J	9.5 J	NA	NA	50	880	1020
			Perchlorate	0.042 J	NA	NA	NA	NS	3.6	*
			Potassium	1190 J	1150 J	NA	NA	NS	NS	2890
			Sodium	4920 J	4850	NA	NA	NS	NS	45700
			Zinc	4.5 UJB	5.6 JB	NA	NA	5000	11000	60.9
Suspected Mustard Agent Burial Site	MBSmw-004	Unconsolidated	Acetone	5.6 JB	10 U	NA	NA	NS	5500	*
			Barium	35.7	30.1	NA	NA	2000	2600	82.1

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Suspected Mustard Agent Burial Site	MBSmw-004	Unconsolidated	beta-BHC	0.016 J	0.03 U	NA	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	1.5 JB	1.5 JB	NA	NA	NS	4.8	*
			Calcium	74000	79300	NA	NA	NS	NS	115000
			Magnesium	21200	23300	NA	NA	NS	NS	43300
			Manganese	59.7	45.3	NA	NA	50	880	1020
			Perchlorate	0.019 J	NA	NA	NA	NS	3.6	*
			Potassium	1240 J	1210 J	NA	NA	NS	NS	2890
			Sodium	6630 J	7390	NA	NA	NS	NS	45700
			Zinc	10 U	3.1 JB	NA	NA	5000	11000	60.9
Suspected Mustard Agent Burial Site	MBSmw-005	Unconsolidated	Acetone	5 JB	1.1 JB	NA	NA	NS	5500	*
			Aluminum	126	50 U	NA	NA	200	36000	0
			Arsenic	10.3	8.6	NA	NA	10	0.045	11.7
			Barium	89.9	77.2	NA	NA	2000	2600	82.1
			beta-BHC	0.01 J	0.03 UJ	NA	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	0.83 JB	1.2 JB	NA	NA	NS	4.8	*
			Calcium	83200	81300	NA	NA	NS	NS	115000
			Iron	5360	2840	NA	NA	300	11000	279
			Magnesium	25500	24700	NA	NA	NS	NS	43300
			Manganese	955	598	NA	NA	50	880	1020
			Methylene chloride	2.0 U	0.51 J	NA	NA	NS	4.3	*
			Perchlorate	0.031 J	NA	NA	NA	NS	3.6	*
			Potassium	1140 J	1100 J	NA	NA	NS	NS	2890
			Sodium	22800	11500	NA	NA	NS	NS	45700
			Zinc	10 U	2.5 JB	NA	NA	5000	11000	60.9
Suspected Mustard Agent Burial Site	MBSmw-006	Unconsolidated	2,6-Dinitrotoluene	0.062 J	0.1 U	NA	NA	NS	36	*
			Acetone	5.2 JB	10 U	NA	NA	NS	5500	*
			Aluminum	19.7 J	50 U	NA	NA	200	36000	0
			Barium	73.5	86.7	NA	NA	2000	2600	82.1
			beta-BHC	0.03 UJB	0.011 J	NA	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	0.87 JB	1 JB	NA	NA	NS	4.8	*
			Calcium	69200	81000	NA	NA	NS	NS	115000
			Magnesium	19700	23900	NA	NA	NS	NS	43300
			Manganese	369	392	NA	NA	50	880	1020
			Mercury	0.12 J	0.2 U	NA	NA	2	11	0
			Nitrobenzene	0.061 J	0.1 U	NA	NA	NS	3.4	*
			Perchlorate	0.04 J	NA	NA	NA	NS	3.6	*
			Potassium	1320 J	1620 J	NA	NA	NS	NS	2890
			Sodium	6480 J	7320	NA	NA	NS	NS	45700
NACA Test Area	NTAmw-107	Unconsolidated	1,3,5-Trinitrobenzene	0.096 U	0.052 J	NA	NA	NS	1100	*
			Acetone	1.1 JB	10 U	NA	NA	NS	5500	*
			Aluminum	50 U	244 J	NA	NA	200	36000	0
			Arsenic	13.5	11.9	NA	NA	10	0.045	11.7
			Barium	107	108	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	10 U	0.96 JB	NA	NA	NS	4.8	*
			Calcium	60700	66700 J	NA	NA	NS	NS	115000
			Iron	470	728 J	NA	NA	300	11000	279
			Magnesium	15500	17700 J	NA	NA	NS	NS	43300
			Manganese	250	197 J	NA	NA	50	880	1020
			Nitrocellulose	0.14 J	0.5 UJ	NA	NA	NS	NS	*
			Perchlorate	0.024 J	NA	NA	NA	NS	3.6	*
			Potassium	1060 J	1440 J	NA	NA	NS	NS	2890
			Sodium	7430	8010	NA	NA	NS	NS	45700
			Zinc	3.6 UJB	3.6 JB	NA	NA	5000	11000	60.9
NACA Test Area	NTAmw-108	Unconsolidated	1,3,5-Trinitrobenzene	0.096 U	0.063 J	NA	NA	NS	1100	*
			Aluminum	207	293 J	NA	NA	200	36000	0
			Arsenic	5.1	5 U	NA	NA	10	0.045	11.7
			Barium	52.9	68.3	NA	NA	2000	2600	82.1
			beta-BHC	0.03 UJ	0.012 J	NA	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	1.1 JB	1.2 JB	NA	NA	NS	4.8	*
			Calcium	90900	84400 J	NA	NA	NS	NS	115000
			Chromium	4.6 J	5.0 UJ	NA	NA	100	110	7.3
			Cobalt	3.3 J	5.0 UJ	NA	NA	NS	730	0
			Iron	50 U	385 J	NA	NA	300	11000	279
			Magnesium	23800	22300 J	NA	NA	NS	NS	43300
			Manganese	3.4 JB	11.9 J	NA	NA	50	880	1020
			Perchlorate	0.032 J	NA	NA	NA	NS	3.6	*
			Potassium	1190 J	1020 J	NA	NA	NS	NS	2890
			Silver	5.4 J	5.0 U	NA	NA	100	180	0
			Sodium	9630	10200	NA	NA	NS	NS	45700
			Zinc	5.5 UJB	5.9 JB	NA	NA	5000	11000	60.9
NACA Test Area	NTAmw-109	Unconsolidated	Arsenic	5.2	5.0 U	NA	NA	10	0.045	11.7
			Barium	29.8	28	NA	NA	2000	2600	82.1

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
NACA Test Area	NTAmw-109	Unconsolidated	bis(2-Ethylhexyl) phthalate	10 U	1.5 JB	NA	NA	NS	4.8	*
			Calcium	8610	9040	NA	NA	NS	NS	115000
			Chloromethane	0.51 J	1.0 U	NA	NA	NS	160	*
			Cobalt	1.8 J	5.0	NA	NA	NS	730	0
			Iron	3220	918	NA	NA	300	11000	279
			Magnesium	3510	4100	NA	NA	NS	NS	43300
			Manganese	91.2	40 J	NA	NA	50	880	1020
			Nickel	10 U	4 J	NA	NA	NS	730	0
			Nitrocellulose	0.14 J	0.5 U	NA	NA	NS	NS	*
			PCB- 1248	0.25 J	0.5 U	NA	NA	0.5	0.034	*
			Perchlorate	0.068	NA	NA	NA	NS	3.6	*
			Potassium	1200 J	1080 J	NA	NA	NS	NS	2890
			Sodium	1150	1130	NA	NA	NS	NS	45700
			Vanadium	0.73 J	10 U	NA	NA	NS	36	0
			Zinc	9.8 JB	12.7 B	NA	NA	5000	11000	60.9
NACA Test Area	NTAmw-110	Unconsolidated	Acetone	1.2 JB	10 U	NA	NA	NS	5500	*
			Aluminum	707 J	271	NA	NA	200	36000	0
			Arsenic	20.3	15.2	NA	NA	10	0.045	11.7
			Barium	153	122	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	10 U	0.98 JB	NA	NA	NS	4.8	*
			Calcium	63300	55400	NA	NA	NS	NS	115000
			Chloromethane	0.33 J	1.0 U	NA	NA	NS	160	*
			Iron	801 J	458	NA	NA	300	11000	279
			Magnesium	17500	15600	NA	NA	NS	NS	43300
			Manganese	267	132	NA	NA	50	880	1020
			Perchlorate	0.037 J	NA	NA	NA	NS	3.6	*
			Potassium	1260 J	1060 J	NA	NA	NS	NS	2890
			Sodium	15500	13300	NA	NA	NS	NS	45700
			Vanadium	1.7 J	0.66 J	NA	NA	NS	36	0
			Zinc	5.8 UJB	8.7 JB	NA	NA	5000	11000	60.9
NACA Test Area	NTAmw-111	Unconsolidated	Acetone	1.4 JB	10 U	NA	NA	NS	5500	*
			Barium	69.6	61.1	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	10 U	1.2 JB	NA	NA	NS	4.8	*
			Calcium	87300	79900	NA	NA	NS	NS	115000
			Iron	82.6	62.7	NA	NA	300	11000	279
			Magnesium	40600	37300	NA	NA	NS	NS	43300
			Manganese	164	84.7	NA	NA	50	880	1020
			Nitrocellulose	0.14 J	0.5 UJ	NA	NA	NS	NS	*
			Potassium	1170 J	1020 J	NA	NA	NS	NS	2890
			Sodium	13400	12100	NA	NA	NS	NS	45700
			Zinc	10 U	3.3 JB	NA	NA	5000	11000	60.9
NACA Test Area	NTAmw-112	Unconsolidated	Acetone	5.1 JB	10 U	NA	NA	NS	5500	*
			Arsenic	6.3	16.7	NA	NA	10	0.045	11.7
			Barium	42.3	31.1	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	3.1 JB	2 JB	NA	NA	NS	4.8	*
			Calcium	93400	135000 J	NA	NA	NS	NS	115000
			Gamma-BHC	0.03 UJ	0.0088 J	NA	NA	0.2	0.052	*
			Iron	362	1580 J	NA	NA	300	11000	279
			Magnesium	29600	41100 J	NA	NA	NS	NS	43300
			Manganese	1070	502 J	NA	NA	50	880	1020
			Potassium	1640 J	1310 J	NA	NA	NS	NS	2890
			Sodium	19900	18100	NA	NA	NS	NS	45700
			Zinc	8.2 JB	2.4 JB	NA	NA	5000	11000	60.9
NACA Test Area	NTAmw-113	Unconsolidated	2,6-Dinitrotoluene	0.074 J	0.096 U	NA	NA	NS	36	*
			Acetone	4.1 JB	10 U	NA	NA	NS	5500	*
			alpha-BHC	0.0072 J	0.03 UJ	NA	NA	NS	0.011	*
			Aluminum	50 U	4640 J	NA	NA	200	36000	0
			Arsenic	11	12.5	NA	NA	10	0.045	11.7
			Barium	38.4	61.6	NA	NA	2000	2600	82.1
			Benzene	0.45 J	1.0 U	NA	NA	5	0.35	*
			bis(2-Ethylhexyl) phthalate	1.2 JB	1.7 JB	NA	NA	NS	4.8	*
			Calcium	77900	74700 J	NA	NA	NS	NS	115000
			Chromium	5.0 U	7.2	NA	NA	100	110	7.3
			Cobalt	5.0 U	2.1 J	NA	NA	NS	730	0
			Copper	5.0 U	5.9	NA	NA	1300	1500	0
			Iron	570	6920 J	NA	NA	300	11000	279
			Lead	3.0 U	4.7	NA	NA	15	NS	0
			Magnesium	33700	35800 J	NA	NA	NS	NS	43300
			Manganese	308	334 J	NA	NA	50	880	1020
			Nickel	10 U	7.4 J	NA	NA	NS	730	0
			Potassium	1680 J	3020 J	NA	NA	NS	NS	2890
			Sodium	19600	14700	NA	NA	NS	NS	45700

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
NACA Test Area	NTAmw-113	Unconsolidated	Toluene	1.0 U	0.25 J	NA	NA	1000	720	*
			Vanadium	10 U	8 J	NA	NA	NS	36	0
			Zinc	2.7 UJB	25.8 J	NA	NA	5000	11000	60.9
NACA Test Area	NTAmw-114	Unconsolidated	Acetone	4.1 JB	10 U	NA	NA	NS	5500	*
			Aluminum	19.4 J	50 U	NA	NA	200	36000	0
			Arsenic	7.2	4 J	NA	NA	10	0.045	11.7
			Barium	85.9	74.8	NA	NA	2000	2600	82.1
			Calcium	99400	104000 J	NA	NA	NS	NS	115000
			Iron	532	76.4 J	NA	NA	300	11000	279
			Magnesium	33300	35800 J	NA	NA	NS	NS	43300
			Manganese	493	537 J	NA	NA	50	880	1020
			Potassium	1270 J	1240 J	NA	NA	NS	NS	2890
			Sodium	9630	9400	NA	NA	NS	NS	45700
			Zinc	4.3 UJB	3 JB	NA	NA	5000	11000	60.9
NACA Test Area	NTAmw-115	Unconsolidated	1,3,5-Trinitrobenzene	0.097 U	0.047 J	NA	NA	NS	1100	*
			Acetone	3.1 JB	10 U	NA	NA	NS	5500	*
			Barium	67.9	97.2	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	1 JB	1.9 JB	NA	NA	NS	4.8	*
			Calcium	84500	76500 J	NA	NA	NS	NS	115000
			Magnesium	20200	19900 J	NA	NA	NS	NS	43300
			Manganese	0.89 JB	21.7 J	NA	NA	50	880	1020
			Nitrobenzene	0.097 U	0.079 J	NA	NA	NS	3.4	*
			Potassium	1080 J	970 J	NA	NA	NS	NS	2890
			Sodium	12300	8860	NA	NA	NS	NS	45700
			Zinc	4.0 UJB	3.2 JB	NA	NA	5000	11000	60.9
NACA Test Area	NTAmw-116	Unconsolidated	1,3,5-Trinitrobenzene	0.099 U	0.056 J	NA	NA	NS	1100	*
			Acetone	5.5 JB	10 U	NA	NA	NS	5500	*
			Barium	18.3	16.8	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	1.1 JB	1.8 JB	NA	NA	NS	4.8	*
			Calcium	17100	19300 J	NA	NA	NS	NS	115000
			Iron	50 U	107 J	NA	NA	300	11000	279
			Magnesium	2900	3430 J	NA	NA	NS	NS	43300
			Manganese	52.7	16.7 J	NA	NA	50	880	1020
			Perchlorate	0.061	NA	NA	NA	NS	3.6	*
			Potassium	979 J	868 J	NA	NA	NS	NS	2890
			Sodium	1760	1450	NA	NA	NS	NS	45700
			Zinc	10 U	3.3 JB	NA	NA	5000	11000	60.9
NACA Test Area	NTAmw-117	Unconsolidated	1,3,5-Trinitrobenzene	0.096 U	0.052 J	NA	NA	NS	1100	*
			Acetone	1.7 JB	10 U	NA	NA	NS	5500	*
			Barium	75	80.7	NA	NA	2000	2600	82.1
			beta-BHC	0.016 J	0.03 U	NA	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	1.5 JB	1.9 JB	NA	NA	NS	4.8	*
			Calcium	66300	76700 J	NA	NA	NS	NS	115000
			Magnesium	15800	18800 J	NA	NA	NS	NS	43300
			Manganese	423	120 J	NA	NA	50	880	1020
			Nitrobenzene	0.086 J	0.11 U	NA	NA	NS	3.4	*
			Perchlorate	0.054	NA	NA	NA	NS	3.6	*
			Potassium	946 JB	962 J	NA	NA	NS	NS	2890
			Sodium	10600 J	11500	NA	NA	NS	NS	45700
			Zinc	4.4 UJB	3.8 JB	NA	NA	5000	11000	60.9
NACA Test Area	NTAmw-118	Unconsolidated	Acetone	2.2 JB	10 U	NA	NA	NS	5500	*
			Aluminum	21.1 J	19 JB	NA	NA	200	36000	0
			Barium	19.1	14.4	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	0.91 JB	1.9 JB	NA	NA	NS	4.8	*
			Calcium	73800	64000 J	NA	NA	NS	NS	115000
			Magnesium	32900	28800 J	NA	NA	NS	NS	43300
			Manganese	101	33.3 J	NA	NA	50	880	1020
			Perchlorate	0.038 J	NA	NA	NA	NS	3.6	*
			Potassium	2120 J	1060 J	NA	NA	NS	NS	2890
			Sodium	13100	9990	NA	NA	NS	NS	45700
			Zinc	2.6 UJB	3.3 JB	NA	NA	5000	11000	60.9
Ramsdell Quarry Landfill	RQLmw-007	Bedrock	1,2-Dichloroethane	1	NA	1.0 U	NA	5	0.12	*
			2,6-Dinitrotoluene	0.1	NA	0.08 J	NA	NS	36	*
			Acetone	4.9 JB	NA	10 U	NA	NS	5500	*
			Antimony	2.0 U	NA	0.25 J	NA	6	15	0
			Arsenic	51.7	NA	4.6 J	NA	10	0.045	0
			Barium	49.4	NA	34.1	NA	2000	2600	256
			bis(2-Ethylhexyl) phthalate	3.3 J	NA	10 U	NA	NS	4.8	*
			Cadmium	0.5 U	NA	0.55	NA	5	18	0
			Calcium	122000	NA	105000 J	NA	NS	NS	53100
			Cobalt	5.6	NA	2.7 J	NA	NS	730	0
			Cyanide	0.009 J	NA	0.01 U	NA	0.2	0.73	0

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Ramsdell Quarry Landfill	RQLmw-007	Bedrock	Iron	16400	NA	381	NA	300	11000	1430
			Magnesium	129000	NA	42900	NA	NS	NS	15000
			Manganese	1810 J	NA	969	NA	50	880	1340
			Nickel	8.7 J	NA	15.6	NA	NS	730	83.4
			Potassium	7370 J	NA	3710 J	NA	NS	NS	5770
			Sodium	7750	NA	4390	NA	NS	NS	51400
			Zinc	7.8 JB	NA	37.5 J	NA	5000	11000	52.3
Ramsdell Quarry Landfill	RQLmw-008	Bedrock	1,3-Dinitrobenzene	1.0 U	NA	0.07 J	NA	NS	3.6	*
			Acetone	3.1 JB	NA	10 U	NA	NS	5500	*
			alpha-BHC	0.0092 J	NA	0.03 UJ	NA	NS	0.011	*
			Arsenic	50.4	NA	13.4	NA	10	0.045	0
			Barium	157	NA	103	NA	2000	2600	256
			beta-BHC	0.029 J	NA	0.03 UJ	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	10 U	NA	7.5 JB	NA	NS	4.8	*
			Calcium	74300	NA	53900 J	NA	NS	NS	53100
			Cobalt	5.0 U	NA	2.9 J	NA	NS	730	0
			delta-BHC	0.014 J	NA	0.03 UJ	NA	NS	NS	*
			Iron	126000	NA	73400	NA	300	11000	1430
			Magnesium	32200	NA	55900	NA	NS	NS	15000
			Manganese	775 J	NA	717	NA	50	880	1340
			Nickel	6.5 J	NA	5.1 J	NA	NS	730	83.4
			Potassium	5830 J	NA	3040 J	NA	NS	NS	5770
			Sodium	13500	NA	4040	NA	NS	NS	51400
			Tetryl	0.099 U	NA	0.061 J	NA	NS	360	*
			Vanadium	0.68 J	NA	10 U	NA	NS	36	0
			Zinc	3.9 JB	NA	11.6 B	NA	5000	11000	52.3
Ramsdell Quarry Landfill	RQLmw-009	Bedrock	1,2-Dichloroethane	1	NA	1.0 U	NA	5	0.12	*
			Acetone	6 JB	NA	10 U	NA	NS	5500	*
			Arsenic	22.7	NA	5.0 U	NA	10	0.045	0
			Barium	43.2	NA	20.1	NA	2000	2600	256
			bis(2-Ethylhexyl) phthalate	0.94 J	NA	47	NA	NS	4.8	*
			Calcium	30100	NA	19600 J	NA	NS	NS	53100
			Cobalt	6.9	NA	2.1 J	NA	NS	730	0
			Heptachlor	0.0088 J	NA	0.03 UJ	NA	0.4	0.015	*
			Iron	16200	NA	1990	NA	300	11000	1430
			Magnesium	36100	NA	11500	NA	NS	NS	15000
			Manganese	2340	NA	907	NA	50	880	1340
			Nickel	6.6 J	NA	10 U	NA	NS	730	83.4
			Potassium	3690 J	NA	2770 J	NA	NS	NS	5770
			Sodium	1580	NA	2020	NA	NS	NS	51400
			Zinc	2.5 JB	NA	11.6 B	NA	5000	11000	52.3
Ramsdell Quarry Landfill	RQLmw-012	Bedrock	1,2-Dichloroethane	1	1.0 U	NA	NA	5	0.12	*
			Acetone	6.4 JB	10 U	NA	NA	NS	5500	*
			Aluminum	1400	1480	NA	NA	200	36000	0
			Barium	13.2	12.7	NA	NA	2000	2600	256
			bis(2-Ethylhexyl) phthalate	10 U	1.5 JB	NA	NA	NS	4.8	*
			Cadmium	0.67	0.63	NA	NA	5	18	0
			Calcium	75200	90600	NA	NA	NS	NS	53100
			Cobalt	7.6	7.1	NA	NA	NS	730	0
			HMX	0.052 J	0.06 J	NA	NA	NS	1800	*
			Iron	84.6	136	NA	NA	300	11000	1430
			Magnesium	18700	24000	NA	NA	NS	NS	15000
			Manganese	271	332	NA	NA	50	880	1340
			Nickel	16.7	14.8	NA	NA	NS	730	83.4
			Perchlorate	0.066	NA	NA	NA	NS	3.6	*
			Potassium	4130 J	4740 J	NA	NA	NS	NS	5770
			RDX	0.17	0.23	NA	NA	NS	0.61	*
			Sodium	4650	5740	NA	NA	NS	NS	51400
			Thallium	0.75 UJ	0.68 J	NA	NA	2	2.4	0
			Zinc	54.8	54.8 J	NA	NA	5000	11000	52.3
Ramsdell Quarry Landfill	RQLmw-013	Bedrock	Acetone	5.6 JB	10 U	NA	NA	NS	5500	*
			alpha-BHC	0.3 UJ	0.0083 J	NA	NA	NS	0.011	*
			Aluminum	4120	5040	NA	NA	200	36000	0
			Barium	28	24.8	NA	NA	2000	2600	256
			Beryllium	0.66 UJ	0.84 J	NA	NA	4	73	0
			bis(2-Ethylhexyl) phthalate	10 U	1.5 JB	NA	NA	NS	4.8	*
			Calcium	20300	21300	NA	NA	NS	NS	53100
			Cobalt	36.5	40.1	NA	NA	NS	730	0
			Iron	124	344	NA	NA	300	11000	1430
			Magnesium	9690	9580	NA	NA	NS	NS	15000
			Manganese	639	667	NA	NA	50	880	1340
			Nickel	80.6	80.4	NA	NA	NS	730	83.4

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Ramsdell Quarry Landfill	RQLmw-013	Bedrock	Potassium	2010 J	2150 J	NA	NA	NS	NS	5770
			Sodium	20600	23900	NA	NA	NS	NS	51400
			Thallium	1	1.1	NA	NA	2	2.4	0
			Zinc	246	285 J	NA	NA	5000	11000	52.3
Ramsdell Quarry Landfill	RQLmw-014	Bedrock	1,2-Dichloroethane	1	1.0 U	NA	NA	5	0.12	*
			Acetone	6.2 JB	10 U	NA	NA	NS	5500	*
			Barium	10.9	14.7	NA	NA	2000	2600	256
			bis(2-Ethylhexyl) phthalate	10 U	2.2 JB	NA	NA	NS	4.8	*
			Calcium	39100	30100	NA	NA	NS	NS	53100
			Cobalt	5 U	6.9	NA	NA	NS	730	0
			Iron	50 U	1200	NA	NA	300	11000	1430
			Magnesium	15700	13300	NA	NA	NS	NS	15000
			Manganese	2480	2230	NA	NA	50	880	1340
			Nickel	12.5	16.2	NA	NA	NS	730	83.4
			PCB- 1248	0.1 J	0.5 UJ	NA	NA	0.5	0.034	*
			Perchlorate	0.025 J	NA	NA	NA	NS	3.6	*
			Potassium	3460 J	2930 J	NA	NA	NS	NS	5770
			Sodium	5960	5130	NA	NA	NS	NS	51400
			Zinc	16.4 B	15.5 B	NA	NA	5000	11000	52.3
Ramsdell Quarry Landfill	RQLmw-015	Bedrock	Barium	1.2 JB	0.97 J	NA	NA	2000	2600	256
			beta-BHC	0.019 J	0.03 U	NA	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	10 U	4 JB	NA	NA	NS	4.8	*
			Calcium	24700	31100	NA	NA	NS	NS	53100
			Cobalt	1.7 J	5.0 U	NA	NA	NS	730	0
			Fluoranthene	0.2 U	0.2	NA	NA	NS	NS	*
			Iron	511	363	NA	NA	300	11000	1430
			Magnesium	11400	14100	NA	NA	NS	NS	15000
			Manganese	1000	840	NA	NA	50	880	1340
			Nickel	6.8 J	5.9 J	NA	NA	NS	730	83.4
			PCB- 1248	0.16 J	0.5 U	NA	NA	0.5	0.034	*
			Perchlorate	0.03 J	NA	NA	NA	NS	3.6	*
			Phenanthrene	0.2 U	0.27	NA	NA	NS	NS	*
			Potassium	1480 J	1570 J	NA	NA	NS	NS	5770
			Sodium	1000 U	678 J	NA	NA	NS	NS	51400
			Zinc	37.3	34.1 J	NA	NA	5000	11000	52.3
Ramsdell Quarry Landfill	RQLmw-016	Bedrock	1,3,5-Trinitrobenzene	0.048 J	0.05 J	NA	NA	NS	1100	*
			2,6-Dinitrotoluene	0.066 J	5.0 U	NA	NA	NS	36	*
			Acetone	4.6 JB	10 U	NA	NA	NS	5500	*
			Arsenic	5.0 U	7.3	NA	NA	10	0.045	0
			Barium	12.2	12.7	NA	NA	2000	2600	256
			bis(2-Ethylhexyl) phthalate	10 U	2.7 JB	NA	NA	NS	4.8	*
			Calcium	449000	421000	NA	NA	NS	NS	53100
			Cobalt	9.4	5.5	NA	NA	NS	730	0
			Cyanide	0.0067 J	0.01 U	NA	NA	0.2	0.73	0
			Iron	19700	10200	NA	NA	300	11000	1430
			Magnesium	64800	61600	NA	NA	NS	NS	15000
			Manganese	7590 J	7020	NA	NA	50	880	1340
			Nickel	38.9	34.4	NA	NA	NS	730	83.4
			Perchlorate	0.036 J	NA	NA	NA	NS	3.6	*
			Potassium	3110 J	3510 J	NA	NA	NS	NS	5770
			Sodium	7640	7940	NA	NA	NS	NS	51400
			Zinc	14.6 JB	2.9 JB	NA	NA	5000	11000	52.3
Ramsdell Quarry Landfill	RQLmw-017	Bedrock	Acetone	5.4 JB	10 UJ	NA	NA	NS	5500	*
			Aluminum	136	201 J	NA	NA	200	36000	0
			Barium	2.9 JB	2.4 JB	NA	NA	2000	2600	256
			beta-BHC	0.02 J	0.019 J	NA	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	10 U	3.3 JB	NA	NA	NS	4.8	*
			Cadmium	0.22 J	0.15 UJ	NA	NA	5	18	0
			Calcium	63200	57000 J	NA	NA	NS	NS	53100
			Cobalt	13.4	9	NA	NA	NS	730	0
			Iron	204	50 U	NA	NA	300	11000	1430
			Magnesium	22200	23300 J	NA	NA	NS	NS	15000
			Manganese	3360	3720 J	NA	NA	50	880	1340
			Nickel	51.9	26.5	NA	NA	NS	730	83.4
			PCB- 1248	0.26 J	0.5 UJ	NA	NA	0.5	0.034	*
			Potassium	1880 J	1940 J	NA	NA	NS	NS	5770
			Sodium	4220	4530	NA	NA	NS	NS	51400
			Zinc	209 J	94.4 J	NA	NA	5000	11000	52.3
Winklepeck Burning Grounds	WBGmw-005	Unconsolidated	Acetone	4.8 JB	10 U	NA	NA	NS	5500	*
			Arsenic	21.9 B	9.9	NA	NA	10	0.045	11.7
			Barium	65	52.3	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	10 U	1.2 JB	NA	NA	NS	4.8	*

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Winklepeck Burning Grounds	WBGmw-005	Unconsolidated	Calcium	53700	40600 J	NA	NA	NS	NS	115000
			Cobalt	11.7	5.9	NA	NA	NS	730	0
			Iron	6830	8070	NA	NA	300	11000	279
			Magnesium	16400	14100	NA	NA	NS	NS	43300
			Manganese	986	1270 J	NA	NA	50	880	1020
			Nickel	11.5	6.8 J	NA	NA	NS	730	0
			Perchlorate	0.03 J	NA	NA	NA	NS	3.6	*
			Potassium	930 JB	769 JB	NA	NA	NS	NS	2890
			Sodium	12300	11100	NA	NA	NS	NS	45700
			Zinc	5.7 JB	11.9 B	NA	NA	5000	11000	60.9
Winklepeck Burning Grounds	WBGmw-008	Unconsolidated	Acetone	7.1 JB	10 U	NA	NA	NS	5500	*
			Barium	35.1	26.3	NA	NA	2000	2600	82.1
			Calcium	78700	93600 J	NA	NA	NS	NS	115000
			Magnesium	20300	21200	NA	NA	NS	NS	43300
			Manganese	52.8	2.1 JB	NA	NA	50	880	1020
			Perchlorate	0.025 J	NA	NA	NA	NS	3.6	*
			Potassium	880 JB	551 UJB	NA	NA	NS	NS	2890
			Sodium	7090	7870	NA	NA	NS	NS	45700
			Zinc	9 JB	8.3 JB	NA	NA	5000	11000	60.9
Winklepeck Burning Grounds	WBGmw-010	Unconsolidated	Acetone	8 JB	10 U	NA	NA	NS	5500	*
			Aluminum	50 U	201 J	NA	NA	200	36000	0
			Barium	20.7	24.1	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	10 UJ	6.2 JB	NA	NA	NS	4.8	*
			Calcium	92400	104000 J	NA	NA	NS	NS	115000
			Iron	50 U	333	NA	NA	300	11000	279
			Magnesium	33500	38200	NA	NA	NS	NS	43300
			Manganese	129	184 J	NA	NA	50	880	1020
			Perchlorate	0.091 J	NA	NA	NA	NS	3.6	*
			Potassium	700 JB	810 J	NA	NA	NS	NS	2890
			Sodium	18600	20200	NA	NA	NS	NS	45700
			Zinc	2.9 JB	7.2 JB	NA	NA	5000	11000	60.9
Winklepeck Burning Grounds	WBGmw-011	Unconsolidated	1,3,5-Trinitrobenzene	0.1 U	0.062 J	NA	NA	NS	1100	*
			2,6-Dinitrotoluene	0.06 J	0.099 U	NA	NA	NS	36	*
			Acetone	8.3 JB	10 U	NA	NA	NS	5500	*
			Aluminum	48.1 J	36 J	NA	NA	200	36000	0
			Barium	43.3	43.5	NA	NA	2000	2600	82.1
			beta-BHC	0.3 UJ	0.0098 J	NA	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	10 U	1.5 JB	NA	NA	NS	4.8	*
			Calcium	86700	91000 J	NA	NA	NS	NS	115000
			Iron	51.9	42.1 J	NA	NA	300	11000	279
			Magnesium	18000	19100	NA	NA	NS	NS	43300
			Manganese	149	21.2 J	NA	NA	50	880	1020
			Nitrobenzene	0.077 J	0.099 U	NA	NA	NS	3.4	*
			Perchlorate	0.047 J	NA	NA	NA	NS	3.6	*
			Potassium	4270 J	4080 J	NA	NA	NS	NS	2890
			Sodium	4990	5220	NA	NA	NS	NS	45700
			Zinc	3.2 JB	5.6 JB	NA	NA	5000	11000	60.9
Winklepeck Burning Grounds	WBGmw-012	Unconsolidated	Acetone	5.2 JB	10 U	NA	NA	NS	5500	*
			Barium	22.7	29.2	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	10 U	1.2 JB	NA	NA	NS	4.8	*
			Calcium	68400	85200 J	NA	NA	NS	NS	115000
			Magnesium	20000	25900	NA	NA	NS	NS	43300
			Manganese	0.66 J	0.69 JB	NA	NA	50	880	1020
			Mercury	0.2	0.2 UJ	NA	NA	2	11	0
			Perchlorate	0.088	NA	NA	NA	NS	3.6	*
			Potassium	795 UJB	880 J	NA	NA	NS	NS	2890
			Sodium	3550	4030	NA	NA	NS	NS	45700
			Zinc	3.2 JB	6.4 JB	NA	NA	5000	11000	60.9
Winklepeck Burning Grounds	WBGmw-013	Unconsolidated	2,4-Dinitrotoluene	O.11 U	0.059 J	NA	NA	NS	73	*
			2-Amino-4,6-dinitrotoluene	0.61	0.93	NA	NA	NS	NS	*
			4-Amino-2,6-Dinitrotoluene	0.36	0.5	NA	NA	NS	NS	*
			Acetone	4.8 JB	10 U	NA	NA	NS	5500	*
			Barium	13.4	17.4	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	10 U	1.8 JB	NA	NA	NS	4.8	*
			Calcium	34300	42200 J	NA	NA	NS	NS	115000
			Magnesium	10000	12100	NA	NA	NS	NS	43300
			Manganese	2.4 J	31.2 J	NA	NA	50	880	1020
			Perchlorate	0.11	NA	NA	NA	NS	3.6	*
			Sodium	3860	2470	NA	NA	NS	NS	45700
			Zinc	2.4 J	8 JB	NA	NA	5000	11000	60.9
Winklepeck Burning Grounds	WBGmw-014	Unconsolidated	Acetone	10 B	10 U	NA	NA	NS	5500	*
			Barium	15.8	14.8	NA	NA	2000	2600	82.1

Table 4-2. Summary of Constituents Detected - October 2008, January, April and July 2009

Area	Well Number	Monitored Zone	Analyte	Oct-08 Level (µg/L)	Jan-09 Level (µg/L)	Apr-09 Level (µg/L)	Jul-09 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	Facility-Wide Background (µg/L)
Winklepeck Burning Grounds	WBGmw-014	Unconsolidated	bis(2-Ethylhexyl) phthalate	2.2 J	0.96 JB	NA	NA	NS	4.8	*
			Calcium	*71100*	*68300 J*	NA	NA	NS	NS	115000
			Cyanide	0.0089 J	0.1 UJ	NA	NA	0.2	0.73	0
			Magnesium	*17700*	*17100*	NA	NA	NS	NS	43300
			Manganese	*113*	*74.5 J*	NA	NA	50	880	1020
			Perchlorate	0.027 J	NA	NA	NA	NS	3.6	*
			Potassium	*1340 J*	*1520 J*	NA	NA	NS	NS	2890
			Sodium	*10900*	*5760*	NA	NA	NS	NS	45700
			Zinc	*21.8 J*	*4.1 JB*	NA	NA	5000	11000	60.9
Winklepeck Burning Grounds	WBGmw-015	Unconsolidated	Acetone	10 B	5 U	NA	NA	NS	5500	*
			Arsenic	*5.7 B*	10.0 U	NA	NA	10	0.045	11.7
			Barium	*72.1*	*54.6*	NA	NA	2000	2600	82.1
			beta-BHC	0.03 UJ	0.017 J	NA	NA	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	10 U	1.1 JB	NA	NA	NS	4.8	*
			Calcium	*85800*	*97900 J*	NA	NA	NS	NS	115000
			Iron	*151*	50 U	NA	NA	300	11000	279
			Magnesium	*27200*	*33000*	NA	NA	NS	NS	43300
			Manganese	*140*	*18.6 J*	NA	NA	50	880	1020
			Nitrobenzene	0.094 J	0.099	NA	NA	NS	3.4	*
			Perchlorate	0.014 J	NA	NA	NA	NS	3.6	*
			Potassium	*1180 J*	*1240 J*	NA	NA	NS	NS	2890
			Sodium	*10500*	*15500*	NA	NA	NS	NS	45700
			Zinc	*2.7 JB*	*7.9 JB*	NA	NA	5000	11000	60.9
Winklepeck Burning Grounds	WBGmw-016	Unconsolidated	Acetone	7.6 JB	10 U	NA	NA	NS	5500	*
			Barium	*30.7*	*25.6*	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	1.4 J	1.1 JB	NA	NA	NS	4.8	*
			Calcium	*79600*	*76400 J*	NA	NA	NS	NS	115000
			Magnesium	*20500*	*17500*	NA	NA	NS	NS	43300
			Manganese	*1.3 JB*	*1.9 JB*	NA	NA	50	880	1020
			Potassium	*1060 B*	*1010 J*	NA	NA	NS	NS	2890
			Sodium	*4600*	*3840*	NA	NA	NS	NS	45700
			Zinc	*4.1 JB*	*6 JB*	NA	NA	5000	11000	60.9
Winklepeck Burning Grounds	WBGmw-017	Unconsolidated	1,3,5-Trinitrobenzene	0.078 JB	0.1 U	U	NA	NS	1100	*
			Acetone	6.7 JB	10 U	NA	NA	NS	5500	*
			Aluminum	40.3 J	50 U	NA	NA	200	36000	0
			Arsenic	*6.1 B*	5.0 U	NA	NA	10	0.045	11.7
			Barium	*55.1*	*52*	NA	NA	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	10 U	1 JB	NA	NA	NS	4.8	*
			Calcium	*68100*	*68600 J*	NA	NA	NS	NS	115000
			Iron	538	*199*	NA	NA	300	11000	279
			Magnesium	*18300*	*18500*	NA	NA	NS	NS	43300
			Manganese	*199*	*174 J*	NA	NA	50	880	1020
			Nitrobenzene	0.097 U	0.081 J	NA	NA	NS	3.4	*
			Potassium	*941 JB*	*923 J*	NA	NA	NS	NS	2890
			Sodium	*4790*	*4740*	NA	NA	NS	NS	45700
			Zinc	*2.5 JB*	*3.7 JB*	NA	NA	5000	11000	60.9

Notes:
* = nitrate/nitrite concentrations are in mg/L
NS = no standard NA = not analyzed
All inorganics are filtered, all organics are not filtered
* There are no background levels for organic constituents
J = estimated result. Results have been qualified "J" For more details refer to Data Verification/Validation Reports in in the FWGWMP October 2007 and January, April and July 2008 Sampling Reports
B = organic or inorganic analysis when the analyte is found in the method blank or any of the field blanks
R = Rejected data
U = analyzed but not detected at or above the reporting limit
Bold = inorganic constituent detected above Facility-Wide background levels
Italics = inorganic constituent detected below the Facility-Wide background levels
Shaded boxes indicate any contituent, which does not have a background value, detected above the reporting limit.

Table 4-3 RVAAP Facility-Wide Background Criteria, (SAIC, 2001b)

Media Units	Surface Soil mg/kg	Subsurface Soil mg/kg	Sediment mg/kg	Surface Water µg/L	Groundwater Bedrock Zone Filtered µg/L	Groundwater Bedrock Zone Unfiltered µg/L	Groundwater Unconsolidated Zone Filtered µg/L	Groundwater Unconsolidated Unfiltered µg/L
Analyte								
Cyanide	0	0	0	0	0	0	0	0
Aluminum	17700	19500	13900	3370	0	9410	0	0
Antimony	0.96	0.96	0	0	0	0	0	0
Arsenic	15.4	19.8	19.5	3.2	0	19.1	11.7	11.7
Barium	88.4	124	123	47.5	256	241	82.1	82.1
Beryllium	0.88	0.88	0.38	0	0	0	0	0
Cadmium	0	0	0	0	0	0	0	0
Calcium	15800	35500	5510	41400	53100	48200	115000	115000
Chromium	17.4	27.2	18.1	0	0	19.5	7.3	7.3
Cobalt	10.4	23.2	9.1	0	0	0	0	0
Copper	17.7	32.3	27.6	7.9	0	17	0	0
Iron	23100	35200	28200	2560	1430	21500	279	279
Lead	26.1	19.1	27.4	0	0	23	0	0
Magnesium	3030	8790	2760	10800	15000	13700	43300	43300
Manganese	1450	3030	1950	391	1340	1260	1020	1020
Mercury	0.036	0.044	0.059	0	0	0	0	0
Nickel	21.1	60.7	17.7	0	83.4	85.3	0	0
Potassium	927	3350	1950	3170	5770	6060	2890	2890
Selenium	104	105	107	0	0	0	0	0
Silver	0	0	0	0	0	0	0	0
Sodium	123	145	112	21300	51400	49700	45700	45700
Thallium	0	0.91	0.89	0	0	0	0	0
Vanadium	31.1	37.6	26.1	0	0	15.5	0	0
Zinc	61.8	93.3	532	42	52.3	193	60.9	60.9

Table 4-4 presents those COPCs detected in any of the October 2008, January 2009, April 2009, or July 2009 sampling events that exceeded Region 9 PRGs, primary MCLs, or secondary MCLs. Section 4.27 presents a summary discussion of the MCL and PRG exceedances.

Sections 4.2 through 4.26 present a summary of the time trend graphs for COPCs identified in groundwater samples collected under the FWGWMP over the last 15 quarters (i.e., October 2005 through July 2009). Each of Sections 4.2 through 4.26 contains several subsections presented by group of COPCs (e.g., inorganics, semi-volatile organic compounds, explosives, etc.). To facilitate the discussion of concentration changes over time concentration versus time graphs (i.e. time-trend graphs) were prepared. The following guidelines were applied to produce the graphs:

1. Only wells with three or more detections of an organic and explosive or three or more detection above background for inorganics are graphed.
2. Values reported as “non-detect” are shown as one-half the reporting limit.

Table 4-6 summarizes the wells and constituents for which time-trend graphs were prepared. Time-trend graphs for the COPCs are presented in Appendix F. The graphs are organized by AOC (maps showing each of the AOC areas are presented in Appendix H). The background wells are grouped before the AOCs.

The time-trend plots include the comparative criteria of: 1) MCL, 2) PRG for tap water, and 3) background concentration (either unconsolidated or bedrock) for inorganics. It is noted that background concentrations for several inorganics are identified as “0” (i.e., not expected to be naturally present at any measurable concentration) (Table 4-4). These inorganics include aluminum, antimony, arsenic (bedrock only), beryllium, cadmium, chromium (bedrock only), cobalt, copper, lead, selenium, silver, thallium and vanadium. These criteria were calculated from data collected prior to implementation of the FWGWMP. With implementation of the FWGWMP, many of the inorganics with a “0” background criterion are found to be present at concentrations greater than the respective FWGWMP RLs. Consideration should be made for a re-evaluation of background criteria for inorganics with thought given to inclusion of the FWGWMP data.

4.2 Atlas Scrap Yard

Sampling at the Atlas Scrap Yard has been conducted since April 2009. Groundwater samples are obtained from seven bedrock aquifer wells and three unconsolidated aquifer wells. The Atlas Scrap Yard data set is too small for further evaluation per condition #1 (i.e., only wells with three or more detections of a COPC).

Table 4-4. Exceedances of MCLs and Region 9 PRGs

Area	Well Number	Analyte	Oct-08 Level (µg/l)	Jan-09 Level (µg/l)	Apr-09 Level (µg/l)	Jul-09 Level (µg/l)	MCL (µg/l)	Region 9 PRG (µg/l)
Atlas Scrap Yard	ASYmw-001	Manganese	NA	NA	94.7 J	895	50	880
Atlas Scrap Yard	ASYmw-003	Arsenic	NA	NA	5.0 U	4.9 J	10	0.045
Atlas Scrap Yard	ASYmw-003	Iron	NA	NA	50 U	2420 J	300	11000
Atlas Scrap Yard	ASYmw-003	Manganese	NA	NA	49.2 J	532	50	880
Atlas Scrap Yard	ASYmw-004	Arsenic	NA	NA	18.4	19	10	0.045
Atlas Scrap Yard	ASYmw-004	Iron	NA	NA	1650	1760 J	300	11000
Atlas Scrap Yard	ASYmw-004	Manganese	NA	NA	244 J	200	50	880
Atlas Scrap Yard	ASYmw-005	Manganese	NA	NA	132 J	194	50	NS
Atlas Scrap Yard	ASYmw-006	Aluminum	NA	NA	506	50 U	200	36000
Atlas Scrap Yard	ASYmw-006	Arsenic	NA	NA	20.1	15.2	10	0.045
Atlas Scrap Yard	ASYmw-006	Iron	NA	NA	1960	1250	300	11000
Atlas Scrap Yard	ASYmw-006	Manganese	NA	NA	195 J	167	50	880
Atlas Scrap Yard	ASYmw-007	Manganese	NA	NA	149 J	186	50	880
Atlas Scrap Yard	ASYmw-008	Aluminum	NA	NA	7700 J	50 U	200	36000
Atlas Scrap Yard	ASYmw-008	Arsenic	NA	NA	24.6	15.5	10	0.045
Atlas Scrap Yard	ASYmw-008	Iron	NA	NA	17300	357	300	11000
Atlas Scrap Yard	ASYmw-008	Manganese	NA	NA	375 J	136	50	880
Atlas Scrap Yard	ASYmw-009	Manganese	NA	NA	580 J	596	50	880
Atlas Scrap Yard	ASYmw-010	Arsenic	NA	NA	37.2	43	10	0.045
Atlas Scrap Yard	ASYmw-010	Iron	NA	NA	1950	2250	300	11000
Atlas Scrap Yard	ASYmw-010	Manganese	NA	NA	65.3 J	96.8	50	880
Building 1200	B12mw-010	bis(2-Ethylhexyl) phthalate	4.5 J	11 B	NA	NA	NS	4.8
Building 1200	B12mw-010	Manganese	58.8 J	34.8 J	NA	NA	50	880
Building 1200	B12mw-011	Manganese	70.7	10.9	NA	NA	50	880
Building 1200	B12mw-012	Manganese	1.5 JB	NA	163 J	NA	50	880
C-Block Quarry	CBLmw-004	PCB- 1248	0.11 J	0.5 U	NA	NA	0.5	0.034
Central Burn Pits	CBPmw-001	1,2-Dichloroethane	1	1.0 U	NA	NA	5	0.12
Central Burn Pits	CBPmw-001	Arsenic	78.6	85	NA	NA	10	0.045
Central Burn Pits	CBPmw-001	Iron	8520	8620 J	NA	NA	300	11000
Central Burn Pits	CBPmw-001	Manganese	92.2	106 J	NA	NA	50	880
Central Burn Pits	CBPmw-001	PCB- 1248	0.11 J	0.5 UJ	NA	NA	0.5	0.034
Central Burn Pits	CBPmw-002	1,2-Dichloroethane	1	1.0 U	NA	NA	5	0.12
Central Burn Pits	CBPmw-002	Aluminum	72.4	474 J	NA	NA	200	36000
Central Burn Pits	CBPmw-002	Arsenic	20.4	24.8	NA	NA	10	0.045
Central Burn Pits	CBPmw-002	Iron	1470	3720 J	NA	NA	300	11000
Central Burn Pits	CBPmw-002	Manganese	138	222 J	NA	NA	50	880
Central Burn Pits	CBPmw-002	PCB- 1248	0.22 J	0.5 UJ	NA	NA	0.5	0.034
Central Burn Pits	CBPmw-003	1,2-Dichloroethane	1	1.0 U	NA	NA	5	0.12
Central Burn Pits	CBPmw-003	Arsenic	26.3	26.2	NA	NA	10	0.045
Central Burn Pits	CBPmw-003	bis(2-Chloroethyl) ether	1.0 U	10 JB	NA	NA	NS	0.001
Central Burn Pits	CBPmw-003	Iron	2400	2220 J	NA	NA	300	11000
Central Burn Pits	CBPmw-003	Manganese	153	85.3 J	NA	NA	50	880
Central Burn Pits	CBPmw-004	1,2-Dichloroethane	1	1 U	NA	NA	5	0.12
Central Burn Pits	CBPmw-004	Arsenic	50.1	39.1	NA	NA	10	0.045
Central Burn Pits	CBPmw-004	Iron	1760	962 J	NA	NA	300	11000
Central Burn Pits	CBPmw-004	PCB- 1248	0.1 J	0.5 UJ	NA	NA	0.5	0.034
Central Burn Pits	CBPmw-008	Arsenic	5.0 U	7.2	NA	NA	10	0.05
Central Burn Pits	CBPmw-008	bis(2-Ethylhexyl) phthalate	8 J	1.4 JB	NA	NA	NS	4.8
Central Burn Pits	CBPmw-008	Iron	50 U	840 J	NA	NA	300	11000
Central Burn Pits	CBPmw-008	Manganese	7.1 JB	241 J	NA	NA	50	880
Cobbs Pond	CPmw-001	1,2-Dichloroethane	1	1.0 U	U	NA	5	0.12
Cobbs Pond	CPmw-002	Manganese	241	288 J	NA	NA	50	880
Cobbs Pond	CPmw-003	1,2-Dichloroethane	1	1.0 U	NA	NA	5	0.12

Table 4-4. Exceedances of MCLs and Region 9 PRGs

Area	Well Number	Analyte	Oct-08 Level (µg/l)	Jan-09 Level (µg/l)	Apr-09 Level (µg/l)	Jul-09 Level (µg/l)	MCL (µg/l)	Region 9 PRG (µg/l)
Cobbs Pond	CPmw-003	Arsenic	9.5	5.0 U	NA	NA	10	0.045
Cobbs Pond	CPmw-003	Iron	600	82.1	NA	NA	300	11000
Cobbs Pond	CPmw-003	Manganese	216	73.1 J	NA	NA	50	880
Cobbs Pond	CPmw-004	Manganese	89.5 J	2.7 J	NA	NA	50	880
Cobbs Pond	CPmw-005	Arsenic	35.9	53.9	NA	NA	10	0.045
Cobbs Pond	CPmw-005	Iron	683	956	NA	NA	300	11000
Cobbs Pond	CPmw-006	1,2-Dichloroethane	1	1.0 U	NA	NA	5	0.12
Cobbs Pond	CPmw-006	Aluminum	51.9	468 J	NA	NA	200	36000
Cobbs Pond	CPmw-006	Arsenic	8.3	9.6	NA	NA	10	0.045
Cobbs Pond	CPmw-006	Iron	6300	9190	NA	NA	300	11000
Cobbs Pond	CPmw-006	Manganese	1770	3260 J	NA	NA	50	880
Demolition Area 2	DA2mw-105	Arsenic	6.3 J	3.3 J	NA	NA	10	0.045
Demolition Area 2	DA2mw-105	Iron	1160	50 U	NA	NA	300	11000
Demolition Area 2	DA2mw-105	Manganese	223 J	212 J	NA	NA	50	880
Demolition Area 2	DA2mw-106	Iron	132	1270	NA	NA	300	11000
Demolition Area 2	DA2mw-106	Manganese	3180	4720 J	NA	NA	50	880
Demolition Area 2	DA2mw-108	Iron	5090	978	NA	NA	300	11000
Demolition Area 2	DA2mw-108	Manganese	342	326 J	NA	NA	50	880
Demolition Area 2	DA2mw-109	Manganese	386 J	7 J	NA	NA	50	880
Demolition Area 2	DA2mw-110	bis(2-Ethylhexyl) phthalate	18 J	2.6 JB	NA	NA	NS	4.8
Demolition Area 2	DA2mw-111	Manganese	362 J	241 J	NA	NA	50	880
Demolition Area 2	DA2mw-112	Iron	4290	4350	NA	NA	300	11000
Demolition Area 2	DA2mw-112	Manganese	629	782 J	NA	NA	50	880
Demolition Area 2	DA2mw-113	Arsenic	3.3 J	5.0 U	NA	NA	10	0.045
Demolition Area 2	DA2mw-113	Iron	4030	2610	NA	NA	300	11000
Demolition Area 2	DA2mw-113	Manganese	319	442 J	NA	NA	50	880
Demolition Area 2	DETmw-003	Arsenic	11.3 J	NA	10.5	NA	10	0.045
Demolition Area 2	DETmw-003	bis(2-Ethylhexyl) phthalate	1.3 J	NA	5.5 JB	NA	NS	4.8
Demolition Area 2	DETmw-003	Iron	1750	NA	1770	NA	300	11000
Demolition Area 2	DETmw-003	Manganese	287	NA	281 J	NA	50	880
Demolition Area 2	DETmw-004	RDX	0.16	NA	2.4	NA	NS	0.61
Erie Burning Grounds	EBGmw-123	Arsenic	51.7 J	55.4	NA	NA	10	0.045
Erie Burning Grounds	EBGmw-123	bis(2-Ethylhexyl) phthalate	13	1.6 JB	NA	NA	NS	4.8
Erie Burning Grounds	EBGmw-123	Iron	5940	6040	NA	NA	300	11000
Erie Burning Grounds	EBGmw-123	Manganese	116	121 J	NA	NA	50	880
Erie Burning Grounds	EBGmw-124	Arsenic	58 J	37.6	NA	NA	10	0.045
Erie Burning Grounds	EBGmw-124	Iron	4680	2950	NA	NA	300	11000
Erie Burning Grounds	EBGmw-124	Manganese	73.6	63.7 J	NA	NA	50	880
Erie Burning Grounds	EBGmw-125	Arsenic	17.5 J	13.5	NA	NA	10	0.045
Erie Burning Grounds	EBGmw-125	Iron	5540	5430	NA	NA	300	11000
Erie Burning Grounds	EBGmw-125	Manganese	385	353 J	NA	NA	50	880
Erie Burning Grounds	EBGmw-126	Arsenic	23 J	17.9	NA	NA	10	0.045
Erie Burning Grounds	EBGmw-126	Iron	7300	4700	NA	NA	300	11000
Erie Burning Grounds	EBGmw-126	Manganese	189	170 J	NA	NA	50	880
Erie Burning Grounds	EBGmw-127	Aluminum	50 U	1060 J	NA	NA	200	36000
Erie Burning Grounds	EBGmw-127	Arsenic	15 J	11.2 J	NA	NA	10	0.045
Erie Burning Grounds	EBGmw-127	Iron	672	3060 J	NA	NA	300	11000
Erie Burning Grounds	EBGmw-127	Manganese	27	66.3 J	NA	NA	50	880
Erie Burning Grounds	EBGmw-128	Arsenic	18 J	9.4	NA	NA	10	0.045
Erie Burning Grounds	EBGmw-128	Iron	1380	766	NA	NA	300	11000
Erie Burning Grounds	EBGmw-128	Manganese	290	192 J	NA	NA	50	880
Erie Burning Grounds	EBGmw-129	Arsenic	5.1 J	3.6 J	NA	NA	10	0.045
Erie Burning Grounds	EBGmw-129	Iron	7450	5770	NA	NA	300	11000

Table 4-4. Exceedances of MCLs and Region 9 PRGs

Area	Well Number	Analyte	Oct-08 Level (µg/l)	Jan-09 Level (µg/l)	Apr-09 Level (µg/l)	Jul-09 Level (µg/l)	MCL (µg/l)	Region 9 PRG (µg/l)
Erie Burning Grounds	EBGmw-129	Manganese	560	563 J	NA	NA	50	880
Erie Burning Grounds	EBGmw-130	Arsenic	5 U	5	NA	NA	10	0.05
Erie Burning Grounds	EBGmw-130	Iron	4430	3610	NA	NA	300	11000
Erie Burning Grounds	EBGmw-130	Manganese	658	694	NA	NA	50	880
Fuze and Booster Quarry	FBQmw-166	Arsenic	6.1 J	5.0 U	NA	NA	10	0.045
Fuze and Booster Quarry	FBQmw-166	Iron	466 J	541	NA	NA	300	11000
Fuze and Booster Quarry	FBQmw-166	Manganese	436	60.5 J	NA	NA	50	880
Fuze and Booster Quarry	FBQmw-167	Iron	15100 J	12300	NA	NA	300	11000
Fuze and Booster Quarry	FBQmw-167	Manganese	2050	1760 J	NA	NA	50	880
Fuze and Booster Quarry	FBQmw-168	Arsenic	5	5.0 U	NA	NA	10	0.045
Fuze and Booster Quarry	FBQmw-168	Manganese	50.1	5.9 JB	NA	NA	50	880
Fuze and Booster Quarry	FBQmw-169	Iron	955 J	448	NA	NA	300	11000
Fuze and Booster Quarry	FBQmw-169	Manganese	7680	5440 J	NA	NA	50	880
Fuze and Booster Quarry	FBQmw-170	Arsenic	5	5.0 U	NA	NA	10	0.045
Fuze and Booster Quarry	FBQmw-170	Manganese	64	63.1 J	NA	NA	50	880
Fuze and Booster Quarry	FBQmw-172	Aldrin	0.03 U	0.03 J	NA	NA	NS	0.004
Fuze and Booster Quarry	FBQmw-172	Manganese	2460	1170 J	NA	NA	50	880
Fuze and Booster Quarry	FBQmw-173	Iron	50 U	362	NA	NA	300	11000
Fuze and Booster Quarry	FBQmw-173	Manganese	1210	1130 J	NA	NA	50	880
Fuze and Booster Quarry	FBQmw-174	2,4,6-Trinitrolouene	27 J	49	NA	NA	NS	2.2
Fuze and Booster Quarry	FBQmw-176	Aluminum	50 U	906 J	NA	NA	200	36000
Fuze and Booster Quarry	FBQmw-176	Arsenic	3.6 J	5.0 U	NA	NA	10	0.045
Fuze and Booster Quarry	FBQmw-176	Iron	9800 J	8910 J	NA	NA	300	11000
Fuze and Booster Quarry	FBQmw-176	Manganese	1500	1360 J	NA	NA	50	880
Fuze and Booster Quarry	FBQmw-177	Manganese	1340	1170 J	NA	NA	50	880
Load Line 10	LL10mw-001	bis(2-Ethylhexyl) phthalate	NA	1.1 J	5.5 JB	1.8 JB	NS	4.8
Load Line 10	LL10mw-001	Carbon tetrachloride	NA	1.0 U	0.94 J	1.3	5	0.17
Load Line 10	LL10mw-001	Chloroform	NA	1.0 U	1.0 U	0.22 J	NS	0.17
Load Line 10	LL10mw-002	Iron	NA	50 U	50 U	5800	300	11000
Load Line 10	LL10mw-002	Manganese	NA	1.2 J	0.91 UJB	1620	50	880
Load Line 10	LL10mw-003	Carbon tetrachloride	NA	3.7	0.63 J	2.4	5	0.17
Load Line 10	LL10mw-003	Chloroform	NA	0.4 JB	1 U	0.29 J	NS	0.17
Load Line 11	LL11mw-001	Manganese	NA	207	146 J	575	50	880
Load Line 11	LL11mw-003	Manganese	NA	184	333 J	690	50	880
Load Line 11	LL11mw-004	Cadmium	NA	9.7	5.1	3.2	5	18
Load Line 11	LL11mw-004	Manganese	NA	51.2	572 J	609	50	880
Load Line 11	LL11mw-008	bis(2-Ethylhexyl) phthalate	NA	9.4 JB	1 JB	3.5 JB	NS	4.8
Load Line 11	LL11mw-009	bis(2-Ethylhexyl) phthalate	NA	NA	10 U	5.9 JB	NS	4.8
Load Line 11	LL11mw-009	Manganese	NA	NA	900 J	804	50	880
Load Line 11	LL11mw-009	Tetrachloroethene	NA	NA	3.6	3.8	5	0.1
Load Line 11	LL11mw-010	Arsenic	NA	5.0 U	5.0 U	5.8	10	0.045
Load Line 11	LL11mw-010	Iron	NA	138	50 U	1420 J	300	11000
Load Line 11	LL11mw-010	Manganese	NA	178	130 J	967 J	50	880
Load Line 12	LL12mw-088	Arsenic	13.8	NA	NA	NA	10	0.045
Load Line 12	LL12mw-088	Iron	1700	NA	NA	NA	300	11000
Load Line 12	LL12mw-088	Manganese	392	NA	NA	NA	50	880
Load Line 12	LL12mw-107	Arsenic	15.1	NA	NA	NA	10	0.045
Load Line 12	LL12mw-107	Iron	2700	NA	NA	NA	300	11000
Load Line 12	LL12mw-107	Manganese	311	NA	NA	NA	50	880
Load Line 12	LL12mw-113	Arsenic	7.3	NA	NA	NA	10	0.045
Load Line 12	LL12mw-113	Iron	371	NA	NA	NA	300	11000
Load Line 12	LL12mw-113	Manganese	2800	NA	NA	NA	50	880
Load Line 12	LL12mw-128	Aluminum	546 J	NA	NA	NA	200	36000

Table 4-4. Exceedances of MCLs and Region 9 PRGs

Area	Well Number	Analyte	Oct-08 Level (µg/l)	Jan-09 Level (µg/l)	Apr-09 Level (µg/l)	Jul-09 Level (µg/l)	MCL (µg/l)	Region 9 PRG (µg/l)
Load Line 12	LL12mw-128	Arsenic	47.6	NA	NA	NA	10	0.045
Load Line 12	LL12mw-128	Iron	5650	NA	NA	NA	300	11000
Load Line 12	LL12mw-128	Manganese	192	NA	NA	NA	50	880
Load Line 12	LL12mw-154	Arsenic	24.7	NA	NA	NA	10	0.045
Load Line 12	LL12mw-154	Iron	2440	NA	NA	NA	300	11000
Load Line 12	LL12mw-154	Manganese	80.7	NA	NA	NA	50	880
Load Line 12	LL12mw-184	Arsenic	18.4	NA	NA	NA	10	0.045
Load Line 12	LL12mw-184	Iron	2940	NA	NA	NA	300	11000
Load Line 12	LL12mw-184	Manganese	498	NA	NA	NA	50	880
Load Line 12	LL12mw-185	Manganese	1640	NA	NA	NA	50	880
Load Line 12	LL12mw-185	Nitrate-Nitrite	230* J	NA	NA	NA	1	1
Load Line 12	LL12mw-187	Manganese	2260	NA	NA	NA	50	880
Load Line 12	LL12mw-187	Nitrate-Nitrite	200* B	NA	NA	NA	1	1
Load Line 12	LL12mw-188	Arsenic	4.5 J	NA	NA	NA	10	0.045
Load Line 12	LL12mw-188	Benzene	0.4 JB	NA	NA	NA	5	0.35
Load Line 12	LL12mw-188	Iron	1640	NA	NA	NA	300	11000
Load Line 12	LL12mw-188	Manganese	1010 J	NA	NA	NA	50	880
Load Line 12	LL12mw-189	Arsenic	11.1 J	NA	NA	NA	10	0.045
Load Line 12	LL12mw-189	Iron	1960 J	NA	NA	NA	300	11000
Load Line 12	LL12mw-189	Manganese	283	NA	NA	NA	50	880
Load Line 12	LL12mw-242	Aluminum	922 J	NA	NA	NA	200	36000
Load Line 12	LL12mw-242	Arsenic	18.3	NA	NA	NA	10	0.05
Load Line 12	LL12mw-242	Benzene	0.49 JB	NA	NA	NA	5	0.35
Load Line 12	LL12mw-242	Iron	3950	NA	NA	NA	300	11000
Load Line 12	LL12mw-242	Manganese	98.2	NA	NA	NA	50	880
Load Line 12	LL12mw-243	Arsenic	12	NA	NA	NA	10	0.05
Load Line 12	LL12mw-243	Iron	1150	NA	NA	NA	300	11000
Load Line 12	LL12mw-243	Manganese	813	NA	NA	NA	50	880
Load Line 12	LL12mw-244	Arsenic	8.2	NA	NA	NA	10	0.05
Load Line 12	LL12mw-244	Benzene	0.46 JB	NA	NA	NA	5	0.35
Load Line 12	LL12mw-244	Manganese	148	NA	NA	NA	50	880
Load Line 12	LL12mw-245	Arsenic	20.4	NA	NA	NA	10	0.05
Load Line 12	LL12mw-245	Iron	994	NA	NA	NA	300	11000
Load Line 12	LL12mw-245	Manganese	163	NA	NA	NA	50	880
Load Line 12	LL12mw-246	Arsenic	14.6	NA	NA	NA	10	0.05
Load Line 12	LL12mw-246	Benzene	0.58 JB	NA	NA	NA	5	0.35
Load Line 12	LL12mw-246	bis(2-Ethylhexyl) phthalate	5 JB	NA	NA	NA	NS	4.80
Load Line 1	LL1mw-063	Aluminum	2700	NA	NA	NA	200	36000
Load Line 1	LL1mw-063	Arsenic	5.6	NA	NA	NA	10	0.05
Load Line 1	LL1mw-063	Benzene	0.37 JB	NA	NA	NA	5	0.35
Load Line 1	LL1mw-063	Iron	6180	NA	NA	NA	300	11000
Load Line 1	LL1mw-064	Arsenic	4.9 J	5.0 U	NA	NA	10	0.05
Load Line 1	LL1mw-064	Iron	601 J	564	NA	NA	300	11000
Load Line 1	LL1mw-064	Manganese	129	121 J	NA	NA	50	880.00
Load Line 1	LL1mw-065	Arsenic	4.7 J	NA	NA	NA	10	0.05
Load Line 1	LL1mw-065	Manganese	348	NA	NA	NA	50	880.00
Load Line 1	LL1mw-079	Manganese	89.7	NA	NA	NA	50	880.00
Load Line 1	LL1mw-079	RDX	0.98	NA	NA	NA	NS	0.61
Load Line 2	LL2mw-060	Benzene	0.42 JB	NA	NA	NA	5	0.35
Load Line 2	LL2mw-261	Arsenic	19.1	NA	NA	NA	10	0.045
Load Line 2	LL2mw-261	Iron	2570 J	NA	NA	NA	300	11000
Load Line 2	LL2mw-261	Manganese	370	NA	NA	NA	50	880.00
Load Line 2	LL2mw-264	Arsenic	5.4	NA	NA	NA	10	0.045

Table 4-4. Exceedances of MCLs and Region 9 PRGs

Area	Well Number	Analyte	Oct-08 Level (µg/l)	Jan-09 Level (µg/l)	Apr-09 Level (µg/l)	Jul-09 Level (µg/l)	MCL (µg/l)	Region 9 PRG (µg/l)
Load Line 2	LL2mw-264	Benzene	0.4 JB	NA	NA	NA	5	0.35
Load Line 2	LL2mw-264	Iron	458 JB	NA	NA	NA	300	11000
Load Line 2	LL2mw-264	Manganese	304	NA	NA	NA	50	880.00
Load Line 2	LL2mw-265	Benzene	0.36 JB	NA	NA	NA	5	0.35
Load Line 2	LL2mw-265	bis(2-Ethylhexyl) phthalate	7 JB	NA	NA	NA	NS	4.80
Load Line 2	LL2mw-265	Iron	4250 J	NA	NA	NA	300	11000
Load Line 2	LL2mw-265	Manganese	831	NA	NA	NA	50	880
Load Line 2	LL2mw-268	Arsenic	5.2	NA	NA	NA	10	0.045
Load Line 2	LL2mw-268	Benzene	0.44 JB	NA	NA	NA	5	0.35
Load Line 2	LL2mw-268	Iron	2790 J	NA	NA	NA	300	11000
Load Line 2	LL2mw-268	Manganese	331	NA	NA	NA	50	880
Load Line 2	LL2mw-270	Iron	765 J	NA	NA	NA	300	11000
Load Line 2	LL2mw-270	Manganese	407	NA	NA	NA	50	880.00
Load Line 3	LL3mw-232	Benzene	0.37 JB	NA	NA	NA	5	0.35
Load Line 3	LL3mw-232	Manganese	345	NA	NA	NA	50	880
Load Line 3	LL3mw-233	Benzene	0.44 JB	NA	NA	NA	5	0.35
Load Line 3	LL3mw-233	Iron	6660 J	NA	NA	NA	300	11000
Load Line 3	LL3mw-233	Manganese	1410	NA	NA	NA	50	880
Load Line 3	LL3mw-234	Iron	748 J	NA	NA	NA	300	11000
Load Line 3	LL3mw-234	Manganese	2180	NA	NA	NA	50	880
Load Line 3	LL3mw-235	alpha-BHC	0.02 J	NA	NA	NA	NS	0.01
Load Line 3	LL3mw-240	Benzene	0.4 JB	NA	NA	NA	5	0.35
Load Line 3	LL3mw-240	Tetrachloroethene	0.29 J	NA	NA	NA	5	0.1
Load Line 3	LL3mw-241	2,4,6-Trinitrolouene	2.5	NA	NA	NA	NS	2.20
Load Line 3	LL3mw-241	RDX	1.1	NA	NA	NA	NS	0.61
Load Line 4	LL4mw-193	Arsenic	5.4	NA	NA	NA	10	0.05
Load Line 4	LL4mw-193	Benzene	0.47 JB	NA	NA	NA	5	0.35
Load Line 4	LL4mw-193	bis(2-Ethylhexyl) phthalate	5 JB	NA	NA	NA	NS	4.80
Load Line 4	LL4mw-193	Manganese	344	NA	NA	NA	50	880
Load Line 4	LL4mw-194	Benzene	0.36 JB	NA	NA	NA	5	0.35
Load Line 4	LL4mw-194	Manganese	374	NA	NA	NA	50	880
Load Line 4	LL4mw-195	2-Nitrotoluene	0.096 J	NA	NA	NA	NS	0.05
Load Line 4	LL4mw-195	Iron	8330 J	NA	NA	NA	300	11000
Load Line 4	LL4mw-195	Manganese	3800	NA	NA	NA	50	880.00
Load Line 4	LL4mw-200	Benzene	0.45 JB	NA	NA	NA	5	0.35
Load Line 5	LL5mw-001	Aluminum	50 U	7320 J	NA	NA	200	36000
Load Line 5	LL5mw-001	Arsenic	5.0 U	6.6	NA	NA	10	0.05
Load Line 5	LL5mw-001	Iron	50 U	22300 J	NA	NA	300	11000
Load Line 5	LL5mw-001	Manganese	1.5 JB	661 J	NA	NA	50	880
Load Line 5	LL5mw-001	PCB- 1248	0.41 J	0.5 U	NA	NA	0.5	0.034
Load Line 5	LL5mw-002	Arsenic	3.2 JB	3.4 J	NA	NA	10	0.045
Load Line 5	LL5mw-002	Manganese	158	114 J	NA	NA	50	880
Load Line 5	LL5mw-005	Manganese	333	444	NA	NA	50	880
Load Line 6	LL6mw-003	Manganese	84.7	32.8 J	NA	NA	50	880
Load Line 6	LL6mw-004	Benzene	1.0 U	1	1 U	NA	5	0.35
Load Line 6	LL6mw-004	bis(2-Ethylhexyl) phthalate	10 U	1.1 JB	69 B	NA	NS	4.8
Load Line 6	LL6mw-004	Iron	50 U	642 J	1310 B	798	300	11000
Load Line 6	LL6mw-004	Manganese	0.9 JB	113 J	183 J	114	50	880
Load Line 6	LL6mw-005	Arsenic	NA	13.7	14.9	45.2	10	0.05
Load Line 6	LL6mw-005	Iron	NA	824 J	949 B	2520	300	11000
Load Line 6	LL6mw-005	Manganese	NA	557 J	579 J	583	50	880
Load Line 6	LL6mw-006	bis(2-Ethylhexyl) phthalate	NA	10 U	5.9 J	10 U	NS	4.80
Load Line 6	LL6mw-006	Manganese	NA	14.8 J	0.86 JB	97.6	50	880

Table 4-4. Exceedances of MCLs and Region 9 PRGs

Area	Well Number	Analyte	Oct-08 Level (µg/l)	Jan-09 Level (µg/l)	Apr-09 Level (µg/l)	Jul-09 Level (µg/l)	MCL (µg/l)	Region 9 PRG (µg/l)
Load Line 6	LL6mw-007	bis(2-Ethylhexyl) phthalate	NA	10 U	6.7 JB	1.1 JB	NS	4.80
Load Line 6	LL6mw-007	Manganese	NA	442 J	393 J	395	50	880
Load Line 7	LL7mw-001	1,1-Dichloroethene (total)	NA	7.6	6.5	6.4	7	340
Load Line 7	LL7mw-001	Iron	NA	7820	8240 J	7850	300	11000
Load Line 7	LL7mw-001	Manganese	NA	446	488 J	454	50	880
Load Line 7	LL7mw-002	bis(2-Ethylhexyl) phthalate	NA	1.1 JB	10 U	5.8 JB	NS	4.80
Load Line 7	LL7mw-003	Iron	NA	17000	22100	20200	300	11000
Load Line 7	LL7mw-003	Manganese	NA	1420	1430 J	1430	50	880
Load Line 7	LL7mw-004	Iron	NA	15900	20000 J	19000	300	11000
Load Line 7	LL7mw-004	Manganese	NA	1270	1340 J	1240	50	880
Load Line 7	LL7mw-005	Iron	NA	1600	211 B	50 U	300	11000
Load Line 7	LL7mw-005	Manganese	NA	2500	1650 J	1660	50	880
Load Line 7	LL7mw-006	Iron	NA	1160	1030 B	2210	300	11000
Load Line 7	LL7mw-006	Manganese	NA	1200	1210 J	1280	50	880
Load Line 8	LL8mw-001	Manganese	NA	39.6	62.3	192	50	880
Load Line 8	LL8mw-002	Aluminum	NA	76.9	5.5	5.6	200	36000
Load Line 8	LL8mw-002	Iron	NA	3070	3390	3320	300	11000
Load Line 8	LL8mw-002	Manganese	NA	489	315	344	50	880
Load Line 8	LL8mw-003	Arsenic	NA	5.0 U	5.0 U	3.5 J	10	0.045
Load Line 8	LL8mw-003	bis(2-Ethylhexyl) phthalate	NA	30	1.1 JB	4.3 JB	NS	4.80
Load Line 8	LL8mw-003	Iron	NA	416	515	422	300	11000
Load Line 8	LL8mw-003	Manganese	NA	246	367	389	50	880
Load Line 8	LL8mw-005	bis(2-Ethylhexyl) phthalate	NA	5.3 J	1.2 JB	10 U	NS	4.80
Load Line 8	LL8mw-005	Iron	NA	451	790	760	300	11000
Load Line 8	LL8mw-005	Manganese	NA	2800	2760	2780	50	880
Load Line 9	LL9mw-002	bis(2-Ethylhexyl) phthalate	NA	20	1.0 JB	1.0 JB	NS	4.80
Load Line 9	LL9mw-002	Manganese	NA	109	121	52.6	50	880
Load Line 9	LL9mw-004	Iron	NA	11000	8160	10600	300	11000
Load Line 9	LL9mw-004	Manganese	NA	2430	2330	2450	50	880
Load Line 9	LL9mw-006	beta-BHC	NA	0.03 UJ	0.0086 J	0.15 J	NS	0.037
Load Line 9	LL9mw-006	Iron	NA	428	519	1480	300	11000
Load Line 9	LL9mw-006	Manganese	NA	203	96.9 J	371	50	880
Load Line 9	LL9mw-007	Iron	NA	2720	2380	7300	300	11000
Load Line 9	LL9mw-007	Manganese	NA	497	306 J	800	50	880
Winklepeck	LNWmw-024	Aluminum	27.9 J	297 J	NA	NA	200	36000
Winklepeck	LNWmw-024	Iron	50 U	415	NA	NA	300	11000
Winklepeck	LNWmw-024	Manganese	31.4	64.6 J	NA	NA	50	880.00
Winklepeck	LNWmw-025	Arsenic	7 J	5.0 U	NA	NA	10	0.045
Winklepeck	LNWmw-025	Iron	1030 J	463	NA	NA	300	11000
Winklepeck	LNWmw-025	Manganese	822	822 J	NA	NA	50	880
Winklepeck	LNWmw-026	Arsenic	5	421 J	NA	NA	10	0.045
Winklepeck	LNWmw-026	Manganese	50.7	13.2 J	NA	NA	50	880
Winklepeck	LNWmw-027	Manganese	111 J	57.4 J	NA	NA	50	880
Burial Site	MBSmw-001	Arsenic	5.0 U	3.3 J	NA	NA	10	0.050
Burial Site	MBSmw-001	Iron	137	377	NA	NA	300	11000
Burial Site	MBSmw-001	Manganese	362	412	NA	NA	50	880
Burial Site	MBSmw-002	Arsenic	7.8	9.9	NA	NA	10	0.045
Burial Site	MBSmw-002	Iron	478	535	NA	NA	300	11000
Burial Site	MBSmw-002	Manganese	233	208	NA	NA	50	880
Burial Site	MBSmw-004	Manganese	59.7	45.3	NA	NA	50	880
Burial Site	MBSmw-005	Arsenic	10.3	8.6	NA	NA	10	0.045
Burial Site	MBSmw-005	Iron	5360	2840	NA	NA	300	11000
Burial Site	MBSmw-005	Manganese	955	598	NA	NA	50	880

Table 4-4. Exceedances of MCLs and Region 9 PRGs

Area	Well Number	Analyte	Oct-08 Level (µg/l)	Jan-09 Level (µg/l)	Apr-09 Level (µg/l)	Jul-09 Level (µg/l)	MCL (µg/l)	Region 9 PRG (µg/l)
Burial Site	MBSmw-006	Manganese	369	392	NA	NA	50	880
NACA Test Area	NTAmw-107	Aluminum	50 U	244 J	NA	NA	200	36000
NACA Test Area	NTAmw-107	Arsenic	13.5	11.9	NA	NA	10	0.045
NACA Test Area	NTAmw-107	Iron	470	728 J	NA	NA	300	11000
NACA Test Area	NTAmw-107	Manganese	250	197 J	NA	NA	50	880
NACA Test Area	NTAmw-108	Aluminum	207	293 J	NA	NA	200	36000
NACA Test Area	NTAmw-108	Arsenic	5.1	5.0 U	NA	NA	10	0.045
NACA Test Area	NTAmw-108	Iron	50 U	385 J	NA	NA	300	11000
NACA Test Area	NTAmw-109	Arsenic	5.2	5.0 U	NA	NA	10	0.045
NACA Test Area	NTAmw-109	Iron	3220	918	NA	NA	300	11000
NACA Test Area	NTAmw-109	Manganese	91.2	40 J	NA	NA	50	880.00
NACA Test Area	NTAmw-109	PCB- 1248	0.25 J	0.5 U	NA	NA	1	0.03
NACA Test Area	NTAmw-110	Aluminum	707 J	271	NA	NA	200	36000
NACA Test Area	NTAmw-110	Arsenic	20.3	15.2	NA	NA	10	0.05
NACA Test Area	NTAmw-110	Iron	801 J	458	NA	NA	300	11000
NACA Test Area	NTAmw-110	Manganese	267	132	NA	NA	50	880
NACA Test Area	NTAmw-111	Manganese	164	84.7	NA	NA	50	880
NACA Test Area	NTAmw-112	Arsenic	6.3	16.7	NA	NA	10	0.045
NACA Test Area	NTAmw-112	Iron	362	1580 J	NA	NA	300	11000
NACA Test Area	NTAmw-112	Manganese	1070	502 J	NA	NA	50	880
NACA Test Area	NTAmw-113	Aluminum	50 U	4640 J	NA	NA	200	36000
NACA Test Area	NTAmw-113	Arsenic	11	12.5	NA	NA	10	0.045
NACA Test Area	NTAmw-113	Benzene	0.45 J	1 U	NA	NA	5	0.35
NACA Test Area	NTAmw-113	Iron	570	6920 J	NA	NA	300	11000
NACA Test Area	NTAmw-113	Manganese	308	334 J	NA	NA	50	880
NACA Test Area	NTAmw-114	Arsenic	7.2	4 J	NA	NA	10	0.05
NACA Test Area	NTAmw-114	Iron	532	76.4 J	NA	NA	300	11000
NACA Test Area	NTAmw-114	Manganese	493	537 J	NA	NA	50	880
NACA Test Area	NTAmw-116	Manganese	52.7	16.7 J	NA	NA	50	880
NACA Test Area	NTAmw-117	Manganese	423	120 J	NA	NA	50	880
NACA Test Area	NTAmw-118	Manganese	101	33.3 J	NA	NA	50	880
Ramsdell Quarry Landfill	RQLmw-007	1,2-Dichloroethane	1	NA	1.0 U	NA	5	0.12
Ramsdell Quarry Landfill	RQLmw-007	Arsenic	51.7	NA	4.6 J	NA	10	0.045
Ramsdell Quarry Landfill	RQLmw-007	Iron	16400	NA	381	NA	300	11000
Ramsdell Quarry Landfill	RQLmw-007	Manganese	1810 J	NA	969	NA	50	880
Ramsdell Quarry Landfill	RQLmw-008	Arsenic	50.4	NA	13.4	NA	10	0.045
Ramsdell Quarry Landfill	RQLmw-008	bis(2-Ethylhexyl) phthalate	10 U	NA	7.5 JB	NA	NS	4.80
Ramsdell Quarry Landfill	RQLmw-008	Iron	126000	NA	73400	NA	300	11000
Ramsdell Quarry Landfill	RQLmw-008	Manganese	775 J	NA	717	NA	50	880
Ramsdell Quarry Landfill	RQLmw-009	1,2-Dichloroethane	1	NA	1.0 U	NA	5	0.12
Ramsdell Quarry Landfill	RQLmw-009	Arsenic	22.7	NA	5.0 U	NA	10	0.05
Ramsdell Quarry Landfill	RQLmw-009	bis(2-Ethylhexyl) phthalate	0.94 J	NA	47	NA	NS	4.80
Ramsdell Quarry Landfill	RQLmw-009	Iron	16200	NA	1990	NA	300	11000
Ramsdell Quarry Landfill	RQLmw-009	Manganese	2340	NA	907	NA	50	880
Ramsdell Quarry Landfill	RQLmw-012	1,2-Dichloroethane	1	1.0 U	NA	NA	5	0.12
Ramsdell Quarry Landfill	RQLmw-012	Aluminum	1400	1480	NA	NA	200	36000
Ramsdell Quarry Landfill	RQLmw-012	Manganese	271	332	NA	NA	50	880
Ramsdell Quarry Landfill	RQLmw-013	Aluminum	4120	5040	NA	NA	200	36000
Ramsdell Quarry Landfill	RQLmw-013	Iron	124	344	NA	NA	300	11000
Ramsdell Quarry Landfill	RQLmw-013	Manganese	639	667	NA	NA	50	880
Ramsdell Quarry Landfill	RQLmw-014	1,2-Dichloroethane	1	1.0 U	NA	NA	5	0.12
Ramsdell Quarry Landfill	RQLmw-014	Iron	50 U	1200	NA	NA	300	11000
Ramsdell Quarry Landfill	RQLmw-014	Manganese	2480	2230	NA	NA	50	880

Table 4-4. Exceedances of MCLs and Region 9 PRGs

Area	Well Number	Analyte	Oct-08 Level (µg/l)	Jan-09 Level (µg/l)	Apr-09 Level (µg/l)	Jul-09 Level (µg/l)	MCL (µg/l)	Region 9 PRG (µg/l)
Ramsdell Quarry Landfill	RQLmw-014	PCB- 1248	0.1 J	0.5 UJ	NA	NA	1	0.03
Ramsdell Quarry Landfill	RQLmw-015	Iron	511	363	NA	NA	300	11000
Ramsdell Quarry Landfill	RQLmw-015	Manganese	1000	840	NA	NA	50	880
Ramsdell Quarry Landfill	RQLmw-015	PCB- 1248	0.16 J	0.5 U	NA	NA	1	0.03
Ramsdell Quarry Landfill	RQLmw-016	Arsenic	5.0 U	7.3	NA	NA	10	0.050
Ramsdell Quarry Landfill	RQLmw-016	Iron	19700	10200	NA	NA	300	11000
Ramsdell Quarry Landfill	RQLmw-016	Manganese	7590 J	7020	NA	NA	50	880
Ramsdell Quarry Landfill	RQLmw-017	Aluminum	136	201 J	NA	NA	200	36000
Ramsdell Quarry Landfill	RQLmw-017	Manganese	3360	3720 J	NA	NA	50	880
Ramsdell Quarry Landfill	RQLmw-017	PCB- 1248	0.26 J	0.5 UJ	NA	NA	1	0.03
Grounds	WBGmw-005	Arsenic	21.9 B	9.9	NA	NA	10	0.05
Grounds	WBGmw-005	Iron	6830	8070	NA	NA	300	11000
Grounds	WBGmw-005	Manganese	986	1270 J	NA	NA	50	880
Grounds	WBGmw-008	Manganese	52.8	2.1 JB	NA	NA	50	880
Grounds	WBGmw-010	Aluminum	50 U	201 J	NA	NA	200	36000
Grounds	WBGmw-010	bis(2-Ethylhexyl) phthalate	10 UJ	6.2 JB	NA	NA	NS	4.80
Grounds	WBGmw-010	Iron	50 U	333	NA	NA	300	11000
Grounds	WBGmw-010	Manganese	129	184 J	NA	NA	50	880
Grounds	WBGmw-011	Manganese	149	21.2 J	NA	NA	50	880
Grounds	WBGmw-014	Manganese	113	74.5 J	NA	NA	50	880
Grounds	WBGmw-015	Arsenic	5.7 B	10 U	NA	NA	10	0.045
Grounds	WBGmw-015	Manganese	140	18.6 J	NA	NA	50	880
Grounds	WBGmw-017	Arsenic	6.1 B	5.0 U	NA	NA	10	0.045
Grounds	WBGmw-017	Iron	538	199	NA	NA	300	11000
Grounds	WBGmw-017	Manganese	199	174 J	NA	NA	50	880

Notes:
* = nitrate/nitrite concentrations are in mg/L
NS = no standard NA = not analyzed
All inorganics are filtered, all organics are not filtered
J = estimated result. Results have been qualified "J"
Bold = constituent detected above MCL and/or the Region 9 PRG
B = the analyte is found in the method blank or any of the field blanks
U = analyzed but not detected at or above the reporting limit

Table 4.5. Wells and COPCs with Time-Trend Graphs

Area	Well	Inorganics																							VOCs							SVOCs		Pesticide & Herbicides					Explosives									
		Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Cobalt	Chromium	Copper	Cyanide	Iron	Lead	Magnesium	Manganese	Nickel	Nitrate-Nitrite	Potassium	Selenium	Sodium	Thallium	Vanadium	Zinc	Acetone	Carbon Sulfide	Carbon Tetrachloride	1,1,1-Trichloroethane	1,1-Dichloroethene	1,1-Dichloroethane	Xylenes	Bis(2-ethylhexyl)phthalate	Di-n-octyl phthlate	alpha-Chlordane	beta-BHC	4,4-DDE	Lindane	Heptachlor Epoxide	1,3,5-Trinitrobenzene	2,4,6-Trinitrotoluene	2,4-Dinitrotoluene	2,6-Dinitrotoluene	1,3-Dinitrobenzne	Nitrobenzene	HMX	m-Dinitrobenzene	RDX	Trinitrophenylmethylnitrmine
Load Line 1	LL1mw-063	X							X								X																		X				X	X		X			X		X	
	LL1mw-064			X				X																																									
	LL1mw-065							X							X																																		
	LL1mw-067								X								X																															
	LL1mw-078	X	X														X					X										X																	
	LL1mw-079						X										X															X							X						X		X	
	LL1mw-080		X					X																								X			X				X						X		X	
	LL1mw-081																																															
	LL1mw-082																X																															
	LL1mw-083	X				X	X		X		X											X										X	X		X				X			X		X	X	X	X	
	LL1mw-084																																															
	LL1mw-085																																															
Load Line 2	LL2mw-059	X	X						X				X				X					X										X		X	X				X		X				X	X	X	
	LL2mw-060		X																													X																
	LL2mw-261			X				X					X		X		X																															
	LL2mw-262		X					X	X						X		X															X																
	LL2mw-263		X	X					X				X			X	X															X																
	LL2mw-264														X																																		
	LL2mw-265																X															X																
	LL2mw-266			X																																												
	LL2mw-267												X		X																																	
	LL2mw-268							X																																								
	LL2mw-269								X				X		X		X																															
	LL2mw-270																															X																
Load Line 3	LL3mw-232							X							X	X	X															X																
	LL3mw-233								X				X		X	X	X																															
	LL3mw-234																																											X		X	
	LL3mw-235																																															
	LL3mw-236																																			X												
	LL3mw-237																X			X												X							X	X				X		X	
	LL3mw-238	X																														X			X				X	X				X		X	
	LL3mw-239																X																															
	LL3mw-240		X																													X																
	LL3mw-241																X															X							X	X	X				X		X	
	LL3mw-242	X																														X																
	LL3mw-243		X												X																	X																
Load Line 4	LL4mw-193	X						X					X		X																																	
	LL4mw-194							X					X		X																																	
	LL4mw-195							X	X							X																																
	LL4mw-196																																															
	LL4mw-197												X																																			
	LL4mw-198	X	X						X				X			X								X								X																
	LL4mw-199			X	X			X							X																	X																
	LL4mw-200							X							X																																	

Table 4.5. Wells and COPCs with Time-Trend Graphs

Area	Well	Inorganics																							VOCs							SVOCs		Pesticide & Herbicides					Explosives									
		Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Cobalt	Chromium	Copper	Cyanide	Iron	Lead	Magnesium	Manganese	Nickel	Nitrate-Nitrite	Potassium	Selenium	Sodium	Thallium	Vanadium	Zinc	Acetone	Carbon Sulfide	Carbon Tetrachloride	1,1,1-Trichloroethane	1,1-Dichloroethene	1,1-Dichloroethane	Xylenes	Bis(2-ethylhexyl)phthalate	Di-n-octyl phthlate	alpha-Chlordane	beta-BHC	4,4-DDE	Lindane	Heptachlor Epoxide	1,3,5-Trinitrobenzene	2,4,6-Trinitrotoluene	2,4-Dinitrotoluene	2,6-Dinitrotoluene	1,3-Dinitrobenzne	Nitrobenzene	HMX	m-Dinitrobenzene	RDX	Trinitrophenylmethylnitrmine
Load Line 5	LL5mw-001							X							X																																	
	LL5mw-002							X							X																																	
	LL5mw-003							X							X																																	
	LL5mw-004	X						X							X																																	
	LL5mw-005							X							X																																	
	LL5mw-006							X							X																																	
Load Line 6	LL6mw-001							X							X																																	
	LL6mw-002							X							X										X							X																
	LL6mw-003							X							X																																	
	LL6mw-004							X					X		X																	X							X									
	LL6mw-005		X					X					X		X																																	
	LL6mw-006						X	X							X																																	
	LL6mw-007						X	X							X																																	
Load Line 7	LL7mw-001								X				X				X											X	X	X	X	X																
	LL7mw-002																X																						X									
	LL7mw-003								X				X			X	X															X							X									
	LL7mw-004								X				X			X	X															X																
	LL7mw-005				X				X							X	X															X																
	LL7mw-006						X						X			X	X																											X		X		
Load Line 8	LL8mw-001							X							X																	X																
	LL8mw-002							X					X		X																								X									
	LL8mw-003							X					X		X																	X																
	LL8mw-004							X							X																	X																
	LL8mw-005							X					X-		X	X																																
	LL8mw-006							X							X																	X																
Load Line 9	LL9mw-001																															X																
	LL9mw-002	X															X															X																
	LL9mw-003																															X																
	LL9mw-004								X				X			X	X															X																
	LL9mw-005																															X																
	LL9mw-006	X											X				X															X																
	LL9mw-007								X				X				X																															
Load Line 10	LL10mw-001							X							X																	X																
	LL10mw-002																																															
	LL10mw-003							X							X												X																					
	LL10mw-004							X							X																	X																
	LL10mw-005							X																								X																
	LL10mw-006																																															
Load Line 11	LL11mw-001							X							X																	X																
	L L11mw-002	X	X				X	X			X		X		X		X															X							X					X				
	LL11mw-003							X							X																	X																
	LL11mw-004						X	X							X																	X																
	LL11mw-005	X						X							X		X																															
	LL11mw-006							X							X																																	
	LL11mw-007				X	X		X					X		X																	X																
	LL11mw-008							X							X																	X																
	LL11mw-009							X							X																																	
	LL11mw-010							X							X																																	

Table 4.5. Wells and COPCs with Time-Trend Graphs

Area	Well	Inorganics																							VOCs							SVOCs		Pesticide & Herbicides					Explosives								
		Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Cobalt	Chromium	Copper	Cyanide	Iron	Lead	Magnesium	Manganese	Nickel	Nitrate-Nitrite	Potassium	Selenium	Sodium	Thallium	Vanadium	Zinc	Acetone	Carbon Sulfide	Carbon Tetrachloride	1,1,1-Trichloroethane	1,1-Dichloroethene	1,1-Dichloroethane	Xylenes	Bis(2-ethylhexyl)phthalate	Di-n-octyl phthlate	alpha-Chlordane	beta-BHC	4,4-DDE	Lindane	Heptachlor Epoxide	1,3,5-Trinitrobenzene	2,4,6-Trinitrotoluene	2,4-Dinitrotoluene	2,6-Dinitrotoluene	1,3-Dinitrobenzne	Nitrobenzene	HMX	m-Dinitrobenzene	RDX	Trinitrophenylmethylnitrmine
Load Line 12	LL12mw-088			X	X			X					X		X		X																															
	LL12mw-107			X				X					X		X		X															X																
	LL12mw-113	X	X	X			X	X		X			X	X	X	X			X				X																									
	LL12mw-128	X		X				X					X		X																	X																
	LL12mw-153			X				X					X		X		X															X																
	LL12mw-154			X				X					X		X			X																														
	LL12mw-182	X		X	X			X							X		X		X													X																
	LL12mw-183		X	X				X					X		X				X													X																
	LL12mw-184			X				X					X		X																																
	LL12mw-185						X	X	X						X	X	X	X	X		X																						X					
	LL12mw-186	X	X					X	X			X	X		X		X	X														X						X										
	LL12mw-187				X			X	X						X	X	X	X	X			X										X																
	LL12mw-188	X						X	X				X		X		X	X														X			X													
	LL12mw-189							X					X		X						X																											
	LL12mw-242	X		X				X					X		X																X																	
	LL12mw-243			X				X					X		X			X	X																													
	LL12mw-244	X	X	X	X			X							X			X																														
	LL12mw-245			X				X					X		X			X	X																													
	LL12mw-246			X				X					X		X				X																													
Building 1200	B12mw-010	X															X															X																
	B12mw-011																																															
	B12mw-012												X																			X																
C-Block Quarry	CBLmw-001	X															X																															
	CBLmw-002	X					X										X																															
	CBLmw-003																X								X							X																
	CBLmw-004																								X							X																
Central Burn Pits	CBPmw-001			X				X					X		X				X		X											X																
	CBPmw-002	X		X				X					X		X				X		X											X																
	CBPmw-003			X				X					X		X				X		X											X																
	CBPmw-004			X				X					X		X																	X																
	CBPmw-005			X				X					X		X				X													X																
	CBPmw-006	X		X	X			X					X		X		X															X																
	CBPmw-007		X	X				X	X				X		X		X		X		X											X																
	CBPmw-008			X				X							X				X		X											X																
Cobbs Pond	CPmw-001																																															
	CPmw-002							X							X																	X																
	CPmw-003			X									X																			X																
	CPmw-004							X							X																																	
	CPmw-005		X	X				X					X		X																																	
	CPmw-006	X		X				X					X		X																	X																

Table 4.5. Wells and COPCs with Time-Trend Graphs

Area	Well	Inorganics																							VOCs							SVOCs		Pesticide & Herbicides					Explosives									
		Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Cobalt	Chromium	Copper	Cyanide	Iron	Lead	Magnesium	Manganese	Nickel	Nitrate-Nitrite	Potassium	Selenium	Sodium	Thallium	Vanadium	Zinc	Acetone	Carbon Sulfide	Carbon Tetrachloride	1,1,1-Trichloroethane	1,1-Dichloroethene	1,1-Dichloroethane	Xylenes	Bis(2-ethylhexyl)phthalate	Di-n-octyl phthlate	alpha-Chlordane	beta-BHC	4,4-DDE	Lindane	Heptachlor Epoxide	1,3,5-Trinitrobenzene	2,4,6-Trinitrotoluene	2,4-Dinitrotoluene	2,6-Dinitrotoluene	1,3-Dinitrobenzne	Nitrobenzene	HMX	m-Dinitrobenzene	RDX	Trinitrophenylmethylnitrmine
Demolition Area 2	DETmw-001B																																															
	DETmw-002																																															
	DETmw-003							X					X		X																	X																
	DETmw-004	X						X					X		X																	X												X		X		
	DA2mw-104																																															
	DA2mw-105			X				X					X		X																	X									X							
	DA2mw-106							X	X				X		X	X	X								X							X																
	DA2mw-107			X				X					X		X																	X																
	DA2mw-108							X					X		X																	X																
	DA2mw-109							X							X																	X																
	DA2mw-110							X							X																	X																
	DA2mw-111							X							X				X													X																
	DA2mw-112							X					X		X																	X																
	DA2mw-113							X					X		X																																	
Erie Burning Grounds	EBGmw-123			X	X			X					X		X																	X																
	EBGmw-124			X	X			X					X		X																	X																
	EBGmw-125			X									X																																			
	EBGmw-126			X	X								X		X																																	
	EBGmw-127	X		X	X			X					X		X																	X																
	EBGmw-128			X									X																			X																
	EBGmw-129												X																			X																
	EBGmw-130			X				X					X		X																																	
Fuze & Booster Quarry	FBQmw-166							X							X																	X																
	FBQmw-167								X				X			X	X															X																
	FBQmw-168		X																						X																							
	FBQmw-169						X		X				X		X	X	X															X																
	FBQmw-170	X															X															X																
	FBQmw-171																															X																
	FBQmw-172							X							X	X	X																															
	FBQmw-173								X				X			X																X								X								
	FBQmw-174																																							X								
	FBQmw-175																X																															
	FBQmw-176								X				X			X																																
	FBQmw-177															X																																
Landfill North of Winklepeck	LNWmw-024							X									X															X																
	LNWmw-025	X											X																			X																
	LNWmw-026				X																											X																
	LNWmw-027							X									X																															
Suspected Mustard Agent Burial Site	MBS-001	X			X			X							X																	X																
	MBS-002	X			X			X					X		X																	X																
	MBS-003							X							X																	X																
	MBS-004							X							X																	X																
	MBS-005							X					X		X																	X																
	MBS-006							X							X										X							X																

Table 4.5. Wells and COPCs with Time-Trend Graphs

Area	Well	Inorganics																							VOCs							SVOCs		Pesticide & Herbicides					Explosives									
		Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Cobalt	Chromium	Copper	Cyanide	Iron	Lead	Magnesium	Manganese	Nickel	Nitrate-Nitrite	Potassium	Selenium	Sodium	Thallium	Vanadium	Zinc	Acetone	Carbon Sulfide	Carbon Tetrachloride	1,1,1-Trichloroethane	1,1-Dichloroethene	1,1-Dichloroethane	Xylenes	Bis(2-ethylhexyl)phthalate	Di-n-octyl phthlate	alpha-Chlordane	beta-BHC	4,4-DDE	Lindane	Heptachlor Epoxide	1,3,5-Trinitrobenzene	2,4,6-Trinitrotoluene	2,4-Dinitrotoluene	2,6-Dinitrotoluene	1,3-Dinitrobenzne	Nitrobenzene	HMX	m-Dinitrobenzene	RDX	Trinitrophenylmethylnitrmine
NACA Test Area	NTAmw-107			X				X					X		X																																	
	NTAmw-108							X							X																																	
	NTAmw-109							X					X		X																																	
	NTAmw-110	X		X	X			X					X		X								X																									
	NTAmw-111							X							X																																	
	NTAmw-112			X				X					X		X																																	
	NTAmw-113			X				X					X		X																																	
	NTAmw-114			X				X							X																																	
	NTAmw-115							X							X																																	
	NTAmw-116							X							X																																	
	NTAmw-117							X							X																																	
	NTAmw-118	X						X							X																																	
Ramsdell Quarry Landfill	RQLmw-006																																															
	RQLmw-007		X	X				X	X				X		X	X	X		X			X										X																
	RQLmw-008			X	X			X	X				X		X	X	X		X													X			X				X							X		x
	RQLmw-009			X					X				X		X		X		X			X										X			X													
	RQLmw-010																																															
	RQLmw-011																																															
	RQLmw-012	X					X	X	X						X		X		X			X		X																					X		X	
	RQLmw-013	X				X			X				X				X					X		X																								
	RQLmw-014								X				X			X	X																															
	RQLmw-015												X				X								X																		X					
	RQLmw-016			X				X	X				X		X	X	X		X			X																										
	RQLmw-017	X					X	X	X						X	X	X							X																								
Winklepeck Burning Grounds	WBGmw-005			X				X					X		X																	X																
	WBGmw-006							X							X																	X					X							X		X		
	WBGmw-007							X					X		X																	X																
	WBGmw-008							X							X																																	
	WBGmw-009	X	X					X							X																	X												X		X		
	WBGmw-010							X							X				X																													
	WBGmw-011	X		X				X							X																																	
	WBGmw-012							X							X																																	
	WBGmw-013																																								x							
	WBGmw-014							X							X																	X																
	WBGmw-015							X							X																																	
	WBGmw-016							X					X		X																	X																
	WBGmw-017							X							X																																	

4.3 Building 1200

Sampling at Building 1200 was conducted between April 2008 and January 2009. Groundwater samples were obtained from three bedrock aquifer wells. The unconsolidated aquifer is not monitored at this location.

4.3.1 Inorganics

Aluminum (B12mw-010), **magnesium** (B12mw-012) and **nickel** (B12mw-010) are the only inorganic COPCs present above the respective RLs in wells at Building 1200. The trends of all three metals show decreasing concentrations during the one-year monitoring period.

4.3.2 Volatile Organic Compounds

Acetone (B12mw-012) is the only volatile organic compound (VOC) COPC present above the respective RLs in wells at Building 1200. No increasing or decreasing concentration trend is evident for acetone during the one-year monitoring period.

4.3.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (B12mw-10 and B12mw-12) is the only semi-volatile organic compound (SVOC) COPCs present above the respective RLs in wells at Building 1200. An increasing trend is shown during the one-year monitoring period.

4.3.4 Pesticides/Herbicides

No pesticide or herbicide COPC is present above the respective RLs in wells at Building 1200 during the monitoring period.

4.3.5 Explosives

No explosives COPC is present above the respective RLs in wells at Building 1200 during the monitoring period.

4.3.6 Polychlorinated Biphenyls

No polychlorinated biphenyl (PCB) isomer is present above the respective RLs in wells at Building 1200 during the monitoring period.

4.4 C-Block Quarry

Sampling at C-Block Quarry was conducted between April 2008 and January 2009. Groundwater samples were obtained from four bedrock aquifer wells. The unconsolidated aquifer is not monitored at this location.

4.4.1 Inorganics

Aluminum (CBLmw-001 and CBLmw-002), **cadmium** (CBLmw-002) and **nickel** (CBLmw-001, CBLmw-002 and CBLmw-003) are the only inorganic COPCs present above the respective RLs at the C-Block Quarry. The trend of aluminum shows decreasing concentrations during the one-year monitoring period. No increasing or decreasing trends are shown for the other inorganic COPCs.

4.4.2 Volatile Organic Compounds

Acetone (CBLmw-003 and CBLmw-004) is the only VOC COPC present above the respective RLs in wells at the Building C-Block Quarry. No increasing or decreasing concentration trend is evident for acetone during the one-year monitoring period.

4.4.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (CBLmw-003 and CBLmw-004) is the only SVOC COPC present above the respective RLs in wells at the C-Block Quarry. No increasing or decreasing trend is shown during the one-year monitoring period.

4.4.4 Pesticides/Herbicides

No pesticide or herbicide COPC is present above the respective RLs in wells at the C-Block Quarry during the monitoring period.

4.4.5 Explosives

No explosives COPC is present above the respective RLs in wells at the C-Block Quarry during the monitoring period.

4.4.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs in wells at the C-Block Quarry during the monitoring period.

4.5 Central Burn Pits Area

Sampling at the Central Burn Pits Area was conducted between January 2006 and January 2009. Groundwater samples were obtained from eight unconsolidated aquifer wells. The bedrock aquifer is not monitored at this location.

4.5.1 Inorganics

Aluminum (CBPmw-002, CBPmw-006), **antimony** (CPBmw-007), **arsenic** (CBPmw-001, CBPmw-002, CBPmw-003, CBPmw-004, CBPmw-005, CBPmw-006 and CBPmw-007), **barium** (CBPmw-006), **calcium** (CBPmw-001, CBPmw-002, CBPmw-003, CBPmw-004, CBPmw-005, CBPmw-006, CBPmw-007 and CBPmw-008), **cobalt** (CBPmw-007), **iron** (CBPmw-001, CBPmw-002, CBPmw-003, CBPmw-004, CBPmw-005, CBPmw-006 and CBPmw-007), **magnesium** (CBPmw-001, CBPmw-002, CBPmw-003, CBPmw-004, CBPmw-005, CBPmw-006, CBPmw-007 and CBPmw-008), **nickel** (CBPmw-006 and CBPmw-007), **potassium** (CBPmw-001, CBPmw-002, CBPmw-003, CBPmw-005, CBPmw-007 and CBPmw-008) and **sodium** (CBPmw-001, CBPmw-002, CBPmw-003, CBPmw-007 and CBPmw-008) are the inorganic COPCs present above the respective RLs at the Central Burn Pits Area. The trends for arsenic (CBPmw-002, CBPmw-003 and CBPmw-007) and calcium (CBPmw-001 and CPBmw-008) show increasing concentrations during the one-year monitoring period. The trend for sodium (CBPmw-007) shows decreasing concentrations during the one-year monitoring period. No increasing or decreasing trends are shown for the others.

4.5.2 Volatile Organic Compounds

No VOC COPC is present above the respective RLs at the Central Burn Pits area during the monitoring period.

4.5.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (CBPmw-001, CBPmw-002, CBPmw-003, CPBmw-005, CBPmw-007 and CBPmw-008) is the only SVOC COPC present above the respective RLs at the Central Burn Pits Area. No increasing or decreasing trend is shown during the monitoring period.

4.5.4 Pesticides/Herbicides

No pesticide or herbicide COPCs is present above the respective RLs in wells at the Central Burn Pits Area during the monitoring period.

4.5.5 Explosives

No explosives COPC is present above the respective RLs in wells at the Central Burn Pits Area during the monitoring period.

4.5.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs in wells at the Central Burn Pits Area during the monitoring period.

4.6 Cobbs Pond

Sampling at Cobbs Pond was conducted between April 2008 and January 2009. Groundwater samples were obtained from five unconsolidated aquifer wells. The bedrock aquifer is not monitored at this location.

4.6.1 Inorganics

Aluminum (CPmw-006), **arsenic** (CPmw-003, CPmw-005, and CPmw-006), **barium** (CPmw-005), **calcium** (CPmw-002, CPmw-004, CPmw-005, and CPmw-006), **iron** (CPmw-003, CPmw-005, and CPmw-006), **magnesium** (CPmw-002, CPmw-004, CPmw-005, and CPmw-006) and CPmw-002, CPmw-004, CPmw-005, and CPmw-006 (CPmw-006) are the inorganic COPCs present above the respective RLs at Cobbs Pond. The trend for arsenic (CPmw-005) shows increasing concentrations during the one-year monitoring period. No increasing or decreasing trends are shown for the others.

4.6.2 Volatile Organic Compounds

No VOC COPC is present above the respective RLs at the Cobbs Pond area during the monitoring period.

4.6.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (CPmw-002, CPmw-003 and CPmw-006) is the only SVOC present above the respective RLs at the Cobbs Pond area. No increasing or decreasing trend is shown during the monitoring period.

4.6.4 Pesticides/Herbicides

No pesticide or herbicide COPCs is present above the respective RLs in wells at the Cobbs Pond area during the monitoring period.

4.6.5 Explosives

No explosives COPC is present above the respective RLs in wells at the Cobbs Pond area during the monitoring period.

4.6.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs in wells at the Cobbs Pond area during the monitoring period.

4.7 Demolition Area #2

Sampling at Demolition Area #2 was conducted between January 2006 and January 2009. Groundwater samples were obtained from 11 unconsolidated aquifer wells. The bedrock aquifer is not monitored at this location.

4.7.1 Inorganics

Antimony (DETmw-004), **arsenic** (DA2mw-105 and DA2mw-107), **calcium** (DA2mw-105, DA2mw-106, DA2mw-107, DA2mw-108, DA2mw-109, DA2mw-110, DA2mw-111, DA2mw-112, DA2mw-113, DETmw-003 and DETmw-004), **cobalt** (CA2mw-106), **iron** (DA2mw-105, DA2mw-106, DA2mw-107, DA2mw-108, DA2mw-112, DA2mw-113, DETmw-003 and DETmw-004), **magnesium** (DA2mw-105, DA2mw-106, DA2mw-107, DA2mw-108, DA2mw-109, DA2mw-110, DA2mw-111, DA2mw-112, DA2mw-113, DETmw-003 and DETmw-004), **manganese** (DA2mw-106), **nickel** (DA2mw-106) and **potassium** (DA2mw-111) are the inorganic COPCs present above the respective RLs at Demolition Area #2. No increasing or decreasing concentration trends are evident for any inorganic COPC during the monitoring period.

4.7.2 Volatile Organic Compounds

Acetone (DA2mw-106) is the only VOC COPC present above the respective RL in wells at Demolition Area #2. No increasing or decreasing concentration trend is evident for acetone during the monitoring period.

4.7.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (DA2mw-105, DA2mw-106, DA2mw-107, DA2mw-108, DA2mw-109, DA2mw-110, DA2mw-111, DA2mw-112,, DETmw-003 and DETmw-004) is the only SVOC COPC present above the respective RLs at Demolition Area #2. No increasing or decreasing trend is shown during the monitoring period.

4.7.4 Pesticides/Herbicides

No pesticide or herbicide COPCs is present above the respective RLs in wells at Demolition Area #2 during the monitoring period.

4.7.5 Explosives

2,6-Dinitrotoluene (DA2mw-105), **HMX** (DETmw-004) and **RDX** (DETmw-004) are the explosives COPCs present above respective RLs in wells at Demolition Area #2. No increasing or decreasing trends are shown during monitoring period.

4.7.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs in wells at Demolition Area #2 during the monitoring period.

4.8 Erie Burning Grounds

Sampling at the Erie Burning Grounds was conducted between April 2008 and January 2009. Groundwater samples were obtained from eight unconsolidated aquifer wells. The bedrock aquifer is not monitored at this location.

4.8.1 Inorganics

Aluminum (EBGmw-127), **arsenic** (EBGmw-123, EBGmw-124, EBGmw-125, EBGmw-126, EBGmw-127, EBGmw-128, and EBGmw-130), **barium** (EBGmw-123, EBGmw-124, EBGmw-126 and EBGmw-127), **calcium** (EBGmw-123, EBGmw-124, EBGmw-126, EBGmw-127 and EBGmw-130), **iron** (EBGmw-123, EBGmw-124, EBGmw-125, EBGmw-126, EBGmw-127, EBGmw-128, and EBGmw-130), and **magnesium** (EBGmw-123, EBGmw-124, EBGmw-126, EBGmw-127, and EBGmw-130) are the inorganic COPCs present above respective RLs at the Erie Burning Grounds. No increasing or decreasing concentration trends are evident for any inorganic COPC during the one-year monitoring period.

4.8.2 Volatile Organic Compounds

No VOC COPC is present above the respective RLs at the Erie Burning Grounds during the monitoring period.

4.8.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (EBGmw-123, EBGmw-124, EBGmw-127, EBGmw-128 and EBGmw-130) is the only SVOC COPC present above the respective RLs at the Erie Burning Grounds. No increasing or decreasing trend is shown during the monitoring period.

4.8.4 Pesticides/Herbicides

No pesticide or herbicide COPCs is present above the respective RLs in wells at the Erie Burning Grounds during the monitoring period.

4.8.5 Explosives

No explosives COPC is present above the respective RLs in wells at the Erie Burning Grounds during the monitoring period.

4.8.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs in wells at the Erie Burning Grounds during the monitoring period.

4.9 Fuze & Booster Quarry

Sampling at the Fuze & Booster Quarry was conducted between January 2008 and January 2009. Groundwater samples are obtained from three unconsolidated aquifer wells (FBQmw-166, FBQmw-167 and FBQmw-176) and nine bedrock aquifer wells (FBQmw-168, FBQmw-169, FBQmw-170, FBQmw-171, FBQmw-172, FBQmw-173, FBQmw-174, FBQmw-175 and FBQmw-177).

4.9.1 Inorganics

Aluminum (FBQmw-170), **antimony** (FBQmw-168), **cadmium** (FBQmw-169), **calcium** (FBQmw-166 and FBQmw-172), **cobalt** (FBQmw-167, FBQmw-169, FBQmw-173 and FBQmw-176), **iron** (FBQmw-167, FBQmw-169, FBQmw-173 and FBQmw-176), **magnesium** (FBQmw-166, FBQmw-169 and FBQmw-172), **manganese** (FBQmw-167, FBQmw-169, FBQmw-172, FBQmw-173, FBQmw-176 and FBQmw-177) and **nickel** (FBQmw-167, FBQmw-169, FBQmw-170, FBQmw-172, and FBQmw-175) are the inorganic COPCs present above respective RLs at the Fuze & Booster Quarry. No increasing or decreasing concentration trends are evident for any inorganic COPC during the one-year monitoring period.

4.9.2 Volatile Organic Compounds

Acetone (FBQmw-168) is the only VOC COPC present above the respective RLs in wells at the Fuze & Booster Quarry. No increasing or decreasing concentration trend is evident for acetone during the one-year monitoring period.

4.9.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (FBQmw-166m FBQmw-167, FBQmw-169, FBQmw-170, FBQmw-171 and FBQmw-173) is the only SVOC COPC present above the respective RLs at the Fuze & Booster Quarry. No increasing or decreasing trend is shown during the monitoring period.

4.9.4 Pesticides/Herbicides

No pesticide or herbicide COPC is present above the respective RLs in wells at the Fuze & Booster Quarry.

4.9.5 Explosives

2,4,6-Trinitrotoluene (FBQmw-173 and FBQmw-174) is the only explosives COPC present above the respective RLs the Fuze & Booster Quarry during the monitoring period.

4.9.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs in wells at the Fuze & Booster Quarry during the monitoring period.

4.10 Load Line 1

Sampling at Load Line 1 has been conducted since October 2005. Groundwater samples were obtained from two unconsolidated aquifer wells (LL1mw-064 and LL1mw-065) and 10 bedrock aquifer wells (LL1mw-063, LL1mw-067, LL1mw-078, LL1mw-079, LL1mw-080, LL1mw-081, LL1mw-082, LL1mw-083, LL1mw-084 and LL1mw-085).

4.10.1 Inorganics

Aluminum (LL1mw-063, LL1mw-079 and LL1mw-083), **antimony** (LL1mw-079 and LL1mw-083), **arsenic** (LL1mw-064), **barium** (CBPmw-006), **beryllium** (LL1mw-083), **cadmium** (LL1mw-079 and LL1mw-083), **calcium** (LL1mw-064, LL1mw-065 and LL1mw-080), **cobalt** (LL1mw-063, LL1mw-078, and LL1mw-083), **copper** (LL1mw-083), **magnesium** (LL1mw-065), **nickel** (LL1mw-063, LL1mw-078, LL1mw-079, LL1mw-080 and LL1mw-083), and **thallium** (LL1mw-078 and LL1mw-083) are the inorganic COPCs present above the respective RLs at Load Line 1. No increasing or decreasing concentration trends are evident for any inorganic COPC during the monitoring period.

4.10.2 Volatile Organic Compounds

No VOC COPC is present above the respective RLs at Load Line 1 during the monitoring period.

4.10.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (LL1mw-078, LL1mw-079, LL1mw-080 and LL1mw-083) and **di-n-octyl phthalate** (LL1mw-083) is the only SVOC COPC present above the respective RLs at Load Line 1. No increasing or decreasing trends are shown during the monitoring period.

4.10.4 Pesticides/Herbicides

beta-BHC (LL1mw-063, LL1mw-080 and LL1mw-083) is the only pesticide/herbicide COPC above the respective RLs at Load Line 1.

4.10.5 Explosives

2,4-Dinitrotoluene (LL1mw-063, LL1mw-0798, LL1mw-080 and LL1mw-083), **2,6-Dinitrotoluene (**LL1mw-063 and LL1mw-083), **nitrobenzene** (LL1mw-079), **1,3,5-trinitrobenzene** (LL1mw-063, LL1mw-0798, LL1mw-080 and LL1mw-083), **2,4,6-trinitrotoluene** (LL1mw-080 and LL1mw-083), **4-methylnitrobenzene** (LL1mw-080), **HMX** (LL1mw-063, LL1mw-0798, LL1mw-080 and LL1mw-083), **m-dinitrobenzene** (LL1mw-083) and **RDX** (LL1mw-063, LL1mw-0798, LL1mw-080 and LL1mw-083) are the explosives COPCs present above the respective RLs at Load Line 1 during the monitoring period. No increasing or decreasing trends are shown during the monitoring period.

4.10.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs in wells at Load Line 1 during the monitoring period.

4.11 Load Line 2

Sampling at Load Line 2 was been conducted since October 2005. Groundwater samples were obtained from 12 bedrock aquifer wells. The unconsolidated aquifer was not sampled at Load Line 2.

4.11.1 Inorganics

Aluminum (LL2mw-059), **antimony** (LL2mw-059, LL2mw-060, LL2mw-062 and LL2mw-263), **arsenic** (LL2mw-061, LL2mw-063 and LL2mw-268), **calcium** (LL2mw-061, LL2mw-062 and LL2mw-268), **cobalt** (LL2mw-059, LL2mw-262, LL2mw-263 and LL2mw-270), **iron** (LL2mw-059, LL2mw-261, LL2mw-263, LL2mw-268 and LL2mw-270), **magnesium** (LL2mw-261, LL2mw-262, LL2mw-264, LL2mw-268 and LL2mw-270), **manganese** (LL2mw-263), **nickel** (LL2mw-059, LL2mw-261, LL2mw-062, LL2mw-263, LL2mw-265 and LL2mw-270) and **thallium** (LL2mw-059) are the inorganic COPC present above the respective RLs at the Load Line 2. No increasing or decreasing concentration trends are evident for any inorganic COPC during the monitoring period.

4.11.2 Volatile Organic Compounds

No VOC COPC is present above the respective RLs at Load Line 2 during the monitoring period.

4.11.3 Semi-volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (LL2mw-059, LL2mw-060, LL2mw-062, LL2mw-063, LL2mw-065 and LL2mw-270) is the only SVOC COPC present above the respective RLs at Load Line 2 during the monitoring period. No increasing or decreasing trends are shown during the monitoring period.

4.11.4 Pesticides/Herbicides

alpha-Chlordane (LL2mw-059) and **beta-BHC** (LL2mw-059) are pesticide/herbicide COPCs present above the respective RLs at Load Line 2 during the monitoring period.

4.11.5 Explosives

2,4-Dinitrotoluene (LL2mw-059), **1,3,5-trinitrobenzene** (LL2mw-059), **HMX** (LL2mw-059), **m-dinitrobenzene** (LL2mw-059) and **RDX** (LL2mw-059) are the explosives COPCs present above the respective RLs at Load Line 2 during the monitoring period.

4.11.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs in wells at Load Line 2 during the monitoring period.

4.12 Load Line 3

Sampling at Load Line 3 has been conducted since October 2005. Groundwater samples were obtained from 12 bedrock aquifer wells. The unconsolidated aquifer is not monitored at Load Line 3.

4.12.1 Inorganics

Aluminum (LL3mw-238 and LL3mw-242), **antimony** (LL3mw-240 and LL3mw-243), **calcium** (LL3mw-232), cobalt (LL3mw-233), **iron** (LL3mw-233 and LL3mw-234), **magnesium** (LL3mw-322, LL3mw-233 and LL3mw-234), **manganese** (LL3mw-233 and LL3mw-234), **nickel** (LL3mw-232, LL3mw-233, LL3mw-234, LL3mw-238, LL3mw-240 and LL3mw-242), **potassium** (LL3mw-232) and **selenium** (LL3mw-238) are the inorganic COPCs present above their respective RLs at Load Line 3 during the monitoring period. No increasing or decreasing concentration trends are evident for any inorganic COPC during the monitoring period.

4.12.2 Volatile Organic Compounds

No VOC COPC is present above the respective RLs at Load Line 3 during the monitoring period.

4.12.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (LL3mw-232, LL3mw-237, LL3mw-238, LL3mw-240, LL3mw-241, LL3mw-242 and LL3mw-243) is the only SVOC COPC present above the respective RLs at Load Line 3 during the monitoring period. No increasing or decreasing trends are shown during the monitoring period.

4.12.4 Pesticides/Herbicides

4,4-DDE (LL3mw-238) and **beta-BHC** (LL3mw-238) are the only pesticide/herbicide COPCs present above the respective RLs at Load Line 3 during the monitoring period. No increasing or decreasing trends are shown during the reporting period.

4.12.5 Explosives

2,4-Dinitrotoluene (LL3mw-237 and LLmw-241), **2,6-dinitrotoluene** ((LL3mw-237 and LLmw-241), **1,3,5-trinitrobenzene** (LL2mw-238 and LL3mw-241), **2,4,6-trinitrotoluene** (LL3mw-237, LL3mw-238 and LLmw-241), **HMX** (LL3mw-234, LL3mw-237, LL3mw-238 and LLmw-241) and **RDX** (LL3mw-234, LL3mw-237, LL3mw-238 and LLmw-241) are the explosives COPCs present above the respective RLs at Load Line 3 during the monitoring period. No increasing or decreasing trends are evident during the monitoring period.

4.12.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs in wells at Load Line 3 during the monitoring period.

4.13 Load Line 4

Sampling at Load Line 4 was been conducted since October 2005. Groundwater samples were obtained from eight unconsolidated aquifer wells. The bedrock aquifer is not monitored at Load Line 4.

4.13.1 Inorganics

Aluminum (LL4mw-193 and LL4mw-198), **antimony** (LL4mw-198), **arsenic** (LL4mw-199), **barium** (LL4mw-199), calcium (LL4mw-193, LL4mw-194, LL4mw-195, LL4mw-199 and LL4mw-200), **cobalt** (LL4mw-195 and LL4mw-198), **iron** (LL4mw-193,

LL4mw-195, LL4mw-198 and LL4mw-199), **magnesium** (LL4mw-193, LL4mw-194, LL4mw-195, LL4mw-199 and LL4mw-200), **manganese** (LL4mw-198 and LL4mw-199), **nickel** (LL4mw-198), and **zinc** (LL4mw-198) are the inorganic COPCs present above respective RLs at Load Line 4 during the monitoring period. No increasing or decreasing concentration trends are evident for any inorganic COPC during the monitoring period.

4.13.2 Volatile Organic Compounds

No VOC COPC is present above the respective RLs at Load Line 4 during the monitoring period.

4.13.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (LL4mw-198 and LL4mw-199) is the only SVOC COPC present above the respective RLs at Load Line 4 during the monitoring period. No increasing or decreasing trend is shown during the monitoring period.

4.13.4 Pesticides/Herbicides

No pesticide/herbicide COPC is present above the respective RLs at Load Line 4 during the monitoring period.

4.13.5 Explosives

No explosives COPC is present above the respective RLs at Load Line 4 during the monitoring period.

4.13.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs at Load Line 4 during the monitoring period.

4.14 Load Line 5

Sampling at Load Line 5 has been conducted between January 2008 and January 2009. Groundwater samples were obtained from five bedrock aquifer wells (LL5mw-001, LL5mw-002, LL5mw-004 LL5mw-005 and LL5mw-0060) and one unconsolidated aquifer well (LL5mw-003) at Load Line 5.

4.14.1 Inorganics

Aluminum (LL5mw-004), **calcium** (LL5mw-001, LL5mw-002, LL5mw-003, LL5mw-004, LL5mw-005 and LL5mw-006) and **magnesium** (LL5mw-001, LL5mw-002, LL5mw-003, LL5mw-004, LL5mw-005 and LL5mw-006) are the only inorganic COPCs

present above the respective RLs at Load Line 5 during the monitoring period. No increasing or decreasing trends are shown during the monitoring period.

4.14.2 Volatile Organic Compounds

No VOC COPC is present above the respective RLs at Load Line 5 during the monitoring period.

4.14.3 Semi-Volatile Organic Compounds

No SVOC COPC is present above the respective RLs at Load Line 5 during the monitoring period.

4.14.4 Pesticides/Herbicides

No pesticide or herbicide COPC is present above the respective RLs at Load Line 5 during the monitoring period.

4.14.5 Explosives

No explosives COPC is present above the respective RLs at Load Line 5 during the monitoring period.

4.14.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs at Load Line 5 during the monitoring period.

4.15 Load Line 6

Sampling at Load Line 6 has been conducted since January 2009. Groundwater samples are obtained from four bedrock aquifer wells (LL6mw-003, LL6mw-004, LL6mw-005, and LL6mw-007) and three unconsolidated aquifer well (LL6mw-001, LL6mw-002 and LL6mw-006) at Load Line 6.

4.15.1 Inorganics

Arsenic (LL6mw-005), **cadmium** (LL6mw-006 and LL6mw-007), **calcium** (LL6mw-001, LL6mw-002, LL6mw-003, LL6mw-004, LL6mw-005, LL6mw-006 and LL6mw-007), **iron** (LL6mw-004 and LL6mw-005) and **magnesium** (LL6mw-001, LL6mw-002, LL6mw-003, LL6mw-004, LL6mw-005, LL6mw-006 and LL6mw-007) are the inorganic COPCs present above the respective RLs at Load Line 6 during the monitoring period. No increasing or decreasing trends are shown during the monitoring period.

4.15.2 Volatile Organic Compounds

Acetone (LL6mw-002) is the only VOC COPC present above the respective RLs at Load Line 6 during the monitoring period. No increasing or decreasing trend is shown during the monitoring period.

4.15.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (LL6mw-002 and LL6mw-004) is the only SVOC COPC present above the respective RLs at Load Line 6 during the monitoring period. No increasing or decreasing trend is shown during the monitoring period.

4.15.4 Pesticides/Herbicides

No pesticide or herbicide COPC is present above the respective RLs at Load Line 6 during the monitoring period.

4.15.5 Explosives

1,3,5-Trinitrobenzene (LL6mw-004) is the only explosives COPC present above the respective RLs at Load Line 6 during the monitoring period. No increasing or decreasing trend is shown during the monitoring period.

4.15.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs at Load Line 6 during the monitoring period.

4.16 Load Line 7

Sampling at Load Line 7 has been conducted since January 2009. Groundwater samples are obtained from six bedrock aquifer wells. The unconsolidated aquifer is not monitored at Load Line 7.

4.16.1 Inorganics

Barium (LL7mw-005), **cadmium** (LL7mw-006), **cobalt** (LL7mw-001, LL7mw-003, LL7mw-004 and LL7mw-005), **iron** (LL7mw-001, LL7mw-002, LL7mw-004 and LL7mw-006), **magnesium** (LL7mw-003, LL7mw-004, LL7mw-005 and LL7mw-006), and **nickel** (LL7mw-001, LL7mw-003, LL7mw-004, LL7mw-005 and LL7mw-006) are the inorganic COPCs present above the respective RLs at Load Line 7. No increasing or decreasing trends are shown during the monitoring period.

4.16.2 Volatile Organic Compounds

1,1,1-Trichloroethane (LL7mw-001), **1,1-dichloroethene** (LL7mw-001) and **1,1-dichloroethane** (LL7mw-001) are the VOC COPCs present above the respective RLs at Load Line 7. No increasing or decreasing trends are shown during the monitoring period.

4.16.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (LL7mw-001, LL7mw-003, LL7mw-004 and LL7mw-005) is the only SVOC COPC present above the respective RLs at Load Line 7 during the monitoring period. No increasing or decreasing trend is shown during the monitoring period.

4.16.4 Pesticides/Herbicides

No pesticide or herbicide COPC is present above the respective RLs at Load Line 7 during the monitoring period.

4.16.5 Explosives

1,3,5-Trinitrobenzene (LL7mw-002 and LL7mw-003), **HMX** (LL7mw-006) and **RDX** (LL7mw-006) are the explosives COPCs present above the respective RLs at Load Line 7 during the monitoring period. No increasing or decreasing trends are shown during the monitoring period.

4.16.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs at Load Line 7 during the monitoring period.

4.17 Load Line 8

Sampling at Load Line 8 has been conducted since January 2009. Groundwater samples are obtained from two bedrock aquifer wells (LL8mw-005 and LL8mw-006) and four unconsolidated aquifer wells (LL8mw-001, LL8mw-002, LL8mw-003 and LL8mw-004).

4.17.1 Inorganics

Calcium (LL8mw-001, LL8mw-002, LL8mw-003, LL8mw-004, LL8mw-005 and LL8mw-006), **iron** (LL8mw-002, LL8mw-003 and LL8mw-004), **magnesium** (LL8mw-001, LL8mw-002, LL8mw-003, LL8mw-004, LL8mw-005, LL8mw-006 and LL8mw-007) and **manganese** (LL8mw-005) are the inorganic COPCs present above the

respective RLs at Load Line 8. No increasing or decreasing trends are shown during the monitoring period.

4.17.2 Volatile Organic Compounds

No VOC COPC is present above the respective RLs at Load Line 8 during the monitoring period.

4.17.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (LL8mw-001, LL8mw-003, LL8mw-004 and LL8mw-006) is the only SVOC COPC present above the respective RLs at Load Line 8 during the monitoring period. No increasing or decreasing trend is shown during the monitoring period.

4.17.4 Pesticides/Herbicides

No pesticide or herbicide COPC is present above the respective RLs at Load Line 8 during the monitoring period.

4.17.5 Explosives

1,3,5-Trinitrobenzene (LL8mw-002) are the only explosives COPC present above the respective RLs at Load Line 8 during the monitoring period. No increasing or decreasing trend is shown during the monitoring period.

4.17.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs at Load Line 8 during the monitoring period.

4.18 Load Line 9

Sampling at Load Line 9 has been conducted since January 2009. Groundwater samples are obtained from seven bedrock aquifer wells. The unconsolidated aquifer is not monitored at Load Line 9.

4.18.1 Inorganics

Aluminum (LL9mw-002 and LL9mw-006), **cobalt** (LL9mw-004 and LL9mw-007), **iron** (LL9mw-004, LL9mw-006 and LL9mw-007), **manganese** (LL9mw-004) and **nickel** (LL9mw-002, LL9mw-004, LL9mw-006 and LL9mw-007) are the inorganic COPCs present above the respective RLs at Load Line 9. No increasing or decreasing trends are shown during the monitoring period.

4.18.2 Volatile Organic Compounds

No VOC COPCs are present above the respective RLs at Load Line 9 during the monitoring period.

4.18.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (LL9mw-001, LL9mw-002, LL9mw-003, LL9mw-004, LL9mw-005 and LL9mw-006) is the only SVOC COPC present above the respective RLs at Load Line 9 during the monitoring period. No increasing or decreasing trend is shown during the monitoring period.

4.18.4 Pesticides/Herbicides

No pesticide or herbicide COPC is present above the respective RLs at Load Line 9 during the monitoring period.

4.18.5 Explosives

No explosives COPC is present above the respective RLs at Load Line 9 during the monitoring period.

4.18.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs at Load Line 9 during the monitoring period.

4.19 Load Line 10

Sampling at Load Line 10 has been conducted since January 2009. Groundwater samples are obtained from five bedrock aquifer wells (LL10mw-001, LL10mw-002, LL10mw-003, LL10mw-004 and LL10mw-005) and one unconsolidated aquifer well (LL10mw-006).

4.19.1 Inorganics

Calcium (LL10mw-001, LL10mw-003, LL10mw-004 and LL10mw-005) and **magnesium** (LL10mw-001, LL10mw-003 and LL10mw-004) are the only inorganic COPCs present above the respective RLs at Load Line 10. No increasing or decreasing trends are shown during the monitoring period.

4.19.2 Volatile Organic Compounds

Carbon tetrachloride (LL10mw-003) is the only VOC COPC present above the respective RLs at Load Line 10. No increasing or decreasing trend is shown during the monitoring period.

4.19.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (LL10mw-001, LL10mw-004 and LL9mw-005) is the only SVOC COPC present above the respective RLs at Load Line 10. No increasing or decreasing trend is shown during the monitoring period.

4.19.4 Pesticides/Herbicides

No pesticide or herbicide COPC is present above the respective RLs at Load Line 10 during the monitoring period.

4.19.5 Explosives

No explosives COPC is present above the respective RLs at Load Line 10 during the monitoring period.

4.19.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs at Load Line 10 during the monitoring period.

4.20 Load Line 11

Sampling at Load Line 11 has been conducted since October 2005. Groundwater samples are obtained from 10 unconsolidated aquifer wells. The bedrock aquifer is not monitored at Load Line 11.

4.20.1 Inorganics

Aluminum (LL11mw-002 and LL11mw-005), **antimony** (LL11mw-002), **arsenic** (LL11mw-007), **barium** (LL11mw-007), **cadmium** (LL11mw-002 and LL11mw-004), **calcium** (LL11mw-001, LL11mw-002, LL11mw-003, LL11mw-004, LL11mw-005, LL11mw-006, LL11mw-007, LL11mw-008 and LL11mw-009), **copper** (LL11mw-002), **iron** (LL11mw-002 and LL11mw-007), **magnesium** (LL11mw-001, LL11mw-002, LL11mw-003, LL11mw-004, LL11mw-005, LL11mw-006, LL11mw-007, LL11mw-008 and LL11mw-009), **nickel** (LL11mw-002 and LL11mw-005) and **zinc** (LL11mw-002) are the inorganic COPCs present the respective RLs at Load Line 11. No increasing or decreasing concentration trends are evident for any inorganic COPC during the monitoring period.

4.20.2 Volatile Organic Compounds

No VOC COPC is present above the respective RLs at Load Line 11 during the monitoring period.

4.20.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (LL11mw-001, LL11mw-002, LL11mw-003, LL11mw-004, LL11mw-007 and LL11mw-008) is the only SVOC COPC present above the respective RLs at Load Line 12. No increasing or decreasing trend is shown during the monitoring period.

4.20.4 Pesticides/Herbicides

No pesticide or herbicide COPC is present above the respective RLs at Load Line 11 during the monitoring period.

4.20.5 Explosives

Nitrobenzene (LL11mw-002) and **1,3,5-trinitrobenzene** (LL11mw-002) are the only explosive COPCs present above the respective RLs at Load Line 11. No increasing or decreasing trends are shown during the monitoring period.

4.20.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs at Load Line 11 during the monitoring period.

4.21 Load Line 12

Sampling at Load Line 12 was conducted between October 2005 and October 2008. Groundwater samples were obtained from four bedrock aquifer wells (LL12mw-113, LL12mw-183, LL12mw-186 and LL12mw-189) and 15 unconsolidated aquifer wells (LL12mw-088, LL12mw-107, LL12mw-128, LL12mw-153, LL12mw-154, LL12mw-182, LL12mw-184, LL12mw-185, LL12mw-187, LL12mw-188, LL12mw-242, LL12mw-243, LL12mw-244 LL12mw-245 and LL12mw-246).

4.21.1 Inorganics

Aluminum (LL12mw-113, LL12mw-128, LL12mw-182, LL12mw-186, LL12mw-242 and LL12mw-244), **antimony** (LL12mw-113, LL12mw-183, LL12mw-186 and LL12mw-244), **arsenic** (LL12mw-088, LL12mw-107, LL12mw-128, LL12mw-153, LL12mw-154, LL12mw-182, LL12mw-183, LL12mw-184, LL12mw-242, LL12mw-243, LL12mw-244, LL12mw-245 and LL12mw-246), **barium** (LL12mw-088, LL12mw-

182, LL12mw-187 and LL12mw-244), **cadmium** (LL12mw-113 and LL12mw-185), **calcium** (all wells), **chromium** (LL12mw-113 and LL12mw-188), **cobalt** (LL12mw-113, LL12mw-185, LL12mw-186, LL12mw-1187 and LL12mw-188), cyanide (LL12mw-186), **iron** (LL12mw-088, LL12mw-107, LL12mw-113, LL12mw-128, LL12mw-153, LL12mw-154, LL12mw-182, LL12mw-183, LL12mw-184, LL12mw-186, LL12mw-188, LL12mw-189, LL12mw-242, LL12mw-243, LL12mw-245 and LL12mw-246), **lead** (LL12mw-113), **magnesium** (all wells), **manganese** (LL12mw-113, LL12mw-185 and LL12mw-187), **nickel** (LL12mw-088, LL12mw-113, LL12mw-153, LL12mw-182, LL12mw-185, LL12mw-186, LL12mw-187 and LL12mw-188), **nitrate/nitrite** LL12mw-088, LL12mw-128, LL12mw-154, LL12mw-185, LL12mw-187, LL12mw-188, LL12mw-242, LL12mw- 243, and LL12mw-244, **potassium** (LL12mw-113, LL12mw-182, LL12mw-183, LL12mw-185, LL12mw-187, LL12mw-243, LL12mw-245 and LL12mw-246), **sodium** (LL12mw-185 and LL12mw-189), **thallium** (LL12mw-187) and **vanadium** (LL12mw-113) are the inorganic COPCs present above respective RLs at Load Line 12. No increasing or decreasing concentration trends are evident for any inorganic COPC during the monitoring period.

4.21.2 Volatile Organic Compounds

Xylenes (LL12mw-242) is the only VOC COPC present above the respective RLs at Load Line 12. No increasing or decreasing trend is shown during the monitoring period.

4.21.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (LL12mw-107, LL12mw-108, LL12mw-153, LL12mw-182, LL12mw-183, LL12mw-186, LL12mw-187 and LL12mw-188) is the only SVOC COPC present above the respective RLs at Load Line 12. No increasing or decreasing trend is shown during the monitoring period.

4.21.4 Pesticides/Herbicides

beta-BHC (LL12mw-188) and **heptachlor epoxide** (LL12mw-186) are the pesticide or herbicide COPCs present above the respective RLs at Load Line 12. No increasing or decreasing trends are shown during the monitoring period.

4.21.5 Explosives

Nitrobenzene (LL12mw-185) is the only explosive COPC present above the respective RLs at Load Line 12 during the monitoring period. No increasing or decreasing trend is shown during the monitoring period.

4.21.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs at Load Line 12 during the monitoring period.

4.22 Landfill North of Winklepeck

Sampling at the Landfill North of Winklepeck was conducted between May 2008 and January 2009. Groundwater samples were obtained from four unconsolidated aquifer wells. The bedrock aquifer is not monitored at the Landfill North of Winklepeck.

4.22.1 Inorganics

Arsenic (LNWmw-025), **barium** (LNWmw-026), **calcium** (LNWmw-024 and LNWmw-027), **iron** (LNWmw-025) and **magnesium** (LNWmw-024 and LNWmw-027) are the inorganic COPCs present above the respective RLs. No increasing or decreasing concentration trends are evident for any inorganic COPC at the Landfill North of Winklepeck during the monitoring period.

4.22.2 Volatile Organic Compounds

No VOC COPC is present above the respective RLs the Landfill North of Winklepeck during the monitoring period.

4.22.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (LNWmw-024, LNWmw-025 and LNWmw-026) is the only SVOC COPC present above the respective RLs at the Landfill North of Winklepeck during the monitoring period. No increasing or decreasing trend is shown during the monitoring period.

4.22.4 Pesticides/Herbicides

No pesticide or herbicide COPC is present above the respective RLs at the Landfill North of Winklepeck during the monitoring period.

4.22.5 Explosives

No explosive COPCs is present above the respective RLs at the Landfill North of Winklepeck during the monitoring period.

4.22.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs at the Landfill North of Winklepeck during the monitoring period.

4.23 Suspected Mustard Agent Burial Grounds

Sampling at the Suspected Mustard Agent Burial Grounds was conducted between May 2008 and January 2009. Groundwater samples were obtained from six unconsolidated aquifer wells. The bedrock aquifer is not monitored at the Suspected Mustard Agent Burial Grounds.

4.23.1 Inorganics

Arsenic (MBSmw-002 and MBSmw-005), barium (MBSmw-001 and MBSmw-002), calcium (MBSmw-001, MBSmw-002, MBSmw-003, MBSmw-004, MBSmw-005 and MBSmw-006), **iron** (MBSmw-002 and MBSmw-005) and **magnesium** (MBSmw-001, MBSmw-002, MBSmw-003, MBSmw-004, MBSmw-005 and MBSmw-006) are the inorganic COPCs present above the respective RLs at the Suspected Mustard Agent Burial Grounds. No increasing or decreasing concentration trends are evident during the monitoring period.

4.23.2 Volatile Organic Compounds

Acetone (MBSmw-006) is the only VOC COPC present above the respective RLs the Suspected Mustard Agent Burial Grounds . No increasing or decreasing trend is shown during the monitoring period.

4.23.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (MBSmw-001, MBSmw-002, MBSmw-003, MBSmw-004, MBSmw-005 and MBSmw-006) is the only SVOC COPC present above the respective RLs at the Suspected Mustard Burial Grounds. No increasing or decreasing trend is shown during the monitoring period.

4.23.4 Pesticides/Herbicides

No pesticide or herbicide COPC is present above the respective RLs at the Suspected Mustard Burial Grounds during the monitoring period.

4.23.5 Explosives

No explosive COPC is present above the respective RLs at the Suspected Mustard Burial Grounds during the monitoring period.

4.23.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs at the Suspected Mustard Burial Grounds during the monitoring period.

4.24 NACA Test Area

Sampling at the NACA Test Area was conducted between May 2008 and January 2009. Groundwater samples were obtained from 12 unconsolidated aquifer wells. The bedrock aquifer is not monitored at the NACA Test Area.

4.24.1 Inorganics

Aluminum (NTAmw-110 and NTAmw-118), **arsenic** (NTAmw-107, NTAmw-110, NTAmw-112, NTAmw-113 and NTAmw-114), **barium** (NTAmw-107 and NTAmw-110), **calcium** (NTAmw-107, NTAmw-108, NTAmw-110, NTAmw-111, NTAmw-112, NTAmw-113, NTAmw-114, NTAmw-115, NTAmw-117 and NTAmw-118), **iron** (NTAmw-107, NTAmw-109, NTAmw-110, NTAmw-111 and NTAmw-113), **magnesium** (NTAmw-107, NTAmw-108, NTAmw-111, NTAmw-112, NTAmw-113, NTAmw-114, NTAmw-115, NTAmw-117 and NTAmw-118) and **vanadium** (NTAmw-110) are the inorganic COPCs present above respective RLs at the NACA Test Area. No increasing or decreasing concentration trends are evident during the monitoring period.

4.24.2 Volatile Organic Compounds

No VOC COPC is present above the respective RLs the NACA Test Area during the monitoring period.

4.24.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (NTAmw-107, NTAmw-108, NTAmw-109, NTAmw-111, NTAmw-112, NTAmw-115, NTAmw-116, NTAmw-117 and NTAmw-118) is the only SVOC COPC present above the respective RLs at the NACA Test Area. No increasing or decreasing trends are shown during the monitoring period.

4.24.4 Pesticides/Herbicides

No pesticide or herbicide COPC is present above the respective RLs at the NACA Test Area during the monitoring period.

4.24.5 Explosives

Nitrobenzene (NTAmw-115) is the only explosives COPC present above the respective RLs at the NACA Test Area. No increasing or decreasing trend is shown during the monitoring period.

4.24.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs at the NACA Test Area during the monitoring period.

4.25 Ramsdell Quarry Landfill

Sampling at the Ramsdell Quarry Landfill has been conducted since October 2005. Groundwater samples are obtained from 12 bedrock aquifer wells. The unconsolidated aquifer is not monitored at the Ramsdell Quarry Landfill.

4.25.1 Inorganics

Aluminum (RQLmw-012, RQLmw-013 and RQLmw-017), **antimony** (RQLmw-007), **arsenic** (RQLmw-007, RQLmw-008, RQLmw-009 and RQLmw-016), **barium** (RQLmw-008), **beryllium** (RQLmw-013), **cadmium** (RQLmw-012 and RQLmw-017), **calcium** (RQLmw-007, RQLmw-008, RQLmw-012, RQLmw-016 and RQLmw-017), **cobalt** (RQLmw-007, RQLmw-008, RQLmw-009, RQLmw-012, RQLmw-013, RQLmw-014, RQLmw-016 and RQLmw-017), **iron** (RQLmw-007, RQLmw-008, RQLmw-009, RQLmw-013, RQLmw-014, RQLmw-015 and RQLmw-016), magnesium (RQLmw-007, RQLmw-008, RQLmw-009, RQLmw-012, RQLmw-016 and RQLmw-017), **magnesium** (RQLmw-007, RQLmw-009, RQLmw-014, RQLmw-016 and RQLmw-017), **nickel** (RQLmw-007, RQLmw-008, RQLmw-009, RQLmw-012, RQLmw-013, RQLmw-014, RQLmw-015, RQLmw-016 and RQLmw-017), **potassium** (RQLmw-007, RQLmw-008, RQLmw-009, RQLmw-012 and RQLmw-016), **thallium** (RQLmw-007, RQLmw-009, RQLmw-012, RQLmw-013 and RQLmw-016) and **zinc** (RQLmw-012, RQLmw-013 and RQLmw-014) are the inorganic COPCs present above the respective RLs at the Ramsdell Quarry Landfill. No increasing or decreasing concentration trends are evident during the monitoring period.

4.25.2 Volatile Organic Compounds

No VOC COPC is present above the respective RLs the Ramsdell Quarry Landfill during the monitoring period.

4.25.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (RQLmw-007, RQLmw-008 and RQLmw-009) is the only SVOC COPC present above the respective RLs at the Ramsdell Quarry Landfill. No increasing or decreasing trend is shown during the monitoring period.

4.25.4 Pesticides/Herbicides

beta-BHC (RQLmw-008 and RQLmw-009) is the only pesticide/herbicide COPC present above the respective RLs at the Ramsdell Quarry Landfill. No increasing or decreasing trends are shown during the monitoring period.

4.25.3 Explosives

1,3,5-Trinitrobenzene (RQLmw-008)**, HMX** (RQLmw-012), **RDX** (RQLmw-012), **m-dinitrobenzene** (RQLmw-008) and **triphenylmethylnitramine** (RQLmw-008) are the explosive COPCs present above the respective RLs at the Ramsdell Quarry Landfill. No increasing or decreasing trends are shown during the monitoring period.

4.25.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs at the Ramsdell Quarry Landfill during the monitoring period.

4.26 Winklepeck Burning Grounds

Sampling at the Winklepeck Burning Grounds has been conducted since October 2005. Groundwater samples are obtained from 13 unconsolidated aquifer wells. The bedrock aquifer is not monitored at the Winklepeck Burning Grounds.

4.26.1 Inorganics

Aluminum (WBGmw-009, WBGmw-011 and WBGmw-017), **antimony** (WBGmw-009), **arsenic** (WBGmw-005 and WBGmw-017), **calcium** (WBGmw-006, WBGmw-007, WBGmw-008, WBGmw-009, WBGmw-010, WBGmw-011, WBGmw-012, WBGmw-014, WBGmw-015, WBGmw-016 and WBGmw-017), **iron** (WBGmw-005, WBGmw-007, WBGmw-009 and WBGmw-017), **magnesium** (WBGmw-005, WBGmw-006, WBGmw-007, WBGmw-008, WBGmw-009, WBGmw-010, WBGmw-011, WBGmw-012, WBGmw-014, WBGmw-015, WBGmw-016 and WBGmw-017), **manganese** (WBGmw-005), **potassium** (WBGmw-011) and **thallium** (WBGmw-006) are the inorganic COPC present above respective RLs at the Winklepeck Burning Grounds. No increasing or decreasing concentration trends are evident during the monitoring period.

4.26.2 Volatile Organic Compounds

No VOC COPC is present above the respective RLs the Winklepeck Burning Grounds during the monitoring period.

4.26.3 Semi-Volatile Organic Compounds

Bis(2-ethylhexyl)phthalate (WBGmw-005, WBGmw-006, WBGmw-007, WBGmw-009, WBGmw-014 and WBGmw-016) is the only SVOC COPC present above the respective RLs at the Winklepeck Burning Grounds. No increasing or decreasing trend is shown during the monitoring period.

4.26.4 Pesticides/Herbicides

Lindane (WBGmw-006) is the only pesticide/herbicide COPC present above the respective RLs at the Winklepeck Burning Grounds. No increasing or decreasing trend is shown during the reporting period.

4.26.5 Explosives

2,4-Dinitrotoluene (WBGmw-007), **HMX** (WBGmw-006 and WBGmw-009) and **RDX** (WBGmw-006 and WBGmw-009) are the only explosives COPCs present above the respective RLs at the Winklepeck Burning Grounds. No increasing or decreasing trends are shown during the monitoring period.

4.25.6 Polychlorinated Biphenyls

No PCB isomer is present above the respective RLs at the Winklepeck Burning Grounds during the monitoring period.

4.27 MCL and Region 9 PRG Exceedances

Table 4-4 (page 97) lists all wells and COPCs reported to be present in samples collected during the FWGWMP in October 2008 and January, March and July 2009 at concentrations greater than either the MCLs or the PRGs. This section summarizes those conditions and is presented by analyte group (e.g., inorganics, explosives, etc.).

4.27.1 Inorganics

Aluminum (20 wells), **arsenic** (72 wells), **cadmium** (1 well), **iron** (91 wells), **manganese** (135 wells) and **nitrate-nitrite** (2 wells) are the inorganics reported to be present in samples at concentrations exceeding MCLs or PRGs during at least one sample event in 139 wells. As general observations: 1) the aluminum MCL (200 μg/L) was exceeded, but not the PRG (36,000 μg/L); 2) all arsenic concentrations exceeded the PRG (0.045 μg/L) and less than 50% exceed the MCL (10 μg/L); 3) the cadmium concentration exceeds the MCL (5 μg/L), but not the PRG (18μg/L); 4) iron concentrations exceed the MCL (300 μg/L) but not the PRG (11,000 μg/L); 5) manganese concentrations exceed the MCL (50 μg/L) and less than 50% exceed the PRG (880 μg/L) and 6) the nitrate-nitrite PRG (1 mg/L) and MCL (1 mg/L) are exceeded.

4.27.2 Volatile Organic Compounds

1,1-Dichloroethene (1 well), **benzene** (17 wells), **carbon tetrachloride** (2 wells), **chloroform** (2 wells) and **tetrachloroethene** (2 wells) are the VOCs reported to be present in samples at concentrations exceeding either the MCLs or PRGs during at least one sample event in 19 wells. As general observations: 1) the 1,1-dichloroethene MCL (7 μg/L) was exceeded, but not the PRG (340 μg/L); 2) the benzene PRG (0.35 μg/L) was exceeded, but not the MCL (5μg/L); 3) the carbon tetrachloride PRG (0.17 μg/L) was exceeded, but not the MCL (5 μg/L).; 4) the chloroform PRG (0.17 μg/L) was exceed and there is no MCL; 5) the tetrachloroethene PRG (0.1 μg/L) was exceeded but not the MCL (5 μg/L).

4.27.3 Semivolatile Organic Compounds

Bis(2-chlorethyl)ether (1 well) and **bis(2-ethylhexyl)phthalate** (21 wells) are the only SVOCs reported to be present in samples at concentrations exceeding the MCLs or PRGs during at least one sample event in 22 wells. As general observations: 1) the bis(2-chlorethyl)ether PRG (0.001 μg/L) was exceeded and there is no MCL and 2) the bis(2-ethylhexyl)phthalate PRG (4.8 μg/L) was exceeded and there is no MCL.

4.27.4 Pesticides and Herbicides

Aldrin (1 well), **alpha-BHC** (1 well), **beta-BHC** (1 well) were the pesticides or herbicides reported to be present in samples at concentrations exceeding the MCLs or PRGs. The reported concentration exceeds the PRGs and there are no MCLs.

4.27.5 Explosives and Propellants

2,4,6-Trinitrotoluene (2 wells), **2-nitrotoluene** (1 well) and **RDX** (3 wells) are the explosives and propellants reported to be present in samples at concentrations exceeding the respective PRGs. There are no MCLs for these explosives and propellants.

4.27.6 PCBs

The **PCB Arochlor 1248** was reported to be present in the samples from nine wells a concentration above the PRG (0.034 μg/L). The concentrations are below the MCL (0.5 μg/L).

4.28 Assessment of Groundwater Remedial Action Effectiveness

Groundwater remedial actions have not been performed to date at RVAAP and therefore are not discussed in this report. The facility-wide groundwater conditions are still being evaluated, including background levels for inorganics. No remedial activities associated with the groundwater are planned at this time.

SECTION 5

FWGWMP ANNUAL RECOMMENDATIONS/REVIEW

5.1 FWGWMP Annual Recommendations

It is recommended that the FWGWMP groundwater monitoring continue as scheduled until all FWGWMP wells at the facility have been sampled and analyzed a minimum of 4 quarters. Additionally as presented in Section 1.6 additional monitoring is proposed for the 2010-2011 timeframe.

5.2 Background Well Issues

Previous discussions between the Army and the Ohio EPA have dealt with concerns that the background wells may have been impacted by the facility. The specific issues related to the background wells at RVAAP include the presence of explosives and the exceedance of health/aesthetic criteria (MCLs). An additional question is related to the presence of naturally occurring elements (e.g., aluminum, copper, nickel, etc) previously establish to have a "0" background concentration in background wells. Prior to addressing the concern that background needs to be re-evaluated, it is necessary to point out that the background data are not conclusive that explosives are present. While a few explosive compounds have been reported in samples at estimated ("J") concentrations, these reports are isolated and not recurrent. Background wells can be used to address one or both of the following: 1) define regional water-quality conditions without the effects of human activities and 2) define the quality of groundwater flowing into an area of interest (e.g., AOC) from a neighboring site that may show effects of outside actions (i.e., groundwater contaminated from other sources). The Army recognizes that there are issues associated with background water-quality data and suggests that background data require re-evaluation. This re-evaluation should include the actual quality of water in the wells and the location of the wells with respect to objective. The Army considers the FWGWMP to be a fluid program allowing for re-evaluation and re-definition. The Army has initiated this re-evaluation with the presentation in October 2007 of the Draft Proposal to Update the Facility-Wide Ground Water Monitoring Program. The major premise of this document is that previous interpretations of the groundwater regime at RVAAP are not completely accurate. If the Ohio EPA agrees with this conclusion and the subsequent reinterpretation of groundwater flow systems, the locations and objectives of background wells can be re-considered. Inspection of the locations of background wells in relationship to the newly interpreted groundwater flow regime (as described in the Annual Report) suggests that only wells BKGmw-005, BKGmw-006, and BKGmw-018 may be located to establish unaffected regional water-quality conditions. All other background wells may be located hydraulically down gradient from activities and practices at RVAAP that may result in measurable affects.

Following the completion of the initial groundwater monitoring for all wells at the facility, the data will be further evaluated as it relates to background issues.

Additionally as discussed in Section 1.6.1 of this report the USACE recently determined that a specialized geochemical study is needed to better characterize the background ground water quality at the site. The geochemical study is also necessary for optimization of the FWGWMPP. An addendum dated September 10, 2009 presented additional sampling and analysis activities to be conducted in support of the geochemical study to be conducted during the October 2009 monitoring event to support the referenced geochemical study.

SECTION 6

REFERENCES

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

SAIC, 2001. *RVAAP Facility-Wide Sampling and Analysis Plan/Quality Assurance Project Plan.*

SAIC, 2001b. *Phase II Remedial Investigation report for the Winklepeck Burning Grounds at Ravenna Army Ammunition Plant, Ravenna, Ohio.*

SAIC/REIMS, 2005. *Table of Reported Construction Depths from REIMS Information.*

SpecPro, Inc., 2005a. *Facility-Wide Groundwater Monitoring Program Report on the April 2005 Sampling Event, Ravenna Training and Logistics Site / Ravenna Army Ammunition Plant, Ravenna, Ohio.*

SpecPro, Inc., 2005b: *Facility-Wide Groundwater Monitoring Program, Report on the July 2005 Sampling Event, Ravenna Training and Logistics Site/Ravenna Army Ammunition Plant, Ravenna, Ohio*

SpecPro, Inc. 2006a. *Facility-Wide Groundwater Monitoring Program, Annual Report for 2005, Ravenna Training and Logistics Site/Ravenna Army Ammunition Plant, Ravenna, Ohio*

SpecPro, Inc. 2006b. *Facility-Wide Groundwater Monitoring Program, Report on the March 2006 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*

SpecPro, Inc. 2006c, *Facility-Wide Groundwater Monitoring Program, Report on the May 2006 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*

SpecPro, Inc. 2006d. (Draft) *Facility-Wide Groundwater Monitoring Program, Annual Report for 2006, Ravenna Army Ammunition Plant, Ravenna, Ohio*

SpecPro, Inc. 2007a. *Facility-Wide Groundwater Monitoring Program, Report on the July 2006 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*

SpecPro, Inc. 2007b. *Facility-Wide Groundwater Monitoring Program, Report on the October 2006 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*

SpecPro, Inc. 2007c. *Facility- Wide Groundwater Monitoring Program, Report on the January 2006 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio.*

Environmental Quality Management, Inc. 2007d. *Facility- Wide Groundwater Monitoring Program, Report on the April 2007 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2007e. *Facility- Wide Groundwater Monitoring Program, Report on the July 2007 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2007f, *Facility- Wide Groundwater Monitoring Program, Report on the October 2007 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio.*

Environmental Quality Management, Inc. 2008g, *Facility- Wide Groundwater Monitoring Program, Report on the January 2008 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2008h, *Facility- Wide Groundwater Monitoring Program, Report on the April 2008 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2008h, *Draft Facility- Wide Groundwater Monitoring Program, Report on the July 2008 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

U.S. Army Corps of Engineers. October 2007. *Draft Proposal to Update the Facility-Wide Ground Water Monitoring Program*.

Environmental Quality Management, Inc. 2008d, *Facility- Wide Groundwater Monitoring Program, Report on the October 2008 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2009a, *Facility- Wide Groundwater Monitoring Program, Report on the January 2009 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2009b, *Facility- Wide Groundwater Monitoring Program, Report on the April 2009 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2009c, *Facility- Wide Groundwater Monitoring Program, Report on the July 2009 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

APPENDIX A

CORRESPONDENCE DOCUMENTING THE CHANGE IN WELLS TO BE SAMPLED

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
P.O. BOX 59
LOUISVILLE, KENTUCKY 40201-0059

December 12, 2007

Engineering Division

Vicki Deppisch
Ohio Environmental Protection Agency
Northeast District Office
2110 East Aurora Road
Twinsburg, OH 44087

Dear Ms. Deppisch:

Re: Notification of Annual Sampling Schedule
Facility-wide Ground water Monitoring Program
Ravenna Army Ammunition Plant
Portage/Trumbull Counties, Ohio

This letter is to serve as notification that the United States Army Corps of Engineers (USACE) will be changing the sampling frequency of 36 of the existing Facility-wide Ground Water Monitoring Program (FWGWMP) wells from quarterly sampling to annual sampling. As we discussed yesterday, this change is in accordance with Section 4.2, Sampling Frequency, on page 4-5 of the September 2004 Facility-wide Ground Water Monitoring Program Plan (FWGWMPP), which states that the initial monitoring frequency for the FWGWMP wells will be three consecutive quarters, and then it will revert to annual sampling, except for the OD#2 and RQL wells, which will be sampled semi-annually. Our next sampling event for the 36 current FWGWMP wells will occur in October 2008.

During the January, April, and July 2008 sampling events, USACE will sample other monitoring wells that have only been sampled during the Remedial Investigations at Load Lines 1, 2, 3, 4, and 12. These wells are identified in the last column of Table 4 in the October 22, 2007 document entitled "Draft Proposal to Update the Facility-wide Ground Water Monitoring Program", where they are numbered "1" through "36". Throughout this process, USACE will continue to comply with the sampling frequency requirements for the Ramsdell Quarry Landfill and Open Demolition Area #2 wells.

We appreciate your assistance with this matter. Copies have been provided to Eileen Mohr and Bonnie Buthker of Ohio EPA, Glen Beckham, USACE (via email) and John Miller, EQM (via email) and Mark Krivanski USAEC (via email) and Katie Elgin, OHARNG RTLS (via email). Please call Rick Hockett at 502.315.6329 if you have any questions or comments regarding this matter.

Sincerely,

Richard B. Hockett, P.G.
Geologist, Environmental Branch
Louisville District

Subject: FW: FWGWMP modifications
From: "Hockett, Rick B LRL" <Rick.B.Hockett@usace.army.mil>
Date: Tue, 8 Jan 2008 14:10:27 -0500
To: "John Miller" <jmiller@eqm.com>

Oops! I meant to copy you on this.

Rick

-----Original Message-----
From: Hockett, Rick B LRL
Sent: Tuesday, January 08, 2008 2:08 PM
To: 'Vicki Deppisch'
Cc: 'Eileen Mohr'; Beckham, Glen LRL; Ries, Cynthia A LRL; Chanda, Thomas M LRL; 'Patterson, Mark C Mr CIV USA OSA'; 'Krivansky, Mark E USAEC'
Subject: FWGWMP modifications

Vicki:

Just got back from lunch and listened to your voice mail message regarding the proposed changes to the FWGWMP. Sounds good! To summarize:

1. New well sampling. It's okay to proceed with rotating the new wells into the January sampling event, and not sample the "old" wells - those which have been sampled quarterly since 2005. The new wells will be all of the non-FWGWMP wells from LL-1, LL-2, LL-3, LL-4, and all but one of the non-FWGWMP wells at LL-12.

2. Annual sampling on old wells. You would prefer to not perform annual sampling on the old wells in October 2008, because that would interrupt the quarterly sampling pattern on the new wells. I agree. We will do four consecutive sampling events on the new wells; January, April, July, and October 2008.

3. Sampling order selection criteria. You requested that we provide a description of how the 196 wells were ordered for sampling (per table 4 of the Draft Proposal to Update the FWGWMP). In a nutshell, I thought it made the most sense to do the major load lines first (LL-1, LL-2, LL-3, LL-4, and LL-12), and then follow that effort with the remaining wells. In order to simplify things for the sampling team, I kept all wells at each AOC together, so that the samplers will not be visiting sites all over the facility during each event. That approach also makes the ground water elevation measurements more useable, since all wells at a given AOC that is being sampled will be measured, and we'll get a good snapshot of the ground water flow conditions at that AOC. That's really about all there was to it - there's just not a lot more to base the sampling order on.

4. Perchlorate. You are not comfortable that the perchlorate sampling performed on the October 2008 ground water samples is sufficient to end the perchlorate sampling altogether. You suggested that we discuss a strategy for additional sampling. I suggest that each time we rotate a new group of wells through the four quarters of sampling, that we sample for perchlorate during one of those events. I would prefer that it not be the first event of the four, other than that, I think we should sample at the second, third, or forth quarterly event. Let's do each well once, and then evaluate the perchlorate data at the end of the sampling along with all of the other ground water quality data.

You didn't specifically mention it, but it's worth noting that we will continue to sample the five RCRA wells at RQL and ODA#2 on a semi-annual basis - no changes there at all.

Please let me know if any of this isn't correct.

FW: FWGWMP modifications

Thanks.

Rick

Richard B. Hockett, P.G.
Environmental Branch
Louisville District
US Army Corps of Engineers

APPENDIX B

LIST OF WELLS SAMPLED

Wells Monitored During the October 2008 Event

Well ID	Location
LL1mw-063	Load Line 1
LL1mw-064	Load Line 1
LL1mw-065	Load Line 1
LL1mw-079	Load Line 1
LL2mw-060	Load Line 2
LL2mw-261	Load Line 2
LL2mw-264	Load Line 2
LL2mw-265	Load Line 2
LL2mw-268	Load Line 2
LL2mw-270	Load Line 2
LL3mw-232	Load Line 3
LL3mw-233	Load Line 3
LL3mw-234	Load Line 3
LL3mw-235	Load Line 3
LL3mw-237	Load Line 3
LL3mw-240	Load Line 3
LL3mw-241	Load Line 3
LL3mw-243	Load Line 3
LL4mw-193	Load Line 4
LL4mw-194	Load Line 4
LL4mw-195	Load Line 4
LL4mw-200	Load Line 4
LL5mw-001	Load Line 5
LL5mw-002	Load Line 5
LL5mw-003	Load Line 5
LL5mw-004	Load Line 5
LL5mw-005	Load Line 5
LL5mw-006	Load Line 5
LL6mw-001	Load Line 6
LL6mw-002	Load Line 6
LL6mw-003	Load Line 6
LL6mw-004	Load Line 6
LL12mw-088	Load Line 12
LL12mw-107	Load Line 12
LL12mw-113	Load Line 12
LL12mw-128	Load Line 12
LL12mw-154	Load Line 12
LL12mw-184	Load Line 12
LL12mw-185	Load Line 12
LL12mw-187	Load Line 12
LL12mw-188	Load Line 12
LL12mw-189	Load Line 12
LL12mw-242	Load Line 12
LL12mw-243	Load Line 12
LL12mw-244	Load Line 12

Wells Monitored During the October 2008 Event

Well ID	Location
LL12mw-245	Load Line 12
LL12mw-246	Load Line 12
BL12mw-010	Building 1200
BL12mw-011	Building 1200
BL12mw-012	Building 1200
CBLmw-001	C Block Quarry
CBLmw-002	C Block Quarry
CBLmw-003	C Block Quarry
CBLmw-004	C Block Quarry
CBPmw-001	Central Burn Pits
CBPmw-002	Central Burn Pits
CBPmw-003	Central Burn Pits
CBPmw-004	Central Burn Pits
CBPmw-005	Central Burn Pits
CBPmw-008	Central Burn Pits
CPmw-001	Cobbs Pond
CPmw-002	Cobbs Pond
CPmw-003	Cobbs Pond
CPmw-004	Cobbs Pond
CPmw-005	Cobbs Pond
CPmw-006	Cobbs Pond
DA2mw-104	Demolition 2
DA2mw-105	Demolition Area 2
DA2mw-106	Demolition Area 2
DA2mw-108	Demolition Area 2
DA2mw-110	Demolition Area 2
DA2mw-111	Demolition Area 2
DA2mw-112	Demolition Area 2
DA2mw-113	Demolition Area 2
DETmw-003	Demolition Area 2
DETwm-004	Demolition Area 2
EBGmw-123	Erie Burning Grounds
EBGmw-124	Erie Burning Grounds
EBGmw-125	Erie Burning Grounds
EBGmw-126	Erie Burning Grounds
EBGmw-127	Erie Burning Grounds
EBGmw-128	Erie Burning Grounds
EBGmw-129	Erie Burning Grounds
EBGmw-130	Erie Burning Grounds
FBQmw-168	Fuze & Booster Quarry
FBQmw-169	Fuze & Booster Quarry
FBQmw-170	Fuze & Booster Quarry
FBQmw-171	Fuze & Booster Quarry
FBQmw-172	Fuze & Booster Quarry
FBQmw-173	Fuze & Booster Quarry
FBQmw-174	Fuze & Booster Quarry
FBQmw-175	Fuze & Booster Quarry
FBQmw-177	Fuze & Booster Quarry

Wells Monitored During the October 2008 Event

Well ID	Location
FBQmw-166	Fuze & Booster Quarry
FBQmw-167	Fuze & Booster Quarry
FBQmw-176	Fuze & Booster Quarry
LNWmw-024	Landfill North of Winklepeck
LNWmw-025	Landfill North of Winklepeck
LNWmw-026	Landfill North of Winklepeck
LNWmw-027	Landfill North of Winklepeck
NTAmw-107	NACA Test Area
NTAmw-108	NACA Test Area
NTAmw-109	NACA Test Area
NTAmw-110	NACA Test Area
NTAmw-111	NACA Test Area
NTAmw-112	NACA Test Area
NTAmw-113	NACA Test Area
NTAmw-114	NACA Test Area
NTAmw-115	NACA Test Area
NTAmw-116	NACA Test Area
NTAmw-117	NACA Test Area
NTAmw-118	NACA Test Area
RQLmw-007	Ramsdell Quarry
RQLmw-008	Ramsdell Quarry
RQLmw-009	Ramsdell Quarry
RQLmw-012	Ramsdell Quarry
RQLmw-013	Ramsdell Quarry
RQLmw-014	Ramsdell Quarry
RQLmw-015	Ramsdell Quarry
RQLmw-016	Ramsdell Quarry
RQLmw-017	Ramsdell Quarry
WBGmw-005	Winklepeck Burning Grounds
WBGmw-008	Winklepeck Burning Grounds
WBGmw-010	Winklepeck Burning Grounds
WBGmw-011	Winklepeck Burning Grounds
WBGmw-012	Winklepeck Burning Grounds
WBGmw-013	Winklepeck Burning Grounds
WBGmw-014	Winklepeck Burning Grounds
WBGmw-015	Winklepeck Burning Grounds
WBGmw-016	Winklepeck Burning Grounds
WBGmw-017	Winklepeck Burning Grounds
MBSmw-001	Mustard Agent Burial Site
MBSmw-002	Mustard Agent Burial Site
MBSmw-003	Mustard Agent Burial Site
MBSmw-004	Mustard Agent Burial Site
MBSmw-005	Mustard Agent Burial Site
MBSmw-006	Mustard Agent Burial Site

Wells Monitored During the January 2009 Event

Well ID	Location
LL1mw-064	Load Line 1
LL5mw-001	Load Line 5
LL5mw-002	Load Line 5
LL5mw-003	Load Line 5
LL5mw-004	Load Line 5
LL5mw-005	Load Line 5
LL5mw-006	Load Line 5
LL6mw-001	Load Line 6
LL6mw-002	Load Line 6
LL6mw-003	Load Line 6
LL6mw-004	Load Line 6
LL6mw-005	Load Line 6
LL6mw-006	Load Line 7
LL6mw-007	Load Line 7
LL7mw-001	Load Line 7
LL7mw-002	Load Line 7
LL7mw-003	Load Line 7
LL7mw-004	Load Line 7
LL7mw-005	Load Line 7
LL7mw-006	Load Line 7
LL8mw-001	Load Line 8
LL8mw-002	Load Line 8
LL8mw-003	Load Line 8
LL8mw-004	Load Line 8
LL8mw-005	Load Line 8
LL8mw-006	Load Line 8
LL9mw-001	Load Line 8
LL9mw-002	Load Line 8
LL9mw-003	Load Line 8
LL9mw-004	Load Line 8
LL9mw-005	Load Line 8
LL9mw-006	Load Line 8
LL9mw-007	Load Line 8
LL10mw-001	Load Line 10
LL10mw-002	Load Line 10
LL10mw-003	Load Line 10
LL10mw-004	Load Line 10
LL10mw-005	Load Line 10
LL10mw-006	Load Line 10
LL1mw-001	Load Line 11
LL1mw-003	Load Line 11
LL1mw-004	Load Line 11
LL1mw-005	Load Line 11
LL1mw-006	Load Line 11

Wells Monitored During the January 2009 Event

Well ID	Location
LL1mw-008	Load Line 11
LL1mw-009	**Load Line 11**
LL1mw-010	Load Line 11
BL12mw-010	Building 1200
BL12mw-011	Building 1200
BL12mw-012	**Building 1200**
CBLmw-001	C Block Quarry
CBLmw-002	C Block Quarry
CBLmw-003	C Block Quarry
CBLmw-004	C Block Quarry
CBPmw-001	Central Burn Pits
CBPmw-002	Central Burn Pits
CBPmw-003	Central Burn Pits
CBPmw-004	Central Burn Pits
CBPmw-005	Central Burn Pits
CBPmw-008	Central Burn Pits
CPmw-001	Cobbs Pond
CPmw-002	Cobbs Pond
CPmw-003	Cobbs Pond
CPmw-004	Cobbs Pond
CPmw-005	Cobbs Pond
CPmw-006	Cobbs Pond
DA2mw-104	Demolition 2
DA2mw-105	Demolition Area 2
DA2mw-106	Demolition Area 2
DA2mw-108	Demolition Area 2
DA2mw-110	Demolition Area 2
DA2mw-111	Demolition Area 2
DA2mw-112	Demolition Area 2
DA2mw-113	Demolition Area 2
EBGmw-123	Erie Burning Grounds
EBGmw-124	Erie Burning Grounds
EBGmw-125	Erie Burning Grounds
EBGmw-126	Erie Burning Grounds
EBGmw-127	Erie Burning Grounds
EBGmw-128	Erie Burning Grounds
EBGmw-129	Erie Burning Grounds
EBGmw-130	Erie Burning Grounds
FBQmw-168	Fuze & Booster Quarry
FBQmw-169	Fuze & Booster Quarry
FBQmw-170	Fuze & Booster Quarry
FBQmw-171	Fuze & Booster Quarry
FBQmw-172	Fuze & Booster Quarry
FBQmw-173	Fuze & Booster Quarry
FBQmw-174	Fuze & Booster Quarry
FBQmw-175	Fuze & Booster Quarry
FBQmw-177	Fuze & Booster Quarry

Wells Monitored During the January 2009 Event

Well ID	Location
FBQmw-166	Fuze & Booster Quarry
FBQmw-167	Fuze & Booster Quarry
FBQmw-176	Fuze & Booster Quarry
LNWmw-024	Landfill North of Winklepeck
LNWmw-025	Landfill North of Winklepeck
LNWmw-026	Landfill North of Winklepeck
LNWmw-027	Landfill North of Winklepeck
NTAmw-107	NACA Test Area
NTAmw-108	NACA Test Area
NTAmw-109	NACA Test Area
NTAmw-110	NACA Test Area
NTAmw-111	NACA Test Area
NTAmw-112	NACA Test Area
NTAmw-113	NACA Test Area
NTAmw-114	NACA Test Area
NTAmw-115	NACA Test Area
NTAmw-116	NACA Test Area
NTAmw-117	NACA Test Area
NTAmw-118	NACA Test Area
RQLmw-012	Ramsdell Quarry
RQLmw-013	Ramsdell Quarry
RQLmw-014	Ramsdell Quarry
RQLmw-015	Ramsdell Quarry
RQLmw-016	Ramsdell Quarry
RQLmw-017	Ramsdell Quarry
WBGmw-005	Winklepeck Burning Grounds
WBGmw-008	Winklepeck Burning Grounds
WBGmw-010	Winklepeck Burning Grounds
WBGmw-011	Winklepeck Burning Grounds
WBGmw-012	Winklepeck Burning Grounds
WBGmw-013	Winklepeck Burning Grounds
WBGmw-014	Winklepeck Burning Grounds
WBGmw-015	Winklepeck Burning Grounds
WBGmw-016	Winklepeck Burning Grounds
WBGmw-017	Winklepeck Burning Grounds
MBSmw-001	Mustard Agent Burial Site
MBSmw-002	Mustard Agent Burial Site
MBSmw-003	Mustard Agent Burial Site
MBSmw-004	Mustard Agent Burial Site
MBSmw-005	Mustard Agent Burial Site
MBSmw-006	Mustard Agent Burial Site

Wells Monitored During the April 2009 Event

Well ID	Location
LL6mw-004	Load Line 6
LL6mw-005	Load Line 6
LL6mw-006	Load Line 7
LL6mw-007	Load Line 7
LL7mw-001	Load Line 7
LL7mw-002	Load Line 7
LL7mw-003	Load Line 7
LL7mw-004	Load Line 7
LL7mw-005	Load Line 7
LL7mw-006	Load Line 7
LL8mw-001	Load Line 8
LL8mw-002	Load Line 8
LL8mw-003	Load Line 8
LL8mw-004	Load Line 8
LL8mw-005	Load Line 8
LL8mw-006	Load Line 8
LL9mw-001	Load Line 8
LL9mw-002	Load Line 8
LL9mw-003	Load Line 8
LL9mw-004	Load Line 8
LL9mw-005	Load Line 8
LL9mw-006	Load Line 8
LL9mw-007	Load Line 8
LL10mw-001	Load Line 10
LL10mw-002	Load Line 10
LL10mw-003	Load Line 10
LL10mw-004	Load Line 10
LL10mw-005	Load Line 10
LL10mw-006	Load Line 10
LL11mw-001	Load Line 11
LL11mw-003	Load Line 11
LL11mw-004	Load Line 11
LL11mw-005	Load Line 11
LL11mw-006	Load Line 11
LL11mw-008	Load Line 11
LL11mw-009	Load Line 11
LL11mw-010	Load Line 11
B12mw-012	Building 1200
ASYmw-001	Atlas Scrap Yard
ASYmw-002	Atlas Scrap Yard
ASYmw-003	Atlas Scrap Yard
ASYmw-004	Atlas Scrap Yard
ASYmw-005	Atlas Scrap Yard
ASYmw-006	Atlas Scrap Yard

Wells Monitored During the April 2009 Event

Well ID	Location
ASYmw-007	Atlas Scrap Yard
ASYmw-008	Atlas Scrap Yard
ASYmw-009	Atlas Scrap Yard
ASYmw-010	Atlas Scrap Yard
DETmw-003	Open Detonation Area 2
DETmw-004	Open Detonation Area 2
RQLmw-007	Ramsdale Quarry
RQLmw-008	Ramsdale Quarry
RQLmw-009	Ramsdale Quarry

Wells Monitored During The July 2009 Event

Well ID	Location
LL6mw-005	Load Line 6
LL6mw-006	Load Line 6
LL6mw-007	Load Line 6
LL7mw-001	Load Line 7
LL7mw-002	Load Line 7
LL7mw-003	Load Line 7
LL7mw-004	Load Line 7
LL7mw-005	Load Line 7
LL7mw-006	Load Line 7
LL8mw-001	Load Line 8
LL8mw-002	Load Line 8
LL8mw-003	Load Line 8
LL8mw-004	Load Line 8
LL8mw-005	Load Line 8
LL8mw-006	Load Line 8
LL9mw-001	Load Line 8
LL9mw-002	Load Line 8
LL9mw-003	Load Line 8
LL9mw-004	Load Line 8
LL9mw-005	Load Line 8
LL9mw-006	Load Line 8
LL9mw-007	Load Line 8
LL10mw-001	Load Line 10
LL10mw-002	Load Line 10
LL10mw-003	Load Line 10
LL10mw-004	Load Line 10
LL10mw-005	Load Line 10
LL10mw-006	Load Line 10
LL11mw-001	Load Line 11
LL11mw-003	Load Line 11
LL11mw-004	Load Line 11
LL11mw-005	Load Line 11
LL11mw-006	Load Line 11
LL11mw-008	Load Line 11
LL11mw-009	Load Line 11
LL11mw-010	Load Line 11
ASYmw-001	Atlas Scrap Yard
ASYmw-002	Atlas Scrap Yard
ASYmw-003	Atlas Scrap Yard
ASYmw-004	Atlas Scrap Yard
ASYmw-005	Atlas Scrap Yard
ASYmw-006	Atlas Scrap Yard
ASYmw-007	Atlas Scrap Yard
ASYmw-008	Atlas Scrap Yard
ASYmw-009	Atlas Scrap Yard
ASYmw-010	Atlas Scrap Yard

APPENDIX C

DEEP BEDROCK WELL INSTALLATION REPORT

From Science to Solutions

SAIC Engineering of Ohio, Inc.
A subsidiary of Science Applications International Corporation

April 24, 2009

Mr. Mark Nichter
U.S. Army Corps of Engineers, Louisville District
ATTN: CELRL-ED-E
600 Martin Luther King, Jr. Place
P.O. Box 59
Louisville, Kentucky 40202-0059

Reference: **Contract No. W912QR-04-D-0028, Delivery Order 0001, 2008 Performance-Based Acquisition (PBA) for Environmental Investigation and Remediation at the Ravenna Army Ammunition Plant (RVAAP), Ravenna, Ohio.**

Subject: **Contract Line Item (CLIN) 3.2 – Implementation of Well Installation Work Plan for the 2008 Performance-Based Acquisition (PBA) for Environmental Investigation and Remediation – Letter Report for the Deep Bedrock Well Installation in tbe Basal Sharon Conglomerate**

Dear Mr. Nichter:

In accordance with the Sampling and Analysis Plan Addendum No. 1 for the Deep Bedrock Well Installation in the Basal Sharon Conglomerate, SAIC is issuing this letter report to provide details of the installation of six bedrock wells in the basal portion of the Sharon Conglomerate underlying the former Ravenna Army Ammunition Plant (RVAAP) and Camp Ravenna located in Ravenna, Ohio. This letter report presents the following:

- A figure showing the final locations of the monitoring wells and survey data (Attachment 1);
- Field logbooks (on the attached CD);
- Boring logs with well construction diagrams (Attachment 2);
- Photos of the rock core and installation activities of the bedrock wells (on the attached CD);
- Field change requests (on the attached CD);
- Incident investigation report (on the attached CD); and
- Preliminary lab data (on the attached CD).

The following sections of this letter report discuss the field activities and results, field changes, incidents and reporting, and Investigative-Derived Waste (IDW) pertinent to the installation of these wells.

FIELD ACTIVITIES

SAIC mobilized to RVAAP on February 9, 2009 to begin the fieldwork for the installation of the bedrock wells. On the first day of fieldwork, SAIC and PIKA International, Inc. mobilized to the RVAAP to complete a visual and instrument-assisted ground surface survey of the proposed drilling locations with a hand auger to ensure that the proposed areas were free of munitions and explosives of concern (MEC) and utilities. An unexploded ordnance UXO technician cleared the boreholes to a depth of 10 feet with a Schonstedt® Magnetic Locator to confirm that no iron bearing metals or utilities were within the immediate vicinity of the planned well boring. Some locations, SCFmw-003 and SCFmw-004, were relocated a nominal distance based on the field survey and access issues. Because of saturated soils and health and safety concerns of the drill rig sinking into the mud, SCFmw-004 was moved twice during the field effort. Each time the boring was moved, the UXO technician was brought in and the boring was hand cleared to 10 feet prior to initiating drilling activities. Once the areas were cleared, the Ohio Army National Guard was notified so that they could visit the sites and give their approval of any locations that were moved, or to confirm that the sites were free of buried utilities that might not have been discovered during the hand clearance.

SAIC contracted Frontz Drilling, Inc. to complete well installation activities. Drilling activities began on February 10, 2009. A CME-75 drilling rig and hollow stem auger equipment was used to drill and obtain soil samples from the unconsolidated zone to the overburden-bedrock interface, and to set the outer casings for each well. For each well, eight inch diameter steel casing was placed from the ground surface to the overburden bedrock interface. Casing depths ranged from 10 feet to 57 feet to the interface. The outer casing was grouted into place and allowed to set a minimum of 48 hours prior to beginning air rotary drilling to drill to depth to set the well casing. The last outer casing was set on February 26th in SCFmw-004. Table 1 presents the depth to bedrock, depth of the outer casing, drilling depth and well installation depth.

Table 1. Well Installation Information

Well ID	Depth To Bedrock (ft bgs)	Depth of Outer Casing (ft bgs)	Borehole Depth (ft bgs)	Well Installation Depth (ft bgs)	Screened Interval (ft bgs)
SCFmw-001	32.5	35	230	211	201 - 211
SCFmw-002	24	30	153	147	137 - 147
SCFmw-003	10	15	140	135.5	125.5 – 135.5
SCFmw-004	50	60	120	110	100 - 110
SCFmw-005	4.75	10	160.1	154	139 - 154
SCFmw-006	53.7	60	90	86	76 - 86

On March 2, 2009 drilling began at SCFmw-006 with an Ingersoll-Rand TH-60 air rotary rig to begin coring rock to set the wells in the basal portion of the Sharon Conglomerate. The final monitoring well, SCFmw-001, was installed on March 24, 2009. Rock cores from each borehole were logged, and pictures were taken of each recovered section of core. Because of the large number of photos that were taken during field activities, the photos are included as electronic files on the CD included with this letter report. Photos were also taken to document field activities during the monitoring well installation activities.

All but two of the monitoring wells were installed according to the Sampling and Analysis Plan Addendum No. 1 for the Deep Bedrock Well Installation in the Basal Sharon Conglomerate; a 15 foot length screen was installed in SCFmw-005, and schedule 80 PVC well casing and screen were used in the installation of SCFmw-001. The Field Change Requests (FCRs) detailing the changes from the SAP are discussed below. One other note was the depth that SCFmw-001 was drilled and where the well was installed differs by 19 feet. The borehole was backfilled with bentonite to the installation depth prior to

well installation. The interval backfilled consisted of alternating Shale and Sandstone laminations in the transition between the Sharon and Cuyahoga Formations and the well was not to be screened in that transition area so the boring was backfilled to install the well above that interval.

Well development was completed on March 26, 2009 and the well pads and bumper posts were completed on March 27, 2009. Well development records are included on the attached CD. Well development criteria specified in the Facility-Wide SAP were attained for all wells, and all wells exhibited sufficient groundwater recharge rates for sampling purposes. No other issues were encountered during field activities other than noted above. Well installation field activities were completed on March 31, 2009 with the removal of a FRAC tank that was not used.

The well survey was completed on April 10, 2009 by SAIC and KS Associates, Figure 1 presents the final locations of the wells and their respective top-of-casing and surface elevations.

WORK PLAN FIELD CHANGE REQUESTS

Minor issues were encountered during the field activities that required FCRs to be submitted. The FCRs are included on the attached CD for reference.

FCR RVAAP-SCF-001 addressed the use of a welding torch to join the sections of steel outer casings which was not addressed in the original Site Safety and Health Plan. The Activity Hazard Analysis was updated to include welding activities and was submitted to USACE for approval.

FCR RVAAP-SCF-002 requested USACE's approval to change the schedule to complete well development after the well was installed. The Facility-Wide Sampling and Analysis Plan (SAP) (USACE 2001) stated that well development would be initiated no later than 7 days after the mortar collar was installed. Due to delays in the completion of additional wells, only one well was ready to begin development within that timeframe. It was originally expected that more wells would be ready to begin development to keep the number of mobilizations to the site for well development activities to a minimum. SAIC requested that well development be initiated within 14 days after mortar collar installation. USACE granted the request and all wells were developed within 13 days of the mortar collar installation.

FCRs RVAAP-SCF-003 and RVAAP-SCF-004 were initiated when the bentonite seal failed during the installation of the grout at monitoring well SCFmw-005 in an area of fractured bedrock above the screened interval. The failure of the bentonite seal required that the borehole be redrilled using a larger diameter drill bit to ensure that all of the grout was removed from the boring, and that the well was not compromised. *FCR RVAAP-SCF-003* addressed the use of a larger bentonite seal to prevent the failure of the seal during grout placement. The Facility-Wide SAP calls for the installation of a 0.9 to 1.5 meter (3.0 to 5.0 feet) bentonite seal. SAIC requested that up to a 6.0 m (20.0 ft) thick bentonite seal be placed to help prevent failure of the seal due to fractured zones within the bedrock. *FCR RVAAP-SCF-004* addressed the use of a 4.5 m (15.0 ft) screen to cover the fractured zone in the bedrock at SCFmw-005. The use of the longer screen and thicker bentonite seal prevented a reoccurrence of the seal failure. The pH was monitored during well development activities and a groundwater sample for metal analysis was collected to ensure that the well had not been compromised by the grout in the screened interval. The analytical results of the metals analysis are included on the attached CD.

FCR RVAAP-SCF-005 requested the use of schedule 80 well screen and well casing in monitoring well SCFmw-001 due to the depth at which the well was installed, 211 feet below ground surface (bgs). The project-specific SAP stated that schedule 40 or 80 PVC well screen or well casing may be used based on field conditions.

INCIDENTS AND REPORTING

A small hydraulic fluid release occurred on March 16, 2009 during drilling activities at well SCFmw-002 when a small hydraulic line failed. A small amount of hydraulic fluid was spilled onto the drill rig and onto the mud mats beneath the drill rig. No fluids were released to the ground, the spill was cleaned up, and the drill rig was repaired and placed back in to service. SAIC investigated the leak and an incident investigation report which details the incident, the actions taken by the field crew, and follow-up activities initiated by SAIC and the drilling company is included on the attached CD.

INVESTIGATIVE-DERIVED WASTE

During well installation activities, SAIC containerized approximately 51,000 gallons of IDW liquid. The liquid is containerized in a 10,000 gallon FRAC Tank located near Building 1036, a 21,000 gallon FRAC Tank located near Building 28-808 and in a 21,000 gallon FRAC Tank located at the Atlas Scrap Yard.

Additionally, SAIC containerized 97 soil drums during the well installation activities. Table 2 presents the summary of solid IDW collected at each well.

Table 2. Summary of Solid IDW Drums By Well Location

Well Location	No. of 55 Gallon Drums
SCFmw-001	16
SCFmw-002	8
SCFmw-003	8
SCFmw-004	38
SCFmw-005	12
SCFmw-006	15
Total	97

SAIC collected samples of the liquid and solid IDW on March 28, 2009 under a quick laboratory turn-around time. Once the data is received and analyzed, SAIC will provide the U.S. Army and Ohio EPA with an IDW Letter Report proposing a waste management and disposal plan.

FOLLOW-ON MONITORING PHASE

Currently SAIC is conducting its first quarterly sampling event on the newly installed wells, and field activities should be completed on Friday April 24, 2009. A monitoring report containing the results of groundwater sampling activities and an assessment of water quality will be prepared upon completion of the four planned quarterly monitoring events.

If you have any questions concerning this submittal or require any additional information, please do not hesitate to call me at (614) 791-3387.

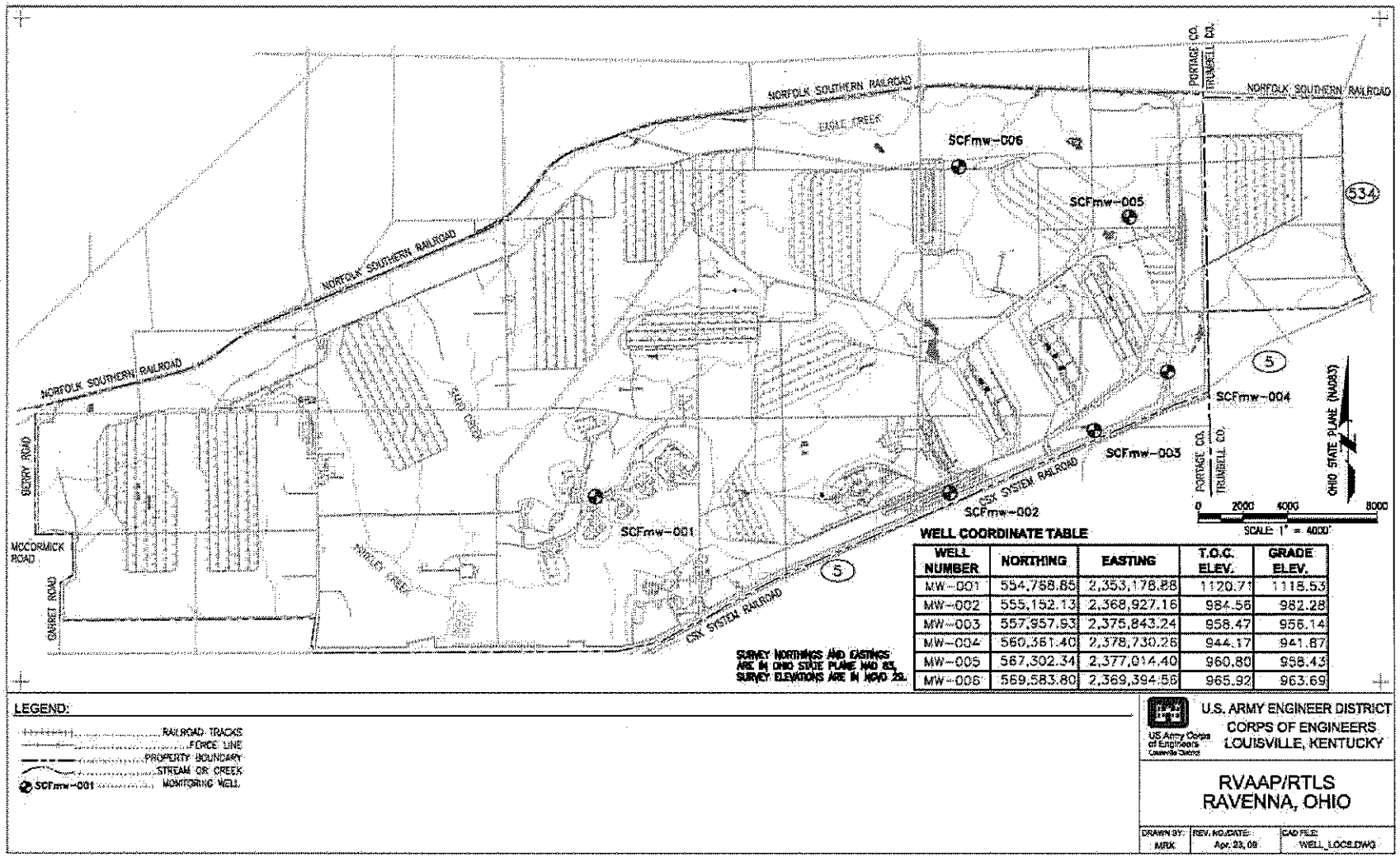
Sincerely,

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

Paul Patrish
Field Manager

cc: Glen Beckham – USACE (1 paper copy, 1 pdf copy)
Bonnie Buthker – Ohio EPA SWDO (1 paper copy, 1 pdf copy)
Vicki Deppisch – Ohio EPA NEDO (1 paper copy, 1 pdf copy)
Katie Elgin – OHARNG (1 paper copy, 1 pdf copy)
Kevin Jago – SAIC (1 paper copy, 1 pdf copy)
Mark Krivansky – USAEC (1 pdf copy)
Eileen Mohr – Ohio EPA NEDO (1 paper copy, 1 pdf copy)
Mark Nichter – USACE (1 paper copy, 1 pdf copy)
Paul Parrish – SAIC (1 paper copy, 1 pdf copy)
Mark Patterson – RVAAP (2 paper copies, 2 pdf copies)
Jed Thomas – SAIC (1 paper copy, 1 pdf copy)
SAIC/REIMS (1 pdf copy)
SAIC DO W912QR-05-F-0033 Project File
SAIC CRF

Attachment 1. Final Monitoring Well Locations



WELL COORDINATE TABLE

WELL NUMBER	NORTHING	EASTING	T.O.C. ELEV.	GRADE ELEV.
MW-001	554,758.85	2,353,178.88	1120.71	1118.53
MW-002	555,152.13	2,368,927.16	984.56	982.28
MW-003	557,957.93	2,375,843.24	958.47	956.14
MW-004	560,561.40	2,378,730.26	944.17	941.87
MW-005	567,302.34	2,377,014.40	960.80	958.43
MW-006	569,583.80	2,369,394.56	965.92	963.69

Figure 1. Final Monitoring Well Locations

Attachment 2. Boring Logs

US Army Corps of Engineers

SAIC

Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266
Portage County

SCFmw-001

(Page 1 of 5)

Start Date	: 02/17/09, 0946
End Date	: 03/24/09, 1150
Northing Coord.	: 554768.62
Easting Coord.	: 2353176.08
Total Depth of Boring	: 230 ft

Drilling Company	: Frontz Drilling
Driller	: Rob Hamilton
Designation of Drill	: CME 75/ TH-60
Type of Drill Rig	: Auger Rig/Air Rotary
Geologist	: Amanda Trantor
Oversight Company	: SAIC
Borehole Diameter	: 12" Overburden/6" Rock
Sampling Equipment	: 12.25" Hollow Stem Augers : 2" 2' Long Split Spoon : 6" 10' Long Core Barrel

Surf. Elev. 1118.53

Well: SCFmw-001
TOC Elev.: 1120.71

Depth in feet	USCS Symbol	DESCRIPTION	Blow Count	Recovery	Collection Interval	Comments
0		(0.0' - 20.8') Silty CLAY (CL); some Gravel throughout; dry to damp; stiff; 2.5Y6/3 light brown with 10YR5/6 yellowish brown and 10YR4/1 gray mottling.	5/4/3/4	1.1/2.0		Elevation NGVD 1929
5			2/3/3/2	0.9/2.0		
			4/6/11/9	1.2/2.0		NAVD 1988: TOC: 1120.17 Surface: 1117.99
			9/15/13/15	1.2/2.0		
10			15/19/17/16	2.0/2.0		
			7/5/6/8	0.0/2.0		
			4/4/7/6	0.9/2.0		
15			7/7/5/6	1.25/2.0		
			6/6/5/11	1.0/2.0		
20			8/12/7/10	2.0/2.0		
		(20.8' - 32.5') Poorly sorted medium to coarse grained SAND (SP); some pockets of Silt and Clay; wet; loose to very loose; 10YR4/2 dark grayish brown and 10YR5/1 gray.	2/2/3/3	1.8/2.0		
			4/3/2/4	1.2/2.0		
25			1/1/1/1	0.8/2.0		
			1/1/1/1	1.25/2.0		
30			2/1/2/1	0.5/2.0		
			2/1/2/1	0.5/2.0		
		(32.5') SANDSTONE (SS); 10YR5/3 brown; competent. Auger to 35 ft bgs to set 6" outer casing; no recovery. Drill using tricone bit to 37 ft bgs; no recovery.	2/2/3/1	0.5/0.5		
35				NA		
40		(37.0' - 54.0') Connoquenissing Sandstone Member. Medium grained quartzose SANDSTONE (SS); dry; medium cementation; some laminations throughout; 5Y6/1 brownish gray.		2.6/3.0		
45		40' - 54' Trace mudstone clasts; some laminations	10.1/10			
50		50' - 54' Very fractured				

Well Constr. Information:

- Above Grade Completion: 6" Protective Casing 3 ft ags - 5 ft bgs Set in Concrete
- Concrete: 0 - 1.0 ft bgs
- Below Grade Completion: 6" Outer Casing set from 0 ft - 35 ft bgs
- Cement Bentonite Grout: 1.0' - 188 ft bgs
- Holeplug 3/8 Coarse Grade Bentonite Chips: 188.0'- 198.0 ft bgs & 212' - 230 ft bgs
- Riser: 2" ID PVC Sch 40 2.5' ags - 201.0 ft bgs
- Centralizers: 6" expansion; placed at 2', 51', 99', 148', & 197 ft bgs
- Top Of Sand Pack: 198.0 ft -212.0 ft Sidley #5 Sand
- Screen: 2" ID PVC Sch 80 201.0 - 211.0 ft bgs 0.010 slot
- Borehole Dia 6"

Boring was hand cleared for MEC on 02/09/09
6" protective casing set using 12.25" ID HSAs from 0' - 35 ft bgs
22.5 gallons of water injected during drilling; 11,000 gallons of water removed.

SCFmw-001

(Page 1 of 5)

US Army Corps of Engineers

SAIC

Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266
Portage County

SCFmw-001

(Page 2 of 5)

Start Date	: 02/17/09; 0946
End Date	: 03/24/09; 1150
Northing Coord.	: 554768.62
Easting Coord.	: 2353178.93
Total Depth of Boring	: 230 ft

Drilling Company	: Frontz Drilling
Driller	: Rob Hamilton
Designation of Drill	: CME 75/ TH-50
Type of Drill Rig	: Augur Rig/Air Rotary
Geologist	: Amanda Trentini
Oversight Company	: SAIC
Borehole Diameter	: 12" Overburden/6" Rock
Sampling Equipment	: 12.25" Hollow Stem Augers
	: 2" 2' Long Split Spoon
	: 6" 10' Long Core Barrel

Well: SCFmw-001
TOC Elev.: 1120.71

Depth in feet	USCS Symbol	DESCRIPTION	Surf. Elev. 1118.53	Well Constr. Information	Blow Count	Recovery	Collection Interval	Comments
50			1068	Above Grade Completion 6" Protective Casing 3 ft ags - 5 ft bgs Set in Concrete				
55		(54.0' - 157') Sharon SHALE (SH) 54.0' - 61.0' Shale with Sandstone layers and laminations throughout, more cohesive; light gray; Sandstone content decreases with depth. 61.0' - 157' SHALE (SH); micaceous; trace Sandstone; wet; planar, brittle structure; very dark gray to black.	1063			3.5/10		
60			1058	Concrete 0 - 1.0 ft bgs Below Grade Completion 8" Outer Casing set from 0 ft - 36 ft bgs				
65			1053	Cement Bentonite Grout 1.0' - 168 ft bgs		5.4/10		
70			1048	Holeplug 3/8 Coarse Grade Bentonite Chips 168.0'- 198.0 ft bgs				
75			1043	& 212' - 230 ft bgs		0.5/10		
80			1038	Riser 2" ID PVC Sch 40 2.6' ags - 201.0 ft bgs Centralizers 6" expansion; placed at 2', 51', 99', 148', & 197 ft bgs				
85		82.0 ft. Increase in fine light gray Sandstone seams; less brittle.	1033			0.8/10		
90			1028	Top Of Sand Pack 198.0 ft -212.0 ft Sidley #5 Sand				
95		94' - 107' Alternating Shale and Sandstone; brittleness decreases with depth.	1023	Screen 2" ID PVC Sch 80 201.0 - 211.0 ft bgs 0.010 slot		8.4/10		
100				Borehole Dia 6"				

Boring was hand cleared for MEC on 02/09/09
8" protective casing set using 12.25" ID HSAs from 0 - 35 ft bgs
22.6 gallons of water injected during drilling; 11,000 gallons of water removed.

SCFmw-001

(Page 2 of 5)

US Army Corps of Engineers

SAIC

Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266
Portage County

SCFmw-001

(Page 3 of 5)

Start Date	: 02/17/09, 0945
End Date	: 03/24/09, 1150
Northing Coord.	: 554768.62
Easting Coord.	: 2363178.98
Total Depth of Boring	: 230 ft

Drilling Company	: Frontz Drilling
Driller	: Rob Hamilton
Designation of Drill	: CME 75/ TH-60
Type of Drill Rig	: Auger Rig/Air Rotary
Geologist	: Amanda Trenton
Oversight Company	: SAIC
Borehole Diameter	: 12" Overburden/8" Rock
Sampling Equipment	: 12.25" Hollow Stem Augers
	: 2" 2' Long Split Spoon
	: 6" 10' Long Core Barrel

Well: SCFmw-001
TOC Elev.: 1120.71

Surf. Elev. 1118.53

Depth in feet	USCS Symbol	DESCRIPTION	Surf. Elev. 1118.53
100			1018
105			1013
110		(107' - 157') Alternating SANDSTONE and SHALE (SH/SS): 107' - 110' Light gray Sandstone w/ Shale Seams	1008
115			1003
120		120.8' Evaporate concretion in voids	998
125			993
130			988
135			983
140			978
145			973
150		150'-157' Increasing Sandstone content with depth; color lightens with depth	

Well Constr. Information

Above Grade Completion
6" Protective Casing
3 ft ags - 51 ft bgs
Set In Concrete

Concrete
0 - 1.0 ft bgs

Below Grade Completion
8" Outer Casing set from 0 ft - 35 ft bgs

Cement Bentonite Grout
1.0' - 188 ft bgs

Holeplug 3/8 Coarse Grade Bentonite Chips
188.0'- 196.0 ft bgs

& 212' - 230 ft bgs

Riser
2" ID PVC Sch 40
2.5' ags - 201.0 ft bgs

Centralizers
6" expansion; placed at 2', 51', 99', 148', & 197 ft bgs

Top Of Sand Pack
196.0 ft -212.0 ft
Selley #5 Sand

Screen
2" ID PVC Sch 80
201.0 - 211.0 ft bgs
0.010 slot

Borehole Dia 6"

Blow Count | Recovery | Collection Interval | Comments

9/2/10

8/8/10

9/7/10

10/3/10

9/7/10

Boring was hand cleared for MEC on 02/09/09
8" protective casing set using 12.25" ID HSAs from 0 - 35 ft bgs
22.6 gallons of water injected during drilling; 11,000 gallons of water removed.

SCFmw-001

(Page 3 of 5)

US Army Corps of Engineers

SAIC

Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266
Portage County

SCFmw-001

(Page 4 of 5)

Start Date	: 02/17/09, 0946
End Date	: 03/24/09, 1150
Northing Coord.	: 554768.62
Easting Coord.	: 2353178.98
Total Depth of Boring	: 230 ft

Drilling Company	: Frontz Drilling
Driller	: Rob Hamilton
Designation of Drill	: CME 75/ TH-60
Type of Drill Rig	: Auger Rig/Air Rotary
Geologist	: Amanda Trenton
Oversight Company	: SAIC
Borehole Diameter	: 12" Overburden/8" Rock
Sampling Equipment	: 12.25" Hollow Stem Augers : 2" 2' Long Split Spoon : 6" 10' Long Core Barrel

Well: SCFmw-001
TOC Elev.: 1120.71

Surf. Elev. 1118.53

Depth in feet	USCS Symbol	DESCRIPTION	Surf. Elev. 1118.53	Well Constr. Information	Blow Count	Recovery	Collection Interval	Comments
150			968	Above Grade Completion 6" Protective Casing 3 ft ags - 5 ft bgs Set in Concrete				
155			963			9.8/10		
		(157' - 212.2') Sharon Conglomerate. Fine to medium grained quartzose SANDSTONE (SS); wet; loosely cemented; laminations throughout; 2.5Y6/1 gray.						
160			958	Concrete 0 - 1.0 ft bgs Below Grade Completion 6" Outer Casing set from 0 ft - 35 ft bgs				
165		Alternating SH/SS to 167 ft bgs	953			9.3/10		
		(167' - 170') Medium to coarse grained Sandstone with rounded fine throughout; some mineralization in voids; trace shale laminations.		Cement Bentonite Grout 1.0' - 168 ft bgs				
170			948	Holeplug 3/8 Coarse Grade Bentonite Chips 168.0'- 198.0 ft bgs				
		(170' - 190') Fining and coarsening sequences throughout; decreasing Gravel content with depth.						
175			943	& 212' - 230 ft bgs		5.9/10		
180			938	Riser 2" ID PVC Sch 40 2.5' ags - 201.0 ft bgs Centralizer: 6" expansion, placed at 2', 51', 99', 148', & 197 ft bgs				
185			933			9.8/10		
				Top Of Sand Pack 198.0 ft -212.0 ft Sidley #5 Sand				
190		(190') Medium grained Sandstone; fractured to 199 ft bgs.	928	Screen 2" ID PVC Sch 80 201.0 - 211.0 ft bgs 0.010 slot				
195			923			10.1/10		
				Borehole Dia 6"				
200								

Boring was hand cleared for MEC on 02/09/09
8" protective casing set using 12.25" ID HSAs from 0 - 35 ft bgs
22.6 gallons of water injected during drilling; 11,000 gallons of water removed.

SCFmw-001

(Page 4 of 5)

US Army Corps of Engineers

SAIC

Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266
Portage County

SCFmw-001

(Page 5 of 5)

Start Date	: 02/17/09, 0946
End Date	: 03/24/09, 1150
Northing Coord.	: 554768.62
Easting Coord.	: 2353178.98
Total Depth of Boring	: 230 ft

Drilling Company	: Fronz Drilling
Driller	: Rob Hamilton
Designation of Drill	: CME 75/ TH-50
Type of Drill Rig	: Auger Rig/Air Rotary
Geologist	: Amanda Trenton
Oversight Company	: SAIC
Borehole Diameter	: 12" Overburden/6" Rock
Sampling Equipment	: 12.25" Hollow Stem Augers : 2" 2' Long Split Spoon : 6" 10' Long Core Barrel

Well: SCFmw-001
TOC Elev.: 1120.71

Surf. Elev. 1118.53

Depth in feet	USCS Symbol	DESCRIPTION	Surf. Elev. 1118.53
200		(200' - 210') Trace pyrite accumulations; Gravel content increases with depth; very fractured from 202' - 203', 203' - 204.8' Shale layer	918
205			913
210			908
		(212.2' - 222.5') Alternating SHALE with Sandstone laminations; Mudstone at 216.7 ft bgs (222.5' - 230.0') Cuyahoga Formation: SHALE (SH); dry; brittle; very dark gray	
215			903
220			898
225			893
230		Boring terminated at 230 ft bgs.	888
235			883
240			878
245			873
250			

Well Constr. Information	Blow Count	Recovery	Collection Interval	Comments
Above Grade Completion 6" Protective Casing 3 ft ags - 5 ft bgs Set in Concrete Concrete 0 - 1.0 ft bgs Below Grade Completion 6" Outer Casing set from 0 ft - 35 ft bgs Cement Bentonite Grout 1.0' - 188 ft bgs Holeplug 3/8 Coarse Grade Bentonite Chips 188.0' - 198.0 ft bgs & 212' - 230 ft bgs Riser 2" ID PVC Sch 40 2.5' ags - 201.0 ft bgs Centralizers 0" expansion; placed at 2', 51', 99', 148', & 197 ft bgs Top Of Sand Pack 198.0 ft -212.0 ft Sidley #5 Sand Screen 2" ID PVC Sch 80 201.0 - 211.0 ft bgs 0.010 slot Borehole Dia 6"		6.5/10 8.7/10 9.5/10		Soil Color Chart Munsell 2000 Rev Ed. Rock Color Chart Munsell 1995, 8th Ed.

Boring was hand cleared for MEC on 02/09/09
8" protective casing set using 12.25" ID HSAs from 0 - 35 ft bgs
22.6 gallons of water injected during drilling; 11,000 gallons of water removed.

SCFmw-001

(Page 5 of 5)

US Army Corps of Engineers

SAIC

Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266
Portage County

SCFmw-002

(Page 1 of 4)

Start Date	: 02/10/09; 1439
End Date	: 03/17/09; 1531
Northing Coord.	: 555152.30
Easting Coord.	: 2368927.36
Total Depth of Boring	: 153 ft

Drilling Company	: Frontz Drilling
Driller	: Rob Hamilton
Designation of Drill	: CME 75/ TH-60
Type of Drill Rig	: Auger Rig/Air Rotary
Geologist	: Amanda Trenton
Oversight Company	: SAIC
Borehole Diameter	: 12" Overburden/6" Rock
Sampling Equipment	: 8.25" Hollow Stem Augers
	: 2" 2' Long Split Spoon
	: 6" 10' Long Core Barrel

Well: SCFmw-002
TOC Elev.: 984.56

Depth in feet	USCS Symbol	DESCRIPTION	Surf. Elev. 982.28	Well Constr. Information	Blow Count	Recovery	Collection Interval	Comments
0		(0.0' - 6.0') Silty CLAY (CL); dry, soft; stiffness increases with depth; medium plasticity; from 0.0' - 6.0' color is mottled 10YR4/3 brown, 10YR5/1 gray, and 10YR5/6 yellowish brown. From 6.0' - 6.0' Clay is 10YR4/1 dark gray and 10YR3/6 dark yellowish brown.	982	Above Grade Completion 6" Protective Casing 3 ft ags - 5 ft bgs Set in Concrete	2/3/4/3 4/3/5/3 3/4/2/7 11/7/5/3	0.9/2.0 1.2/2.0 1.5/2.0 2.0/2.0		Elevation: NGVD 1929: NAVD 1988: TOC: 984.02 Surface: 981.74
5			977	Concrete 0 - 1.0 ft bgs	7/11/13/3	2.0/2.0		
10		(6.0' - 9.5') Fine SAND (SW); dense; wet; 10YR5/3 brown.	972	Below Grade Completion 8" Outer casing set from 0 ft - 30 ft bgs	3/4/2/5 4/2/7/7	1.0/2.0 0.6/2.0		
		(9.5' - 10.1') Sandy CLAY (SC); dense; moist; 10YR5/3 brown.			4/2/3/5	1.1/2.0		
15		(10.1' - 20.0') Silty CLAY (CL); Silt content increases with depth; little subangular, 1/2" Gravel; shale/gravel content increases with depth; medium stiff; damp to dry; 5/5B bluish gray.	967	Cement Bentonite Grout 1.0' - 118.5 ft bgs	5/5/3/6	2.0/2.0		
20		(20.0' - 24.0') SILT (ML); stiff; dry, brittle; shale fragments throughout; 10YR3/1 very dark gray.	962	Holeplug 3/8 Coarse Grade Bentonite Chips 118.5 - 134.0 ft bgs & 148' - 153 ft bgs	6/5/7/6 7/9/11/7 9/13/11/13 17/50/3	0.8/2.0 0.6/2.0 0.8/2.0 0.75/0.75		
25		(24.0' - 24.75') Weathered SHALE (SH); dry, brittle; 10YR3/1 very dark gray. Competent bedrock by 24.75 ft bgs.	957	Riser 2" ID PVC Sch 40 2.5' ags - 137.0 ft bgs				
30		Augered to 30 ft bgs for installation of 8" outer casing. No rock core recovery 24.75' - 30.0'	952	Centralizers 6" expansion, placed at 2', 42', 83' and 126 ft bgs				
35		Air rotary drilling using tricone bit to 32 ft bgs to commence rock coring. No recovery 30 - 32 ft bgs.	947	Top Of Sand Pack 134.0 ft bgs Sidley #5 Sand		0.0/3.0		
		No recovery 32' - 40' bgs.						
40		(40.0' - 53.5') SHALE (SH); micaceous with trace pyrite accumulations throughout; increasing thickness and frequency of interbedded Sandstone with depth; brittle; dry, wet by 45 ft bgs; dark gray.	942	Screen 2" ID PVC Sch 40 134.0 - 148.0 ft bgs 0.010 slot				
45			937	Borehole Dia 6"		9.4/10		
50								

Boring was hand cleared for MEC on 02/09/09
8" outer casing set using 8.25" ID HSAs from 0 ft - 30 ft bgs
105.7 gallons of water injected during drilling; 3,500 gallons of water removed.

SCFmw-002

(Page 1 of 4)

US Army Corps of Engineers

SAIC

Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266
Portage County

SCFmw-002

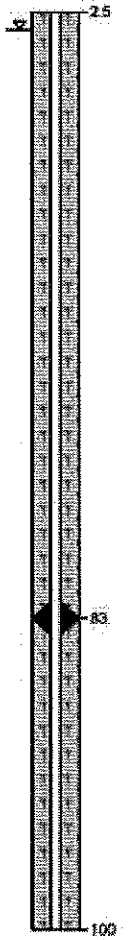
(Page 2 of 4)

Start Date	: 02/10/09; 1430
End Date	: 03/17/09; 1531
Northing Coord.	: 655152.38
Easting Coord.	: 2368927.36
Total Depth of Boring	: 153 ft

Drilling Company	: Frontz Drilling
Driller	: Rob Hamilton
Designation of Drill	: CME 75/ TH-60
Type of Drill Rig	: Auger Rig/Air Rotary
Geologist	: Amanda Trenton
Oversight Company	: SAIC
Borehole Diameter	: 12" Overburden/5" Rock
Sampling Equipment	: 8.25" Hollow Stem Augers
	: 2" 2' Long Split Spoon
	: 6" 10' Long Core Barrel

Well: SCFmw-002
TOC Elev.: 984.56

Depth in feet	USCS Symbol	DESCRIPTION	Surf. Elev. 982.28	Well Constr. Information	Blow Count	Recovery	Collection Interval	Comments
50			932	Above Grade Completion 6" Protective Casing 3 ft ags - 5 ft bgs Set in Concrete				
55		(53.5' - 148.5') Sharon Conglomerate. Medium grained quartzose SANDSTONE (SS); rounded to subrounded fine Gravel thoughout; wet; loosely cemented; laminations throughout; mineral accumulations in voids and fractures; 2.5Y6/1 gray with little 2.5Y 7/1 light gray.	927			0.2/10		
60		Interbedded Shale seams from 53.5' - 58.5' bgs. 60.0' - 64.9' Coarser sequences with increased Gravel content.	922	Concrete 0 - 1.0 ft bgs Below Grade Completion 8" Outer casing set from 0 ft - 30 ft bgs				
65			917	Cement Bentonite Grout 1.0' - 118.5 ft bgs		0.8/10		
70		70.0' - 75.0' Highly fractured.	912	Holeplug 3/8 Coarse Grade Bentonite Chips 118.5 - 134.0 ft bgs & 146' - 153 ft bgs				
75		74.7' - 77.0' Coarse grained SANDSTONE with increased rounded, 1/4" - 1.5" Gravel content. 75.9' - 77.0' Fine coal seam.	907	Riser 2" ID PVC Sch 40 2.5' ags - 137.0 ft bgs		8.3/10		
80		80.0' - 90.0' Highly fractured.	902	Centralizers 6" expansion, placed at 2', 42', 83' and 120 ft bgs				
85			897	Top Of Sand Pack 134.0 ft bgs Sidley #5 Sand		3.4/10		
90		90.0' Coarser SANDSTONE. 92.2' - 95.0' CONGLOMERATE; significant subrounded to rounded Gravel with medium to coarse Sand matrix; loosely cemented.	892	Screen 2" ID PVC Sch 40 134.0 - 148.0 ft bgs 0.010 slot				
95		97.0' - 98.0' Fining downward with depth.	887	Borehole Dia 6"		9.2/10		
100								



Boring was hand cleared for MEC on 02/09/09
8" outer casing set using 8.25" ID HSAs from 0 ft - 30 ft bgs
165.7 gallons of water injected during drilling; 3,500 gallons of water removed.

SCFmw-002

(Page 2 of 4)

US Army Corps of Engineers

SAIC

Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266
Portage County

SCFmw-002

(Page 3 of 4)

Start Date : 02/10/09, 1439
End Date : 03/17/09, 1531

Northing Coord. : 555152.38
Easting Coord. : 2368927.36
Total Depth of Boring : 153 ft

Drilling Company : Frontz Drilling
Driller : Rob Hamilton
Designation of Drill : CME 75/ TH-50
Type of Drill Rig : Auger Rig/Air Rotary
Geologist : Amanda Trenton
Oversight Company : SAIC
Borehole Diameter : 12" Overburden/6" Rock
Sampling Equipment : 8.25" Hollow Stem Augers
: 2" 2' Long Split Spoon
: 6" 10' Long Core Barrel

Well: SCFmw-002
TOC Elev.: 984.56

Depth in feet	USCS Symbol	DESCRIPTION	Surf. Elev. 982.28	Well Constr. Information	Blow Count	Recovery	Collection Interval	Comments
100		100.7' Rounded Gravel.	882	2.5 Above Grade Completion 6" Protective Casing 3 ft ags - 5 ft bgs Set in Concrete Concrete 0 - 1.0 ft bgs Below Grade Completion 9" Outer casing set from 0 ft - 30 ft bgs Cement Bentonite Grout 1.0' - 118.5 ft bgs Holeplug 3/8 Coarse Grade Bentonite Chips 118.5 - 134.0 ft bgs & 148' - 153 ft bgs Riser 2" ID PVC Sch 40 2.5' ags - 137.0 ft bgs Centralizers 6" expansion, placed at 2', 42', 83' and 120 ft bgs Top Of Sand Pack 134.0 ft bgs Sidley #5 Sand Screen 2" ID PVC Sch 40 134.0 - 148.0 ft bgs 0.010 slot Borehole Dia 6"				
105			877			8.2/10		
110		111.5' - 114.5' Few Shale seams throughout.	872					
115			867			0.7/10		
120		118.9' - 119.8' Coarse grained SANDSTONE. 120.0' - 121.0' Rounded Gravel; coral fossil with pyrite replacement; Shale seam at 120.9' bgs.	862	118.5				
125			857	126		0.5/10		
		127.5' - 128.15' Shale seam.						
130		130.0' - 131.0' Shale seams throughout.	852					
135			847	134 137		8.0/10		
140		141.9' Mudstone seam; increased Gravel and Shale content with depth.	842					
145			837			4.0/10		
		(148.5' - 153.0') Cuyahoga Formation. SHALE (SH); dry; brittle; dark gray.		147 148 150				
150								

Boring was hand cleared for MEC on 02/09/09
9" outer casing set using 8.25" ID HSAs from 0 ft - 30 ft bgs
155.7 gallons of water injected during drilling; 3,500 gallons of water removed.

SCFmw-002

(Page 3 of 4)

US Army Corps of Engineers

SAIC

Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266
Portage County

SCFmw-002

(Page 4 of 4)

Start Date	: 02/10/09, 1439
End Date	: 03/17/09, 1531
Northing Coord.	: 555152.36
Easting Coord.	: 2368027.36
Total Depth of Boring	: 153 ft

Drilling Company	: Prentz Drilling
Driller	: Rob Hamilton
Designation of Drill	: CME 75/ TH-60
Type of Drill Rig	: Auger Rig/Air Rotary
Geologist	: Amanda Trenton
Oversight Company	: SAIC
Borehole Diameter	: 12" Overburden/8" Rock
Sampling Equipment	: 8.25" Hollow Stem Augers : 2" 2' Long Split Spoon : 6" 10' Long Core Barrel

Well: SCFmw-002
TOC Elev.: 984.56

Surf. Elev. 982.28

Depth in feet	USCS Symbol	DESCRIPTION	Well Constr. Information	Blow Count	Recovery	Collection Interval	Comments
150					3.0/3.0		
		Boring terminated at 153.0 ft bgs.	Above Grade Completion 6" Protective Casing 3 ft ags - 5 ft bgs Set in Concrete Concrete 0 - 1.0 ft bgs Below Grade Completion 8" Outer casing set from 0 ft - 30 ft bgs Cement Bentonite Grout 1.0' - 118.5 ft bgs Holeplug 3/8 Coarse Grade Bentonite Chips 118.5 - 134.0 ft bgs & 146' - 153 ft bgs Riser 2" ID PVC Sch 40 2.5' ags - 137.0 ft bgs Centralizers 6" expansion, placed at 2', 42', 93' and 120 ft bgs Top Of Sand Pack 134.0 ft bgs Sidley #5 Sand Screen 2" ID PVC Sch 40 134.0 - 148.0 ft bgs 0.010 slot Borehole Dia 6"				Soil Color Chart Munsell 2000 Rev Ed. Rock Color Chart Munsell 1905, 8th Ed.
155							
160							
165							
170							
175							
180							
185							
190							
195							
200							

Surf. Elev. 832, 827, 822, 817, 812, 807, 802, 797, 792, 787

153

Boring was hand cleared for MEC on 02/09/09
8" outer casing set using 8.25" ID HSAs from 0 ft - 30 ft bgs
165.7 gallons of water injected during drilling; 3,500 gallons of water removed.

SCFmw-002

(Page 4 of 4)

US Army Corps of Engineers

SAIC

Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266
Portage County

SCFmw-003

(Page 1 of 3)

Start Date : 02/16/09, 1900
End Date : 03/13/09

Northing Coord. : 557957.67
Easting Coord. : 2375843.20
Total Depth of Boring : 140 ft

Drilling Company : Frontz Drilling
Driller : Rob Hamilton
Designation of Drill : CME 75/ TH-60
Type of Drill Rig : Auger Rig/Air Rotary
Geologist : Amanda Trenton
Oversight Company : SAIC
Borehole Diameter : 14" Overburden/6" Rock
Sampling Equipment : 12.25" Hollow Stem Augers
: 2" 2' Long Split Spoon
: 6" 10' Long Core Barrel

Well: SCFmw-003
TOC Elev.: 958.47

Depth in feet	USCS Symbol	DESCRIPTION	Surf. Elev. 956.14	Well Constr. Information	Blow Count	Recovery	Collection Interval	Comments
0		(0.0' - 7.8') Silty CLAY (CL); dry; medium stiff; trace subangular Gravel; 10YR5/6 yellowish brown and 10YR4/3 brown; fine Sand seams throughout.	956	Above Grade Completion 6" Protective Casing 3 ft ags - 5 ft bgs Set in Concrete	3/7/5/3	1.2/2.0		Elevation: NGVD 1929
5			951		3/3/4/7	1.9/2.0		NAVD 1988: TOC: 957.92 Surface 955.59
					13/15/11/9	1.0/2.0		
				Concrete 0 - 1.0 ft bgs	9/7/10/9	1.0/2.0		
10		(7.8' - 10.0') Silty fine SAND (SM); Sandstone fragments throughout; wet; medium dense; 10YR5/3 brown.	946		13/11/11/13	0.6/2.0		
		(10.0' - 10.25') SANDSTONE (SS); dry; light brown 2.5Y6/3. Augered to 15 ft to install 8" Outer Casing; drill using tricone bit to 16 ft bgs for rock coring.		Below Grade Completion 8" Outer Casing set from 0 ft - 15 ft bgs	50/0	0.25/0.25		
15			941			NA		
		(15.0' -138.5') Sharon Conglomerate. Medium grained quartzose SANDSTONE (SS); wet by 20 ft; loosely cemented; light gray 2.5Y7/1 light gray with some gray 2.5Y6/1 laminations; mineral accumulations within parting layers and voids.		Cement Bentonite Grout 1.0' - 115.5'				
20			936	Holeplug 3/8 Coarse Grade Bentonite Chips 115.5 - 123.0 ft bgs & 138.5' - 140'		8.0/9.0		
25			931	Riser 2" ID PVC Sch 40 2.5' ags - 125.5 ft bgs		5.0/5.0		
30			926	Centralizers 6" expansion, placed at 2', 38', 76', and 114 ft bgs.				
35			921			8.2/10.0		
		Lost core between 37'-40 ft bgs		Top Of Sand Pack 123.0 ft bgs Sidley #5 Sand				
40			916					
		Coal seam at 44.3 ft bgs		Screen 2" ID PVC Sch 40 125.5 - 135.5 ft bgs 0.010 slot				
45			911			10.0/10.0		
50				Borehole Dia 6"				

Boring was hand cleared for MEC on 02/16/09
8" outer casing set using 12.25" ID HSAs from 0 - 15 ft bgs
33.3 gallons of water injected during drilling; 4,000 gallons of water removed.

SCFmw-003

(Page 1 of 3)

US Army Corps of Engineers

SAIC

Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266
Portage County

SCFmw-003

(Page 2 of 3)

Start Date : 02/16/09, 1000
End Date : 03/13/09

Northing Coord. : 557957.67
Easting Coord. : 2375843.20
Total Depth of Boring : 140 ft

Drilling Company : Frontz Drilling
Driller : Rob Hamilton
Designation of Drill : CME 75/ TH-60
Type of Drill Rig : Auger Rig/Air Rotary
Geologist : Amanda Trentes
Oversight Company : SAIC
Borehole Diameter : 14" Overburden/8" Rock
Sampling Equipment : 12.25" Hollow Stem Augers
: 2" 2' Long Split Spoon
: 6" 10' Long Core Barrel

Well: SCFmw-003
TOC Elev.: 958.47

Depth in feet	USCS Symbol	DESCRIPTION	Surf. Elev. 956.14	Well Constr. Information	Blow Count	Recovery	Collection Interval	Comments
50		Quartz rounded gravel at 51.2 ft bgs	906	2.5 Above Grade Completion 6" Protective Casing 3 ft ags - 5 ft bgs Set in Concrete Concrete 0 - 1.0 ft bgs Below Grade Completion 8" Outer Casing set from 0 ft - 15 ft bgs Cement Bentonite Grout 1.0' - 115.5' Holeplug 3/8 Coarse Grade Bentonite Chips 115.5 - 123.0 ft bgs & 138.5' - 140' Riser 2" ID PVC Sch 40 2.5' ags - 125.5 ft bgs Centralizers 6" expansion, placed at 2', 38', 75', and 114 ft bgs. Top Of Sand Pack 123.0 ft bgs Sidley #5 Sand Screen 2" ID PVC Sch 40 125.5 - 135.5 ft bgs 0.010 slot Borehole Dia 6"				
55		57.9' - 59.3' Coarser Sandstone sequence; increased amount of subrounded Gravel.	901			10.0/10.0		
60			896					
65		Mudstone clasts at 65.7 ft bgs	891			10.0/10.0		
70		3/4" Subrounded Gravel 73 ft bgs	886					
75			881			10.1/10.0		
80			876					
85		83.0' - 84.3' & 86.4' - 91' Coarser grained SANDSTONE; increased amounts of subrounded Gravel; increased fracturing from 80' - 91'; mineral concretions along parting fractures.	871			9.3/10.0		
90			866					
95		Shale stringers from 96'-100 ft bgs	861			9.2/10.0		
100				100				

Boring was hand cleared for MEC on 02/16/09
8" outer casing set using 12.25" ID HSAs from 0 - 15 ft bgs
33.3 gallons of water injected during drilling; 4,000 gallons of water removed.

SCFmw-003

(Page 2 of 3)

US Army Corps of Engineers

SAIC

Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266
Portage County

SCFmw-003

(Page 3 of 3)

Start Date : 02/16/09; 1000
End Date : 03/13/09

Northing Coord. : 557657.67
Easting Coord. : 2375643.20
Total Depth of Boring : 140 ft

Drilling Company : Frontz Drilling
Driller : Rob Hamilton
Designation of Drill : CME 75/ T31-50
Type of Drill Rig : Auger Rig/Air Rotary
Geologist : Amanda Trantor
Oversight Company : SAIC
Borehole Diameter : 14" Overburden/8" Rock
Sampling Equipment : 12.25" Hollow Stem Augers
: 2" 2' Long Split Spoon
: 6" 10' Long Core Barrel

Depth in feet	USCS Symbol	DESCRIPTION	Surf. Elev. 866.14	Well: SCFmw-003 TOC Elev.: 868.47	Well Constr. Information	Blow Count	Recovery	Collection Interval	Comments
100		Increased fractures from 100'-105'	866	2.5	Above Grade Completion 6" Protective Casing 3 ft ags - 5 ft bgs Set in Concrete				
105			851				10.2/10.0		
110		109.3' - 109.45' Mudstone seam	846		Concrete 0 - 1.0 ft bgs				
115			841	115.5	Below Grade Completion 8" Outer Casing set from 0 ft - 15 ft bgs		10.0/10.0		
120		Fractured from 120' - 123 ft bgs Increased gravel content 124' - 130'	836		Cement Bentonite Grout 1.0' - 115.5'				
125		135' - 138.5' Very fractured Sandstone with abundant 1/4" - 1.5" rounded and subrounded quartzose Gravel thoroughout; some mudstone clasts.	831	123 / 125.5	Holeplug 3/8 Coarse Grade Bentonite Chips 115.5 - 123.0 ft bgs & 136.5' - 140'		10.0/10.0		
130			826		Riser 2" ID PVC Sch 40 2.5' ags - 125.5 ft bgs				
135			821	135.5 / 136	Centralizers 6" expansion, placed at 2', 38', 76', and 114 ft bgs.		8.4/10.0		
140		(136.5' - 140') Cuyahoga Formation. SHALE; brittle, some Sandstone laminations and seams thoughout, very dark gray.	816	140	Top Of Sand Pack 123.0 ft bgs Sidley #5 Sand				
145		Boring terminated at 140 ft bgs.	811		Screen 2" ID PVC Sch 40 125.5 - 135.5 ft bgs 0.010 slot				Soil Color Chart Munsell 2000 Rev Ed. Rock Color Chart Munsell 1995, 8th Ed.
150					Borehole Dia 6"				

Boring was hand cleared for MEC on 02/16/09
8" outer casing set using 12.25" ID HSAs from 0 - 15 ft bgs
33.3 gallons of water injected during drilling; 4,000 gallons of water removed.

SCFmw-003

(Page 3 of 3)

US Army Corps of Engineers

SAIC

Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266
Portage County

SCFmw-004

(Page 1 of 3)

Start Date	: 02/25/09; 1459
End Date	: 03/10/09; 0948
Northing Coord.	: 560361.03
Easting Coord.	: 2378730.23
Total Depth of Boring	: 120 ft

Drilling Company	: Frontz Drilling
Driller	: Rob Hamilton
Designation of Drill	: CME 75/ TH-60
Type of Drill Rig	: Auger Rig/Air Rotary
Geologist	: Amanda Trenton
Oversight Company	: SAIC
Borehole Diameter	: 14" Overburden/6" Rock
Sampling Equipment	: 12.25" Hollow Stem Augers : 2" 2' Long Split Spoon : 6" 10' Long Core Barrel

Well: SCFmw-004
TOC Elev.: 944.17

Surf. Elev. 941.87

Depth in feet	USCS Symbol	DESCRIPTION	Blow Count	Recovery	Collection Interval	Comments
0		(0.0'- 10.0') Silty Clay (CL); Sand lenses throughout; dry; medium stiff; plastic; wet by 7.8 ft bgs; 10YR5/3 brown and 10YR4/1 dark gray.	3/4/5/7	1.3/2.0		Elevation: NGVD 1929
			5/4/3/5	1.9/2.0		
5			2/3/4/3	1.25/2.0		NAVD 1988; TOC: 943.62 Surface 941.32
			2/2/3/2	1.6/2.0		
10		(10.0' - 24.0') SILT (ML); little pockets of Clay; saturated; medium plasticity; 10YR4/1 dark gray.	4/5/3/4	1.9/2.0		
			3/3/4/4	1.5/2.0		
			2/2/3/3	2.0/2.0		
15			2/2/3/4	1.3/2.0		
			1/1/2/1	1.4/2.0		
20			1/1/1/1	2.0/2.0		
			1/1/1/1	0.8/2.0		
25		(24.0' - 26.5') Silty CLAY (CL); some subangular 1/4" Gravel; little Sand lenses; dry; plastic; 10YR4/1 dark gray.	wh/1/1/1	1.75/2.0		
			1/2/1/4	0.9/2.0		
		(26.5' - 28.0') SILT (ML); little pockets of Clay; damp; medium plasticity; soft; 10YR4/1 dark gray.	2/4/2/3	1.3/2.0		
30			2/2/4/3	1.4/2.0		
		(28.0' - 32.5') Silty fine SAND (SM); little subangular Gravel; Silt content increases with depth; moist; medium dense; 10YR4/1 dark gray.	1/3/2/2	0.9/2.0		
			3/2/4/4	1.4/2.0		
35		(32.5' - 34') SILT (ML); wet; trace Sand; wet; medium dense; 10YR4/1 dark gray.	8/5/5/5	1.2/2.0		
		(34.0' - 42.25') Sandy SILT (ML); some pockets of increased Clay content from 34.0' - 36.6'; little 1/8" to 3/4" subangular Gravel; moist to dry with depth; stiff; Sand and Gravel content increases with depth; 10YR4/1 dark gray.	8/15/17/12	1.5/2.0		
			9/11/13/11	1.25/2.0		
40			50/3	1.25/1.25		
			5/21/28/18	2.0/2.0		
45		(42.25' - 50') Fine SAND (SW); coarsening downward to coarse Sand and fine Gravel; some subrounded Gravel (1/4"-1/2"); some Sandstone fragments; little Silty matrix; moist; stiff to hard; 10YR4/1 dark gray.	8/8/11/9	1.25/2.0		
			13/9/11/11	1.35/2.0		
50			11/50/3	0.75/0.75		

Well Constr. Information:

- Above Grade Completion: 6" Protective Casing 3 ft ags - 5 ft bgs; Set in Concrete
- Concrete: 0 ft - 1.0 ft bgs
- Below Grade Completion: 8" Outer Casing set from 0 ft- 55 ft bgs
- Cement Bentonite Grout: 1.0' - 77.0 ft bgs
- Holeplug 3/8 Coarse Grade Bentonite Chips: 77.0' - 95.0' bgs & 111' - 120 ft bgs
- Riser: 2" ID PVC Sch 40; 2.5' ags - 100.0' bgs
- Centralizers: 6" expansion at 3', 59', and 86 ft bgs; 8" expansion at 29 ft bgs
- Top Of Sand Pack: 95.0 ft bgs; Sidley #5 Sand
- Screen: 2" ID PVC Sch 40; 100.0 - 110.0 ft bgs; 0.010 slot
- Borehole Dia 6"

Boring was hand cleared for MEC on 02/25/09
8" outer casing set using 12.25" ID HSAs from 0.0' - 55 ft bgs
37 gallons of water injected during drilling; 2,000 gallons of water removed.

SCFmw-004

(Page 1 of 3)

US Army Corps of Engineers

SAIC

Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266
Portage County

SCFmw-004

(Page 2 of 3)

Start Date : 02/25/09; 1459
End Date : 03/10/09; 0948

Northing Coord. : 560301.03
Easting Coord. : 2378730.23
Total Depth of Boring : 120 ft

Drilling Company : Frontz Drilling
Driller : Rob Hamilton
Designation of Drill : CME 75/ TH-60
Type of Drill Rig : Auger Rig/Air Rotary
Geologist : Amanda Trenton
Oversight Company : SAIC
Borehole Diameter : 14" Overburden/8" Rock
Sampling Equipment : 12.25" Hollow Stem Augers
: 2" 2' Long Split Spoon
: 6" 10' Long Core Barrel

Depth in feet	USCS Symbol	DESCRIPTION	Surf. Elev. 941.87	Well: SCFmw-004 TOC Elev.: 944.17	Well Constr. Information	Blow Count	Recovery	Collection Interval	Comments
50		(50.0' - 111.5') Sharon Conglomerate. Medium grained quartzose SANDSTONE (SS); trace subrounded fine quartzose Gravel thoughout; wet; loosely cemented; laminations throughout, mineral accumulations in voids and fractures including pyrite and siderite; trace coals seams (<1/8" thick); 5Y6/1 Gray.	891	2.5	Above Grade Completion 6" Protective Casing 3 ft ags - 5 ft bgs Set in Concrete		NA		
55			886				4.3/4.5		
60		58.3' Shale Seam	881	59	Concrete 0 ft - 1.0 ft bgs				
65			876		Below Grade Completion 8" Outer Casing set from 0 ft- 55 ft bgs		9.8/10.0		
		68.6'-68.7' Shale Seam			Cement Bentonite Grout 1.0' - 77.0 ft bgs				
70		71.8' & 74.6' Rounded 1/2" Gravel seam	871		Holeplug 3/8 Coarse Grade Bentonite Chips 77.0' - 95.0' bgs & 111' - 120 ft bgs		10.0/10.0		
75		76.8' - 77.5' Coarser grained SANDSTONE with increased Gravel content	866	77	Riser 2" ID PVC Sch 40 2.5' ags - 100.0' bgs				
80		78.3' - 78.5 Rounded 1/4"-1/2" Gravel seam 81.5' Subrounded 1.5" Gravel Increased laminations from 82' - 90' 85.8' Subrounded 1.5" Gravel	861		Centralizers: 6" expansion at 3', 58', and 66 ft bgs 8" expansion at 29 ft bgs		9.75/10.0		
85			856	85	Top Of Sand Pack 95.0 ft bgs Sidley #5 Sand				
90		90'-100' Very fractured; poor recovery	851		Screen 2" ID PVC Sch 40 100.0 - 110.0 ft bgs 0.010 slot				
95			846	95	Borehole Dia 6"		5.5/10.0		
100				100					

Boring was hand cleared for MEC on 02/25/09
8" outer casing set using 12.25" ID HSAs from 0.0' - 55 ft bgs
37 gallons of water injected during drilling; 2,000 gallons of water removed.

SCFmw-004

(Page 2 of 3)

US Army Corps of Engineers

SAIC

Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266
Portage County

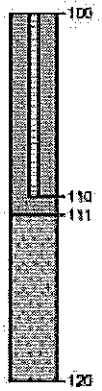
SCFmw-004

(Page 3 of 3)

Start Date	: 02/25/09; 1458
End Date	: 03/10/09; 0948
Northing Coord.	: 560361.03
Easting Coord.	: 2378730.23
Total Depth of Boring	: 120 ft

Drilling Company	: Frontz Drilling
Driller	: Rob Hamilton
Designation of Drill	: CME 75/ TH-60
Type of Drill Rig	: Auger Rig/Air Rotary
Geologist	: Amanda Trentcel
Oversight Company	: SAIC
Borehole Diameter	: 14" Overburden/6" Rock
Sampling Equipment	: 12.25" Hollow Stem Augers : 2" 2' Long Split Spoon : 6" 10' Long Core Barrel

Well: SCFmw-004
TOC Elev.: 944.17



Depth in feet	USCS Symbol	DESCRIPTION	Surf. Elev. 941.87	Well Constr. Information	Blow Count	Recovery	Collection Interval	Comments
100			841	Above Grade Completion 6" Protective Casing 3 ft ags - 5 ft bgs Set in Concrete Concrete 0 ft - 1.0 ft bgs Below Grade Completion 8" Outer Casing set from 0 ft - 55 ft bgs Cement Bentonite Grout 1.0' - 77.0 ft bgs Holeplug 3/8 Coarse Grade Bentonite Chips 77.0' - 95.0' bgs & 111' - 120 ft bgs Riser 2" ID PVC Sch 40 2.5' ags - 100.0' bgs Centralizers: 6" expansion at 3', 55', and 90 ft bgs 8" expansion at 29 ft bgs Top Of Sand Pack 95.0 ft bgs Sidley #5 Sand Screen 2" ID PVC Sch 40 100.0 - 110.0 ft bgs 0.010 slot Borehole Dia 6"				
105			836			10.2/10.0		
110			831					
115		(111.5' - 120') Cuyahoga Formation. SHALE (SH); planar; brittle; some fine Sandstone laminations throughout; very dark gray.	826			9.5/10.0		
120		Boring terminated at 120 ft bgs.	821					
125			816					
130			811					
135			806					
140			801					
145			796					Soil Color Chart Munsell 2000 Rev Ed. Rock Color Chart Munsell 1990, 8th Ed.
150								

Boring was hand cleared for MEC on 02/25/09
8" outer casing set using 12.25" ID HSAs from 0 0' - 55 ft bgs
37 gallons of water injected during drilling; 2,000 gallons of water removed

SCFmw-004

(Page 3 of 3)

US Army Corps of Engineers

SAIC

Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266
Portage County

SCFmw-005

(Page 1 of 4)

Start Date	: 02/13/09, 0819
End Date	: 03/24/09, 1500
Northing Coord.	: 567302.35
Easting Coord.	: 2377014.05
Total Depth of Boring	: 160 ft

Drilling Company	: Frontz Drilling
Driller	: Rob Hamilton
Designation of Drill	: CME 75/ TH-50
Type of Drill Rig	: Auger Rig/Air Rotary
Geologist	: Amanda Trantos
Oversight Company	: SAIC
Borehole Diameter	: 14" Overburden/6" Rock
Sampling Equipment	: 12.25" Hollow Stem Augers : 2" 2' Long Split Spoon : 6" 10' Long Core Barrel

Well: SCFmw-005
TOC Elev.: 960.80

Surf. Elev. 958.43

Depth in feet	USCS Symbol	DESCRIPTION	Blow Count	Recovery	Collection Interval	Comments
0		(0.0' - 1.5') SILT (ML); some Gravel; dry; soft; organics throughout; 10YR4/3 brown.	3/5/5/4	0.6/2.0		Elevation: NGVD 1929
		(1.5' - 4.75') Silty CLAY (CL); dry; medium stiff; low plasticity; 10YR4/3 brown mottled 10YR5/6 yellowish brown and 10YR5/1 gray.	7/5/9/7	1.5/2.0		NAVD 1988 TOC: 960.26 Surface: 957.89
5			11/50/2	0.75/0.75		
10		(4.75' - 11.0) Augered to 10 ft bgs for installation of outer casing; no recovery. 10.0' - 11.0' Drilled using tricone bit to 11.0 ft bgs for rock coring.		NA		
15		(11.0' - 156') Sharon Conglomerate SANDSTONE (SS); medium grained; some subrounded Gravel; wet by 12 ft bgs; loosely cemented; mineral accumulations in voids; yellowish brown 10YR6/6 iron staining; increase in 5Y6/1 gray with depth; laminations throughout.		8.5/9.0		
20						
25		Fractured from 11-24 ft bgs; small seams of coarser Sand and Gravel.		9.3/10.0		
30						
35				10.0/10.0		
40						
45		47' - 53.8' Coarse Sandstone and 1/4"- 1/2" Gravel.		9.0/10.0		
50						

Above Grade Completion
6" Protective Casing
3 ft ags - 5 ft bgs
Set In Concrete

Concrete
0 - 1.0 ft bgs

Below Grade Completion
8" Outer Casing set
0 ft - 10 ft bgs

Cement Bentonite Grout
1.0' - 126.0 ft bgs

Holeplug 3/8 Coarse Grade Bentonite Chips
126.0' - 135' bgs & 155' - 160.1 ft bgs

Riser
2" ID PVC Sch 40
2.5 ft ags - 139.0 ft bgs

Centralizers
6" expansion, placed at 2 ft bgs
8" expansion, placed at 43', 84', & 125' bgs

Top Of Sand Pack
130.0 ft bgs
Sidey #5 Sand

Screen
2" ID PVC Sch 40
139.0 - 164.0 ft bgs
0.010 slot

Borehole Dia 6"

Boring was hand cleared for MEC on 02/05/09
8" outer casing set using 12.25" ID HSAs from 0 ft - 10 ft bgs
156.5 gallons of water injected during drilling; 19,000 gallons of water removed.

SCFmw-005

(Page 1 of 4)

US Army Corps of Engineers | SAIC

Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266
Portage County

SCFmw-005

(Page 2 of 4)

Start Date	: 03/13/09, 0918
End Date	: 03/24/09, 1500
Northing Coord.	: 587302.35
Easting Coord.	: 2377014.05
Total Depth of Boring	: 160 ft

Drilling Company	: Frontz Drilling
Driller	: Rob Hamson
Designation of Drill	: CME 75/ TH-60
Type of Drill Rig	: Auger Rig/Air Rotary
Geologist	: Amanda Trandos
Oversight Company	: SAIC
Borehole Diameter	: 14" Overburden/6" Rock
Sampling Equipment	: 12.25" Hollow Stem Augers : 2" 2' Long Split Spoon : 6" 10' Long Core Barrel

Well: SCFmw-005
TOC Elev.: 960.80

Depth in feet	USCS Symbol	DESCRIPTION	Surf. Elev. 958.43	Well Constr. Information	Blow Count	Recovery	Collection Interval	Comments
50			908	Above Grade Completion 6" Protective Casing 3 ft ags - 5 ft bgs Set In Concrete Concrete 0 - 1.0 ft bgs Below Grade Completion 8" Outer Casing set 0 ft - 10 ft bgs Cement Bentonite Grout 1.0' - 126.0 ft bgs Holeplug 3/8 Coarse Grade Bentonite Chips 126.0' - 136' bgs & 156' - 160.1 ft bgs Riser 2" ID PVC Sch 40 2.5 ft ags - 139.0 ft bgs Centralizers 6" expansion, placed at 2 ft bgs 8" expansion, placed at 43', 84', & 125' bgs Top Of Sand Pack 136.0 ft bgs Sidley #5 Sand Screen 2" ID PVC Sch 40 139.0 - 154.0 ft bgs 0.010 slot Borehole Dia 8"				
55		57.7' Fine rounded Gravel seam	903			10.0/10.0		
60		60.6 5Y6/1 Gray; no staining. 62.5-63.9 Medium to coarse Sandstone	898					
65			893			9.9/10.0		
70			888					
75			883			10.0/10.0		
80		82' - 83' Increased mineralization in voids/fractures	878					
85			873			10.0/10.0		
90			868					
95			863			9.9/10.0		
100								

2.5
84
100

Boring was hand cleared for MEC on 02/09/09
8" outer casing set using 12.25" ID HSAs from 0 ft - 10 ft bgs
156.5 gallons of water injected during drilling; 19,000 gallons of water removed.

SCFmw-005

(Page 2 of 4)

US Army Corps of Engineers

SAIC

Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266
Portage County

SCFmw-005

(Page 3 of 4)

Start Date : 02/13/09, 0818
End Date : 03/24/09, 1500

Northing Coord. : 567302.35
Easting Coord. : 2377014.05
Total Depth of Boring : 160 ft

Drilling Company : Frontz Drilling
Driller : Rob Hamilton
Designation of Drill : CME 75/ TH-60
Type of Drill Rig : Auger Rig/Air Rotary
Geologist : Amanda Trentler
Oversight Company : SAIC
Borehole Diameter : 14" Overburden/6" Rock
Sampling Equipment : 12.25" Hollow Stem Augers
: 2" 2' Long Split Spoon
: 6" 10' Long Core Barrel

Well: SCFmw-005
TOC Elev.: 860.80

Depth in feet	USCS Symbol	DESCRIPTION	Surf. Elev. 858.43	Well Constr. Information	Blow Count	Recovery	Collection Interval	Comments
100		100.5' Subrounded 1/2" Gravel seam 100.8' - 115' Interbedded Shale seams (<1/8" - 0.5' thick).	858	Above Grade Completion 6" Protective Casing 3 ft ags - 5 ft bgs Set in Concrete Concrete 0 - 1.0 ft bgs Below Grade Completion 8" Outer Casing set 0 ft - 10 ft bgs Cement Bentonite Grout 1.0' - 126.0 ft bgs Holeplug 3/8 Coarse Grade Bentonite Chips 126.0' - 136' bgs & 139' - 160.1 ft bgs Riser 2" ID PVC Sch 40 2.5 ft ags - 139.0 ft bgs Centralizers 6" expansion, placed at 2 ft bgs 6" expansion, placed at 43', 84', & 125' bgs Top Of Sand Pack 136.0 ft bgs Sidley #5 Sand Screen 2" ID PVC Sch 40 139.0 - 154.0 ft bgs 0.010 slot Borehole Dia 8"				
105			853			7.1/10.0		
110			848					
115		115' - 117' Increase in rounded Gravel content. 116' - 126' Fractured	843			9.7/10.0		
120			838					
125		127' - 141' Trace to no Gravel	833			9.2/10.0		
130			828					
135			823			9.4/10.0		
140		141'-150' Increase in Gravel with depth.	818					
145			813			10.0/10.0		
150								

Boring was hand cleared for MEC on 02/09/09
8" outer casing set using 12.25" ID HSAs from 0 ft - 10 ft bgs
156.5 gallons of water injected during drilling; 19,000 gallons of water removed.

SCFmw-005

(Page 3 of 4)

US Army Corps of Engineers

SAIC

Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266
Portage County

SCFmw-005

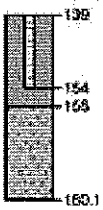
(Page 4 of 4)

Start Date	: 02/13/09, 0918
End Date	: 03/24/09, 1500
Northing Coord.	: 567302.35
Easting Coord.	: 2377014.05
Total Depth of Boring	: 160 ft

Drilling Company	: Frontz Drilling
Driller	: Rob Hamilton
Designation of Drill	: CME 75/ TH-60
Type of Drill Rig	: Auger Rig/Air Rotary
Geologist	: Amanda Trenton
Oversight Company	: SAIC
Borehole Diameter	: 14" Overburden/6" Rock
Sampling Equipment	: 12.25" Hollow Stem Augers : 2" 2' Long Split Spoon : 6" 10' Long Core Barrel

Depth in feet	USCS Symbol	DESCRIPTION	Surf. Elev. 958.43
150		150' - 155' Coarse grained Sandstone with little Gravel	808
155		(155' - 160.1') Cuyahoga Formation. SHALE (SH): planar; brittle; few Sandstone laminations and layers throughout; very dark gray to black.	803
160		Boring terminated at 160.1 ft bgs.	798
165			793
170			788
175			783
180			778
185			773
190			768
195			763
200			

Well: SCFmw-005
TOC Elev.: 960.80



Well Constr. Information

Above Grade Completion
8" Protective Casing
3 ft ags - 5 ft bgs
Set In Concrete

Concrete
0 - 1.0 ft bgs

Below Grade Completion
8" Outer Casing set
0 ft - 10 ft bgs

Cement Bentonite Grout
1.0' - 120.0 ft bgs

Holeplug 3/8 Coarse Grade Bentonite Chips
120.0' - 136' bgs &
155' - 160.1 ft bgs

Riser
2" ID PVC Sch 40
2.5 ft ags - 139.0 ft bgs

Centralizers
6" expansion, placed at 2 ft bgs
8" expansion, placed at 43', 84', & 125' bgs

Top Of Sand Pack
136.0 ft bgs
Sidley #5 Sand

Screen
2" ID PVC Sch 40
139.0 - 154.0 ft bgs
0.010 slot

Borehole Dia 8"

Blow Count	Recovery	Collection Interval	Comments
	0.1/10.0		Soil Color Chart Munsell 2000 Rev Ed. Rock Color Chart Munsell 1995, 8th Ed.

Boring was hand cleared for MEC on 02/09/09
8" outer casing set using 12.25" ID HSAs from 0 ft - 10 ft bgs
156.5 gallons of water injected during drilling; 18,000 gallons of water removed.

SCFmw-005

(Page 4 of 4)

US Army Corps of Engineers

SAIC

Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266
Portage County

SCFmw-006

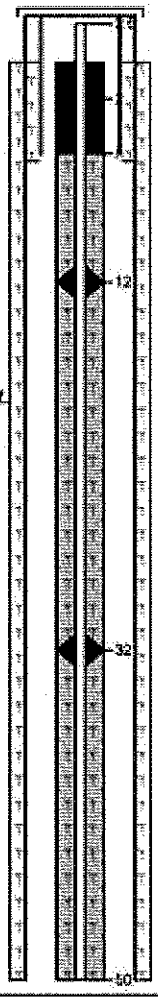
(Page 1 of 2)

Start Date	: 02/19/09, 1032
End Date	: 03/03/09, 1030
Northing Coord.	: 569583.41
Easting Coord.	: 2369394.54
Total Depth of Boring	: 60 ft

Drilling Company	: Frontz Drilling
Driller	: Rob Hamilton
Designation of Drill	: CME 75/ TH-60
Type of Drill Rig	: Auger Rig/Air Rotary
Geologist	: Amanda Trantor
Oversight Company	: SAIC
Borehole Diameter	: 14" Overburden/6" Rock
Sampling Equipment	: 12.25" Hollow Stem Augers : 2" 2' Long Split Spoon : 6" 10' Long Core Barrel

Depth in feet	USCS Symbol	DESCRIPTION	Surf. Elev. 963.68	Well Constr. Information	Blow Count	Recovery	Collection Interval	Comments
0		(0.0' - 6.25') Silty CLAY (CL); dry; soft to stiff; medium plasticity; 10YR5/4 yellow brown, some 10YR5/6 yellow brown and 10YR5/1 gray (1.0' - 2.25'); sand lenses from 3.0' - 6.25'.	963	Above Grade Completion 6" Protective Casing 3 ft ags - 5 ft bgs Set in Concrete	4/3/2/3	1.7/2.0		Elevation: NGVD 1929
5			958		5/6/7/11	2.0/2.0		NAVD 1988: TOC: 965.38 Surface: 963.15
					3/7/5/5	1.6/2.0		
					7/7/9/11	2.0/2.0		
				Concrete 0 - 1.0 ft bgs	5/5/5/9	2.0/2.0		
10		(6.25' - 8.25') Clayey SAND (SC); medium to fine grained; moist, medium dense; 10YR5/3 brown		Below Grade Completion 8" Outer Casing set from 0 ft - 60 ft bgs	9/9/8/7	1.5/2.0		
		(8.25' - 20.3') SAND (SP); coarsening and fining sequences; pockets of Clay and Silt throughout; little fine 1/4" Gravel; dry; medium dense; 10YR4/3 brown.	953		3/7/7/6	2.0/2.0		
					3/2/4/3	1.3/2.0		
15			948	Cement Bentonite Grout 1.0' - 70' bgs	4/3/2/2	2.0/2.0		
					2/2/1/7	2.0/2.0		
20		(20.3' - 33.6') Medium to coarse grained SAND (SW); trace fine Gravel; damp; loose; 10YR4/1 dark gray and 10YR4/2 dark grayish brown.	943	Holeplug 3/8 Coarse Grade Bentonite Chips 70 ft - 73 ft bgs & 87 ft - 90 ft bgs	w/w/1/2	1.6/2.0		
					w/w/w/1	1.3/2.0		
25			938		2/1/2/2	2.0/2.0		
				Riser 2" ID PVC Sch 40 2.5' ags - 76.0 ft bgs	1/1/1/3	2.0/2.0		
					1/1/1/1	2.0/2.0		
30			933	Centralizers 6" expansion; placed at 2' and 72 ft bgs 8" expansion; placed at 12', 32', & 52' bgs	w/w/w/w	1.0/2.0		
					3/7/2/2	2.0/2.0		
35		(33.6' - 46.4') Clayey SILT (ML); little Gravel and Shale fragments; Sand lenses from 44-46.4 ft; dry; stiff; 10YR4/1 dark gray.	928		9/6/6/10	0.8/2.0		
				Top Of Sand Pack 73.0 ft bgs Sidley #5 Sand	6/5/3/5	1.6/2.0		
					6/6/5/7	1.5/2.0		
40			923	Screen 2" ID PVC Sch 40 76.0 - 86.0 ft bgs 0.010 slot	6/5/6/9	1.3/2.0		
					11/13/6/9	1.5/2.0		
45			918	Borehole Dia 6"	4/7/7/11	1.0/2.0		
		(46.4' - 47.6') 1/2" subangular GRAVEL and Clayey SILT (GM); wet to moist; medium dense; 10YR4/1 dark gray.			5/5/4/9	2.0/2.0		
50					7/6/9/10	0.9/2.0		

Well: SCFmw-006
TOC Elev.: 965.92



Boring was hand cleared for MEC on 02/09/09
8" outer casing set using 12.25" ID HSAs from 0 ft - 60 ft bgs
3.1 gallons of water injected during drilling; 1,200 gallons of water removed.

SCFmw-006

(Page 1 of 2)

US Army Corps of Engineers

SAIC

Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, Ohio 44266
Portage County

SCFmw-006

(Page 2 of 2)

Start Date : 02/18/09, 1032
End Date : 03/03/09, 1630

Northing Coord. : 569583.41
Easting Coord. : 2369394.54
Total Depth of Boring : 90 ft

Drilling Company : Frontz Drilling
Driller : Rob Hamilton
Designation of Drill : CME 75/ TH-60
Type of Drill Rig : Auger Rig/Air Rotary
Geologist : Amanda Trentos
Oversight Company : SAIC
Borehole Diameter : 14" Overburden/8" Rock
Sampling Equipment : 12.25" Hollow Stem Augers
: 2" 2' Long Split Spoon
: 6" 10' Long Core Barrel

Well: SCFmw-006
TOC Elev.: 965.92

Depth in feet	USCS Symbol	DESCRIPTION	Surf. Elev. 963.69	Well Constr. Information	Blow Count	Recovery	Collection Interval	Comments
50		(47.6' - 51.75') Clayey SILT (ML); trace 1/4" subangular Gravel; some fine Sand lenses throughout, increased Sand content with depth; dry to damp; 10YR4/1 dark gray.	913	Above Grade Completion 6" Protective Casing 3 ft ags - 5 ft bgs Set in Concrete	7/13/11/19	1.3/2.0		
55		(51.75 - 52.6') SAND and SILT (SM); dry; dense; 10YR4/1 dark gray.	908		11/13/18/50/3	1.0/2.0		
60		(52.6' - 53.7') Fine SAND; trace Silt, Silt content decreases with depth; dry; dense; 10YR4/1 dark gray and 10YR5/3 brown.	903	Concrete 0 - 1.0 ft bgs Below Grade Completion 6" Outer Casing set from 0 ft - 60 ft bgs		NA		
65		(53.7' - 54.0') SANDSTONE (SS); weathered; competant bedrock by 55.0 ft bgs. Augered to 60 ft bgs to set 8" outer casing, no recovery. Drilled using tricone bit to 61' for rock coring, no recovery.	898	Cement Bentonite Grout 1.0' - 70' bgs		7.4/9.0		
70		(61' - 70') Sharon Conglomerate. Medium grained quartzose SANDSTONE (SS); wet; loosely cemented; little fine subrounded quartzose Gravel throughout. Sandstone matrix; laminations throughout with trace coal seams (<1/8" thick); some mineral accumulations in voids and fractures; some coarser sequences; 5Y6/1 Gray Thin coal seam at 70.0' surrounded by subrounded Gravel	893	Holeplug 3/8 Coarse Grade Bentonite Chips 70 ft - 73 ft bgs & 87 ft - 90 ft bgs				
75			888	Riser 2" ID PVC Sch 40 2.5' ags - 76.0 ft bgs		9.3/10.0		
80			883	Centralizers 6" expansion, placed at 2' and 72 ft bgs 8" expansion, placed at 12', 32', & 52' bgs				
85		(74.2') 1/4"-1" Subrounded Gravel (81.6' - 87.3') Coarsening downward sandstone; coarser Gravels at 81.6', 82.7', and 83.7'. Coarse 1/2" - 1.5" subrounded Gravel at 87.3' bgs.	878	Top Of Sand Pack 73.0 ft bgs Sidley #5 Sand		9.4/10.0		
90		(87.3' - 90.0') Cuyahoga Formation. SHALE; interbedded very fine Sandstone laminations; dry; brittle; very dark gray.	873	Screen 2" ID PVC Sch 40 76.0 - 88.0 ft bgs 0.010 slot				Soil Color Chart Munsell 2000 Rev Ed. Rock Color Chart Munsell 1995, 5th Ed.
95		Boring terminated at 90 ft bgs.	868	Borehole Dia 6"				
100								

Boring was hand cleared for MEC on 02/09/09
8" outer casing set using 12.25" ID HSAs from 0 ft - 60 ft bgs
3.1 gallons of water injected during drilling; 1,200 gallons of water removed.

SCFmw-006

(Page 2 of 2)

APPENDIX D

WATER LEVEL MEASUREMENT FIELD SHEETS

COMPREHENSIVE WATER LEVEL MEASUREMENTS

RVAAP FACILITY-WIDE GROUNDWATER MONITORING PROGRAM JANUARY 2009

Well Number		Location	Date	Time	Depth To Water*	Depth to Bottom	Description of bottom	Instrument/Serial Number
ASY	MW-001	Atlas Scrap Yard	1/14/2009	12:31	12.65	23.05	medium	5769
ASY	MW-002	Atlas Scrap Yard	1/14/2009	12:25	16.36	22.90	medium	5769
ASY	MW-003	Atlas Scrap Yard	1/14/2009	12:39	13.60	22.90	medium	5769
ASY	MW-004	Atlas Scrap Yard	1/14/2009	12:12	10.02	29.75	hard	5769
ASY	MW-005	Atlas Scrap Yard	1/14/2009	12:08	8.28	27.01	medium	5769
ASY	MW-006	Atlas Scrap Yard	1/14/2009	12:48	14.76	28.86	hard	5769
ASY	MW-007	Atlas Scrap Yard	1/14/2009	13:00	15.87	28.82	hard	5769
ASY	MW-008	Atlas Scrap Yard	1/14/2009	13:07	5.11	27.49	medium	5769
ASY	MW-009	Atlas Scrap Yard	1/14/2009	12:17	13.51	24.50	hard	5769
ASY	MW-010	Atlas Scrap Yard	1/14/2009	12:53	12.97	30.05	medium	5769
BKG	MW-004	Background	1/20/2009	11:20	14.31	22.21	hard	5767
BKG	MW-005	Background	1/13/2009	15:52	11.22	20.87	hard	5767
BKG	MW-006	Background	1/27/2009	13:05	23.01	37.53	soft	5767
BKG	MW-008	Background	1/20/2009	11:13	18.81	27.35	hard	5767
BKG	MW-010	Background	1/14/2009	11:38	15.42	21.97	hard	5769
BKG	MW-012	Background	1/19/2009	13:10	8.50	62.11	soft	5767
BKG	MW-013	Background	1/20/2009	10:14	12.46	27.96	hard	5767
BKG	MW-015	Background	1/20/2009	11:34	48.90	53.30	hard	5767
BKG	MW-016	Background	1/13/2009	15:41	5.72	21.13	hard	5767
BKG	MW-017	Background	1/13/2009	16:00	17.52	35.94	medium	5767
BKG	MW-018	Background	1/20/2009	12:03	16.24	27.51	hard	5767
BKG	MW-019	Background	1/19/2009	15:50	21.22	35.62	medium	5767
BKG	MW-020	Background	1/14/2009	14:10	8.60	33.17	hard	5767
BKG	MW-021	Background	1/20/2009	11:26	19.20	21.44	hard	5767

*All measurements from top of casing

COMPREHENSIVE WATER LEVEL MEASUREMENTS

RVAAP FACILITY-WIDE GROUNDWATER MONITORING PROGRAM JANUARY 2009

Well Number		Location	Date	Time	Depth To Water*	Depth to Bottom	Description of bottom	Instrument/Serial Number
B12	MW-010	Building 1200	1/14/2009	11:20	19.15	22.82	hard	5769
B12	MW-011	Building 1200	1/14/2009	11:30	23.43	26.70	hard	5769
B12	MW-012	Building 1200	1/14/2009	11:25	24.72	24.80	hard	5769
CBL	MW-001	C-Block Quarry	1/19/2009	15:35	44.82	49.70	hard	5767
CBL	MW-002	C-Block Quarry	1/19/2009	15:39	39.15	47.32	hard	5767
CBL	MW-003	C-Block Quarry	1/19/2009	15:29	37.67	44.71	hard	5767
CBL	MW-004	C-Block Quarry	1/19/2009	15:25	37.36	47.01	hard	5767
CBP	MW-001	Central Burn Pits	1/19/2009	12:25	13.85	32.68	soft	5767
CBP	MW-002	Central Burn Pits	1/19/2009	12:36	10.41	31.94	medium	5767
CBP	MW-003	Central Burn Pits	1/19/2009	12:11	12.69	30.19	hard	5767
CBP	MW-004	Central Burn Pits	1/19/2009	12:20	10.98	29.68	medium	5767
CBP	MW-005	Central Burn Pits	1/19/2009	12:16	12.21	27.40	medium	5767
CBP	MW-006	Central Burn Pits	1/19/2009	12:44	8.10	25.20	medium	5767
CBP	MW-007	Central Burn Pits	1/19/2009	12:07	16.29	31.74	medium	5767
CBP	MW-008	Central Burn Pits	1/19/2009	12:51	16.28	27.90	hard	5767
CP	MW-001	Cobbs Pond	1/19/2009	11:33	2.94	14.74	hard	5767
CP	MW-002	Cobbs Pond	1/19/2009	11:41	0.10	14.99	hard, under pressure	5767
CP	MW-003	Cobbs Pond	1/19/2009	11:20	3.96	17.10	hard	5767
CP	MW-004	Cobbs Pond	1/19/2009	11:56	10.54	22.52	hatd	5767
CP	MW-005	Cobbs Pond	1/19/2009	12:00	11.43	43.16	hard	5767
CP	MW-006	Cobbs Pond	1/14/2009	11:50	8.14	20.62	hard	5769
DA2	MW-104	Demo Area 2	1/19/2009	16:03	21.62	29.21	hard	5767
DA2	MW-105	Demo Area 2	1/19/2009	16:27	3.23	16.20	hard	5767
DA2	MW-106	Demo Area 2	1/19/2009	16:31	3.65	16.78	hard	5767

*All measurements from top of casing

COMPREHENSIVE WATER LEVEL MEASUREMENTS

RVAAP FACILITY-WIDE GROUNDWATER MONITORING PROGRAM JANUARY 2009

Well Number		Location	Date	Time	Depth To Water*	Depth to Bottom	Description of bottom	Instrument/Serial Number
DA2	MW-107	Demo Area 2	1/19/2009	16:33	6.88	16.82	hard	5767
DA2	MW-108	Demo Area 2	1/19/2009	16:19	5.79	17.16	hard	5767
DA2	MW-109	Demo Area 2	1/19/2009	16:55	13.84	24.32	medium	5767
DA2	MW-110	Demo Area 2	1/19/2009	16:58	8.15	22.34	hard	5767
DA2	MW-111	Demo Area 2	1/19/2009	16:50	4.50	14.78	hard	5767
DA2	MW-112	Demo Area 2	1/19/2009	16:45	7.28	17.50	hard	5767
DA2	MW-113	Demo Area 2	1/19/2009	16:43	7.85	16.29	hard	5767
DET	MW-001	Demo Area 2	1/19/2009	16:07	22.99	38.48	hard	5767
DET	MW-002	Demo Area 2	1/19/2009	16:15	32.58	41.94	medium	5767
DET	MW-003	Demo Area 2	1/19/2009	16:36	9.50	15.00	hard	5767
DET	MW-004	Demo Area 2	1/19/2009	16:38	10.51	13.80	hard	5767
EBG	MW-123	Erie Burning Grounds	1/14/2009	9:22	9.32	34.73	medium	5769
EBG	MW-124	Erie Burning Grounds	1/14/2009	9:15	2.98	32.71	medium	5769
EBG	MW-125	Erie Burning Grounds	1/14/2009	9:06	11.45	27.43	hard	5769
EBG	MW-126	Erie Burning Grounds	1/14/2009	8:41	1.99	27.81	medium	5769
EBG	MW-127	Erie Burning Grounds	1/14/2009	8:54	4.23	32.84	hard	5769
EBG	MW-128	Erie Burning Grounds	1/14/2009	8:48	6.31	28.20	hard	5769
EBG	MW-129	Erie Burning Grounds	1/14/2009	8:32	5.34	30.96	medium	5769
EBG	MW-130	Erie Burning Grounds	1/14/2009	8:16	6.09	28.37	hard	5769
FBQ	MW-166	Fuze and Booster Quarry	1/14/2009	8:52	4.71	19.72	hard	5767
FBQ	MW-167	Fuze and Booster Quarry	1/14/2009	8:45	4.49	18.97	hard	5767
FBQ	MW-168	Fuze and Booster Quarry	1/14/2009	9:45	12.15	21.21	medium	5767
FBQ	MW-169	Fuze and Booster Quarry	1/14/2009	8:40	5.48	18.57	hard	5767
FBQ	MW-170	Fuze and Booster Quarry	1/13/2009	16:30	19.95	32.69	hard	5767

*All measurements from top of casing

COMPREHENSIVE WATER LEVEL MEASUREMENTS

RVAAP FACILITY-WIDE GROUNDWATER MONITORING PROGRAM JANUARY 2009

Well Number		Location	Date	Time	Depth To Water*	Depth to Bottom	Description of bottom	Instrument/Serial Number
FBQ	MW-171	Fuze and Booster Quarry	1/13/2009	16:25	19.20	31.39	hard	5767
FBQ	MW-172	Fuze and Booster Quarry	1/13/2009	16:20	28.82	34.40	hard	5767
FBQ	MW-173	Fuze and Booster Quarry	1/14/2009	8:15	45.35	51.75	medium	5767
FBQ	MW-174	Fuze and Booster Quarry	1/14/2009	8:25	18.38	22.84	hard	5767
FBQ	MW-175	Fuze and Booster Quarry	1/14/2009	8:30	19.73	25.80	hard	5767
FBQ	MW-176	Fuze and Booster Quarry	1/13/2009	16:33	9.53	23.87	soft	5767
FBQ	MW-177	Fuze and Booster Quarry	1/13/2009	16:36	13.31	24.74	medium	5767
LNW	MW-024	Landfill North Winklepeck	1/20/2009	10:43	12.42	22.52	hard	5767
LNW	MW-025	Landfill North Winklepeck	1/20/2009	10:40	5.04	20.30	hard	5767
LNW	MW-026	Landfill North Winklepeck	1/20/2009	10:35	3.87	25.97	hard	5767
LNW	MW-027	Landfill North Winklepeck	1/20/2009	10:30	6.70	26.86	hard	5767
LL1	MW-063	Loadline 1	1/13/2009	12:57	29.89	30.04	hard	5769
LL1	MW-064	Loadline 1	1/13/2009	14:00	2.15	21.05	hard, pushed ice	5769
LL1	MW-065	Loadline 1	1/13/2009	14:15	11.94	23.05	medium	5769
LL1	MW-067	Loadline 1	1/13/2009	13:39	20.94	25.68	hard	5769
LL1	MW-078	Loadline 1	1/13/2009	12:38	33.96	41.06	medium	5769
LL1	MW-079	Loadline 1	1/13/2009	13:24	33.89	41.88	hard	5769
LL1	MW-080	Loadline 1	1/13/2009	12:23	10.62	22.34	hard	5769
LL1	MW-081	Loadline 1	1/13/2009	12:50	31.90	41.91	soft	5769
LL1	MW-082	Loadline 1	1/13/2009	11:55	31.35	41.48	soft	5769
LL1	MW-083	Loadline 1	1/13/2009	13:07	35.00	41.42	medium	5769
LL1	MW-084	Loadline 1	1/13/2009	12:07	29.25	38.85	medium	5769
LL1	MW-085	Loadline 1	1/13/2009	11:42	36.17	45.17	hard	5769
LL10	MW-001	Loadline 10	1/14/2009	12:11	25.10	29.53	hard	5767

*All measurements from top of casing

COMPREHENSIVE WATER LEVEL MEASUREMENTS

RVAAP FACILITY-WIDE GROUNDWATER MONITORING PROGRAM JANUARY 2009

Well Number		Location	Date	Time	Depth To Water*	Depth to Bottom	Description of bottom	Instrument/Serial Number
LL10	MW-002	Loadline 10	1/14/2009	12:02	17.80	29.70	hard	5767
LL10	MW-003	Loadline 10	1/14/2009	12:15	20.95	28.49	hard	5767
LL10	MW-004	Loadline 10	1/14/2009	11:40	13.42	33.49	hard	5767
LL10	MW-005	Loadline 10	1/14/2009	11:50	15.75	29.15	hard	5767
LL10	MW-006	Loadline 10	1/14/2009	11:45	12.19	26.47	hard	5767
LL11	MW-001	Loadline 11	1/19/2009	14:33	8.71	21.45	hard	5767
LL11	MW-002	Loadline 11	1/19/2009	13:49	1.59	16.42	hard	5767
LL11	MW-003	Loadline 11	1/19/2009	13:39	0.70	16.02	hard	5767
LL11	MW-004	Loadline 11	1/19/2009	14:12	0.40	16.14	hard	5767
LL11	MW-005	Loadline 11	1/19/2009	13:55	6.40	16.39	hard	5767
LL11	MW-006	Loadline 11	1/19/2009	14:00	3.49	15.65	hard	5767
LL11	MW-007	Loadline 11	1/19/2009	14:07	13.59	25.27	hard	5767
LL11	MW-008	Loadline 11	1/19/2009	14:27	3.68	15.70	hard	5767
LL11	MW-009	Loadline 11	1/19/2009	13:27	N/A	N/A	frozen solid at 2'	5767
LL11	MW-010	Loadline 11	1/19/2009	14:24	3.73	23.39	hard	5767
LL12	MW-088	Loadline 12	1/13/2009	17:10	7.44	27.34	hard	5769
LL12	MW-107	Loadline 12	1/13/2009	17:05	9.85	33.64	hard	5769
LL12	MW-113	Loadline 12	1/13/2009	16:27	5.14	19.62	soft	5769
LL12	MW-128	Loadline 12	1/13/2009	16:51	10.12	34.05	hard	5769
LL12	MW-153	Loadline 12	1/13/2009	16:34	6.23	25.05	hard	5769
LL12	MW-154	Loadline 12	1/13/2009	16:36	8.94	28.73	hard	5769
LL12	MW-182	Loadline 12	1/13/2009	15:52	10.24	38.06	hard	5769
LL12	MW-183	Loadline 12	1/13/2009	15:58	12.63	36.25	hard	5769
LL12	MW-184	Loadline 12	1/13/2009	17:16	12.71	31.33	hard	5769

*All measurements from top of casing

COMPREHENSIVE WATER LEVEL MEASUREMENTS

RVAAP FACILITY-WIDE GROUNDWATER MONITORING PROGRAM JANUARY 2009

Well Number		Location	Date	Time	Depth To Water*	Depth to Bottom	Description of bottom	Instrument/Serial Number
LL12	MW-185	Loadline 12	1/13/2009	16:14	8.24	23.22	hard	5769
LL12	MW-186	Loadline 12	1/14/2009	16:22	5.34	20.99	hard	5769
LL12	MW-187	Loadline 12	1/13/2009	16:41	9.52	29.90	hard	5769
LL12	MW-188	Loadline 12	1/13/2009	16:22	4.18	22.03	medium	5769
LL12	MW-189	Loadline 12	1/14/2009	13:16	3.42	19.97	hard	5769
LL12	MW-242	Loadline 12	1/20/2009	10:00	8.52	28.92	soft	5767
LL12	MW-243	Loadline 12	1/13/2009	16:47	9.63	24.65	medium	5769
LL12	MW-244	Loadline 12	1/13/2009	16:08	10.11	29.34	soft	5769
LL12	MW-245	Loadline 12	1/13/2009	16:58	8.93	29.98	medium	5769
LL12	MW-246	Loadline 12	1/13/2009	16:02	16.96	35.00	hard	5769
LL2	MW-059	Loadline 2	1/13/2009	13:16	14.58	21.86	hard	5769
LL2	MW-060	Loadline 2	1/13/2009	13:10	9.96	20.78	hard	5767
LL2	MW-261	Loadline 2	1/13/2009	12:10	6.92	22.43	hard	5767
LL2	MW-262	Loadline 2	1/13/2009	12:35	8.81	22.61	hard	5767
LL2	MW-263	Loadline 2	1/13/2009	12:55	8.15	22.53	hard	5767
LL2	MW-264	Loadline 2	1/13/2009	12:46	6.21	22.34	hard	5767
LL2	MW-265	Loadline 2	1/13/2009	13:13	9.82	24.39	hard	5767
LL2	MW-266	Loadline 2	1/13/2009	12:20	11.90	22.65	hard	5767
LL2	MW-267	Loadline 2	1/13/2009	12:15	9.00	22.67	hard	5767
LL2	MW-268	Loadline 2	1/13/2009	12:42	14.28	29.85	hard	5767
LL2	MW-269	Loadline 2	1/13/2009	12:00	16.67	30.23	hard	5767
LL2	MW-270	Loadline 2	1/13/2009	12:27	7.62	22.38	hard	5767
LL3	MW-232	Loadline 3	1/13/2009	14:55	22.13	39.77	hard	5767
LL3	MW-233	Loadline 3	1/13/2009	14:49	26.99	32.73	medium	5769

*All measurements from top of casing

COMPREHENSIVE WATER LEVEL MEASUREMENTS

RVAAP FACILITY-WIDE GROUNDWATER MONITORING PROGRAM JANUARY 2009

Well Number		Location	Date	Time	Depth To Water*	Depth to Bottom	Description of bottom	Instrument/Serial Number
LL3	MW-234	Loadline 3	1/13/2009	15:41	10.11	22.60	medium	5769
LL3	MW-235	Loadline 3	1/13/2009	15:01	19.22	22.93	hard	5769
LL3	MW-236	Loadline 3	1/13/2009	15:14	17.29	26.55	hard	5769
LL3	MW-237	Loadline 3	1/13/2009	15:07	15.38	25.50	hard	5769
LL3	MW-238	Loadline 3	1/13/2009	15:37	15.52	23.32	hard	5769
LL3	MW-239	Loadline 3	1/13/2009	15:31	24.95	36.97	soft	5769
LL3	MW-240	Loadline 3	1/13/2009	15:25	28.71	36.65	medium	5769
LL3	MW-241	Loadline 3	1/13/2009	14:45	9.65	25.54	hard	5769
LL3	MW-242	Loadline 3	1/13/2009	14:35	15.42	22.49	hard	5769
LL3	MW-243	Loadline 3	1/13/2009	14:29	12.98	26.32	hard	5769
LL4	MW-193	Loadline 4	1/20/2009	8:41	6.72	24.25	hard	5767
LL4	MW-194	Loadline 4	1/20/2009	8:48	8.09	23.25	soft	5767
LL4	MW-195	Loadline 4	1/20/2009	8:30	10.36	22.87	hard	5767
LL4	MW-196	Loadline 4	1/20/2009	8:25	12.72	21.75	hard	5767
LL4	MW-197	Loadline 4	1/20/2009	9:00	14.16	23.55	medium	5767
LL4	MW-198	Loadline 4	1/20/2009	9:47	8.25	20.72	medium	5767
LL4	MW-199	Loadline 4	1/20/2009	8:35	7.49	23.16	hard	5767
LL4	MW-200	Loadline 4	1/20/2009	9:50	18.10	25.15	hard	5767
LL5	MW-001	Loadline 5	1/14/2009	11:18	20.03	26.97	hard	5767
LL5	MW-002	Loadline 5	1/14/2009	11:25	20.85	27.42	medium	5767
LL5	MW-003	Loadline 5	1/14/2009	11:22	19.65	23.92	hard	5767
LL5	MW-004	Loadline 5	1/14/2009	11:12	17.90	25.34	hard	5767
LL5	MW-005	Loadline 5	1/14/2009	11:02	21.55	29.64	hard	5767
LL5	MW-006	Loadline 5	1/14/2009	11:06	20.42	27.03	hard	5767

*All measurements from top of casing

COMPREHENSIVE WATER LEVEL MEASUREMENTS

RVAAP FACILITY-WIDE GROUNDWATER MONITORING PROGRAM JANUARY 2009

Well Number		Location	Date	Time	Depth To Water*	Depth to Bottom	Description of bottom	Instrument/Serial Number
LL6	MW-001	Loadline 6	1/14/2009	10:50	13.51	17.55	hard	5767
LL6	MW-002	Loadline 6	1/14/2009	10:47	11.71	24.44	hard	5767
LL6	MW-003	Loadline 6	1/14/2009	9:54	12.15	25.69	hard	5767
LL6	MW-004	Loadline 6	1/14/2009	10:42	17.00	24.50	hard	5767
LL6	MW-005	Loadline 6	1/14/2009	10:10	11.86	22.20	hard	5767
LL6	MW-006	Loadline 6	1/14/2009	10:05	15.22	17.75	hard	5767
LL6	MW-007	Loadline 6	1/14/2009	10:27	5.50	19.37	hard	5767
LL7	MW-001	Loadline 7	1/19/2009	14:40	20.35	33.00	hard	5767
LL7	MW-002	Loadline 7	1/19/2009	15:06	15.62	27.14	hard	5767
LL7	MW-003	Loadline 7	1/19/2009	14:43	11.23	33.32	hard	5767
LL7	MW-004	Loadline 7	1/19/2009	15:00	14.75	32.17	hard	5767
LL7	MW-005	Loadline 7	1/19/2009	14:55	21.64	30.31	hard	5767
LL7	MW-006	Loadline 7	1/19/2009	14:47	10.38	30.25	hard	5767
LL8	MW-001	Loadline 8	1/14/2009	9:05	11.45	27.50	soft	5767
LL8	MW-002	Loadline 8	1/14/2009	9:15	18.27	32.53	hard	5767
LL8	MW-003	Loadline 8	1/14/2009	9:10	12.69	22.95	hard	5767
LL8	MW-004	Loadline 8	1/14/2009	9:22	10.87	22.60	medium	5767
LL8	MW-005	Loadline 8	1/14/2009	9:35	13.78	27.12	medium	5767
LL8	MW-006	Loadline 8	1/14/2009	9:25	19.70	27.01	hard	5767
LL9	MW-001	Loadline 9	1/14/2009	13:00	15.01	23.45	hard	5767
LL9	MW-002	Loadline 9	1/14/2009	12:47	10.69	22.70	hard	5767
LL9	MW-003	Loadline 9	1/14/2009	12:54	11.43	24.17	hard	5767
LL9	MW-004	Loadline 9	1/14/2009	12:25	21.21	34.62	hard	5767
LL9	MW-005	Loadline 9	1/14/2009	12:42	16.10	23.45	hard	5767

*All measurements from top of casing

COMPREHENSIVE WATER LEVEL MEASUREMENTS

RVAAP FACILITY-WIDE GROUNDWATER MONITORING PROGRAM JANUARY 2009

Well Number		Location	Date	Time	Depth To Water*	Depth to Bottom	Description of bottom	Instrument/Serial Number
LL9	MW-006	Loadline 9	1/14/2009	12:30	18.92	28.80	hard	5767
LL9	MW-007	Loadline 9	1/14/2009	12:34	9.30	18.06	hard	5767
NTA	MW-107	NACA Test Area	1/13/2009	14:04	12.35	24.25	medium	5767
NTA	MW-108	NACA Test Area	1/13/2009	14:07	17.46	24.48	soft	5767
NTA	MW-109	NACA Test Area	1/13/2009	14:44	7.65	20.89	soft	5767
NTA	MW-110	NACA Test Area	1/13/2009	14:48	13.98	29.74	medium	5767
NTA	MW-111	NACA Test Area	1/13/2009	14:53	3.27	23.06	hard	5767
NTA	MW-112	NACA Test Area	1/13/2009	15:30	8.70	26.60	medium	5767
NTA	MW-113	NACA Test Area	1/13/2009	15:26	6.69	29.30	soft	5767
NTA	MW-114	NACA Test Area	1/13/2009	15:23	5.92	21.74	hard	5767
NTA	MW-115	NACA Test Area	1/13/2009	15:09	13.79	25.27	hard	5767
NTA	MW-116	NACA Test Area	1/13/2009	15:00	4.79	21.53	hard	5767
NTA	MW-117	NACA Test Area	1/13/2009	15:05	12.97	27.50	hard	5767
NTA	MW-118	NACA Test Area	1/13/2009	15:17	8.55	24.09	hard	5767
RQL	MW-006	Ramsdell Quarry	1/14/2009	10:31	36.84	41.97	hard	5769
RQL	MW-007	Ramsdell Quarry	1/14/2009	10:04	8.25	18.56	hard	5769
RQL	MW-008	Ramsdell Quarry	1/14/2009	10:10	7.74	18.60	hard	5769
RQL	MW-009	Ramsdell Quarry	1/14/2009	10:16	6.09	18.78	hard	5769
RQL	MW-010	Ramsdell Quarry	1/14/2009	11:04	27.48	35.25	hard	5769
RQL	MW-011	Ramsdell Quarry	1/14/2009	10:46	23.76	35.30	hard	5769
RQL	MW-012	Ramsdell Quarry	1/14/2009	10:42	23.94	32.61	hard	5769
RQL	MW-013	Ramsdell Quarry	1/14/2009	10:58	27.32	36.42	medium	5769
RQL	MW-014	Ramsdell Quarry	1/14/2009	10:49	21.69	31.15	soft	5769
RQL	MW-015	Ramsdell Quarry	1/14/2009	9:51	33.83	41.86	hard	5769

*All measurements from top of casing

COMPREHENSIVE WATER LEVEL MEASUREMENTS

RVAAP FACILITY-WIDE GROUNDWATER MONITORING PROGRAM JANUARY 2009

Well Number		Location	Date	Time	Depth To Water*	Depth to Bottom	Description of bottom	Instrument/Serial Number
RQL	MW-016	Ramsdell Quarry	1/14/2009	9:55	37.48	41.59	medium	5769
RQL	MW-017	Ramsdell Quarry	1/13/2009	13:47	31.58	32.71	hard	5769
MBS	MW-001	Suspect Mustard Area	1/27/2009	15:35	17.49	30.92	soft	5767
MBS	MW-002	Suspect Mustard Area	1/27/2009	15:20	18.01	30.33	medium	5767
MBS	MW-003	Suspect Mustard Area	1/27/2009	15:15	18.85	30.68	hard	5767
MBS	MW-004	Suspect Mustard Area	1/27/2009	15:15	16.85	26.52	soft	5767
MBS	MW-005	Suspect Mustard Area	1/27/2009	15:15	17.75	29.99	soft	5767
MBS	MW-006	Suspect Mustard Area	1/27/2009	15:15	17.20	28.13	medium	5767
WBG	MW-005	Winklepeck Burning	1/14/2009	13:47	5.59	21.10	hard	5767
WBG	MW-006	Winklepeck Burning	1/14/2009	13:40	6.87	20.14	hard	5767
WBG	MW-007	Winklepeck Burning	1/14/2009	13:25	14.45	26.38	hard	5767
WBG	MW-008	Winklepeck Burning	1/14/2009	13:12	14.49	20.80	hard	5767
WBG	MW-009	Winklepeck Burning	1/14/2009	14:05	13.80	24.28	hard	5767
WBG	MW-010	Winklepeck Burning	1/14/2009	13:53	8.01	23.30	medium	5767
WBG	MW-011	Winklepeck Burning	1/14/2009	14:05	10.70	23.85	medium	5769
WBG	MW-012	Winklepeck Burning	1/14/2009	14:15	24.91	31.55	medium	5769
WBG	MW-013	Winklepeck Burning	1/14/2009	14:35	12.11	24.09	medium	5769
WBG	MW-014	Winklepeck Burning	1/14/2009	13:15	16.02	24.97	hard	5767
WBG	MW-015	Winklepeck Burning	1/14/2009	13:20	11.40	23.51	hard	5767
WBG	MW-016	Winklepeck Burning	1/14/2009	13:30	17.29	25.20	medium	5767
WBG	MW-017	Winklepeck Burning	1/14/2009	13:35	8.39	23.72	hard	5767

*All measurements from top of casing

APPENDIX E

WELL INSPECTION SHEETS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 004 Location/Functional Area: BKG

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 22 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		some rust
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			hard to see
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			X	
Does the well have a flush-mount box?			X	
Is the traffic cover cracked or broken?			X	
Is the concrete apron cracked or deteriorated? Frost Heaving?			X	
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: painted ID				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?				
Measured depth of the well from measurement point: ~~14.31~~ 22.21				
Thickness of sediment accumulation (reported depth-present measurement): -0.21				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1/20/09 Inspected by: [illegible] TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 025 Location/Functional Area: BRg

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 21 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		hinges rusting
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			✓	
Does the well have a flush-mount box?			✓	
Is the traffic cover cracked or broken?			✓	
Is the concrete apron cracked or deteriorated? Frost Heaving?			✓	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: painted ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 20.87				
Thickness of sediment accumulation (reported depth-present measurement): 0.13				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 006 Location/Functional Area: BKG

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 37.6 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			–
Are any of the posts damaged or degraded?	X	X		paint
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: 37.53				
Thickness of sediment accumulation (reported depth-present measurement): 0.07				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1/27/09 Inspected by: gm

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 008 Location/Functional Area: BKG

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 27.5 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			hard to see
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			X	
Does the well have a flush-mount box?			X	
Is the traffic cover cracked or broken?			X	
Is the concrete apron cracked or deteriorated? Frost Heaving?			X	
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: painted ID				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~27.81~~ 27.35				
Thickness of sediment accumulation (reported depth-present measurement): 0.15				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1/20/09 Inspected by: TS JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: BKG - MW 019 Location/Functional Area: _____

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 21.6 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			X	
Does the well have a flush-mount box?			X	
Is the traffic cover cracked or broken?			X	
Is the concrete apron cracked or deteriorated? Frost Heaving?			X	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 21.97				
Thickness of sediment accumulation (reported depth-present measurement): -0.37				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/14/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW012 Location/Functional Area: BKG

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 20 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 62.3 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			hard to see
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: TS ~~8.50~~ 62.11				
Thickness of sediment accumulation (reported depth-present measurement): 0.19				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Soft				

Inspection Date: 1-19-09 Inspected by: JM/TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 013 Location/Functional Area: BKG

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 28 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			hard to see
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: TS ~~12.46~~ 27.96				
Thickness of sediment accumulation (reported depth-present measurement):				0.04
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1/20/09 Inspected by: gm TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 015 Location/Functional Area: _____

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/~~Open-Hole Well~~ Type: _____ Monitor Interval Length: 20 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 52.9 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			hard to see
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: TS ~~48.9~~ 53.30				
Thickness of sediment accumulation (reported depth-present measurement): -0.40				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1-20-09 Inspected by: TS/JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 016 Location/Functional Area: BKG

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10.1 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 21.1 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Some rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 21.13				
Thickness of sediment accumulation (reported depth-present measurement): −0.03				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 017 Location/Functional Area: Bldg

~~Casing~~ Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/~~Open-Hole~~ Well Type: _____ Monitor Interval Length: 10.1 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 36.10 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		square casing
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 35.94				
Thickness of sediment accumulation (reported depth-present measurement): 0.16				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): Mud				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 018 Location/Functional Area: BKG

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 27.2 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		Some rust
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: TS 16 24 27.51				
Thickness of sediment accumulation (reported depth-present measurement):				-0.31
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1-20-09 Inspected by: TS / JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 019 Location/Functional Area: BK6

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 35.7 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			hard to see
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: Paint				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: TS ~~31.22~~ 35.62				
Thickness of sediment accumulation (reported depth-present measurement): 0.08				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): MED				

Inspection Date: 1-19-09 Inspected by: JM TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 020 Location/Functional Area: BKG

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 33.20 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 33.17				
Thickness of sediment accumulation (reported depth-present measurement): 0.03				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): 33.17				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 021 Location/Functional Area: BKG

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10.1 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 20.6 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			hard to see
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: TS ~~19.70~~ 21.44				
Thickness of sediment accumulation (reported depth-present measurement): -0.84				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1-20-09 Inspected by: TS JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: U1 Ø63 Location/Functional Area: LL1

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 30.0 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: ~~3~~ 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?	✓		✓	
Does the well have a flush-mount box?			✓	
Is the traffic cover cracked or broken?			✓	
Is the concrete apron cracked or deteriorated? Frost Heaving?			✓	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 30.04'				
Thickness of sediment accumulation (reported depth-present measurement): 30.04' − 0.04				
Are there an obstructions in the well?		✓		~~DEGRADATION~~? NO
Description of well bottom conditions (soft, hard, etc.): ~~PA 30.04'~~ HARD? NO WATER				

Inspection Date: 1/13/09 Inspected by: E CORBIN / PA

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL1 Ø64 Location/Functional Area: LL1

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-~~Hole Well~~ Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 21.1 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 21.05 - PROB. ICE OBST. IN WELL				
Thickness of sediment accumulation (reported depth-present measurement): 0.05				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/13/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL1 Ø65 Location/Functional Area: LL1

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 23.4 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:

	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?	✓			
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			✓	
Does the well have a flush-mount box?			✓	
Is the traffic cover cracked or broken?			✓	
Is the concrete apron cracked or deteriorated? Frost Heaving?			✓	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 23.05				
Thickness of sediment accumulation (reported depth-present measurement): 0.35				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/13/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL1 Ø67 Location/Functional Area: LL1

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: _____ ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 25.4 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 25.48				
Thickness of sediment accumulation (reported depth-present measurement): -0.08				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/13/09 Inspected by: E Corbin / PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: U1 078 Location/Functional Area: U1

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/~~Open-Hole~~ Well Type: _____ Monitor Interval Length: 9.5 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 41.1 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 41.06'				
Thickness of sediment accumulation (reported depth-present measurement): 0.04				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MEDIUM				

Inspection Date: 7/13/09 Inspected by: EL/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LLI MW #79 Location/Functional Area: LLI

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: _____ ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 42.0 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 41.88				
Thickness of sediment accumulation (reported depth-present measurement): 0.12				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/13/09 Inspected by: EL/RA

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL1-080 Location/Functional Area: LL1

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 9.5 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 22 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID & CAP				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			MISSING LOCK & CAP COVER
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 22.34				
Thickness of sediment accumulation (reported depth-present measurement): -0.34				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/13/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL1 MW 081 Location/Functional Area: LL1

~~Casing~~ Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/~~Open-Hole~~ Well Type: _____ Monitor Interval Length: 9.5 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 41.9 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 41.91				
Thickness of sediment accumulation (reported depth-present measurement): -0.01				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): SOFT				

Inspection Date: 1/13/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL1 - MW 082 Location/Functional Area: LL1

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 9.5 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 41.8 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: 41.48				
Thickness of sediment accumulation (reported depth-present measurement): 0.32				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): SOFT				

Inspection Date: 1/13/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: U1 003 Location/Functional Area: U1

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 9.5 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 41.7 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?	✓			
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 41.42				
Thickness of sediment accumulation (reported depth-present measurement): 0.28				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MED				

Inspection Date: 1/13/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL1 - Ø84 Location/Functional Area: LL1

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 9.6 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 39.3 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			MISSING PLASTIC
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: PH ~~41.48~~ 38.85				
Thickness of sediment accumulation (reported depth-present measurement): 0.45				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MED				

Inspection Date: 1/13/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL1 - MW 08S Location/Functional Area: LL1

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 9.4 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 44.7 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken? NA		✓		
Is the concrete apron cracked or deteriorated? Frost Heaving?		✓		
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: CAP & ID PAINTED				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			MISSING PLASTIC COVER
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 45.17'				
Thickness of sediment accumulation (reported depth-present measurement): -0.47				
Are there an obstructions in the well?				
Description of well bottom conditions (soft, hard, etc.): MEDIUM BAILER IN WELL				

Inspection Date: 1/13/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 059 Location/Functional Area: LL2

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 9.8 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 21.8 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			some rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 21.86				
Thickness of sediment accumulation (reported depth-present measurement): -0.06				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 060 Location/Functional Area: LL2

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 9.8 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 20.9 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 20.78				
Thickness of sediment accumulation (reported depth-present measurement): 0.12				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 261 Location/Functional Area: LL2

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 21.9 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Some rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			✓	
Does the well have a flush-mount box?			✓	
Is the traffic cover cracked or broken?			✓	
Is the concrete apron cracked or deteriorated? Frost Heaving?			✓	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 22.43				
Thickness of sediment accumulation (reported depth-present measurement): -0.53				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 262 Location/Functional Area: LL2

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 22.3 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 22.61				
Thickness of sediment accumulation (reported depth-present measurement): -0.31				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 263 Location/Functional Area: LL2

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 23 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 22.53				
Thickness of sediment accumulation (reported depth-present measurement): 0.47				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 264 Location/Functional Area: LL2

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 21.7 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 22.34				
Thickness of sediment accumulation (reported depth-present measurement): -0.64				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 265 Location/Functional Area: CL2

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 2 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 23.8 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: _____				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: _____				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 24.39				
Thickness of sediment accumulation (reported depth-present measurement): -0.59				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): _____				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 266 Location/Functional Area: CL2

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 22.2 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: Paint				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 22.65				
Thickness of sediment accumulation (reported depth-present measurement): -0.45				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 267 Location/Functional Area: LL2

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 22 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 22.67				
Thickness of sediment accumulation (reported depth-present measurement): -0.67				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 268 Location/Functional Area: LL2

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 29.3 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: 29.85				
Thickness of sediment accumulation (reported depth-present measurement): -0.55				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 269 Location/Functional Area: LL2

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 29.40 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 30.23				
Thickness of sediment accumulation (reported depth-present measurement): -0.83				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 270 Location/Functional Area: LL2

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 20.3 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?		X		hard to see - rusty
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: 22.38				
Thickness of sediment accumulation (reported depth-present measurement): -2.08				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: U3 - MW 232 Location/Functional Area: U3

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 38.8 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 39.77				
Thickness of sediment accumulation (reported depth-present measurement): -0.97				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): ~~SOFT~~ HARD				

Inspection Date: 1-13-09 Inspected by: EZ/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: U3 - MW 233 Location/Functional Area: U3

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 32.2 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			MISSING CAP COVER
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 32.73				
Thickness of sediment accumulation (reported depth-present measurement): -0.53				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MEDIUM				

Inspection Date: 1-13-09 Inspected by: CL/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: U3 - 234 Location/Functional Area: U3

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 22.10 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:

	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	4			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 22.60				
Thickness of sediment accumulation (reported depth-present measurement): -0.50				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MUD				

Inspection Date: 1/13/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: U3 -235 Location/Functional Area: U3

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 22.2 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 22.93				
Thickness of sediment accumulation (reported depth-present measurement): -0.73				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 4/13/09 Inspected by: EZ/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: W3-230 Location/Functional Area: W3

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: A Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 26.2 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 26.55				
Thickness of sediment accumulation (reported depth-present measurement): -0.35				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/13/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL3 237 Location/Functional Area: LL3

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 24.9 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:

	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 25.50				
Thickness of sediment accumulation (reported depth-present measurement): -0.60				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/13/09 Inspected by: PH/LC

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: U3 238 Location/Functional Area: U3

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 22.9 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			✓	
Does the well have a flush-mount box?			✓	
Is the traffic cover cracked or broken?			✓	
Is the concrete apron cracked or deteriorated? Frost Heaving?			✓	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			PLASTIC TAG BROKEN
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 23.32				
Thickness of sediment accumulation (reported depth-present measurement): -0.42				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: PH 1-13-04 Inspected by: PH/EC

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: U3 - 239 Location/Functional Area: U3

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 36.8 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 36.97				
Thickness of sediment accumulation (reported depth-present measurement): -0.17				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): SOFT				

TUBING NEEDS TO BE FISHED OUT OF WELL

Inspection Date: 1-13-09 Inspected by: EC, PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: U3 - 240 Location/Functional Area: U3

Casing Type: [ ] Steel [ ] Stainless Steel [ ] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 36.50 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: A				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED UP				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 36.65				
Thickness of sediment accumulation (reported depth-present measurement): -0.15				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MED.				

Inspection Date: 1-13-09 Inspected by: EC PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: U3 MW 241 Location/Functional Area: U3

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 25.1 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 25.54				
Thickness of sediment accumulation (reported depth-present measurement): -0.44				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1-13-09 Inspected by: EC PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: U3 242 Location/Functional Area: U3

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 21.90 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 22.49				
Thickness of sediment accumulation (reported depth-present measurement): -0.59				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1-13-09 Inspected by: EC PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL3 MW 243 Location/Functional Area: LL3

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 25.8 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?	✓		✓	
Does the well have a flush-mount box?	✓		✓	
Is the traffic cover cracked or broken? PH	✓		✓	
Is the concrete apron cracked or deteriorated? Frost Heaving?	✓		✓	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 24.32				
Thickness of sediment accumulation (reported depth-present measurement): -0.52				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MOD-HARD				

Inspection Date: 1-13-09 Inspected by: EC PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 193 Location/Functional Area: LL4

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: _____ ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 23.5 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: TS ~~24.72~~ 24.25				
Thickness of sediment accumulation (reported depth-present measurement): -0.75				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-20-09 Inspected by: JS/JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 194 Location/Functional Area: LL4

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 23.4 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~TBOC~~ 23.25				
Thickness of sediment accumulation (reported depth-present measurement): 0.15				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Soft				

Inspection Date: 12-0-09 Inspected by: TS/JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 195 Location/Functional Area: LL4

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 22.3 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~19.36~~ 22.87				
Thickness of sediment accumulation (reported depth-present measurement): -0.57				
Are there an obstructions in the well?				
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-20-09 Inspected by: TS/JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 196 Location/Functional Area: LL 4

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 21.4 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: TS 12/12 21.75				
Thickness of sediment accumulation (reported depth-present measurement): -0.35				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-20-09 Inspected by: TS Jim

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 197 Location/Functional Area: LL4

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 22.7 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?	X			Bent Post
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			/	
Does the well have a flush-mount box?			/	
Is the traffic cover cracked or broken?			/	
Is the concrete apron cracked or deteriorated? Frost Heaving?			/	
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: painted				
Security:				
Does the well have a cap or lid?	/			
Does the well have a weatherproof lock?	/			
Does the lock secure well?	/			
Does the inner casing have a water-tight cap?	/			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		/		
Is the well casing loose, (at the surface?)		/		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: ~~14.16~~ 23.55				
Thickness of sediment accumulation (reported depth-present measurement): -0.85				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): MED				

Inspection Date: 1-20-09 Inspected by: TS/JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 198 Location/Functional Area: LL 4

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 22.3 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~18.25~~ 20.72				
Thickness of sediment accumulation (reported depth-present measurement): 1.58				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): MED to soft.				

Inspection Date: 1-20-09 Inspected by: TS/JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 199 Location/Functional Area: LL 4

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 22.6 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			/	
Does the well have a flush-mount box?			/	
Is the traffic cover cracked or broken?			/	
Is the concrete apron cracked or deteriorated? Frost Heaving?			/	
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: painted				
Security:				
Does the well have a cap or lid?	/			
Does the well have a weatherproof lock?	/			
Does the lock secure well?	/			
Does the inner casing have a water-tight cap?	/			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		/		
Is the well casing loose, (at the surface?)		/		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: ~~57.49~~ 23.16				
Thickness of sediment accumulation (reported depth-present measurement): -0.56				
Are there an obstructions in the well?				
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-20-09 Inspected by: TS/JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 200 Location/Functional Area: LL4

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 26 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: PAINT				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: TS 18.10 25.15				
Thickness of sediment accumulation (reported depth-present measurement): -0.15				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-20-09 Inspected by: TS / JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 001 Location/Functional Area: LL5

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 26.9 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINT				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 26.97				
Thickness of sediment accumulation (reported depth-present measurement): -0.07				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: C002 Location/Functional Area: LL5

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 27.9 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINT				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 27.42				
Thickness of sediment accumulation (reported depth-present measurement): 0.48				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, ~~hard~~, etc.): ~~hard~~ medium				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 003 Location/Functional Area: LL5

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 24.0 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: Paint				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 23.92				
Thickness of sediment accumulation (reported depth-present measurement): 0.08				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: JI Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 004 Location/Functional Area: LL5

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 24.9 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 25.34				
Thickness of sediment accumulation (reported depth-present measurement): -0.44				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-07 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 005 Location/Functional Area: LL5

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 29.9 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 29.64				
Thickness of sediment accumulation (reported depth-present measurement): 0.26				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 006 Location/Functional Area: LLS

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 26.9 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 27.03				
Thickness of sediment accumulation (reported depth-present measurement): -0.13				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 001 Location/Functional Area: LL6

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: F

Reported Construction Depth: 17 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?	✓			
Does the well have a flush-mount box?	✓			
Is the traffic cover cracked or broken?		✓		
Is the concrete apron cracked or deteriorated? Frost Heaving?		✓		
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 17.55				
Thickness of sediment accumulation (reported depth-present measurement): -0.55				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 002 Location/Functional Area: LL6

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 22.5 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 24.44				
Thickness of sediment accumulation (reported depth-present measurement): -1.94				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 003 Location/Functional Area: LL6

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 25.9 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:

	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINT				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 25.69				
Thickness of sediment accumulation (reported depth-present measurement): 0.21				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 004 Location/Functional Area: LL6

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 25.1 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust's paint
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINT				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 24.50				
Thickness of sediment accumulation (reported depth-present measurement): 0.60				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 005 Location/Functional Area: LL6

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 22.5 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINT				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 22.20				
Thickness of sediment accumulation (reported depth-present measurement): 0.30				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 006 Location/Functional Area: LL6

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: F

Reported Construction Depth: 170 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?	✓			
Does the well have a flush-mount box?	✓			
Is the traffic cover cracked or broken?		✓		
Is the concrete apron cracked or deteriorated? Frost Heaving?		✓		
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: 17.75				
Thickness of sediment accumulation (reported depth-present measurement): -0.75				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 007 Location/Functional Area: LL6

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: F

Reported Construction Depth: 19.5 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Need's paint
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?			✓	
Does the protective casing have a weep hole?			✓	
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?	✓			
Does the well have a flush-mount box?	✓			
Is the traffic cover cracked or broken?		✓		
Is the concrete apron cracked or deteriorated? Frost Heaving?		✓		
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 19.37				
Thickness of sediment accumulation (reported depth-present measurement): 0.13				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 001 Location/Functional Area: LL 7

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 33.2 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			/	
Does the well have a flush-mount box?			/	
Is the traffic cover cracked or broken?			/	
Is the concrete apron cracked or deteriorated? Frost Heaving?			/	
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: Stencil				
Security:				
Does the well have a cap or lid?	/			
Does the well have a weatherproof lock?	/			
Does the lock secure well?	/			
Does the inner casing have a water-tight cap?	/			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		/		
Is the well casing loose, (at the surface?)		/		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: TS ~~20.35~~ 33.00				
Thickness of sediment accumulation (reported depth-present measurement): -0.80				
Are there an obstructions in the well?				
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: gm TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 002 Location/Functional Area: LL 7

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 27.8 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			/	
Does the well have a flush-mount box?			/	
Is the traffic cover cracked or broken?			/	
Is the concrete apron cracked or deteriorated? Frost Heaving?			/	
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: Stencil				
Security:				
Does the well have a cap or lid?	/			
Does the well have a weatherproof lock?	/			
Does the lock secure well?	/			
Does the inner casing have a water-tight cap?	/			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		/		
Is the well casing loose, (at the surface?)		/		
Is a measurement point marked a the top of well casing?	/			
Measured depth of the well from measurement point: TS ~~15.62~~ 27.14				
Thickness of sediment accumulation (reported depth-present measurement): 0.66				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1-19-09 Inspected by: JW TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 003 Location/Functional Area: LL 7

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 33.6 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: Stencil				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: TS ~~MCS~~ 33.32				
Thickness of sediment accumulation (reported depth-present measurement): 0.28				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: Gn TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 004 Location/Functional Area: LL 7

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 32.5 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: _____				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: Stencil				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: TS ~~14.75~~ 32.17				
Thickness of sediment accumulation (reported depth-present measurement): 0.33				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1-19-07 Inspected by: Jm TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 005 Location/Functional Area: LL 7

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 30.6 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: _____				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: Stencil				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: TS ~~21.64~~ 30.31				
Thickness of sediment accumulation (reported depth-present measurement): 0.29				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): _____				

Inspection Date: 1-19-09 Inspected by: JM TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 006 Location/Functional Area: LL 7

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 30.4 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: Stencil				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: TS ~~10.38~~ 30.25				
Thickness of sediment accumulation (reported depth-present measurement): 0.15				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: gm TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 001 Location/Functional Area: LLS

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 26.8 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 27.5				
Thickness of sediment accumulation (reported depth-present measurement): -0.70				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 002 Location/Functional Area: LL8

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 32.8 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 32.53				
Thickness of sediment accumulation (reported depth-present measurement): 0.27				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 003 Location/Functional Area: LL8

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 23.3 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 22.95				
Thickness of sediment accumulation (reported depth-present measurement): 0.35				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 004 Location/Functional Area: LL8

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 23.08 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 22.6				
Thickness of sediment accumulation (reported depth-present measurement): 0.4				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, ~~hard~~, etc.): hard-medium				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 005 Location/Functional Area: LL8

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 27.2 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:

	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Posts leaning
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 27.12				
Thickness of sediment accumulation (reported depth-present measurement): 0.08				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): Mud				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 006 Location/Functional Area: LL8

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 26.8 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			✓	
Does the well have a flush-mount box?			✓	
Is the traffic cover cracked or broken?			✓	
Is the concrete apron cracked or deteriorated? Frost Heaving?			✓	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 27.01				
Thickness of sediment accumulation (reported depth-present measurement): -0.21				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 001 Location/Functional Area: LL9

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 23.3 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 23.45				
Thickness of sediment accumulation (reported depth-present measurement): -0.15				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 003 Location/Functional Area: LL9

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 22.4 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 22.70				
Thickness of sediment accumulation (reported depth-present measurement): -0.30				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 003 Location/Functional Area: 2L9

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 23.8 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 24.17				
Thickness of sediment accumulation (reported depth-present measurement): -0.37				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 004 Location/Functional Area: LL9

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 34.9 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 34.62				
Thickness of sediment accumulation (reported depth-present measurement): 0.28				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 005 Location/Functional Area: LL9

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 23.3 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 23.45				
Thickness of sediment accumulation (reported depth-present measurement): -0.15				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 006 Location/Functional Area: 219

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 28.9 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 28.80				
Thickness of sediment accumulation (reported depth-present measurement): 0.10				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 007 Location/Functional Area: LL9

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: _____ ft

Flush-mount/Above-ground Completion: F

Reported Construction Depth: 18.5 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?			✓	
Does the protective casing have a weep hole?			✓	
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?	✓			
Does the well have a flush-mount box?	✓			
Is the traffic cover cracked or broken?		✓		
Is the concrete apron cracked or deteriorated? Frost Heaving?		✓		
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?			✓	
Does the lock secure well?			✓	
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 18.06				
Thickness of sediment accumulation (reported depth-present measurement): 0.44				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 001 Location/Functional Area: LL/D

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 29.8 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 29.53				
Thickness of sediment accumulation (reported depth-present measurement): 0.27				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 002 Location/Functional Area: LL10

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 29.7 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 29.70				
Thickness of sediment accumulation (reported depth-present measurement): 0				
Are there an obstructions in the well?	✓			
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 003 Location/Functional Area: LLIO

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 28.5 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			✓	
Does the well have a flush-mount box?			✓	
Is the traffic cover cracked or broken?			✓	
Is the concrete apron cracked or deteriorated? Frost Heaving?			✓	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 28.49				
Thickness of sediment accumulation (reported depth-present measurement): 0.1				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 004 Location/Functional Area: LL10

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 33.8 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 33.49				
Thickness of sediment accumulation (reported depth-present measurement): 0.31				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 025 Location/Functional Area: LL10

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: _____ ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 29.3 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 29.15				
Thickness of sediment accumulation (reported depth-present measurement): 0.15				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 006 Location/Functional Area: LLID

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 26.1 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 26.47				
Thickness of sediment accumulation (reported depth-present measurement): -0.37				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 001 Location/Functional Area: LL 22

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 24.1 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: TS ~~8/11~~ 21.45				
Thickness of sediment accumulation (reported depth-present measurement): 2.65				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 002 Location/Functional Area: LL 22

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 16.0 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			Rusting.
Are any of the posts damaged or degraded?	✓			needs paint
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?			✓	
Does the protective casing have a weep hole?			✓	
Does vegetation around the well need clearing?			✓	
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?	X			
Does the well have a flush-mount box?	X			
Is the traffic cover cracked or broken?		X		
Is the concrete apron cracked or deteriorated? Frost Heaving?		X		
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: Stencil				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: TS ~~1.89~~ 16.42				
Thickness of sediment accumulation (reported depth-present measurement): -0.42				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 003 Location/Functional Area: LL 22

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 16 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: _____				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?	X			
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?			X	
Does the protective casing have a weep hole?			X	
Does vegetation around the well need clearing?			X	
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?	X			
Does the well have a flush-mount box?	X			
Is the traffic cover cracked or broken?		X		
Is the concrete apron cracked or deteriorated? Frost Heaving?		X		
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: _____				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: TS 0 to 16.02				
Thickness of sediment accumulation (reported depth-present measurement): -0.02				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 004 Location/Functional Area: LL 21

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 15.9 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?			X	
Does the protective casing have a weep hole?			X	
Does vegetation around the well need clearing?			X	
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?	X			
Does the well have a flush-mount box?	X			
Is the traffic cover cracked or broken?		X		
Is the concrete apron cracked or deteriorated? Frost Heaving?		X		
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~0.4~~ 16.14				
Thickness of sediment accumulation (reported depth-present measurement): -0.24				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: [signature] TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 005 Location/Functional Area: LL 12

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: ~~16.00~~ 16.0 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?	X			needs paint
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?				
Does the protective casing have a weep hole?				
Does vegetation around the well need clearing?				
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?	X			
Does the well have a flush-mount box?	X			
Is the traffic cover cracked or broken?		X		
Is the concrete apron cracked or deteriorated? Frost Heaving?		X		
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~TS 6.39~~ 16.39				
Thickness of sediment accumulation (reported depth-present measurement): -0.39				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: gm TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 006 Location/Functional Area: LL 11

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 15.5 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?			X	
Does the protective casing have a weep hole?			X	
Does vegetation around the well need clearing?			X	
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?	X			
Does the well have a flush-mount box?	X			
Is the traffic cover cracked or broken?		X		
Is the concrete apron cracked or deteriorated? Frost Heaving?		X		
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	/			
Measured depth of the well from measurement point: TS ~~3.49~~ 15.65				
Thickness of sediment accumulation (reported depth-present measurement): -0.15				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: gw TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 007 Location/Functional Area: LL 22

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 25.2 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			X	
Does the well have a flush-mount box?			X	
Is the traffic cover cracked or broken?			X	
Is the concrete apron cracked or deteriorated? Frost Heaving?			X	
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: TB ~~13.59~~ 25.27				
Thickness of sediment accumulation (reported depth-present measurement): -0.07				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 7-19-09 Inspected by: [signature] TB

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 008 Location/Functional Area: LL 22

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 15.4 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?			X	
Does the protective casing have a weep hole?			X	
Does vegetation around the well need clearing?			X	
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?	X			
Does the well have a flush-mount box?	X			
Is the traffic cover cracked or broken?		X		
Is the concrete apron cracked or deteriorated? Frost Heaving?		X		
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?	/			
Does the well have a weatherproof lock?	/			
Does the lock secure well?	/			
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		/		
Is the well casing loose, (at the surface?)		/		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~15.68~~ 15.70				
Thickness of sediment accumulation (reported depth-present measurement):				-.30
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 4-19-09 Inspected by: gm TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 009 Location/Functional Area: LL 12

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 19.27 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			/	
Does the well have a flush-mount box?			/	
Is the traffic cover cracked or broken?			/	
Is the concrete apron cracked or deteriorated? Frost Heaving?			/	
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: well frozen at 2 ft down (3/19/09 @ 19.47 hard) (3/19/09 2.49 DTW BTOC)				
Thickness of sediment accumulation (reported depth-present measurement): ~0.20				
Are there an obstructions in the well?	✓			
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 4-19-09 Inspected by: TS [illegible]

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 010 Location/Functional Area: LL 22

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 23.4 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: TS ~~3.73~~ 23.39				
Thickness of sediment accumulation (reported depth-present measurement): 0.01				
Are there an obstructions in the well?		X	X	
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1-19-09 Inspected by: TS [illegible]

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: L12 - Ø 88 Location/Functional Area: L12

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 27.1 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 27.34				
Thickness of sediment accumulation (reported depth-present measurement): -0.24				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MED - HARD				

Inspection Date: 1/13/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL12 - 107 Location/Functional Area: LL12

Casing Type: [ ] Steel [ ] Stainless Steel [ ] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 33.1 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 33.64				
Thickness of sediment accumulation (reported depth-present measurement): -0.54				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MEDIUM-HARD				

Inspection Date: 1/13/09 Inspected by: EC/PA

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL12-113 Location/Functional Area: LL12

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 25 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			✓	
Does the well have a flush-mount box?			✓	
Is the traffic cover cracked or broken?			✓	
Is the concrete apron cracked or deteriorated? Frost Heaving?			✓	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 19.62				
Thickness of sediment accumulation (reported depth-present measurement): +5.38				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): SOFT				

Inspection Date: 4/13/09 Inspected by: EWPH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL12-128 Location/Functional Area: LL12

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 33.3 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 34.05				
Thickness of sediment accumulation (reported depth-present measurement): -0.75				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MED-HARD				

Inspection Date: 1/13/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL2-153 Location/Functional Area: LL2

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 25 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 25.05				
Thickness of sediment accumulation (reported depth-present measurement): -0.05				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/13/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL12-154 Location/Functional Area: LL12

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 28.7 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 28.73				
Thickness of sediment accumulation (reported depth-present measurement): -0.30				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MOD HARD				

Inspection Date: 1/13/09 Inspected by: EJPH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL12-182 Location/Functional Area: LL12

Casing Type: [ ] Steel [ ] Stainless Steel [ ] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 37.7 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 38.06				
Thickness of sediment accumulation (reported depth-present measurement): -0.36				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MED-HARD				

Inspection Date: 1/13/09 Inspected by: EC/PU

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 412 183 Location/Functional Area: 412

Casing Type: [ ] Steel [ ] Stainless Steel [ ] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 36.0 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 36.25				
Thickness of sediment accumulation (reported depth-present measurement): -0.25				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/13/09 Inspected by: ECPH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL12 - 184 Location/Functional Area: LL2

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 31.2 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:

	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 31.33				
Thickness of sediment accumulation (reported depth-present measurement): -0.13				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/13/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL12 - 185 Location/Functional Area: LL12

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 23.2 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 23.22				
Thickness of sediment accumulation (reported depth-present measurement): -0.02				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/13/09 Inspected by: EC/PA

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL12 - 106 Location/Functional Area: LL12

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 21.0 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PA				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 20.99				
Thickness of sediment accumulation (reported depth-present measurement): 0.01				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MUD HARD				

Inspection Date: 1/14/09 Inspected by: EC / PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL12-187 Location/Functional Area: LL12

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 29.4 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			MISSING CAP
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 29.90				
Thickness of sediment accumulation (reported depth-present measurement): -0.50				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 4/3/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: U12 - 108 Location/Functional Area: U12

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 22.2 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 22.03				
Thickness of sediment accumulation (reported depth-present measurement): 0.17				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MEDIUM				

Inspection Date: 1/3/04 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL12 - MW189 Location/Functional Area: LL12

Casing Type: [ ] Steel [ ] Stainless Steel [ ] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 19.6 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 19.97				
Thickness of sediment accumulation (reported depth-present measurement): -0.37				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MUD-HARD				

Inspection Date: 1/14/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 242 Location/Functional Area: LL 12

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 28.3 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			/	
Does the well have a flush-mount box?			/	
Is the traffic cover cracked or broken?			/	
Is the concrete apron cracked or deteriorated? Frost Heaving?			/	
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?	/			
Does the well have a weatherproof lock?	/			
Does the lock secure well?	/			
Does the inner casing have a water-tight cap?	/			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		/		
Is the well casing loose, (at the surface?)		/		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~28.52~~ 28.92				
Thickness of sediment accumulation (reported depth-present measurement): -0.62				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Soft				

Inspection Date: 1-20-09 Inspected by: TS / JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: U12 - 243 Location/Functional Area: U12

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 25.7 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:

	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 24.65				
Thickness of sediment accumulation (reported depth-present measurement): 1.05				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MUD				

Inspection Date: 1-13-09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: U12 - 244 Location/Functional Area: U12

Casing Type: [ ] Steel [ ] Stainless Steel [ ] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 32.1 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 29.34				
Thickness of sediment accumulation (reported depth-present measurement): 2.76				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft) hard, etc.): SOFT				

Inspection Date: 1-13-09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: U12 - 245 Location/Functional Area: U12

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 30.5 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:

	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 29.98				
Thickness of sediment accumulation (reported depth-present measurement): +0.52				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MED				

Inspection Date: 1-13-09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: LL2 - 246 Location/Functional Area: LL2

Casing Type: [ ] Steel [ ] Stainless Steel [ ] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 34.3 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:

	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		peeling
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			CAP MISSING
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 35.00				
Thickness of sediment accumulation (reported depth-present measurement): -.70				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MEDIUM-HARD				

Inspection Date: 1-13-09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: ASY - 001 Location/Functional Area: ASY

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 23.7 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			X	
Does the well have a flush-mount box?			X	
Is the traffic cover cracked or broken?			X	
Is the concrete apron cracked or deteriorated? Frost Heaving?			X	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 23.05				
Thickness of sediment accumulation (reported depth-present measurement): 0.65				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MUD				

Inspection Date: 1/14/09 Inspected by: EC/PH

NEEDS TUBING

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: ASY - 002 Location/Functional Area: ASY

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 9.5 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 22.7 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			X	
Does the well have a flush-mount box?			X	
Is the traffic cover cracked or broken?			X	
Is the concrete apron cracked or deteriorated? Frost Heaving?			X	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 22.90				
Thickness of sediment accumulation (reported depth-present measurement): -0.20				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MUD				

Inspection Date: 1/14/09 Inspected by: EC/PH

NEEDS TUBING

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: ASY 003 Location/Functional Area: ASY

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 23.5 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:

	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			X	
Does the well have a flush-mount box?			X	
Is the traffic cover cracked or broken?			X	
Is the concrete apron cracked or deteriorated? Frost Heaving?			X	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 23.41				
Thickness of sediment accumulation (reported depth-present measurement): 0.09				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/14/09 Inspected by: EC/PGH

NEEDS TUBING

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: ASY 004 Location/Functional Area: ASY

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 29.6 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			MISSING CAP
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 29.75				
Thickness of sediment accumulation (reported depth-present measurement): -0.15				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/14/09 Inspected by: EC/PH

WOODS TUBING

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: ASY-005 Location/Functional Area: _____

Casing Type: [ ] Steel [ ] Stainless Steel [ ] PVC

Screened/Open-Hole Well Type: A Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 26.2 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 27.01				
Thickness of sediment accumulation (reported depth-present measurement): -0.81				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MED				

Inspection Date: 1/14/09 Inspected by: EC/PH

NO TUBING IN WELL

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: ASY 086 Location/Functional Area: ASY

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 28.8 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			X	
Does the well have a flush-mount box?			X	
Is the traffic cover cracked or broken?			X	
Is the concrete apron cracked or deteriorated? Frost Heaving?			X	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 28.86				
Thickness of sediment accumulation (reported depth-present measurement): -0.06				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 4/14/09 Inspected by: EC / PLA
WOODS TUBINGER

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: ASY-007 Location/Functional Area: ASY

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 28.8 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			✓	
Does the well have a flush-mount box?			✓	
Is the traffic cover cracked or broken?			✓	
Is the concrete apron cracked or deteriorated? Frost Heaving?			✓	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 28.82				
Thickness of sediment accumulation (reported depth-present measurement): -0.02				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/14/09 Inspected by: EC/PH

NEEDS TUBING

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: ASY - 008 Location/Functional Area: ASY

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 27.7 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			✓	
Does the well have a flush-mount box?			✓	
Is the traffic cover cracked or broken?			✓	
Is the concrete apron cracked or deteriorated? Frost Heaving?			✓	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 27.49				
Thickness of sediment accumulation (reported depth-present measurement): 0.21				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MUD				

Inspection Date: 1/14/09 Inspected by: EC/PH

NEEDS TUBING

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: ASY - 009 Location/Functional Area: ASY

Casing Type: [ ] Steel [ ] Stainless Steel [ ] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 24.3 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 24.50				
Thickness of sediment accumulation (reported depth-present measurement): -0.20				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/14/09 Inspected by: EC/PH

NEEDS TUBING

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: ASY-016 Location/Functional Area: ASY

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 298 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			✓	
Does the well have a flush-mount box?			✓	
Is the traffic cover cracked or broken?			✓	
Is the concrete apron cracked or deteriorated? Frost Heaving?			✓	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINT				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 30.05				
Thickness of sediment accumulation (reported depth-present measurement): -0.25				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MED				

Inspection Date: 1/14/09 Inspected by: EC/PH

NEEDS TUBING

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: B12 - MW010 Location/Functional Area: B12

Casing Type: [ ] Steel [ ] Stainless Steel [ ] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 23.2 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			X	
Does the well have a flush-mount box?			X	
Is the traffic cover cracked or broken?			X	
Is the concrete apron cracked or deteriorated? Frost Heaving?			X	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 22.82				
Thickness of sediment accumulation (reported depth-present measurement): 0.38				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/14/09 Inspected by: EC/PH

TUBING NEEDS TO FISH OUT

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: B12 - MW Ø11 Location/Functional Area: B12

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 26.9 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			/	
Does the well have a flush-mount box?			/	
Is the traffic cover cracked or broken?			/	
Is the concrete apron cracked or deteriorated? Frost Heaving?			/	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 26.70				
Thickness of sediment accumulation (reported depth-present measurement): 0.20				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/14/09 Inspected by: EC/PLA

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: B12- 012 Location/Functional Area: B12

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 24.9 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: paint				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 24.80				
Thickness of sediment accumulation (reported depth-present measurement): +0.10				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1/14/09 Inspected by: EC/PA

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 001 Location/Functional Area: C Block

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 51.60 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?				
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?				
Measured depth of the well from measurement point: ~~TS 44.82~~ 49.70				
Thickness of sediment accumulation (reported depth-present measurement): 1.90				
Are there an obstructions in the well?				
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: JM TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 002 Location/Functional Area: C Block

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 47.2 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: Medallion / Stencil				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~39.15~~ TS 47.32				
Thickness of sediment accumulation (reported depth-present measurement): -0.12				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1-19-09 Inspected by: TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 003 Location/Functional Area: C Block

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 45.8 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			X	
Does the well have a flush-mount box?			X	
Is the traffic cover cracked or broken?			X	
Is the concrete apron cracked or deteriorated? Frost Heaving?			X	
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: medallion Stencil				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~27.67~~ TS 44.71				
Thickness of sediment accumulation (reported depth-present measurement): 1.09				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: JM TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 004 Location/Functional Area: C Block

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: _____ ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 46.8 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			X	
Does the well have a flush-mount box?			X	
Is the traffic cover cracked or broken?			X	
Is the concrete apron cracked or deteriorated? Frost Heaving?			X	
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling: Stencil				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~37.36~~ TS 47.01				
Thickness of sediment accumulation (reported depth-present measurement): -0.21				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: gm TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 002 Location/Functional Area: CBP

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 34.9 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: TS ~~13.85~~ 32.68				
Thickness of sediment accumulation (reported depth-present measurement): 2.22				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): MED				

Inspection Date: 1/19/09 Inspected by: TS gm

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 002 Location/Functional Area: CBP

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AB

Reported Construction Depth: 32.2 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			/	
Does the well have a flush-mount box?			/	
Is the traffic cover cracked or broken?			/	
Is the concrete apron cracked or deteriorated? Frost Heaving?			/	
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?	/			
Does the well have a weatherproof lock?	/			
Does the lock secure well?	/			
Does the inner casing have a water-tight cap?	/			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		/		
Is the well casing loose, (at the surface?)		/		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: TS 10-14-31.94				
Thickness of sediment accumulation (reported depth-present measurement): 0.26				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): MED				

Inspection Date: 1-19-09 Inspected by: TS JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 003 Location/Functional Area: CBP

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: 3 Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AB

Reported Construction Depth: 27.1 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:

	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			/	
Does the well have a flush-mount box?			/	
Is the traffic cover cracked or broken?			/	
Is the concrete apron cracked or deteriorated? Frost Heaving?			/	
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?	/			
Does the well have a weatherproof lock?	/			
Does the lock secure well?	/			
Does the inner casing have a water-tight cap?	/			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		/		
Is the well casing loose, (at the surface?)		/		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~12.69~~ TS 30.19				
Thickness of sediment accumulation (reported depth-present measurement): ~3.09				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 6-19-09 Inspected by: TS JMiller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 004 Location/Functional Area: CBP

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AB

Reported Construction Depth: 29.5 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			/	
Does the well have a flush-mount box?			/	
Is the traffic cover cracked or broken?			/	
Is the concrete apron cracked or deteriorated? Frost Heaving?			/	
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?	/			
Does the well have a weatherproof lock?	/			
Does the lock secure well?	/			
Does the inner casing have a water-tight cap?	/			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		/		
Is the well casing loose, (at the surface?)		/		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~10.49~~ 29.68 TS				
Thickness of sediment accumulation (reported depth-present measurement): -0.18				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 6-19-09 Inspected by: TS JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 005 Location/Functional Area: CBP

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AB

Reported Construction Depth: 27.3 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:

	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~27.1~~ 27.40 TS				
Thickness of sediment accumulation (reported depth-present measurement): -0.1				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 4-19-09 Inspected by: TS JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 006 Location/Functional Area: CBP

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 27.6 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?				
Measured depth of the well from measurement point: ~~8.~~ 25.20 TS				
Thickness of sediment accumulation (reported depth-present measurement): 2.10				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): MED				

Inspection Date: 1-19-09 Inspected by: TS Jmmer

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 007 Location/Functional Area: CBP

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 25.1 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~16.24~~ 31.74 TS				
Thickness of sediment accumulation (reported depth-present measurement): -6.64				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): MED				

Inspection Date: TS 4-19-09 Inspected by: JM TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 008 Location/Functional Area: CBP

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 32.4 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?				
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~16.28~~ 27.90 TS				
Thickness of sediment accumulation (reported depth-present measurement): 4.50				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 001 Location/Functional Area: CP

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: _____ ft

Flush-mount/Above-ground Completion: FM

Reported Construction Depth: 15.3 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?			X	
Does the protective casing have a weep hole?			X	
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?	X			
Does the well have a flush-mount box?	X			
Is the traffic cover cracked or broken?		X		
Is the concrete apron cracked or deteriorated? Frost Heaving?		X		
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~2.44~~ 14.74 TS				
Thickness of sediment accumulation (reported depth-present measurement): 0.56				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1/19/09 Inspected by: TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 002 Location/Functional Area: CP

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: FM

Reported Construction Depth: 15.1 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?				
Does the protective casing have a weep hole?				
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?	X			
Does the well have a flush-mount box?	X			
Is the traffic cover cracked or broken?		X		
Is the concrete apron cracked or deteriorated? Frost Heaving?		X		
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~above ground surface~~ 14.99				
Thickness of sediment accumulation (reported depth-present measurement): 0.11				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 7/9/09 Inspected by: TS JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 003 Location/Functional Area: CP

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: Flush - Mount

Reported Construction Depth: 17.6 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?				
Does the protective casing have a weep hole?				
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?	X			
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?		X		
Is the concrete apron cracked or deteriorated? Frost Heaving?		X		
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?		X		
Measured depth of the well from measurement point: ~~3.96~~ 17.10				
Thickness of sediment accumulation (reported depth-present measurement): 0.50				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/19/04 Inspected by: TS JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 004 Location/Functional Area: CP

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 22.2 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			/	
Does the well have a flush-mount box?			/	
Is the traffic cover cracked or broken?			/	
Is the concrete apron cracked or deteriorated? Frost Heaving?			/	
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?	/			
Does the well have a weatherproof lock?	/			
Does the lock secure well?	/			
Does the inner casing have a water-tight cap?	/			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~10.54~~ 22.52				
Thickness of sediment accumulation (reported depth-present measurement): -0.32				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/19/09 Inspected by: TS Jm

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 005 Location/Functional Area: CP

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 42.4 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~41.43~~ 43.16 TS				
Thickness of sediment accumulation (reported depth-present measurement): -0.76				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/19/09 Inspected by: JS gm

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: CP-MW 006 Location/Functional Area: CP

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 20.2 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			BROKEN CAP
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 20.62				
Thickness of sediment accumulation (reported depth-present measurement): -0.42				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MUD				

Inspection Date: 1/14/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 001B Location/Functional Area: DET

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 5 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 40.5 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		Soil eroded/pad wobbles
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			/	
Does the well have a flush-mount box?			/	
Is the traffic cover cracked or broken?			/	
Is the concrete apron cracked or deteriorated? Frost Heaving?			/	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	/			
Does the well have a weatherproof lock?	/			
Does the lock secure well?	/			
Does the inner casing have a water-tight cap?	/			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: ~~22.99~~ 38.48 TS				
Thickness of sediment accumulation (reported depth-present measurement): 2.02				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: JM TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 002 Location/Functional Area: DET

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 5 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 40.0 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~32.58~~ 41.94				
Thickness of sediment accumulation (reported depth-present measurement): -1.94				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): MED				

Inspection Date: 1-19-09 Inspected by: Jm TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 003 Location/Functional Area: DET

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 5 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 13.0 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: ~~9.5~~ 15.00 TS				
Thickness of sediment accumulation (reported depth-present measurement): -2				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: gm TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 004 Location/Functional Area: DET

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 5 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 12.0 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: 10.51 | 13.80 TS				
Thickness of sediment accumulation (reported depth-present measurement): -1.80				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: Jm TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 104 Location/Functional Area: DA2

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 29.6 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~21.62~~ 29.21 TS				
Thickness of sediment accumulation (reported depth-present measurement): 0.39				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1-19-09 Inspected by: JM/TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 105 Location/Functional Area: DA2

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 5 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 16.2 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~3.23~~ 16.20 TS				
Thickness of sediment accumulation (reported depth-present measurement): 0				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: JM/TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 106 Location/Functional Area: DA2

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 4 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 18.1 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		Soil eroded
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: TS ~~3.65~~ 16.75				
Thickness of sediment accumulation (reported depth-present measurement): 1.32				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: TS/Jim

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 107 Location/Functional Area: DA2

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 5 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 16.5 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:

	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~6.88~~ 16.82 TS				
Thickness of sediment accumulation (reported depth-present measurement): -0.32				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: JW / TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 108 Location/Functional Area: DA 2

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 5 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 16.9 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: 5.79 17.16 TS				
Thickness of sediment accumulation (reported depth-present measurement): -0.26				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: ~~TM/JS~~ JM/TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 109 Location/Functional Area: DA2

Casing Type: [ ] Steel [ ] Stainless Steel [/] PVC

Screened/Open-Hole Well Type: _____ Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: _____

Reported Construction Depth: 24.1 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	/			
Are any of the posts damaged or degraded?		/		
Is a concrete pad installed?	/			
Is the pad cracked or deteriorated? Frost Heaving?		/		
Is steel protective casing installed?	/			
Does the protective casing have a weep hole?	/			
Does vegetation around the well need clearing?		/		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			/	
Does the well have a flush-mount box?			/	
Is the traffic cover cracked or broken?			/	
Is the concrete apron cracked or deteriorated? Frost Heaving?			/	
Identification:				
Is the well labeled with the correct number?	/			
Describe labeling: PAINT ID				
Security:				
Does the well have a cap or lid?	/			
Does the well have a weatherproof lock?	/			
Does the lock secure well?	/			
Does the inner casing have a water-tight cap?	/			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		/		
Is the well casing loose, (at the surface?)		/		
Is a measurement point marked a the top of well casing?	/			
Measured depth of the well from measurement point: ~~13.84~~ 24.32 TS				
Thickness of sediment accumulation (reported depth-present measurement): -0.22				
Are there an obstructions in the well?		/		
Description of well bottom conditions (soft, hard, etc.): MEDIUM				

Inspection Date: 1-19-09 Inspected by: JM / TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 410 Location/Functional Area: DA Q

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 21.9 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~8.15~~ 22.34 TS				
Thickness of sediment accumulation (reported depth-present measurement): -0.44				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: TS/JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 111 Location/Functional Area: DA 2

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 5 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 14.8 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~4.5~~ 14.78 TS				
Thickness of sediment accumulation (reported depth-present measurement): 0.02				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: JM | TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 112 Location/Functional Area: DA2

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 5 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 16.6 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~7.20~~ 17.50 TS				
Thickness of sediment accumulation (reported depth-present measurement): -0.9				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: TS/JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 113 Location/Functional Area: DA 2

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: _____ ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 16.1 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~7.65~~ 16.29 TS				
Thickness of sediment accumulation (reported depth-present measurement): -0.19				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-19-09 Inspected by: gm TS

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: EBG-MW123 Location/Functional Area: EBG

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 33.7 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAIWMD ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 34.73				
Thickness of sediment accumulation (reported depth-present measurement): -1.03				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MED				

Inspection Date: 1-14-09 Inspected by: EW/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: EBG-124 Location/Functional Area: EBG

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 32.9 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 32.71				
Thickness of sediment accumulation (reported depth-present measurement): 0.19				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MED				

Inspection Date: 1-14-09 Inspected by: EC/PA

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: EPA - 125 Location/Functional Area: EBG

Casing Type: [ ] Steel [ ] Stainless Steel [ ] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 26.8 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 27.43				
Thickness of sediment accumulation (reported depth-present measurement): -0.63				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): ~~MED~~ HARD				

Inspection Date: 1-14-09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: EBG - MW12G Location/Functional Area: EBG

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 27.9 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 27.81				
Thickness of sediment accumulation (reported depth-present measurement): 0.09				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MED				

Inspection Date: 1-14-09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: EBG 127 Location/Functional Area: EBG

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 32.40 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 32.84				
Thickness of sediment accumulation (reported depth-present measurement): -0.44				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): ~~MUD~~ HARD				

Inspection Date: 1-14-09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: EBG MW 128 Location/Functional Area: EBG

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 28 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 28.20				
Thickness of sediment accumulation (reported depth-present measurement): ~0.20				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1-14-09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: EBG MW 129 Location/Functional Area: EBG

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 28.4 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 30.96				
Thickness of sediment accumulation (reported depth-present measurement): -2.56				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MED TUBING NEEDS TO BE FISHED OUT				

Inspection Date: 1-14-09 Inspected by: EC/PH.

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: EBG - MW 130 Location/Functional Area: EBG

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 28.3 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:

	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 28.37				
Thickness of sediment accumulation (reported depth-present measurement): -0.07				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1-14-09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 166 Location/Functional Area: FRQ

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 19.5 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 19.72				
Thickness of sediment accumulation (reported depth-present measurement): -0.22				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 169 Location/Functional Area: FBQ

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 18.9 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:

	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: 18.97				
Thickness of sediment accumulation (reported depth-present measurement): -0.07				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Well cap needs to be replaced

H.G. 18.97 Hum

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 168 Location/Functional Area: FBQ

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 21.6 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 21.21				
Thickness of sediment accumulation (reported depth-present measurement): 0.39				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 169 Location/Functional Area: FBQ

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 18.2 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?				
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: 18.57				
Thickness of sediment accumulation (reported depth-present measurement): -0.37				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 170 Location/Functional Area: FBQ

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 32.6 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 32.69				
Thickness of sediment accumulation (reported depth-present measurement): -0.09				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 171 Location/Functional Area: FBQ

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 31.1 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 31.39				
Thickness of sediment accumulation (reported depth-present measurement): -0.29				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 172 Location/Functional Area: FBQ

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 34.4 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)	✓	✓		
Is a measurement point marked a the top of well casing?				
Measured depth of the well from measurement point: 34.4				
Thickness of sediment accumulation (reported depth-present measurement): 0				
Are there an obstructions in the well?	✓	✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Need to fish tubing out of the well.

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 173 Location/Functional Area: FBQ

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 53 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:

	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 51.75				
Thickness of sediment accumulation (reported depth-present measurement): 1.25				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Med				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 1T4 Location/Functional Area: F13Q

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 26.2 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: 22.87				
Thickness of sediment accumulation (reported depth-present measurement): 3.36				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 115 Location/Functional Area: FBQ

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 25.6 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 25.8				
Thickness of sediment accumulation (reported depth-present measurement): -0.2				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 176 Location/Functional Area: ~~[illegible]~~ FBQ

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: _____ ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 23.3 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 23.87				
Thickness of sediment accumulation (reported depth-present measurement): -0.57				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 177 Location/Functional Area: FBQ

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 24.8 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 24.74				
Thickness of sediment accumulation (reported depth-present measurement): 0.06				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): Med				

Inspection Date: 1-13-09 Inspected by: T. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 024 Location/Functional Area: LNW

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 22.7 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~22.42~~ 22.52 TS				
Thickness of sediment accumulation (reported depth-present measurement): 0.18				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1/20/09 Inspected by: TS/JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 025 Location/Functional Area: LNW

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 19. ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)				
Is the well casing loose, (at the surface?)				
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~5.04~~ 20.30 TS				
Thickness of sediment accumulation (reported depth-present measurement): -1.30				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1/20/09 Inspected by: TS / JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 026 Location/Functional Area: LNW

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 25.8 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: ~~3.87~~ TS 25.97				
Thickness of sediment accumulation (reported depth-present measurement): -0.17				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1/20/09 Inspected by: TS/JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 027 Location/Functional Area: LNW

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 26.7 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: 6.20 / 5.26 / 8.4				
Thickness of sediment accumulation (reported depth-present measurement): -0.16				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Hard				

Inspection Date: 1-20-09 Inspected by: TS/JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 107 Location/Functional Area: MACA

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 24.6 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?	X			Some rust
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: 24.25				
Thickness of sediment accumulation (reported depth-present measurement): 0.35				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): Mud				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 108 Location/Functional Area: MACA

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 24.4 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Some rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?				
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 24.48				
Thickness of sediment accumulation (reported depth-present measurement): −0.08				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): Mud				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 109 Location/Functional Area: MACA

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 20.9 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 20.89				
Thickness of sediment accumulation (reported depth-present measurement): 0.01				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 110 Location/Functional Area: MACA

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 29.6 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 29.74				
Thickness of sediment accumulation (reported depth-present measurement): -0.14				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 111 Location/Functional Area: NACA

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 22.4 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 23.06				
Thickness of sediment accumulation (reported depth-present measurement): -0.66				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 112 Location/Functional Area: NACA

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 26.9 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 26.60				
Thickness of sediment accumulation (reported depth-present measurement): 0.30				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): Mud				

Inspection Date: 1-13-09 Inspected by: J Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 113 Location/Functional Area: M NACA

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 30.6 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 29.3				
Thickness of sediment accumulation (reported depth-present measurement): 1.30				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): ~~[illegible]~~				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 114 Location/Functional Area: MACA

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 22.6 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 37.74 21.74				
Thickness of sediment accumulation (reported depth-present measurement): 0.86				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 115 Location/Functional Area: MACA

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 25.2 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 25.27				
Thickness of sediment accumulation (reported depth-present measurement): -0.07				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 110 Location/Functional Area: MACA

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: _____ ft

Flush-mount/Above-ground Completion: A

Reported Construction Depth: 22.6 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?				
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing? on	✓			
Measured depth of the well from measurement point: 31.53				
Thickness of sediment accumulation (reported depth-present measurement): 1.07				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 117 Location/Functional Area: NACA

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: _____ ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 27.4 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Rust
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 27.50				
Thickness of sediment accumulation (reported depth-present measurement): -0.1				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 118 Location/Functional Area: 1ACA

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 24.6 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:

	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 24.69				
Thickness of sediment accumulation (reported depth-present measurement): -0.09				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-13-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: RQL MW 006 Location/Functional Area: RQL

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 20 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 41.4 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			X	
Does the well have a flush-mount box?			X	
Is the traffic cover cracked or broken?			X	
Is the concrete apron cracked or deteriorated? Frost Heaving?			X	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			DOES NOT FIT WELL
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			REPLACED BAD CAP
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		MINOR CORROSION
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 41.97				
Thickness of sediment accumulation (reported depth-present measurement): -0.57				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MUD				

Inspection Date: 1/14/09 Inspected by: EZ/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: RQL 007 Location/Functional Area: _____

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 18.2 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 0				
Are the posts positioned to prevent collision damage to the well?			✓	
Are any of the posts damaged or degraded?			✓	
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			MISSING CAP
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 18.56				
Thickness of sediment accumulation (reported depth-present measurement): -0.36				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/14/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: RQL MW 008 Location/Functional Area: RQL

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 185 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 0				
Are the posts positioned to prevent collision damage to the well?			X	
Are any of the posts damaged or degraded?			X	
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 18.60				
Thickness of sediment accumulation (reported depth-present measurement): -0.10				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/4/07 Inspected by: EZ/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: RQL-MW 009 Location/Functional Area: RQL

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 18.4 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 0				
Are the posts positioned to prevent collision damage to the well?			X	
Are any of the posts damaged or degraded?			X	
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			LOCK RUSTED
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 18.78				
Thickness of sediment accumulation (reported depth-present measurement): -0.38				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/14/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: RQL - 010 Location/Functional Area: RQL

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: _____ ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 35.1 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 2				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 35.25				
Thickness of sediment accumulation (reported depth-present measurement): ~0.15				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MED.				

Inspection Date: 1/14/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: RQL-MW 011 Location/Functional Area: RQL

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 20 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 34.6 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			HINGE RUSTED BROKEN TOP
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			SEE ABOVE
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 35.30				
Thickness of sediment accumulation (reported depth-present measurement): -.70				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1/14/09 Inspected by: EC/PH

~~NOT~~ NO TUBING IN WELL

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: RQL - 012 Location/Functional Area: RQL

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: _____ ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 32.5 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 32.41				
Thickness of sediment accumulation (reported depth-present measurement): ~0.11				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 4/14/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: RQL Ø13 Location/Functional Area: RQL

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 32.6 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:

	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 36.42				
Thickness of sediment accumulation (reported depth-present measurement): -3.82				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MEDIUM				

Inspection Date: 1/14/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: RQC MW 814 Location/Functional Area: RQC

Casing Type: [ ] Steel [ ] Stainless Steel [ ] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 31.6 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 31.15				
Thickness of sediment accumulation (reported depth-present measurement): 0.45				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): SOFT				

Inspection Date: 1/14/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: RQL Ø 15 Location/Functional Area: RQL

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 41.6 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			LOCK RUSTED
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 41.94				
Thickness of sediment accumulation (reported depth-present measurement): -0.34				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 1/14/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: RQL MW 016 Location/Functional Area: RQL

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 41.6 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 41.59				
Thickness of sediment accumulation (reported depth-present measurement): 0.01				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MED				

FISH TUBING OUT OF WELL

Inspection Date: 1/14/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: RQL MW017 Location/Functional Area: RQL

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 32.5 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 32.71				
Thickness of sediment accumulation (reported depth-present measurement): -0.21				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): HARD				

Inspection Date: 4/14/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW001 Location/Functional Area: MBS

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 31.5 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: 30.92				
Thickness of sediment accumulation (reported depth-present measurement): 0.58				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1/27/09 Inspected by: gm

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW002 Location/Functional Area: MBS

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 30.7 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: 30.33				
Thickness of sediment accumulation (reported depth-present measurement): 0.37				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): med				

Inspection Date: 1-27-09 Inspected by: gm

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW 003 Location/Functional Area: MBS

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 30.5 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			X	
Does the well have a flush-mount box?			X	
Is the traffic cover cracked or broken?			X	
Is the concrete apron cracked or deteriorated? Frost Heaving?			X	
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?	X			
Does the well have a weatherproof lock?	X			
Does the lock secure well?	X			
Does the inner casing have a water-tight cap?	X			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: 30.68				
Thickness of sediment accumulation (reported depth-present measurement): -0.18				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-27-09 Inspected by: gm

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW004 Location/Functional Area: MBS

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 27.0 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: 26.52				
Thickness of sediment accumulation (reported depth-present measurement): 0.48				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-27-09 Inspected by: [signature]

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW005 Location/Functional Area: MBS

Casing Type: [ ] Steel [ ] Stainless Steel [/] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 30.2 ft [ ] BGS or [/] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?		X		
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?				
Does the well have a weatherproof lock?				
Does the lock secure well?				
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: 29.99				
Thickness of sediment accumulation (reported depth-present measurement): 0.21				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-27-09 Inspected by: [signature]

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: MW006 Location/Functional Area: MSB

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 28.2 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well:				
Are the posts positioned to prevent collision damage to the well?	X			
Are any of the posts damaged or degraded?	X			paint
Is a concrete pad installed?	X			
Is the pad cracked or deteriorated? Frost Heaving?		X		
Is steel protective casing installed?	X			
Does the protective casing have a weep hole?	X			
Does vegetation around the well need clearing?		X		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			/	
Does the well have a flush-mount box?			/	
Is the traffic cover cracked or broken?			/	
Is the concrete apron cracked or deteriorated? Frost Heaving?			/	
Identification:				
Is the well labeled with the correct number?	X			
Describe labeling:				
Security:				
Does the well have a cap or lid?	/			
Does the well have a weatherproof lock?	/			
Does the lock secure well?	/			
Does the inner casing have a water-tight cap?	/			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		X		
Is the well casing loose, (at the surface?)		X		
Is a measurement point marked a the top of well casing?	X			
Measured depth of the well from measurement point: 28.13				
Thickness of sediment accumulation (reported depth-present measurement): 0.07				
Are there an obstructions in the well?		X		
Description of well bottom conditions (soft, hard, etc.): med-hard				

Inspection Date: 1-27-09 Inspected by: JM

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 005 Location/Functional Area: WBG

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 21.1 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Square casing
Is a concrete pad installed?	✓			Need painting
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 21.10				
Thickness of sediment accumulation (reported depth-present measurement): 0				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 006 Location/Functional Area: WBG

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 20.4 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 20.14				
Thickness of sediment accumulation (reported depth-present measurement): 0.26				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): 20.14				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 007 Location/Functional Area: WBG

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 26.3 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 26.38				
Thickness of sediment accumulation (reported depth-present measurement): -0.08				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, (hard), etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 008 Location/Functional Area: LVBG

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 21.0 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 20.80				
Thickness of sediment accumulation (reported depth-present measurement): 0.20				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, (hard), etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 009 Location/Functional Area: WBG

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 24 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	(YES)	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			/	
Does the well have a flush-mount box?			/	
Is the traffic cover cracked or broken?			/	
Is the concrete apron cracked or deteriorated? Frost Heaving?			/	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 24.28				
Thickness of sediment accumulation (reported depth-present measurement): -0.28				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 01D Location/Functional Area: WBG

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 23.6 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:

	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			Need painting
Are any of the posts damaged or degraded?	✓			
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 23.30				
Thickness of sediment accumulation (reported depth-present measurement): 0.30				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-07 Inspected by: T. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: WBG-011 Location/Functional Area: _____

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 24.0 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			X	
Does the well have a flush-mount box?			X	
Is the traffic cover cracked or broken?			X	
Is the concrete apron cracked or deteriorated? Frost Heaving?			X	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 23.85				
Thickness of sediment accumulation (reported depth-present measurement): 0.15				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MED				

Inspection Date: 1/14/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: WBG-012 Location/Functional Area: WBG

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 32.0 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:

	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 31.55				
Thickness of sediment accumulation (reported depth-present measurement): 0.45				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MED				

Inspection Date: 7/14/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: WBG-013 Location/Functional Area: WBG

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 23.9 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?			X	
Does the well have a flush-mount box?			X	
Is the traffic cover cracked or broken?			X	
Is the concrete apron cracked or deteriorated? Frost Heaving?			X	
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling: PAINTED ID				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 24.09				
Thickness of sediment accumulation (reported depth-present measurement): -0.19				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.): MED				

Inspection Date: 1/14/09 Inspected by: EC/PH

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 0P4 Location/Functional Area: WBG

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 25 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 24.97				
Thickness of sediment accumulation (reported depth-present measurement): 0.03				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Milla

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 015 Location/Functional Area: WBG

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 23.8 ft [ ] BGS or [✓] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 3				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?		✓		
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 23.51				
Thickness of sediment accumulation (reported depth-present measurement): 0.29				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 016 Location/Functional Area: WBG

Casing Type: [ ] Steel [ ] Stainless Steel [✓] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 25.4 ft [ ] BGS or [ ] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Need's painting
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓	✓		
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?				
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 25.2				
Thickness of sediment accumulation (reported depth-present measurement): 0.2				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

Ravenna Army Ammunition Plant

WELL INSPECTION CHECKLIST

WELL INFORMATION:

Well Number: 017 Location/Functional Area: WBG

Casing Type: [ ] Steel [ ] Stainless Steel [X] PVC

Screened/Open-Hole Well Type: S Monitor Interval Length: 10 ft

Flush-mount/Above-ground Completion: AG

Reported Construction Depth: 23.9 ft [ ] BGS or [X] BTOC (chose one only)

INSPECTION ITEMS

Well-Head Completion:	YES	NO	N/A	COMMENTS
Above-ground completion:				
Number of Guard posts at well: 4				
Are the posts positioned to prevent collision damage to the well?	✓			
Are any of the posts damaged or degraded?	✓			Need painting
Is a concrete pad installed?	✓			
Is the pad cracked or deteriorated? Frost Heaving?		✓		
Is steel protective casing installed?	✓			
Does the protective casing have a weep hole?	✓			
Does vegetation around the well need clearing?		✓		
Flush-mount completion:				
Is the traffic cover securely bolted to the flush-mount box?				
Does the well have a flush-mount box?				
Is the traffic cover cracked or broken?				
Is the concrete apron cracked or deteriorated? Frost Heaving?				
Identification:				
Is the well labeled with the correct number?	✓			
Describe labeling:				
Security:				
Does the well have a cap or lid?	✓			
Does the well have a weatherproof lock?	✓			
Does the lock secure well?	✓			
Does the inner casing have a water-tight cap?	✓			
Down-hole Condition:				
Is the well casing bent, corroded, or broken (at the surface?)		✓		
Is the well casing loose, (at the surface?)		✓		
Is a measurement point marked a the top of well casing?	✓			
Measured depth of the well from measurement point: 23.72				
Thickness of sediment accumulation (reported depth-present measurement): 0.18				
Are there an obstructions in the well?		✓		
Description of well bottom conditions (soft, hard, etc.):				

Inspection Date: 1-14-09 Inspected by: J. Miller

APPENDIX F

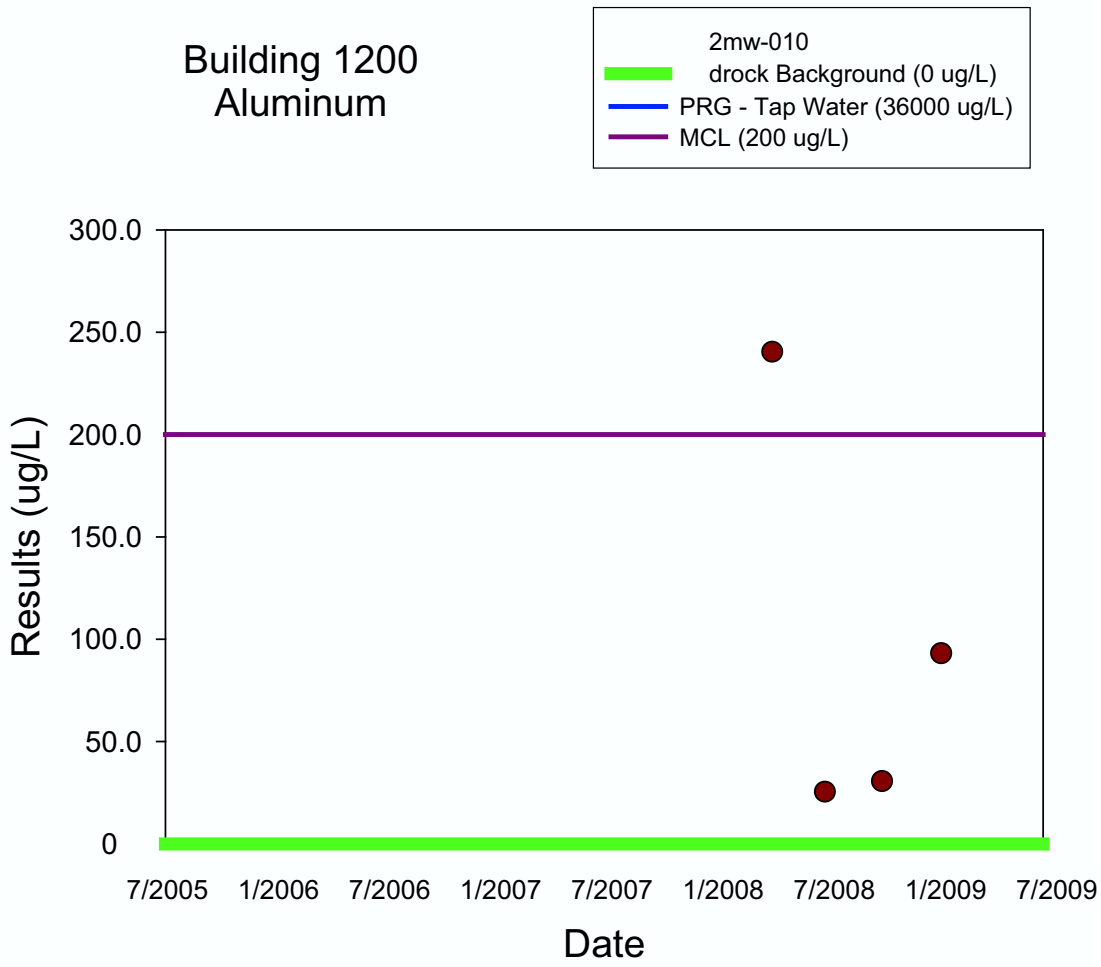
TIME-TREND GRAPHS

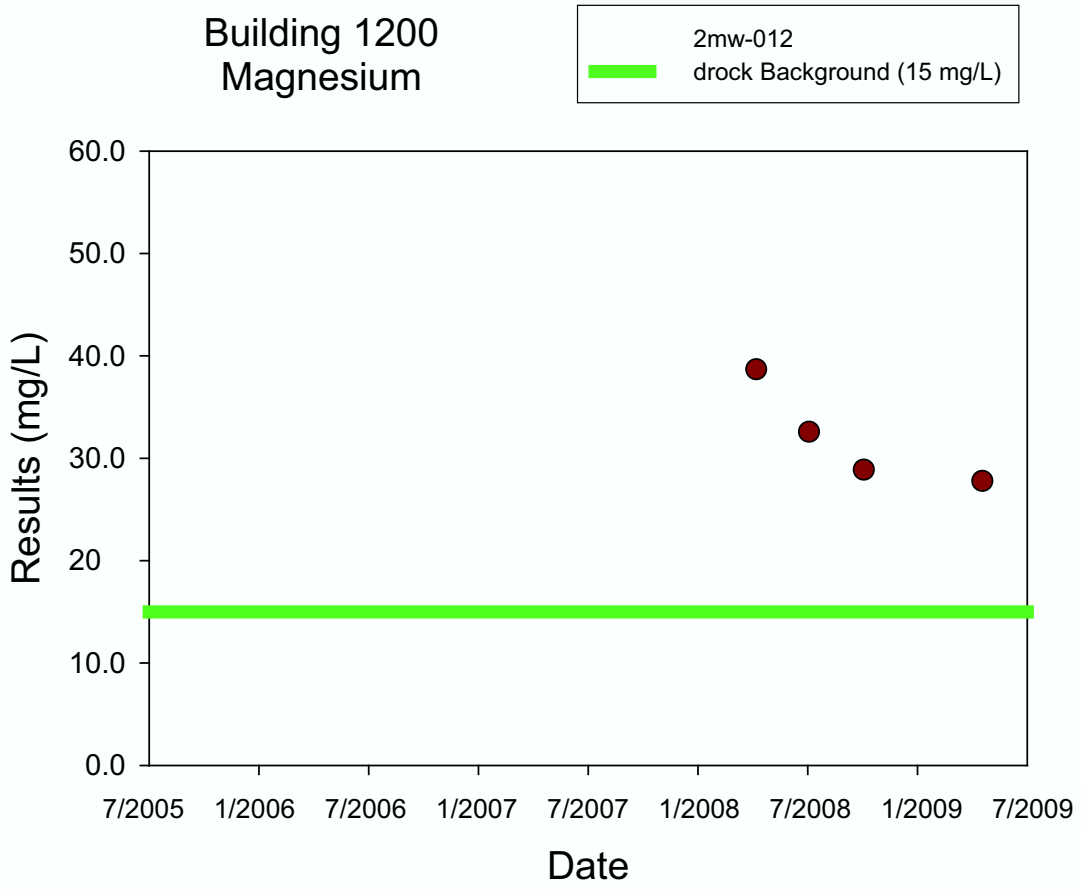
Contaminant Trends in Groundwater

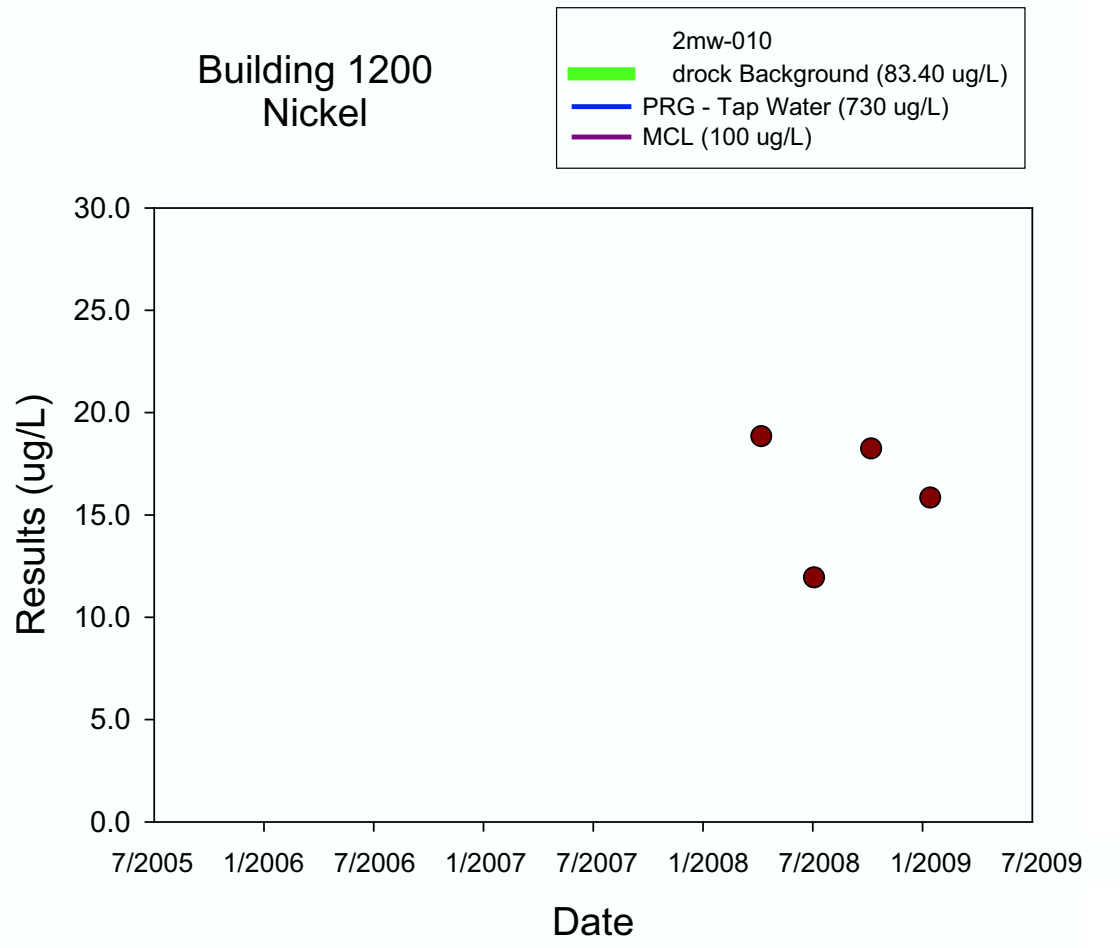
Approach

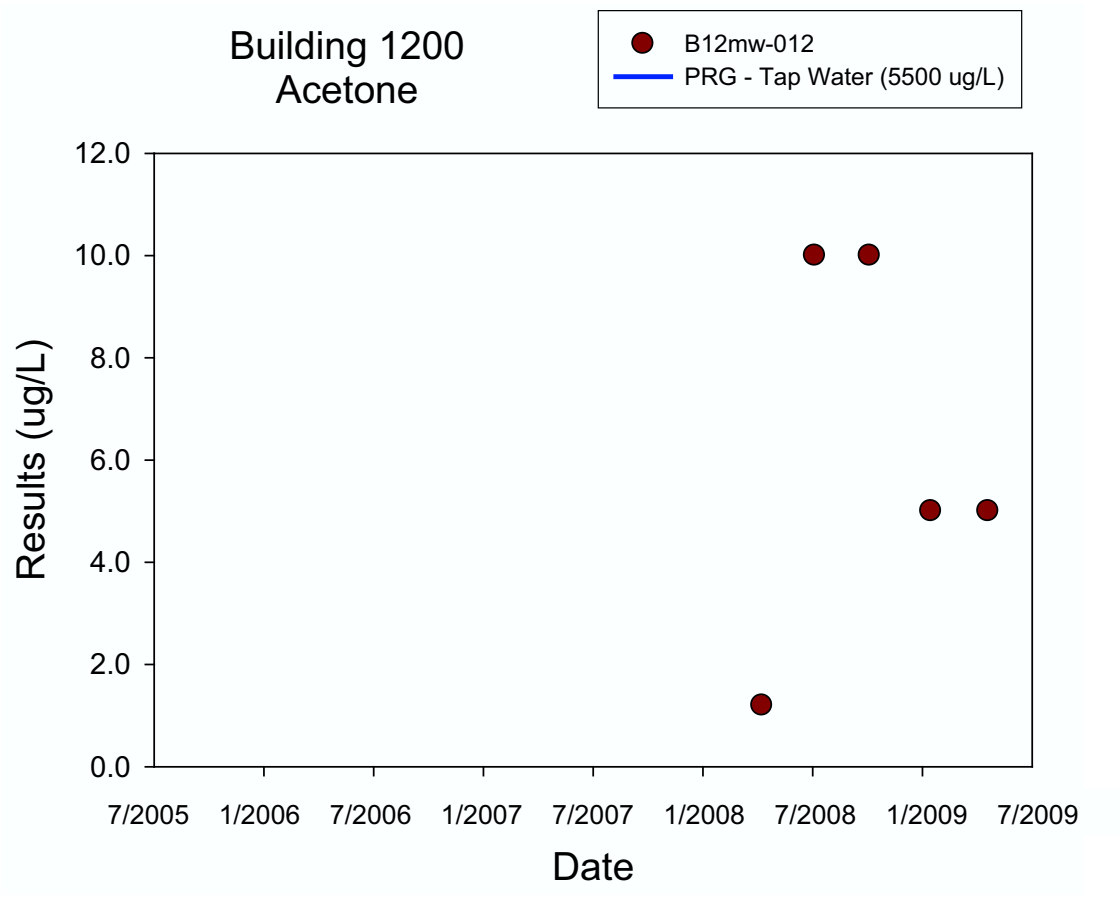
Time series graphs were generated to display the sampling results. The first sampling event included in the dataset is October 2005 and the last event is July 2009. The following guidelines were applied to produce the graphs:

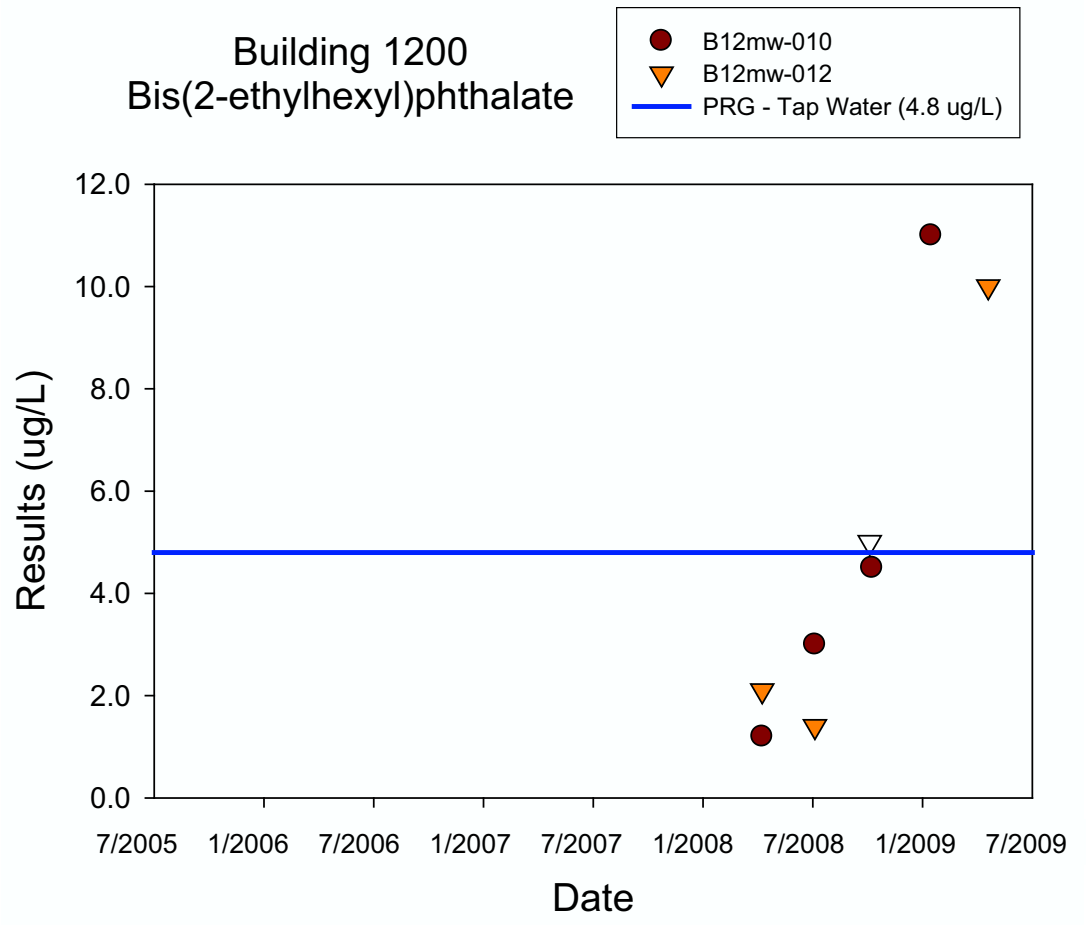
1. Only well locations with three or more detections (above background for inorganics) are graphed.
2. For background wells, inorganics with background values are screened and graphed. Any background well with a detected organic compound is also graphed.
3. Values reported as "non-detect" are shown as one-half the reporting limit.
4. The graphs are organized as follows:
    a. By Site (alphabetically ordered beginning with Background Wells)
        1. Inorganic Compounds
        2. Organic Compounds

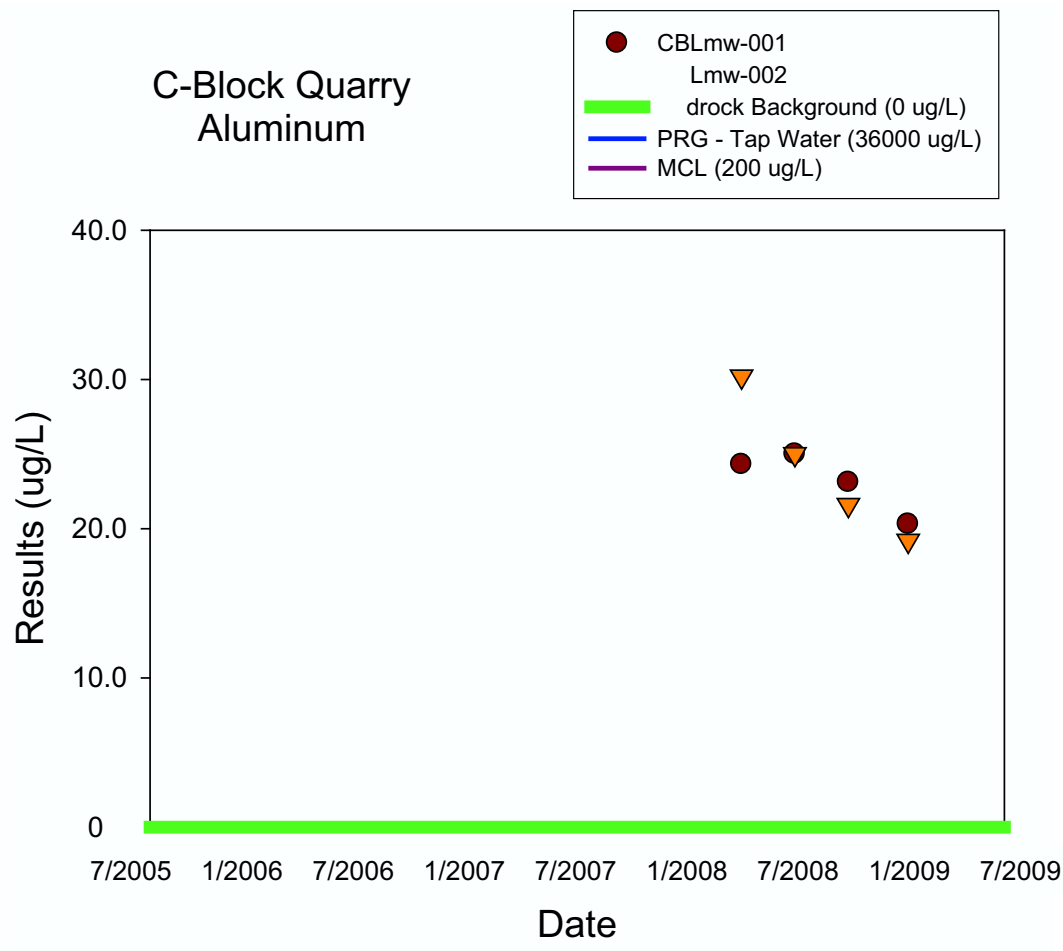

Building 1200
Aluminum
2mw-010
drock Background (0 ug/L)
PRG - Tap Water (36000 ug/L)
MCL (200 ug/L)
Results (ug/L)
300.0
250.0
200.0
150.0
100.0
50.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

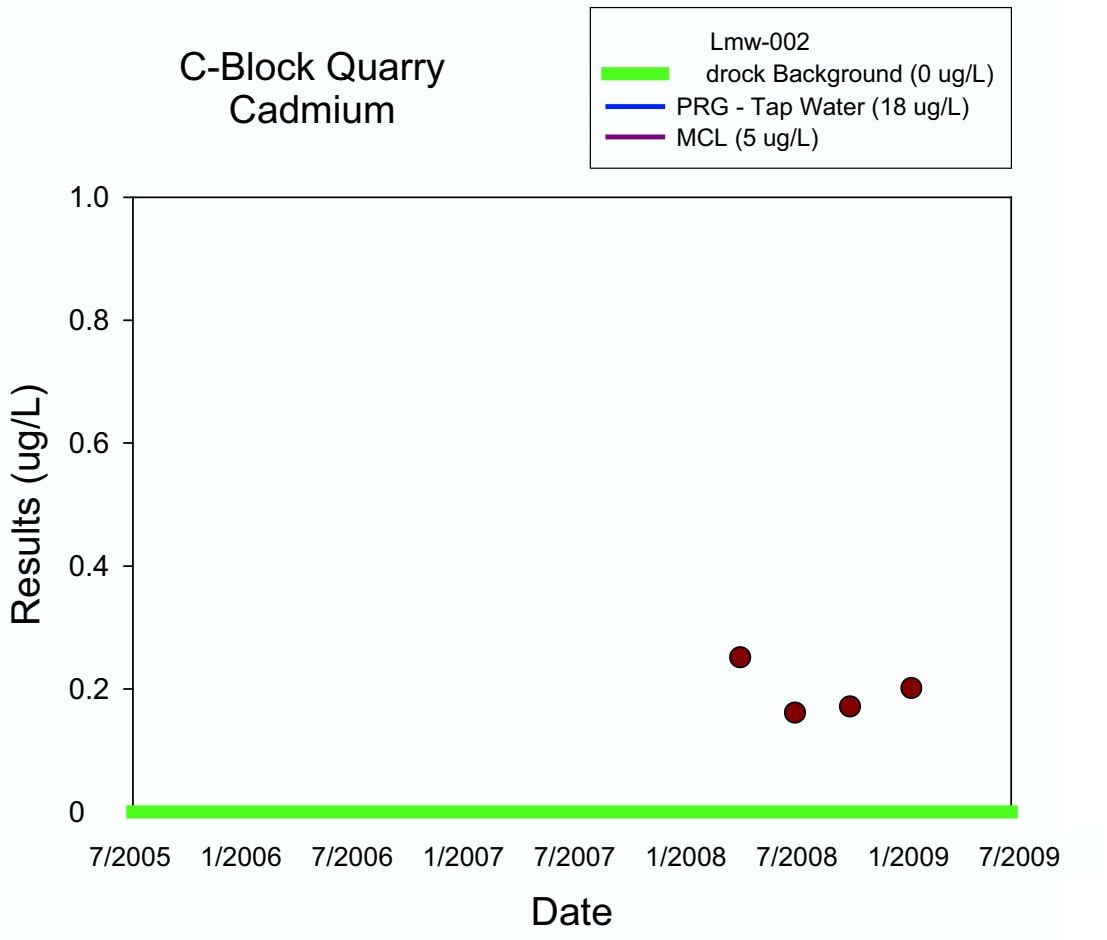

Building 1200
Magnesium
2mw-012
drock Background (15 mg/L)
Results (mg/L)
60.0
50.0
40.0
30.0
20
10.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

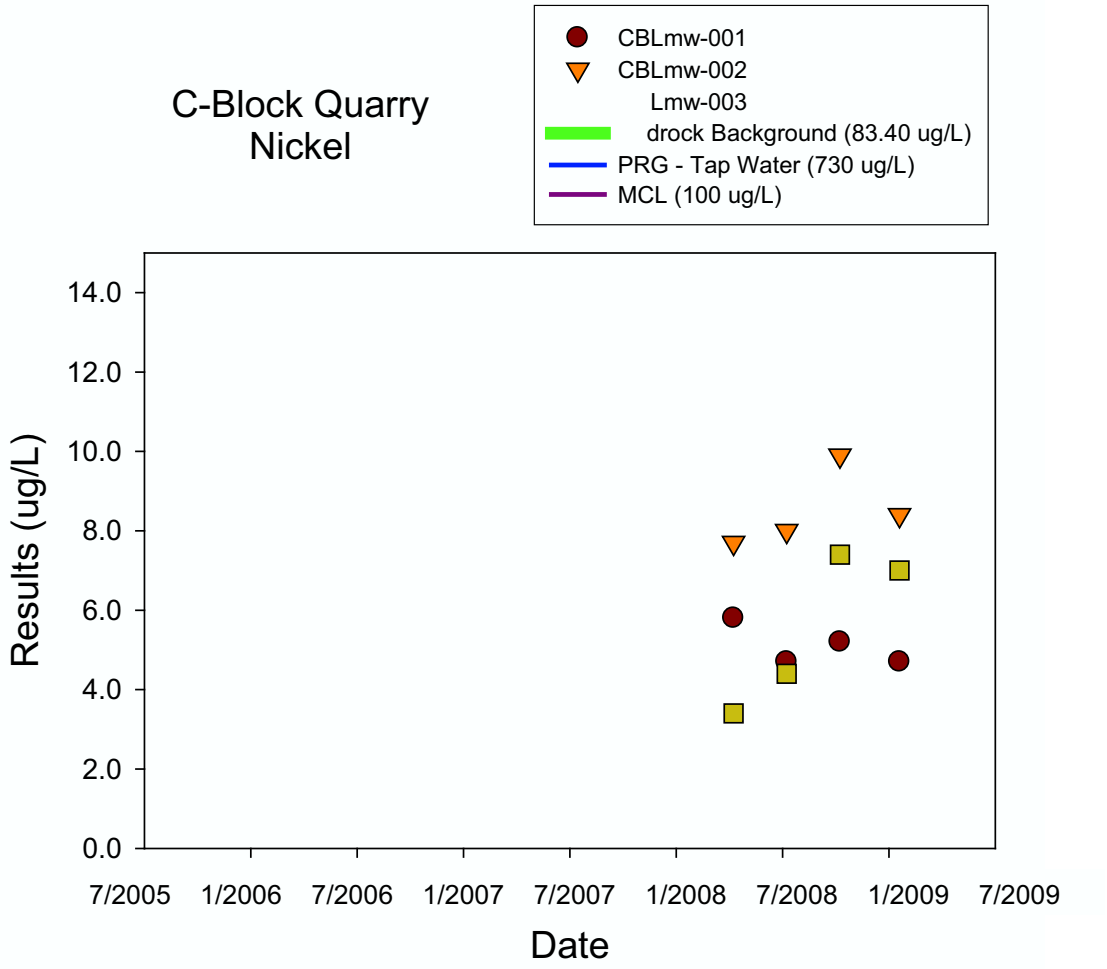

Building 1200
Nickel
2mw-010
drock Background (83.40 ug/L)
PRG - Tap Water (730 ug/L)
MCL (100 ug/L)
Results (ug/L)
30.0
25.0
20.0
15.0
10.0
5.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

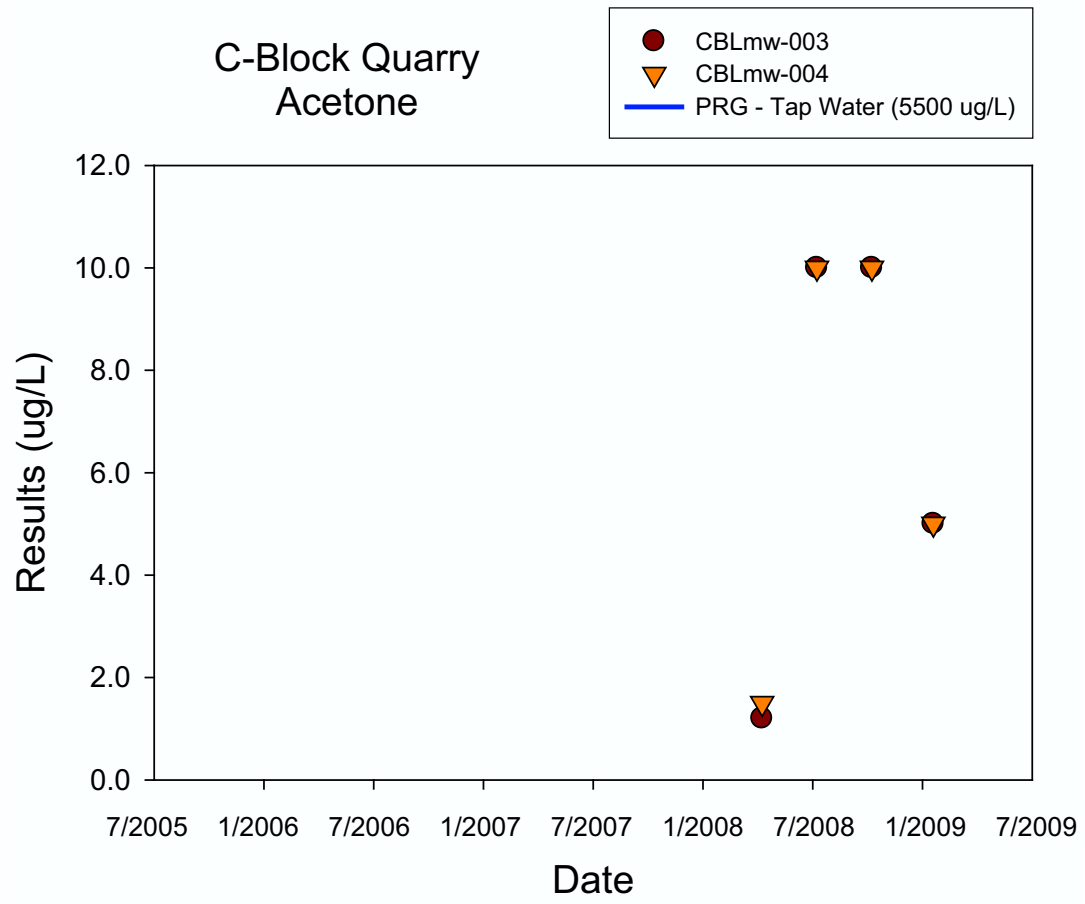

Building 1200
Acetone
B12mw-012
PRG - Tap Water (5500 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

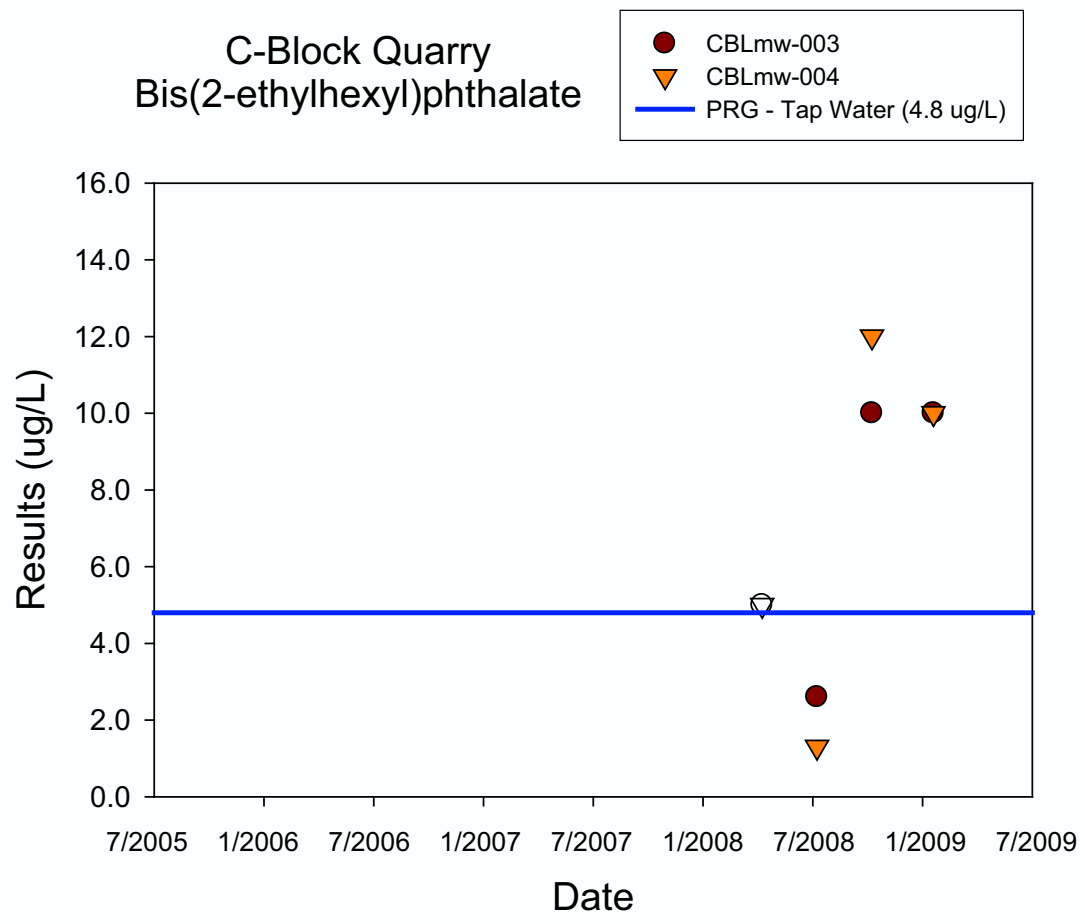

Building 1200
Bis(2-ethylhexyl)phthalate
B12mw-010
B12mw-012
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

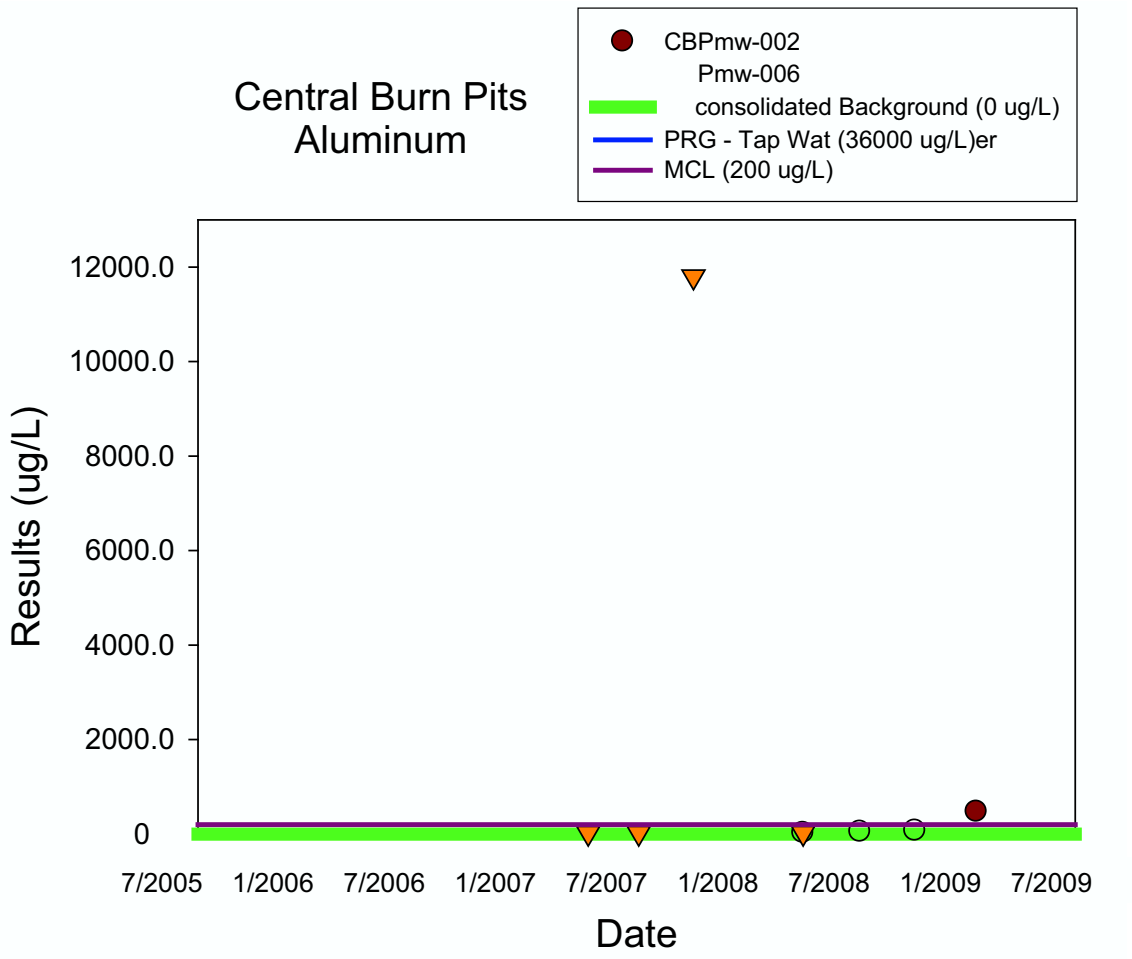

C-Block Quarry
Aluminum
CBLmw-001
Lmw-002
drock Background (0 ug/L)
PRG - Tap Water (36000 ug/L)
MCL (200 ug/L)
Results (ug/L)
40.0
30.0
20.0
10.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

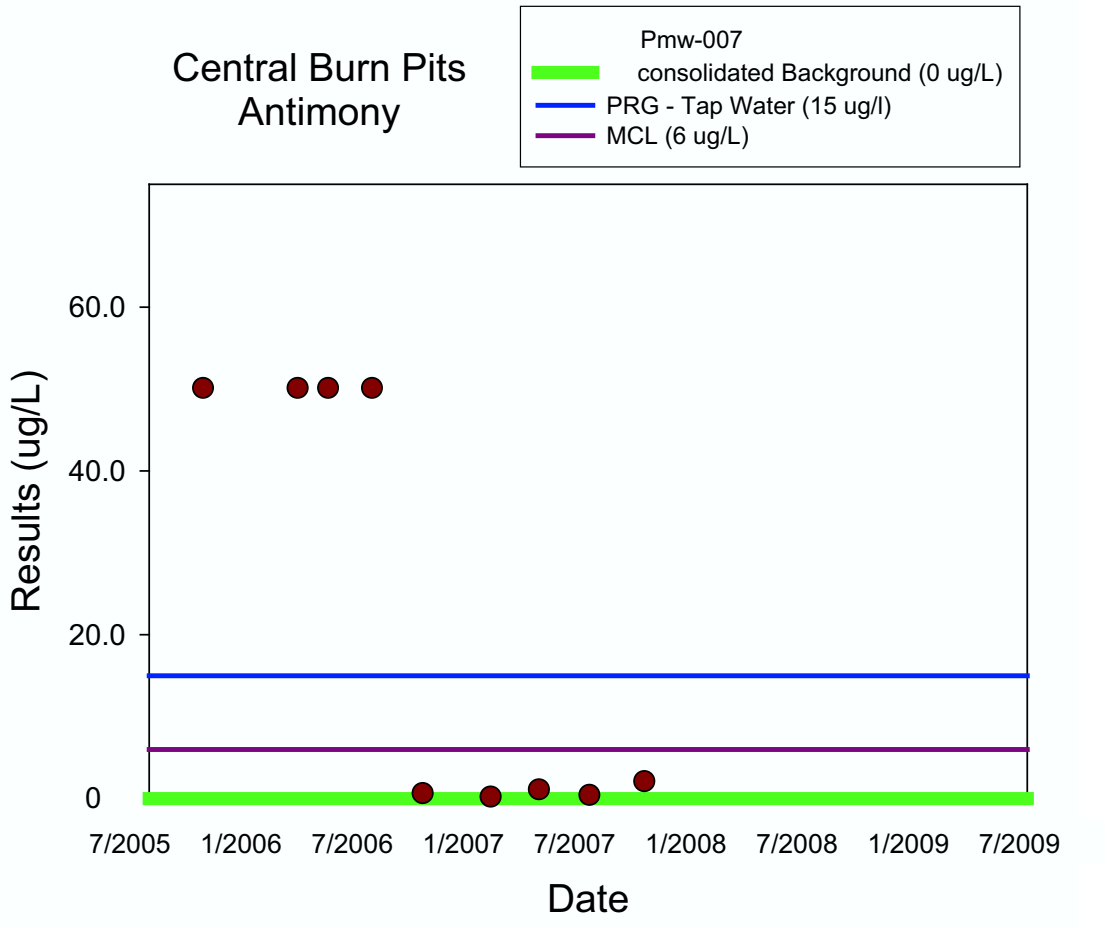

C-Block Quarry
Cadmium
Lmw-002
drock Background (0 ug/L)
PRG - Tap Water (18 ug/L)
MCL (5 ug/L)
Results (ug/L)
1.0
0.8
0.6
0.4
0.2
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

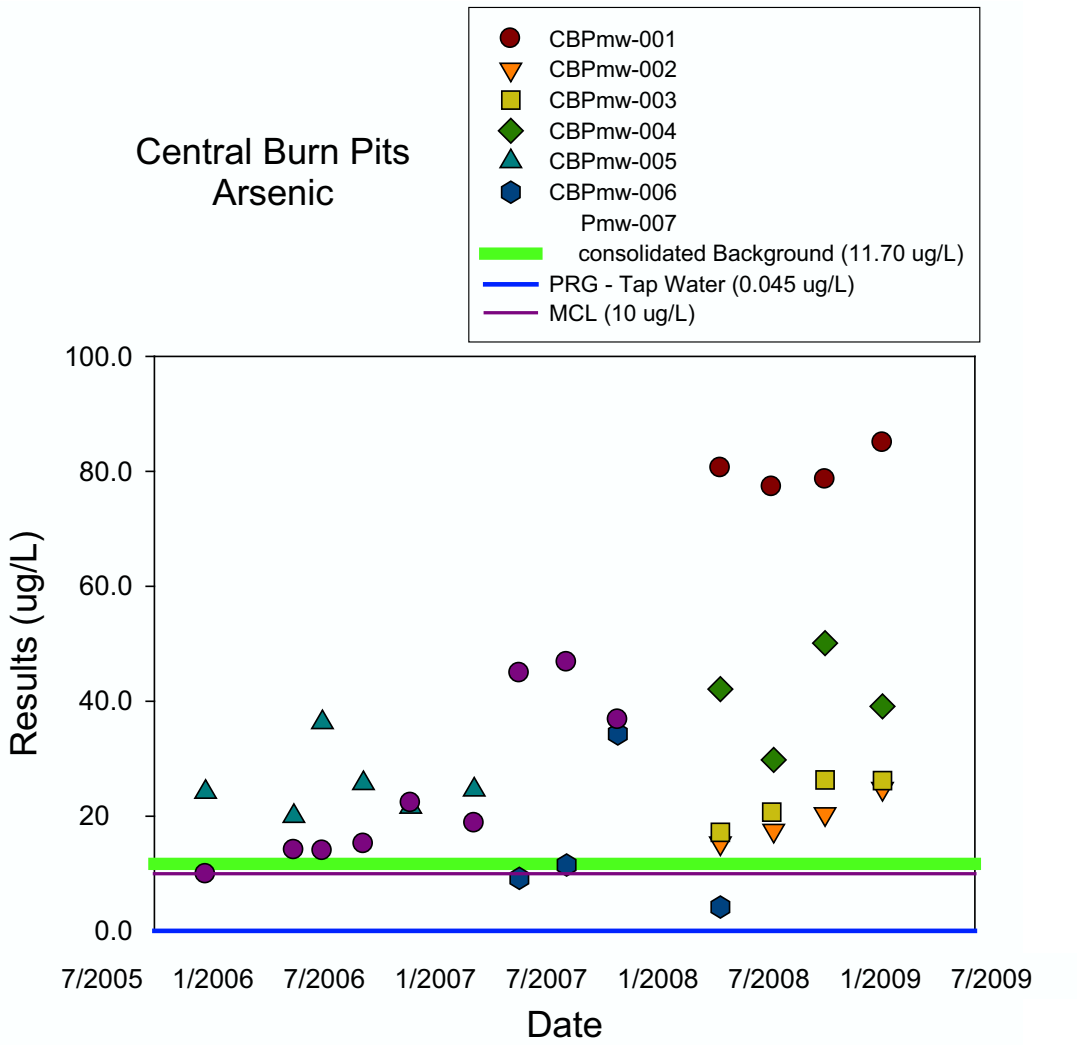

C-Block Quarry
Nickel
CBLmw-001
CBLmw-002
Lmw-003
drock Background (83.40 ug/L)
PRG - Tap Water (730 ug/L)
MCL (100 ug/L)
Results (ug/L)
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

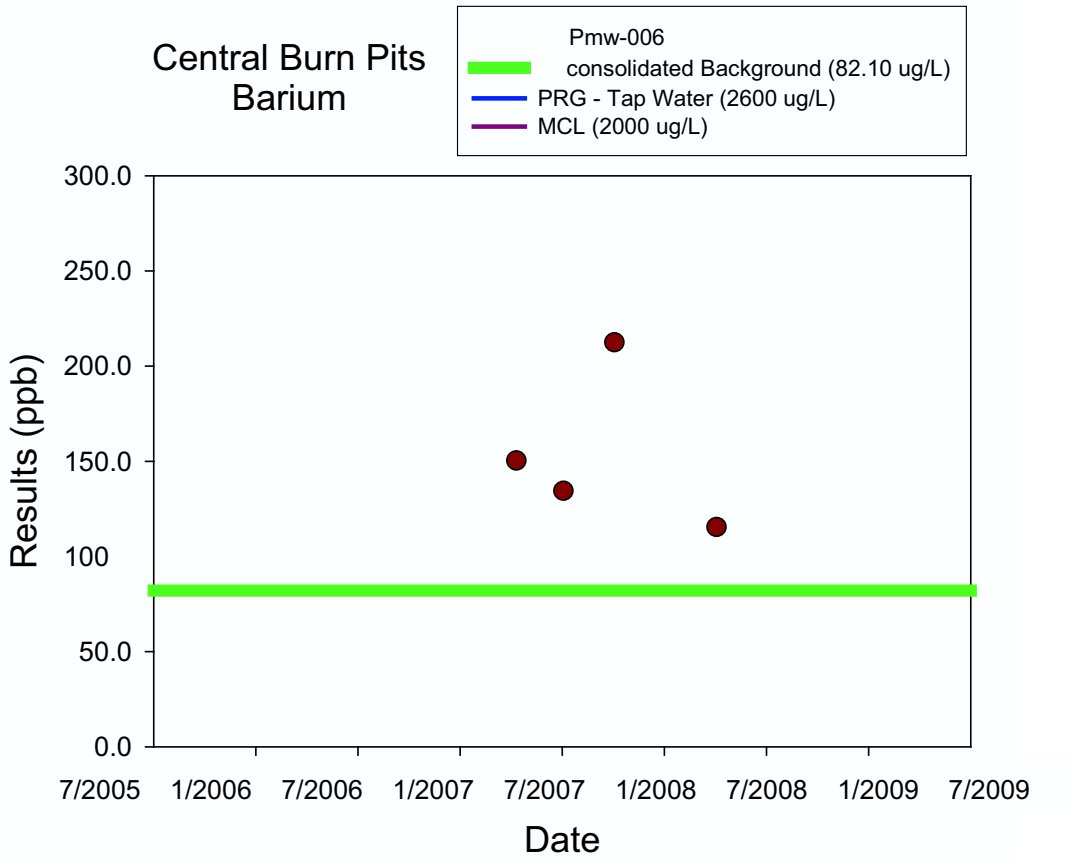

C-Block Quarry
Acetone
CBLmw-003
CBLmw-004
PRG - Tap Water (5500 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

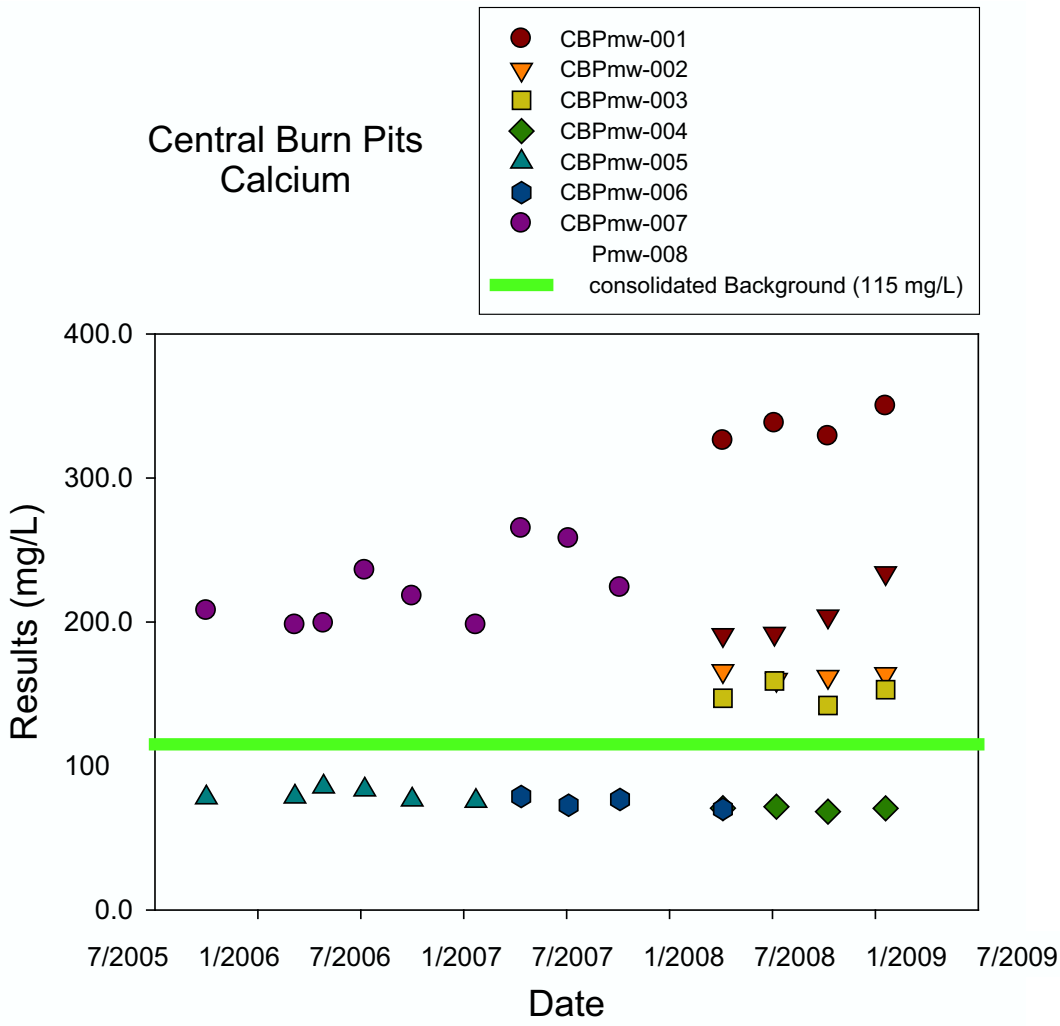

C-Block Quarry
Bis(2-ethylhexyl)phthalate
CBLmw-003
CBLmw-004
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

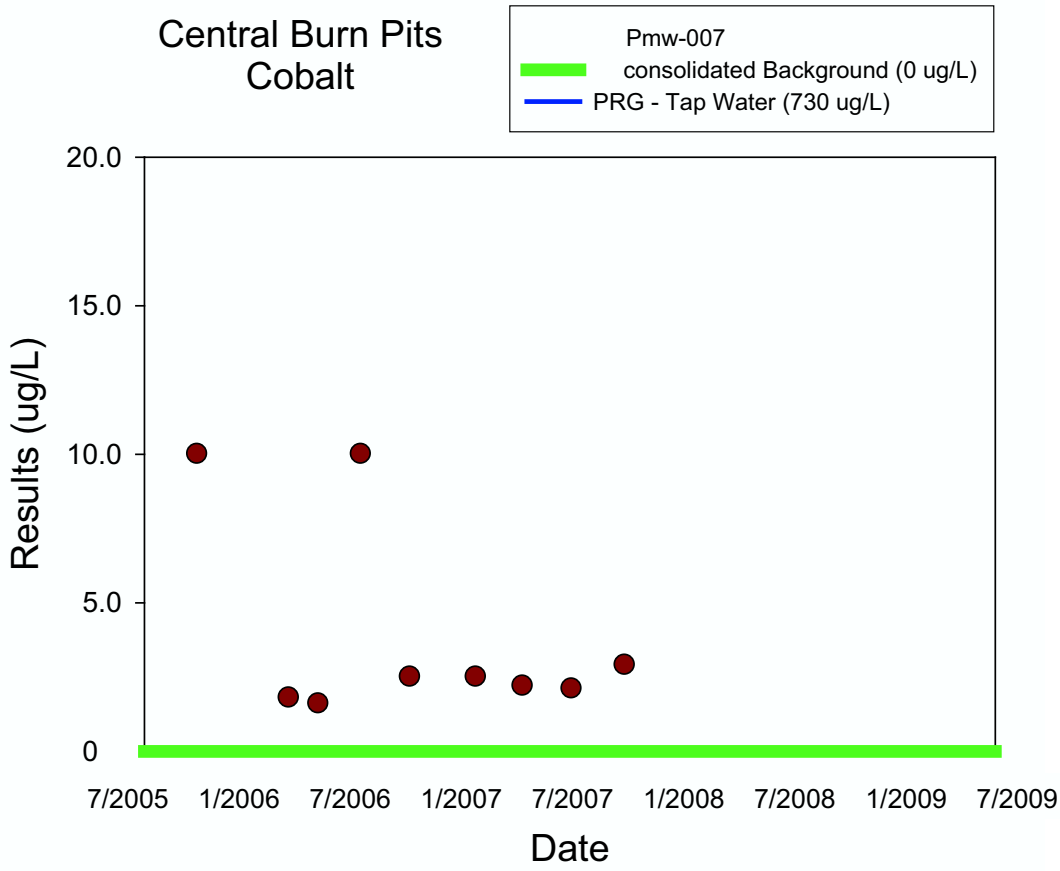

Central Burn Pits
Aluminum
CBPmw-002
Pmw-006
consolidated Background (0 ug/L)
PRG - Tap Wat (36000 ug/L)er
MCL (200 ug/L)
Results (ug/L)
12000.0
10000.0
8000.0
6000.0
4000.0
2000.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

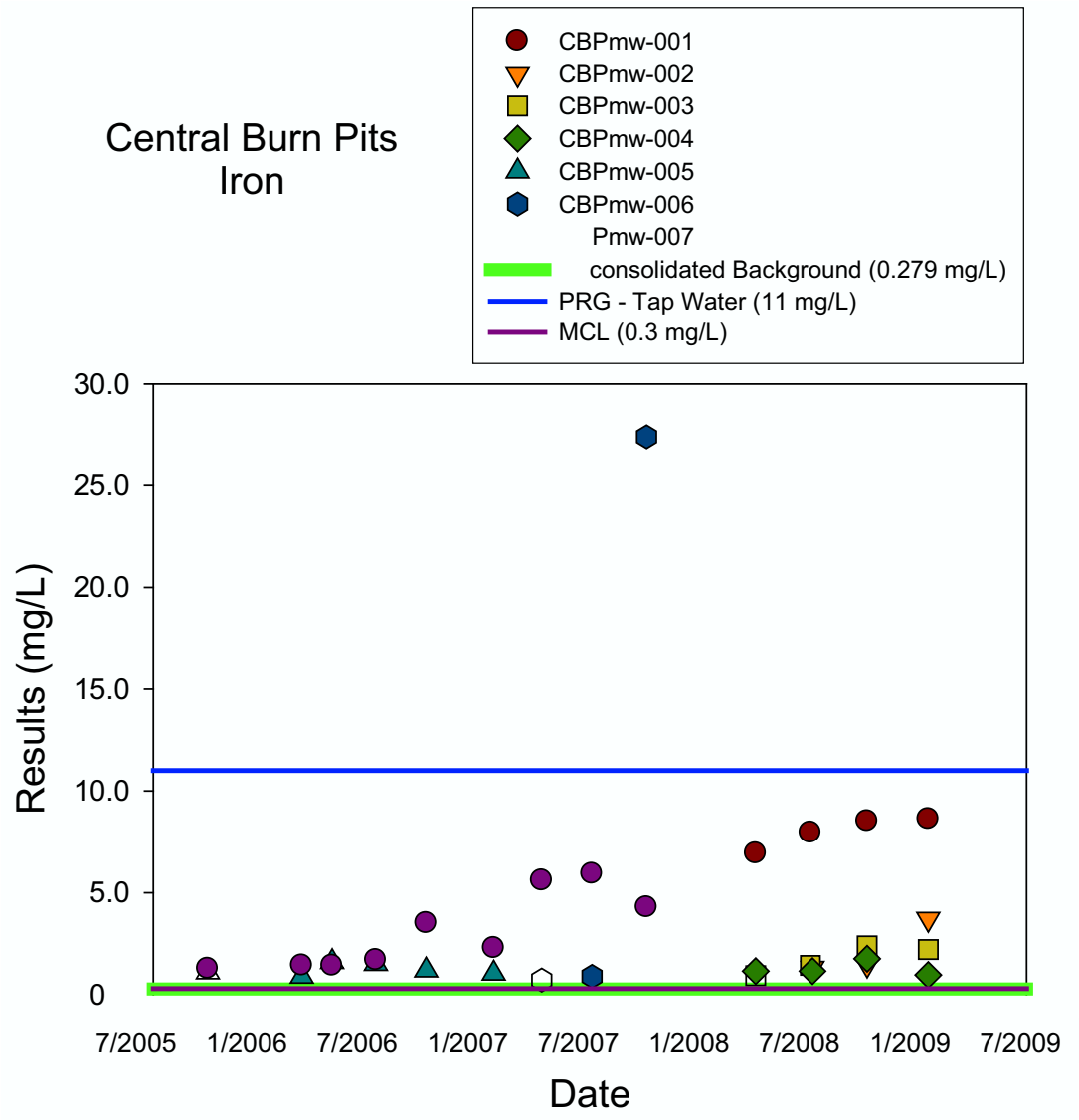

Central Burn Pits
Antimony
Pmw-007
consolidated Background (0 ug/L)
PRG - Tap Water (15 ug/l)
MCL (6 ug/L)
Results (ug/L)
60.0
40.0
20.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

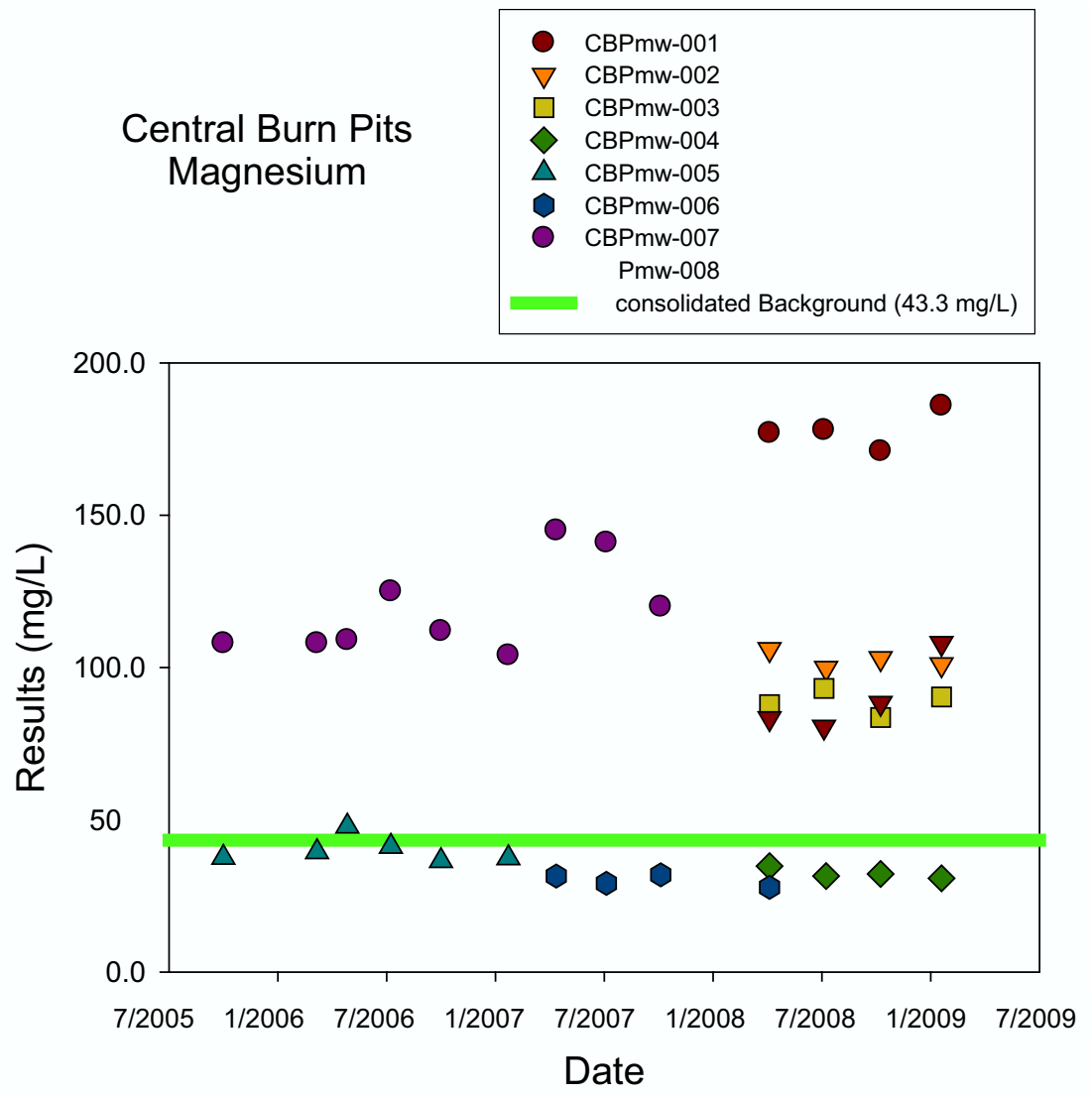

Central Burn Pits
Arsenic
CBPmw-001
CBPmw-002
CBPmw-003
CBPmw-004
CBPmw-005
CBPmw-006
Pmw-007
consolidated Background (11.70 ug/L)
PRG - Tap Water (0.045 ug/L)
MCL (10 ug/L)
Results (ug/L)
100.0
80.0
60.0
40.0
20
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

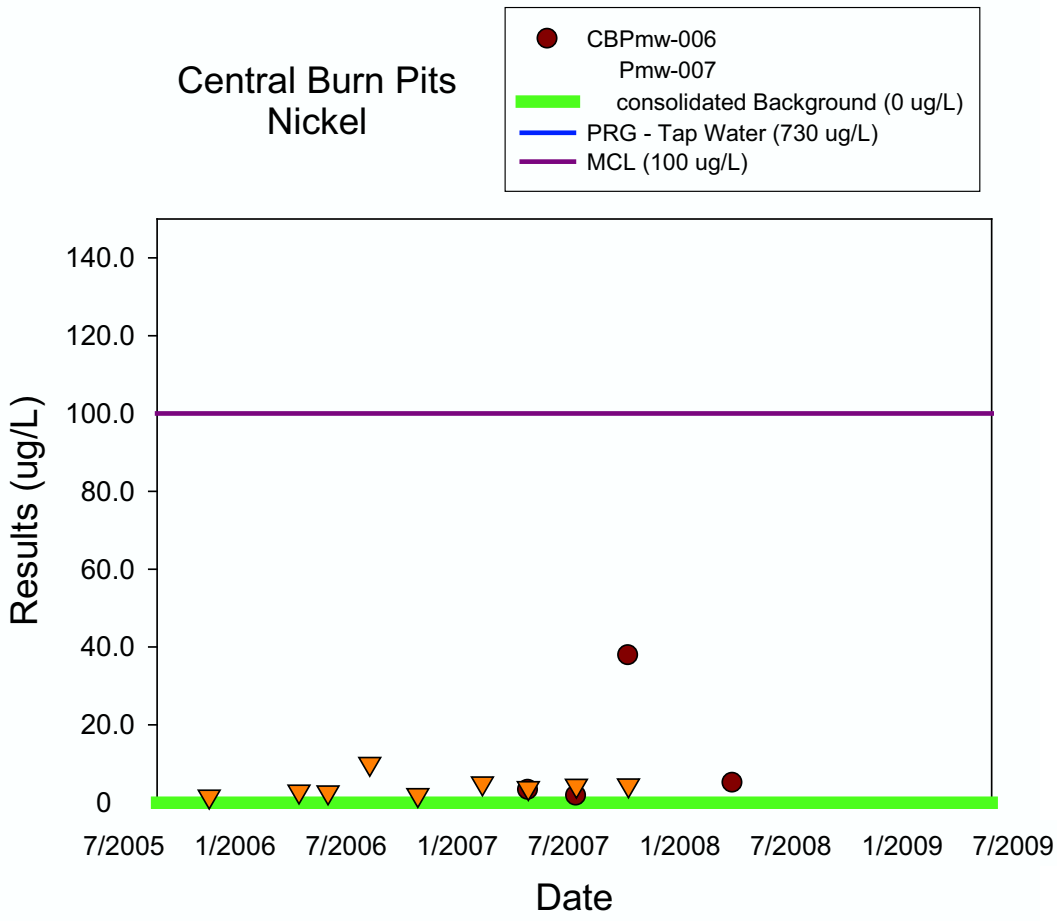

Central Burn Pits
Barium
Pmw-006
consolidated Background (82.10 ug/L)
PRG - Tap Water (2600 ug/L)
MCL (2000 ug/L)
Results (ppb)
300.0
250.0
200.0
150.0
100
50.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

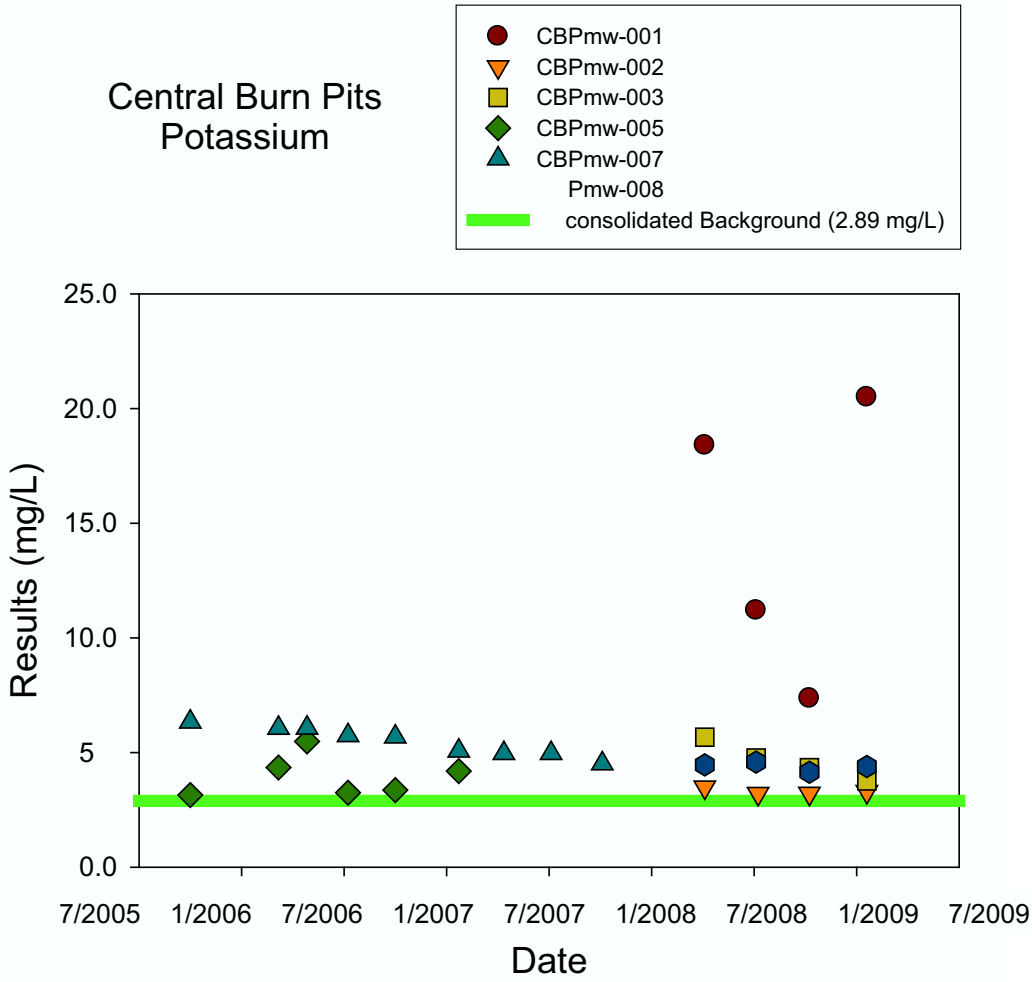

Central Burn Pits
Calcium
CBPmw-001
CBPmw-002
CBPmw-003
CBPmw-004
CBPmw-005
CBPmw-006
CBPmw-007
Pmw-008
consolidated Background (115 mg/L)
Results (mg/L)
400.0
300.0
200.0
100
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

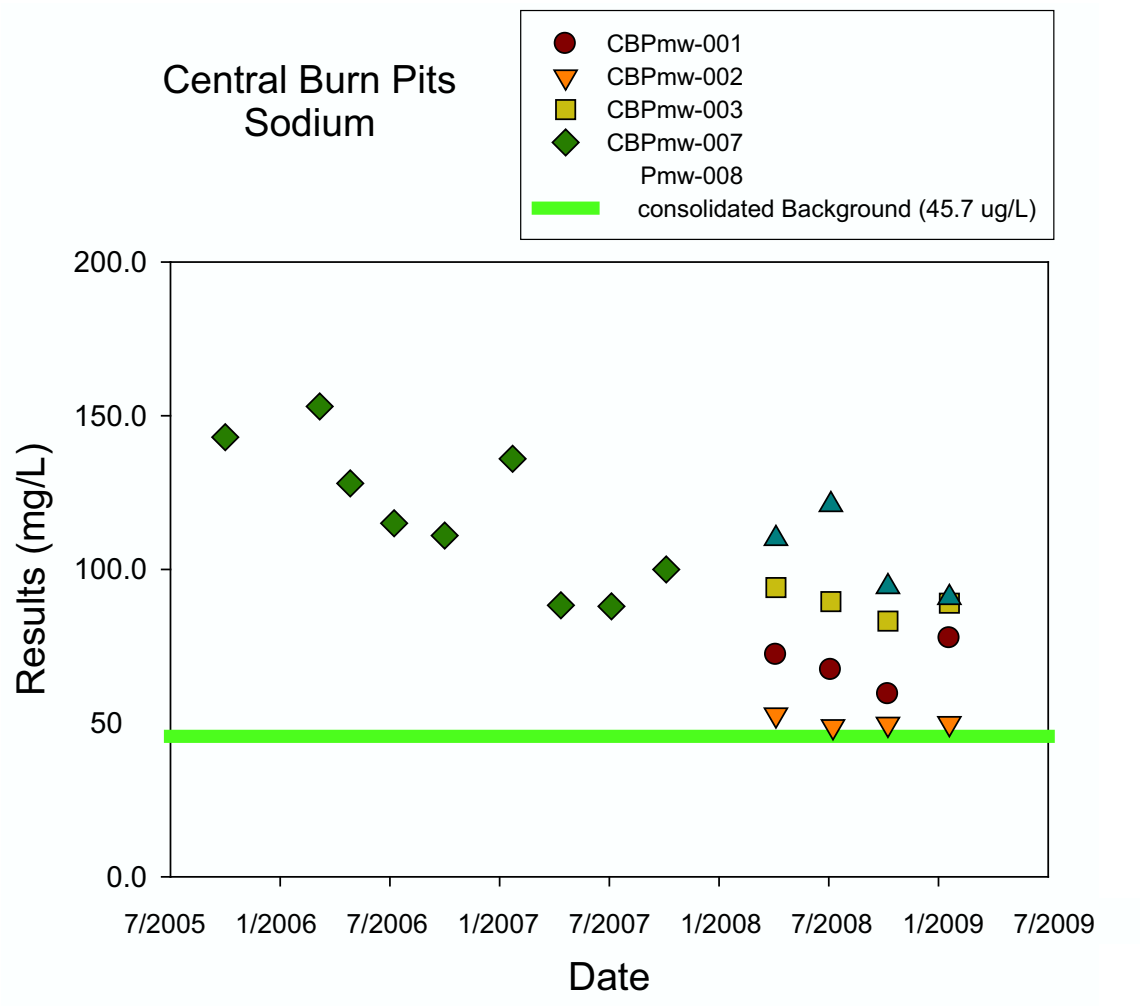

Central Burn Pits
Cobalt
Pmw-007
consolidated Background (0 ug/L)
PRG - Tap Water (730 ug/L)
Results (ug/L)
20.0
15.0
10.0
5.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

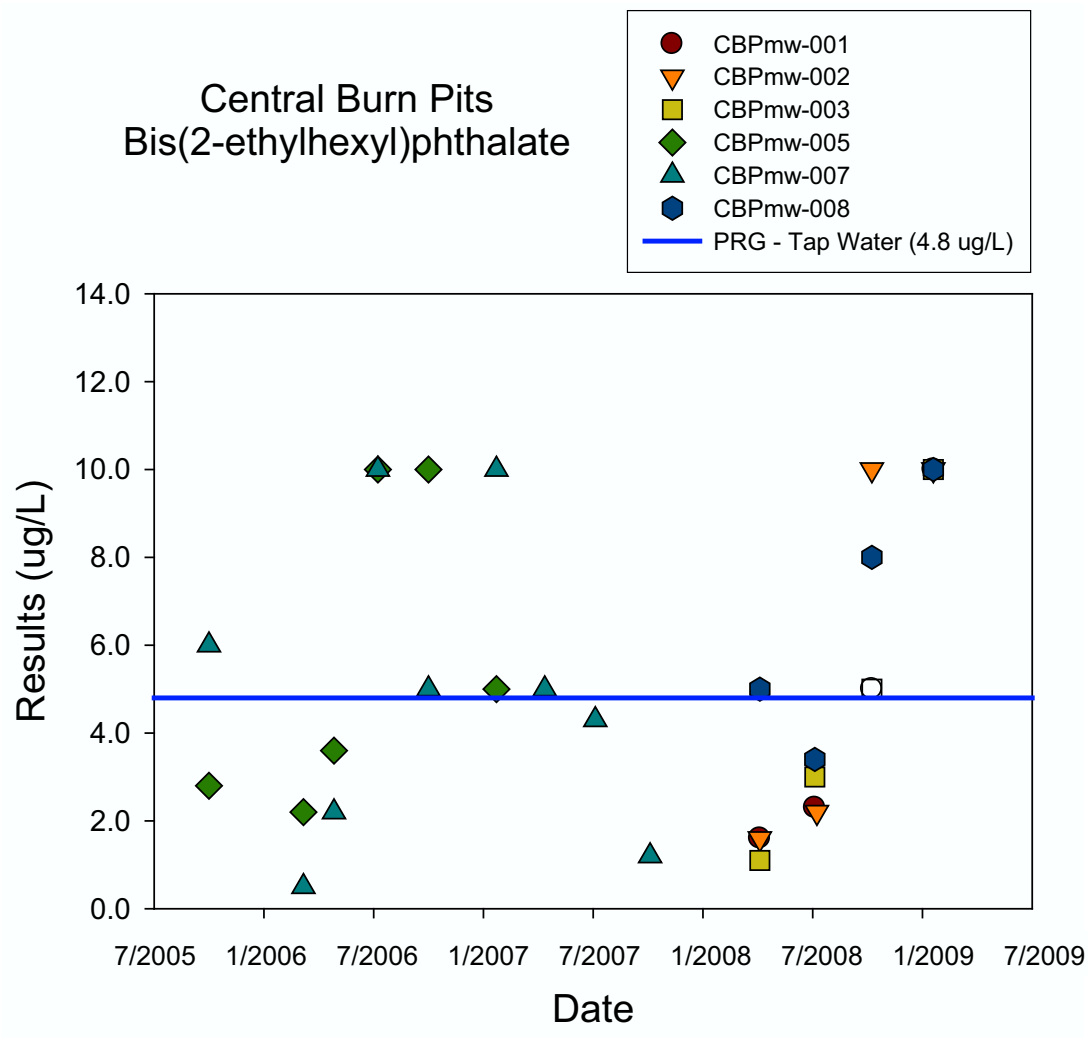

Central Burn Pits
Iron
CBPmw-001
CBPmw-002
CBPmw-003
CBPmw-004
CBPmw-005
CBPmw-006
Pmw-007
consolidated Background (0.279 mg/L)
PRG - Tap Water (11 mg/L)
MCL (0.3 mg/L)
Results (mg/L)
30.0
25.0
20.0
15.0
10.0
5.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

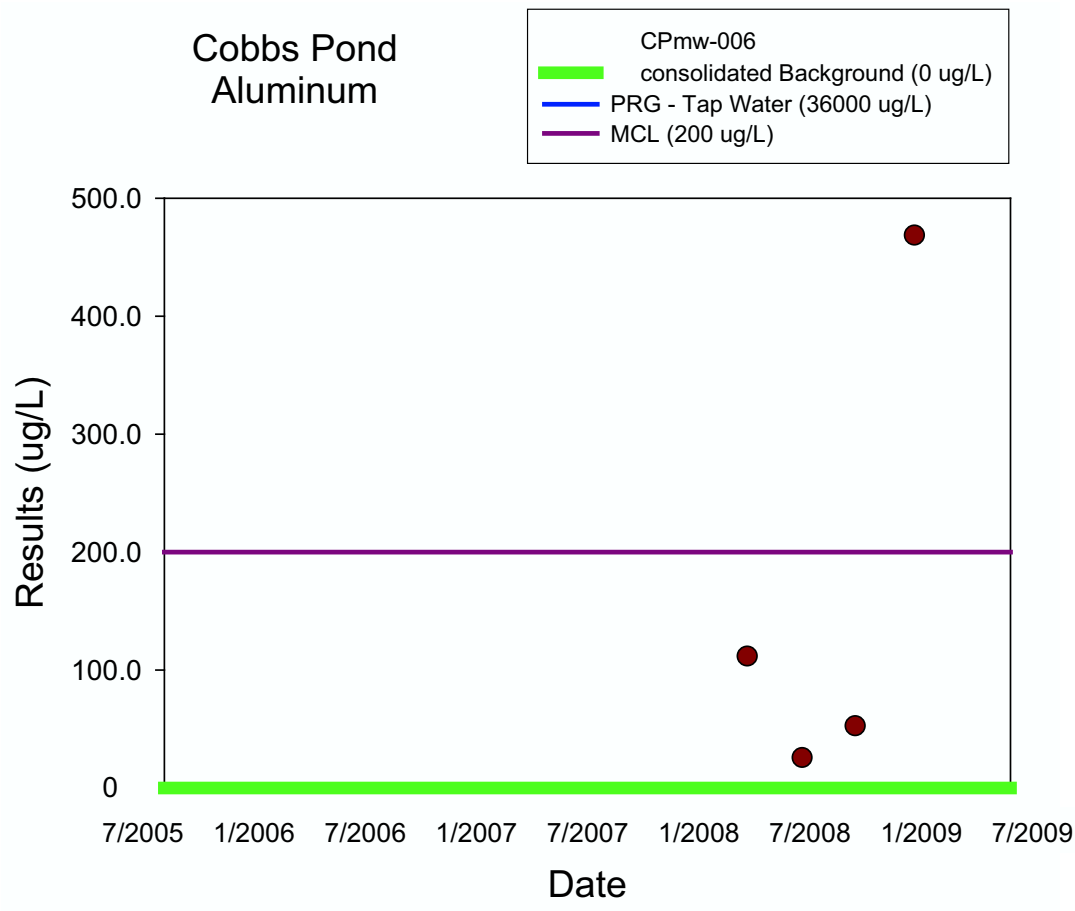

Central Burn Pits
Magnesium
CBPmw-001
CBPmw-002
CBPmw-003
CBPmw-004
CBPmw-005
CBPmw-006
CBPmw-007
Pmw-008
consolidated Background (43.3 mg/L)
200.0
150.0
100.0
50
0.0
Results (mg/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

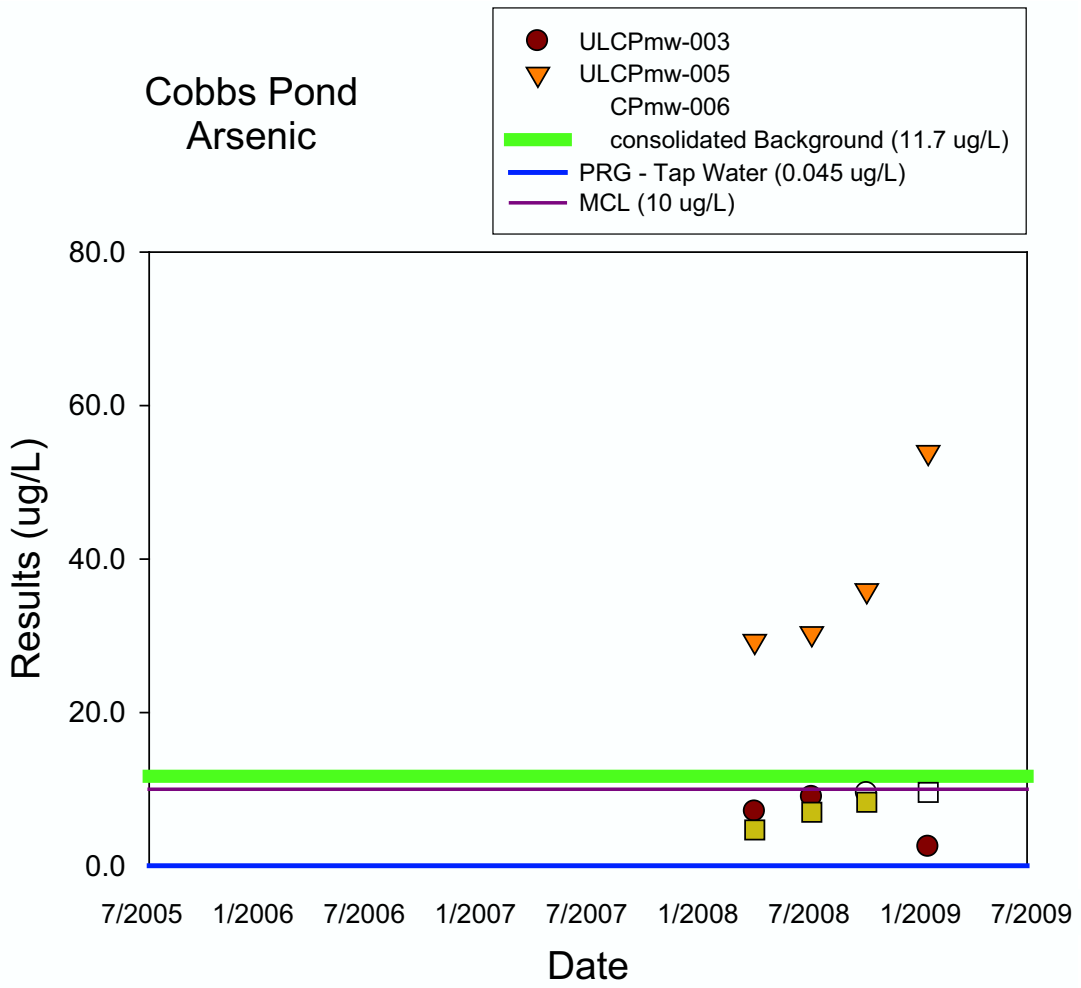

Central Burn Pits
Nickel
CBPmw-006
Pmw-007
consolidated Background (0 ug/L)
PRG - Tap Water (730 ug/L)
MCL (100 ug/L)
Results (ug/L)
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

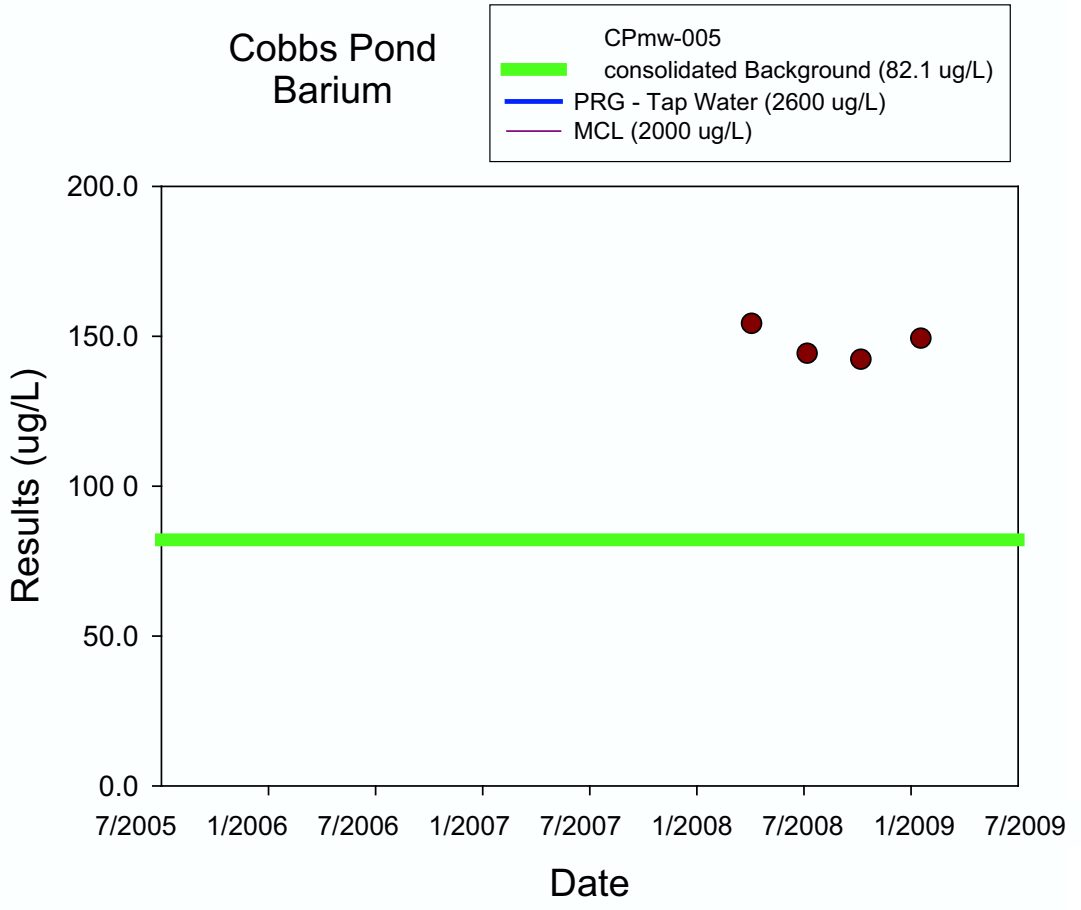

Central Burn Pits
Potassium
CBPmw-001
CBPmw-002
CBPmw-003
CBPmw-005
CBPmw-007
Pmw-008
consolidated Background (2.89 mg/L)
Results (mg/L)
25.0
20.0
15.0
10.0
5
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

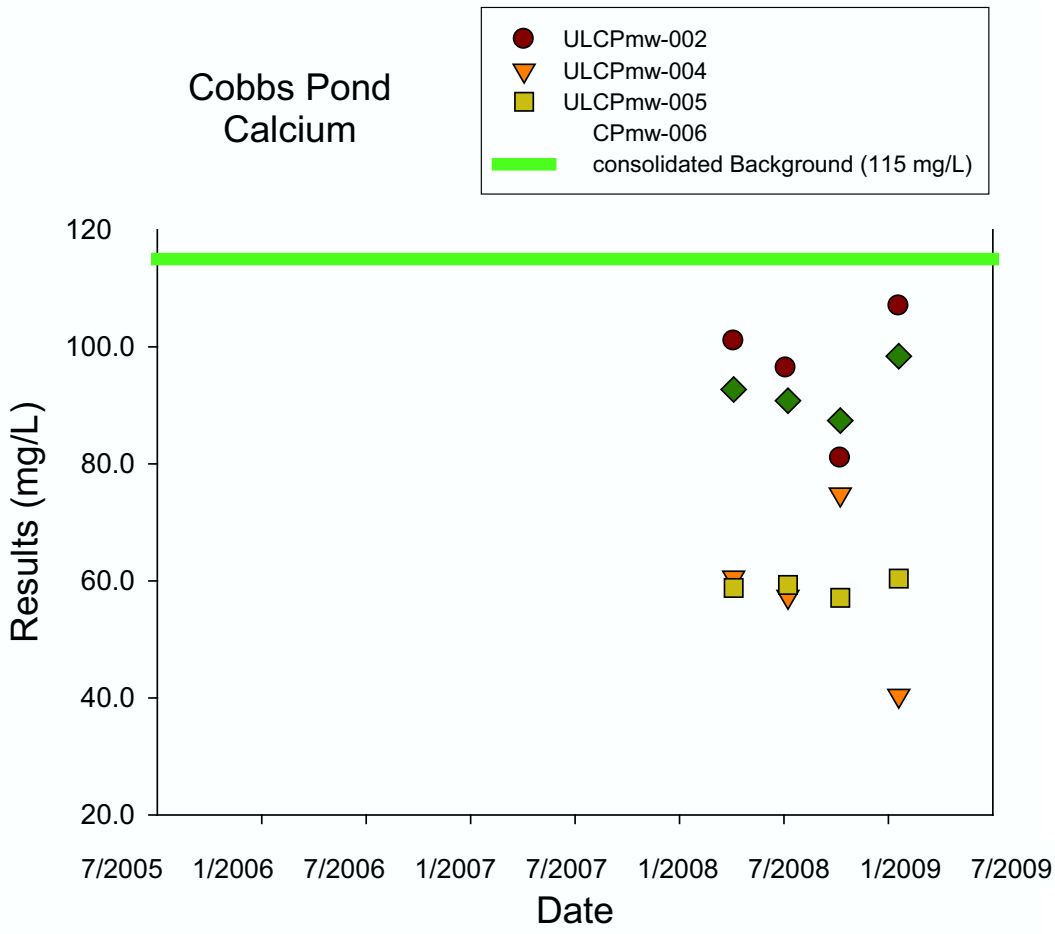

Central Burn Pits
Sodium
CBPmw-001
CBPmw-002
CBPmw-003
CBPmw-007
Pmw-008
consolidated Background (45.7 ug/L)
200.0
150.0
100.0
50
0.0
Results (mg/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

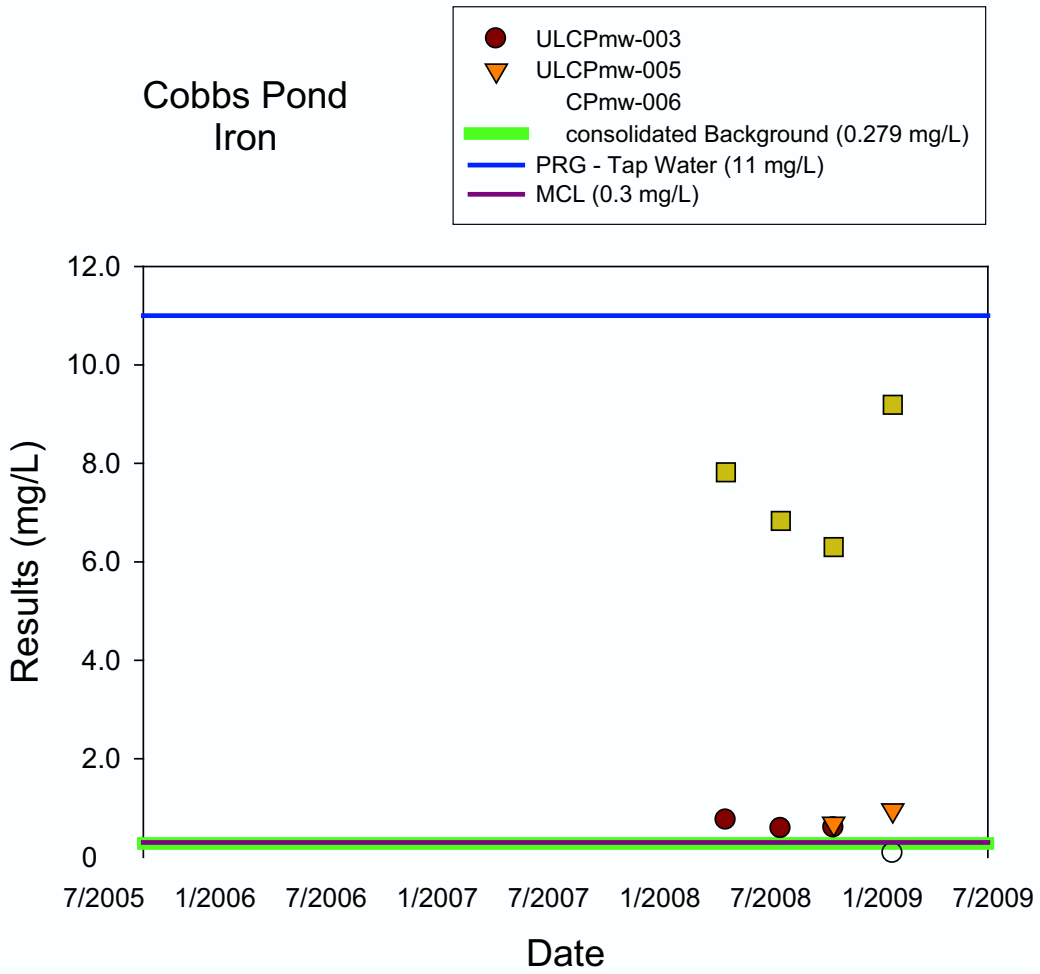

Central Burn Pits
Bis(2-ethylhexyl)phthalate
CBPmw-001
CBPmw-002
CBPmw-003
CBPmw-005
CBPmw-007
CBPmw-008
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

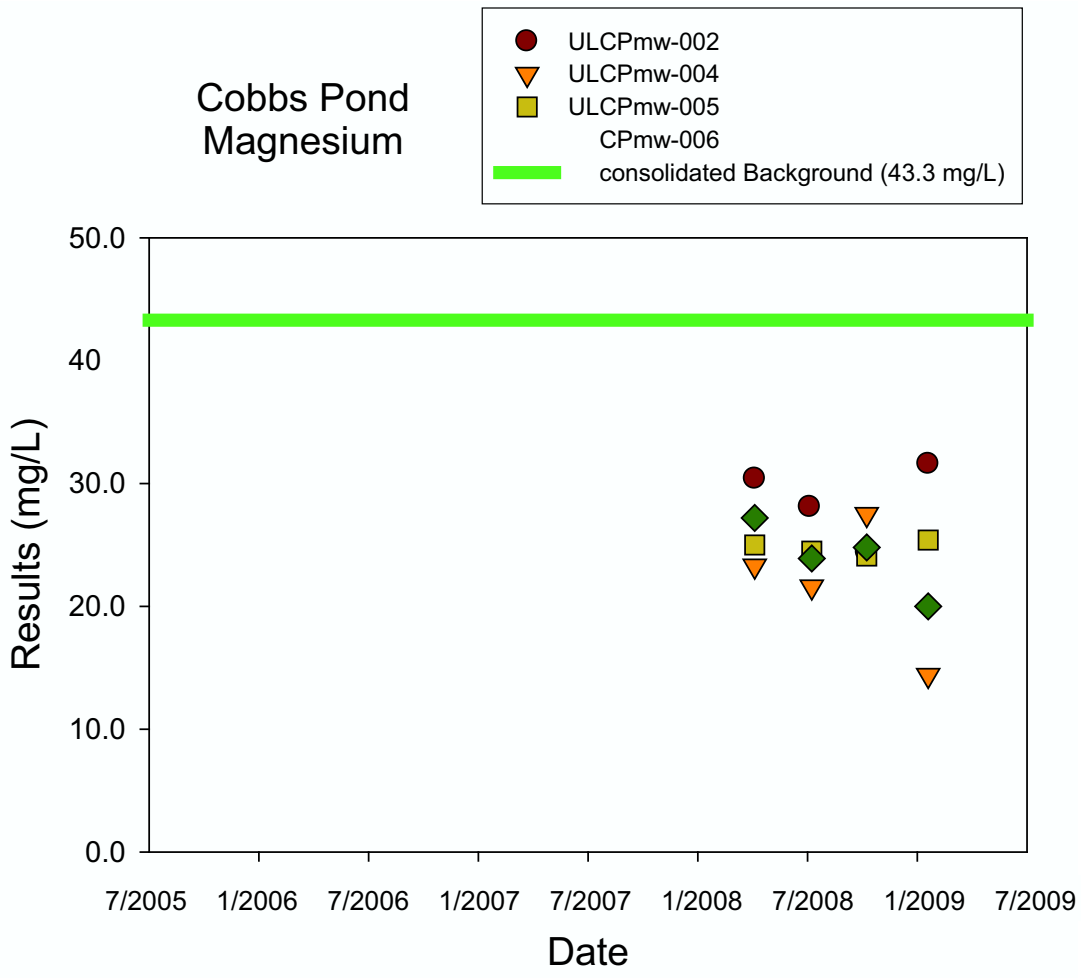

Cobbs Pond
Aluminum
CPmw-006
consolidated Background (0 ug/L)
PRG - Tap Water (36000 ug/L)
MCL (200 ug/L)
Results (ug/L)
500.0
400.0
300.0
200.0
100.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

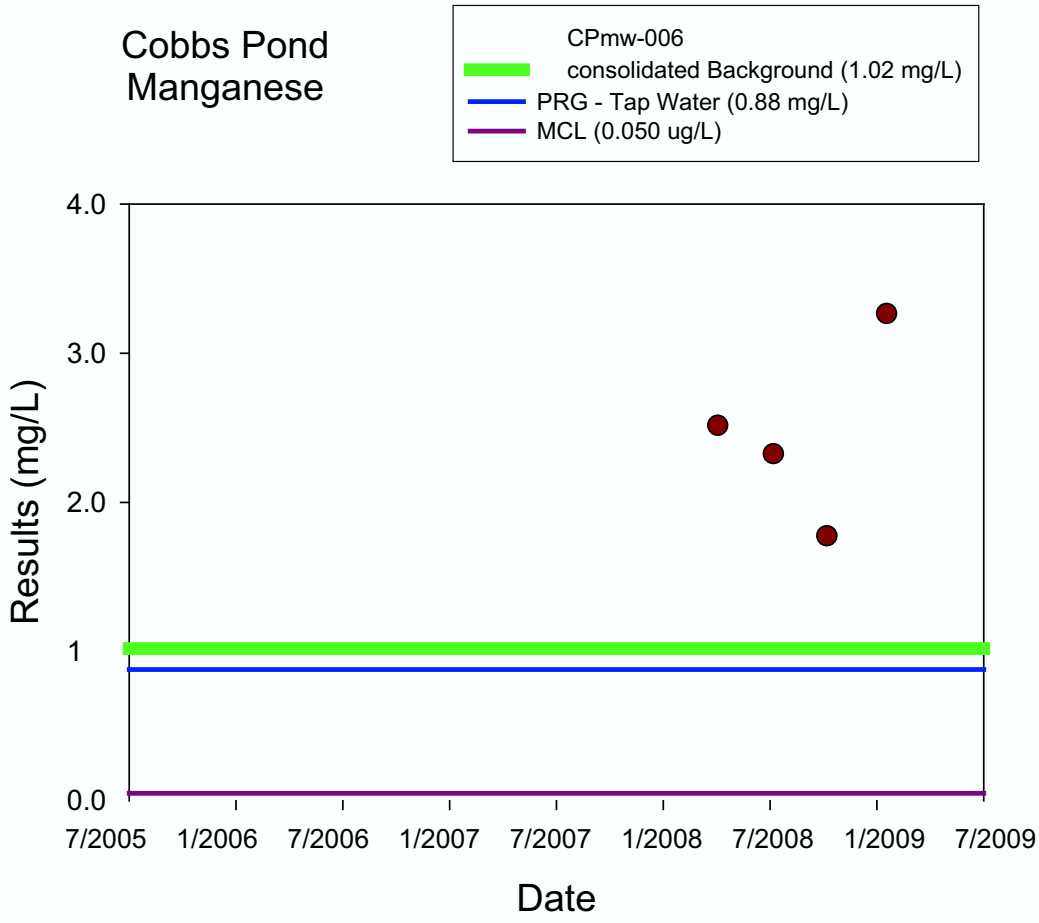

Cobbs Pond
Arsenic
ULCPmw-003
ULCPmw-005
CPmw-006
consolidated Background (11.7 ug/L)
PRG - Tap Water (0.045 ug/L)
MCL (10 ug/L)
80.0
60.0
40.0
20.0
0.0
Results (ug/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

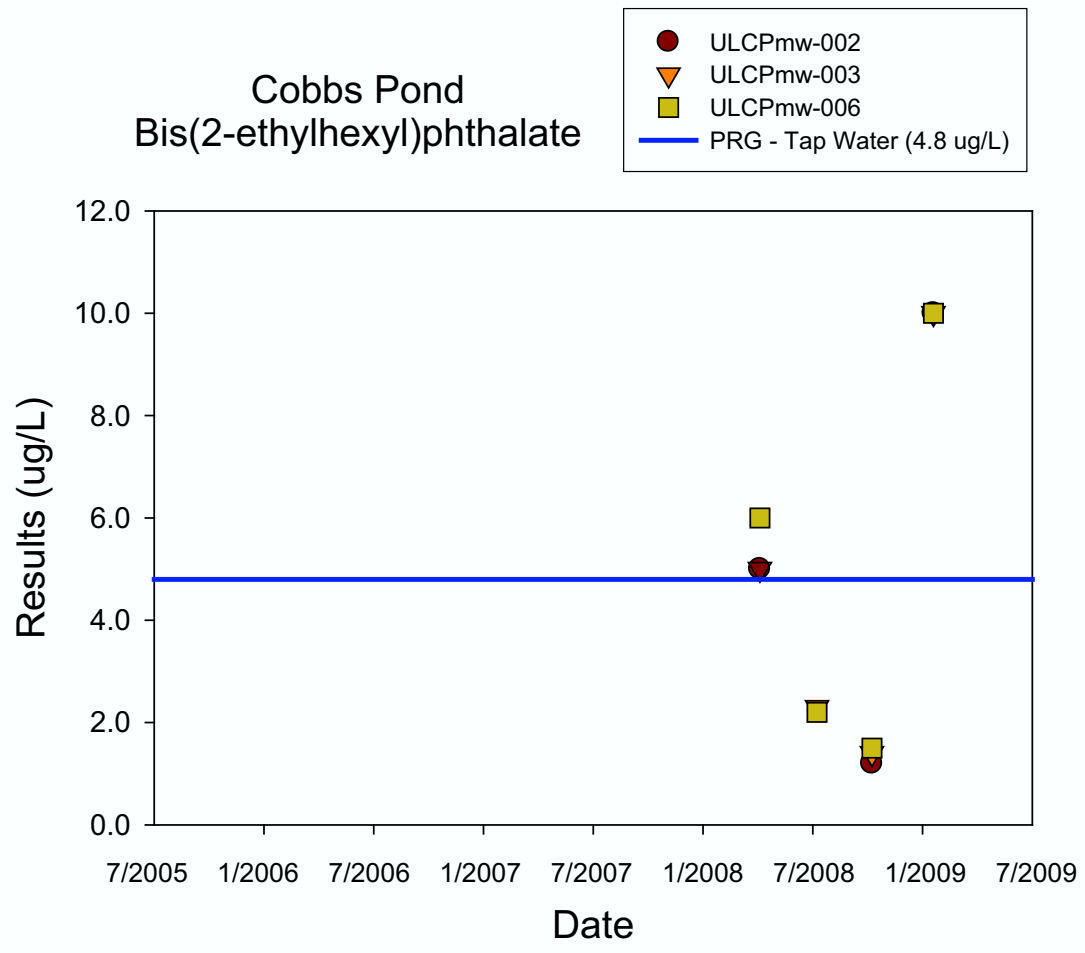

Cobbs Pond
Barium
CPmw-005
consolidated Background (82.1 ug/L)
PRG - Tap Water (2600 ug/L)
MCL (2000 ug/L)
200.0
150.0
100 0
50.0
0.0
Results (ug/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

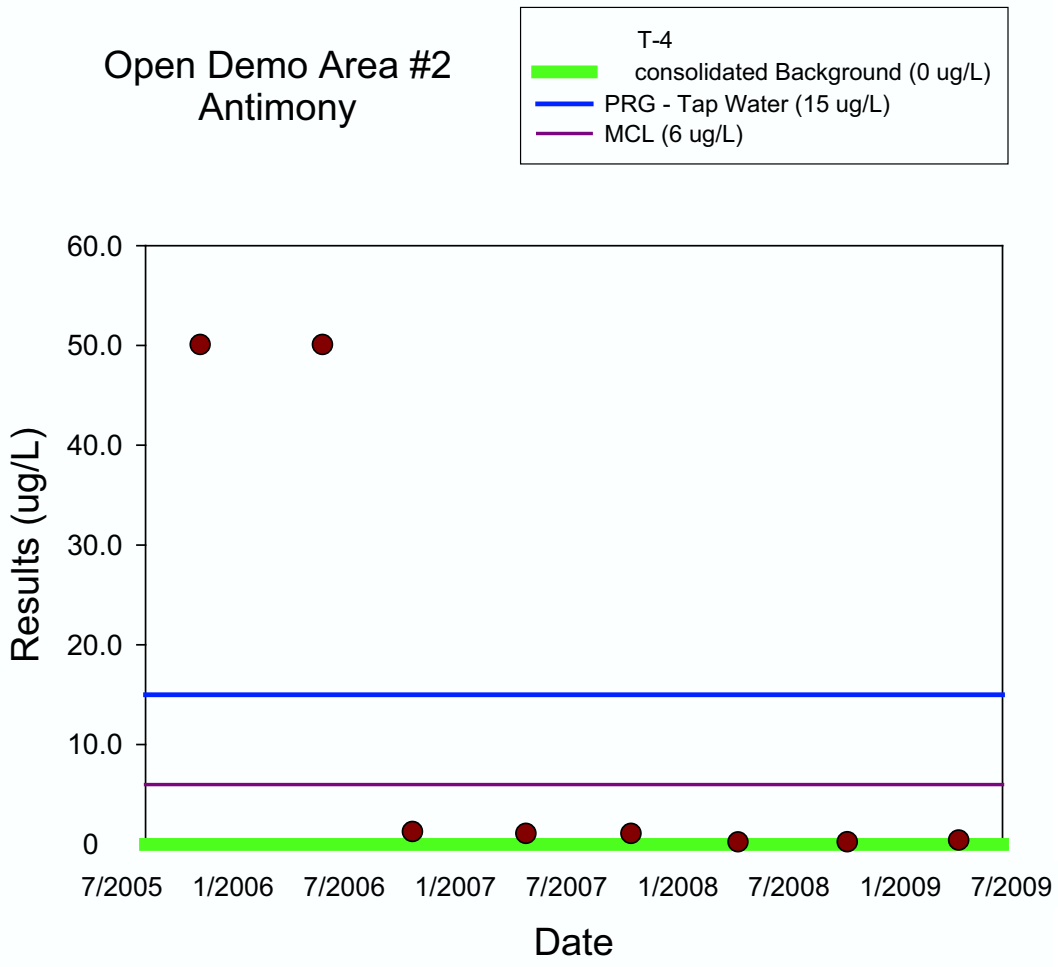

Cobbs Pond
Calcium
ULCPmw-002
ULCPmw-004
ULCPmw-005
CPmw-006
consolidated Background (115 mg/L)
120
100.0
80.0
60.0
40.0
20.0
Results (mg/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

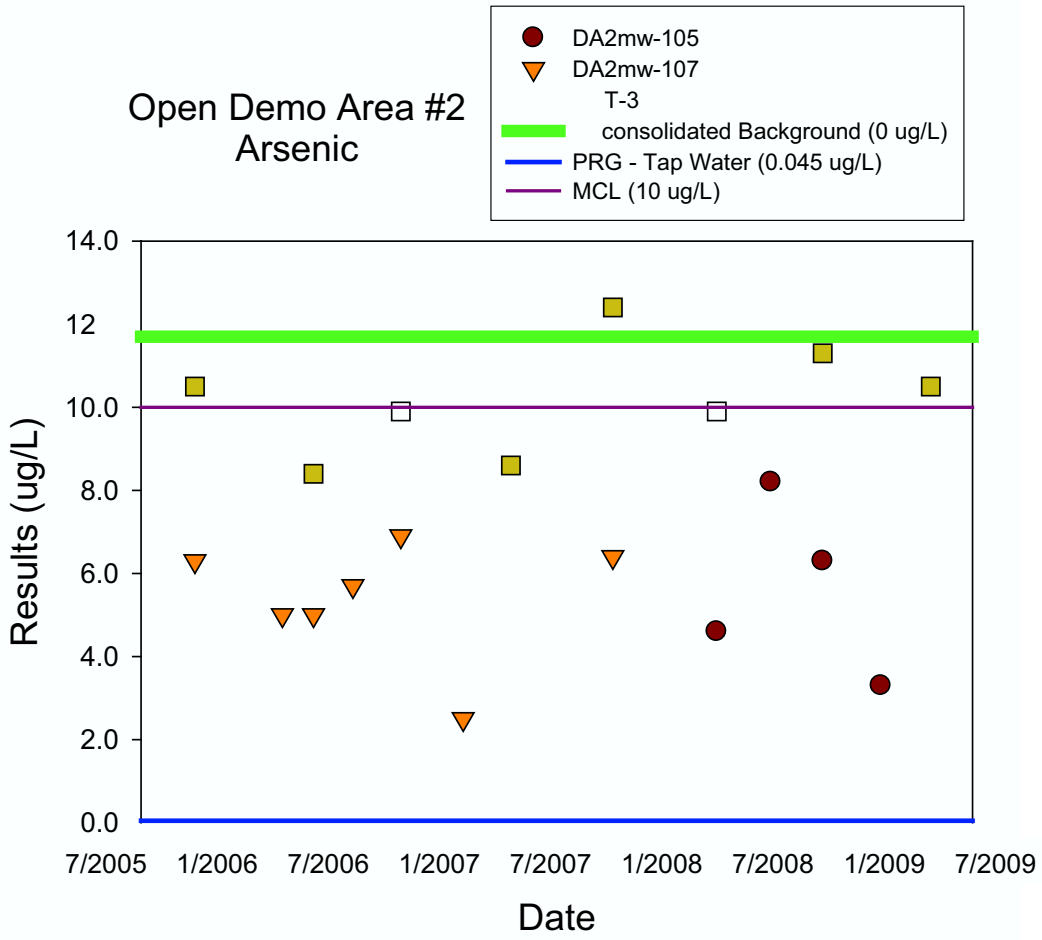

Cobbs Pond
Iron
ULCPmw-003
ULCPmw-005
CPmw-006
consolidated Background (0.279 mg/L)
PRG - Tap Water (11 mg/L)
MCL (0.3 mg/L)
12.0
10.0
8.0
6.0
4.0
2.0
0
Results (mg/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

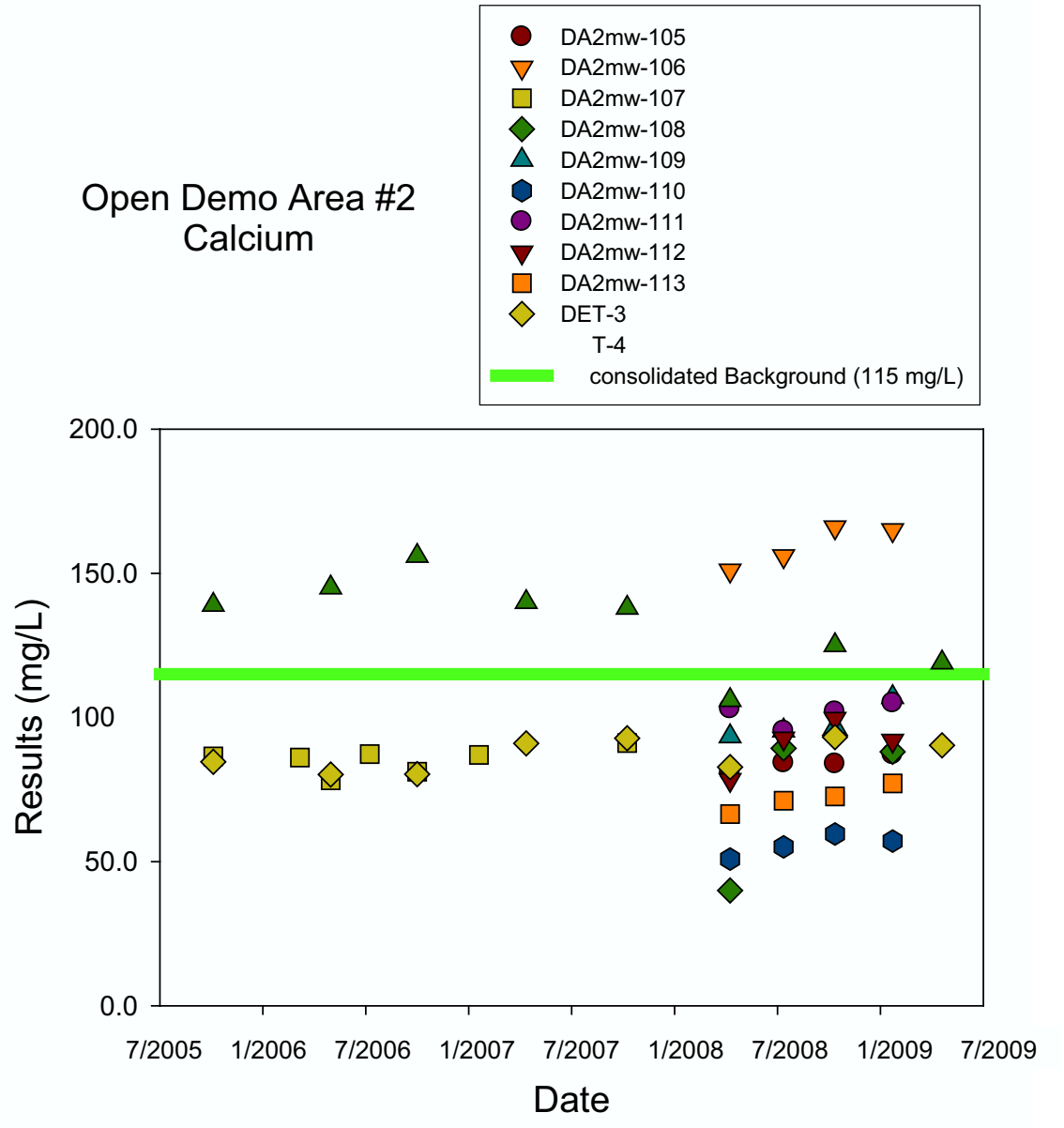

Cobbs Pond
Magnesium
ULCPmw-002
ULCPmw-004
ULCPmw-005
CPmw-006
consolidated Background (43.3 mg/L)
50.0
40
30.0
20.0
10.0
0.0
Results (mg/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

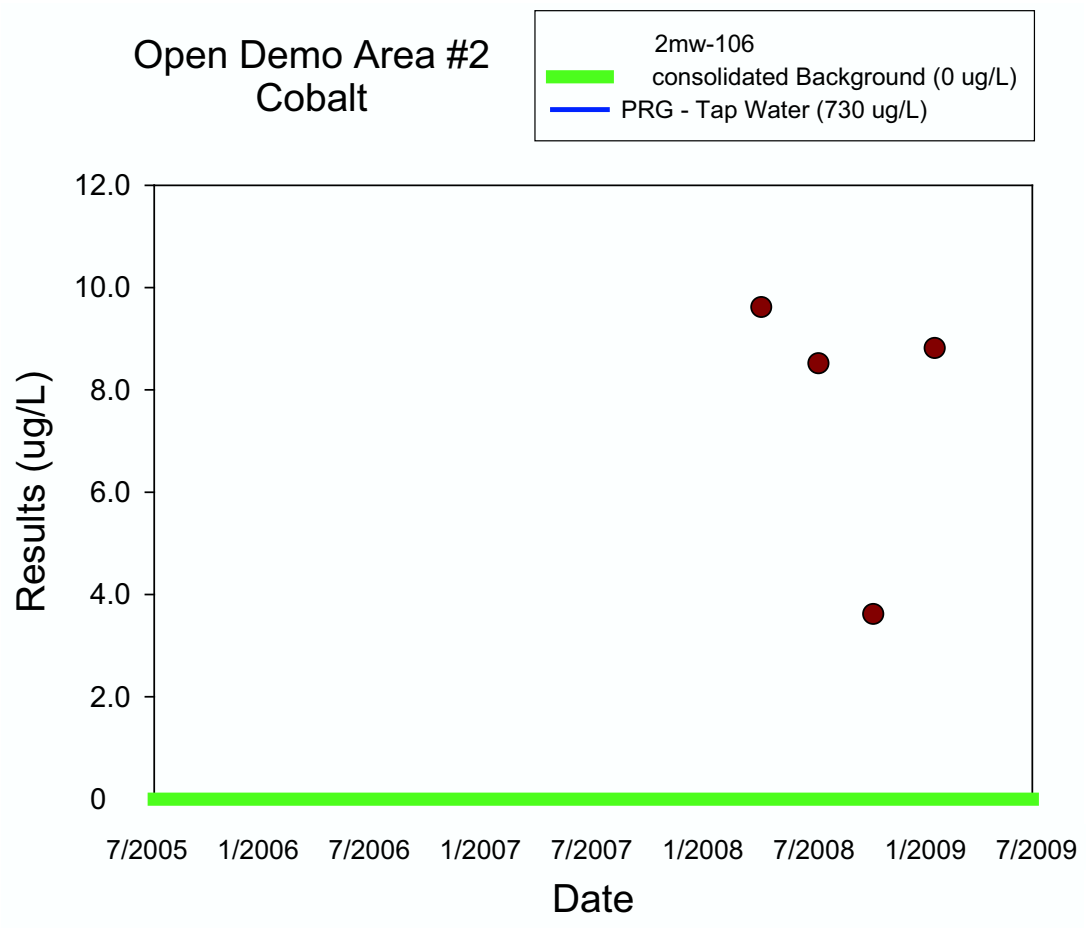

Cobbs Pond
Manganese
CPmw-006
consolidated Background (1.02 mg/L)
PRG - Tap Water (0.88 mg/L)
MCL (0.050 ug/L)
4.0
3.0
2.0
1
0.0
Results (mg/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

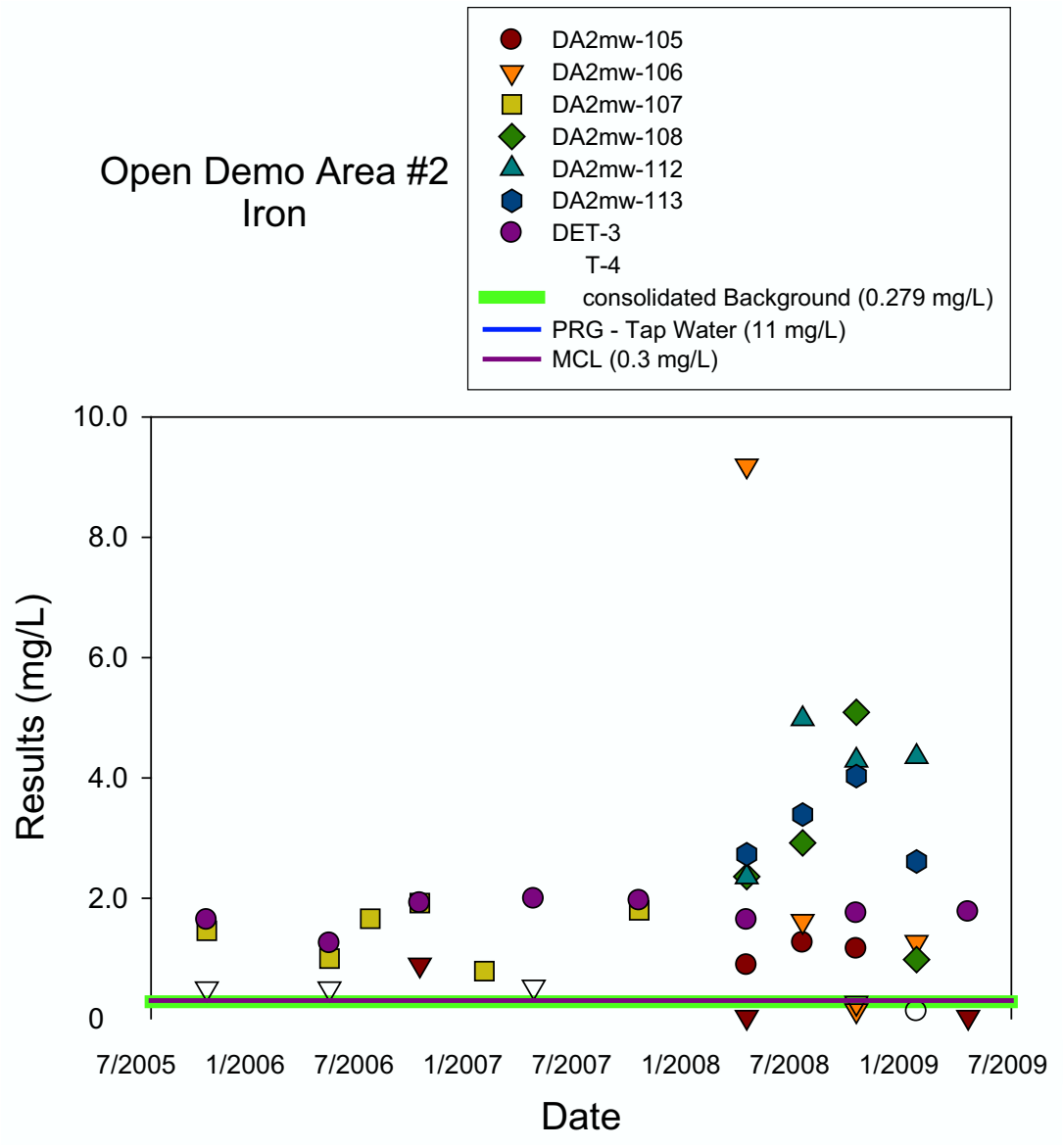

Cobbs Pond
Bis(2-ethylhexyl)phthalate
ULCPmw-002
ULCPmw-003
ULCPmw-006
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

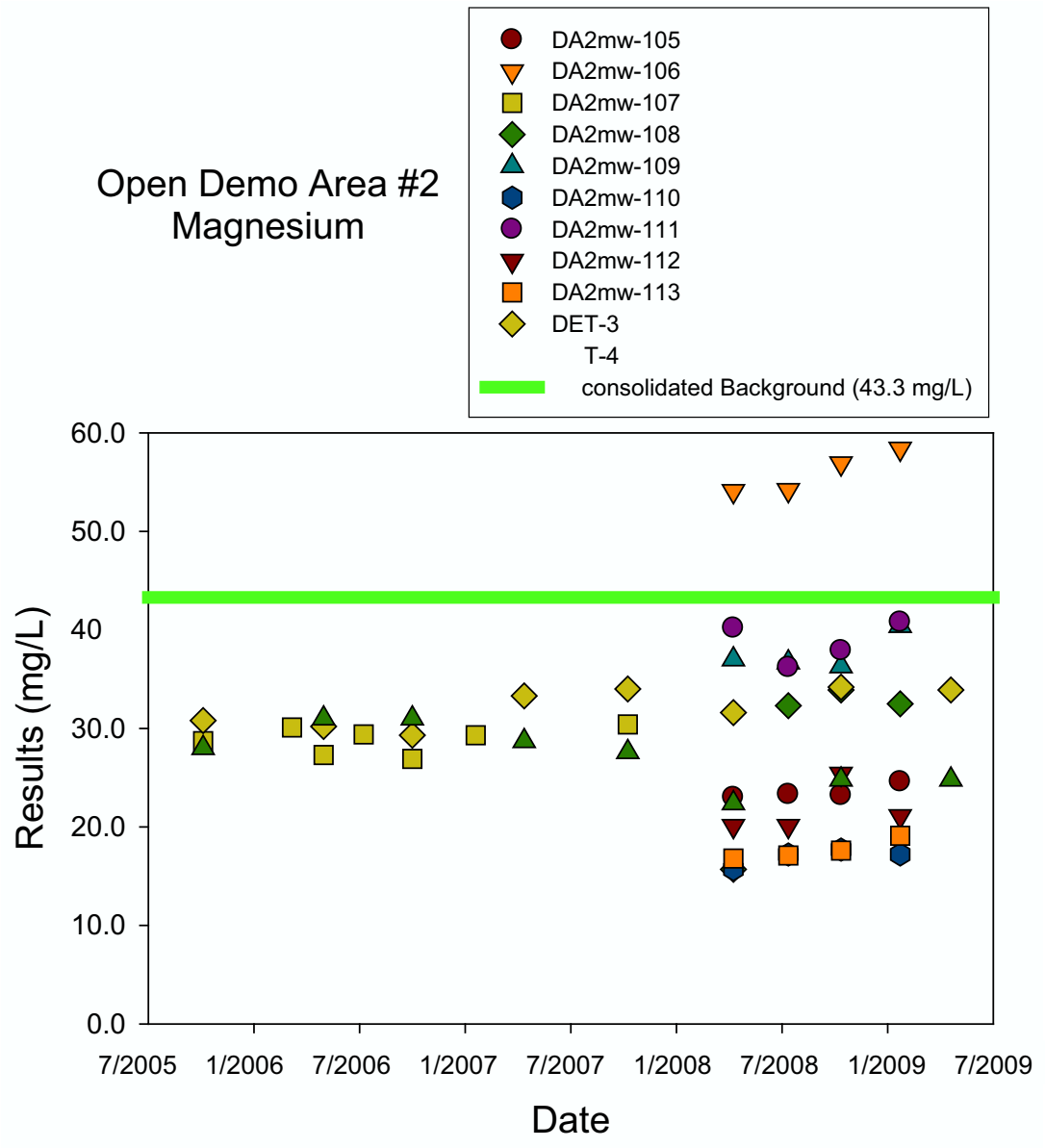

Open Demo Area #2
Antimony
T-4
consolidated Background (0 ug/L)
PRG - Tap Water (15 ug/L)
MCL (6 ug/L)
Results (ug/L)
60.0
50.0
40.0
30.0
20.0
10.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

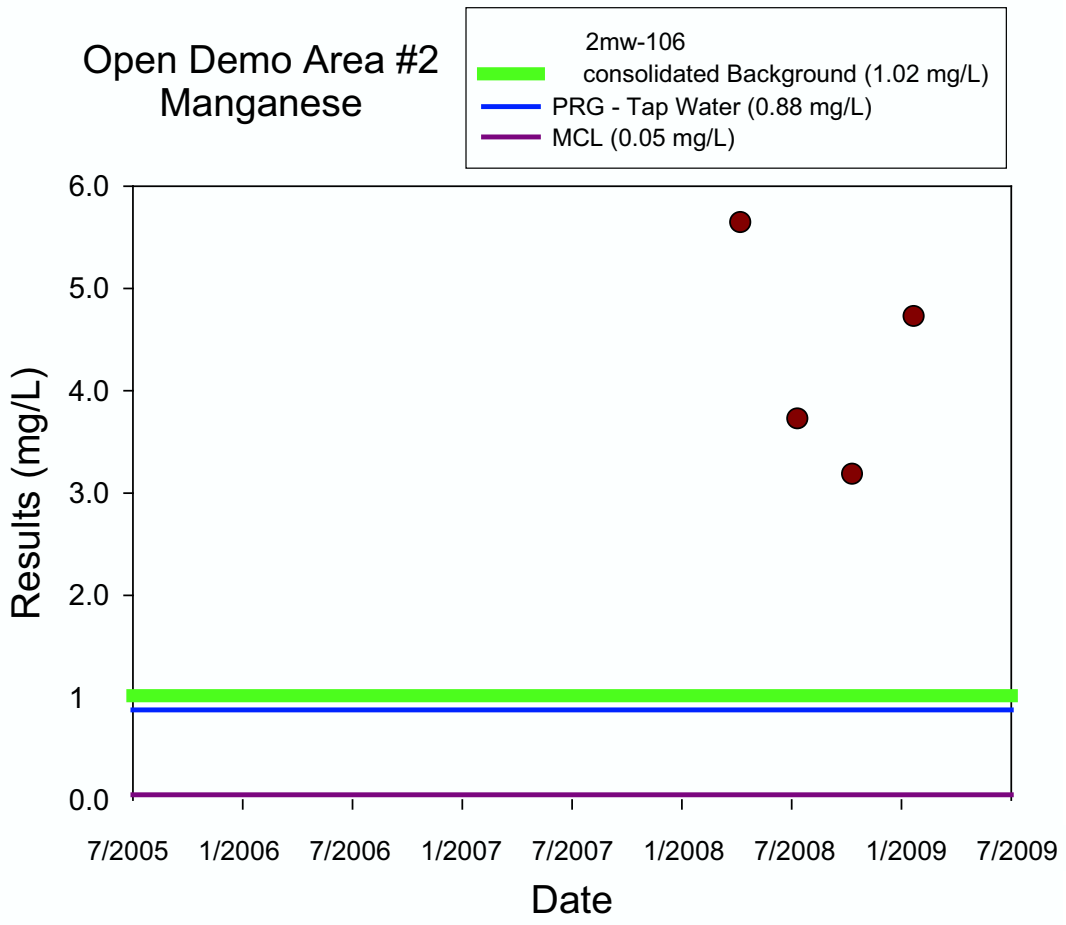

Open Demo Area #2
Arsenic
DA2mw-105
DA2mw-107
T-3
consolidated Background (0 ug/L)
PRG - Tap Water (0.045 ug/L)
MCL (10 ug/L)
Results (ug/L)
14.0
12
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

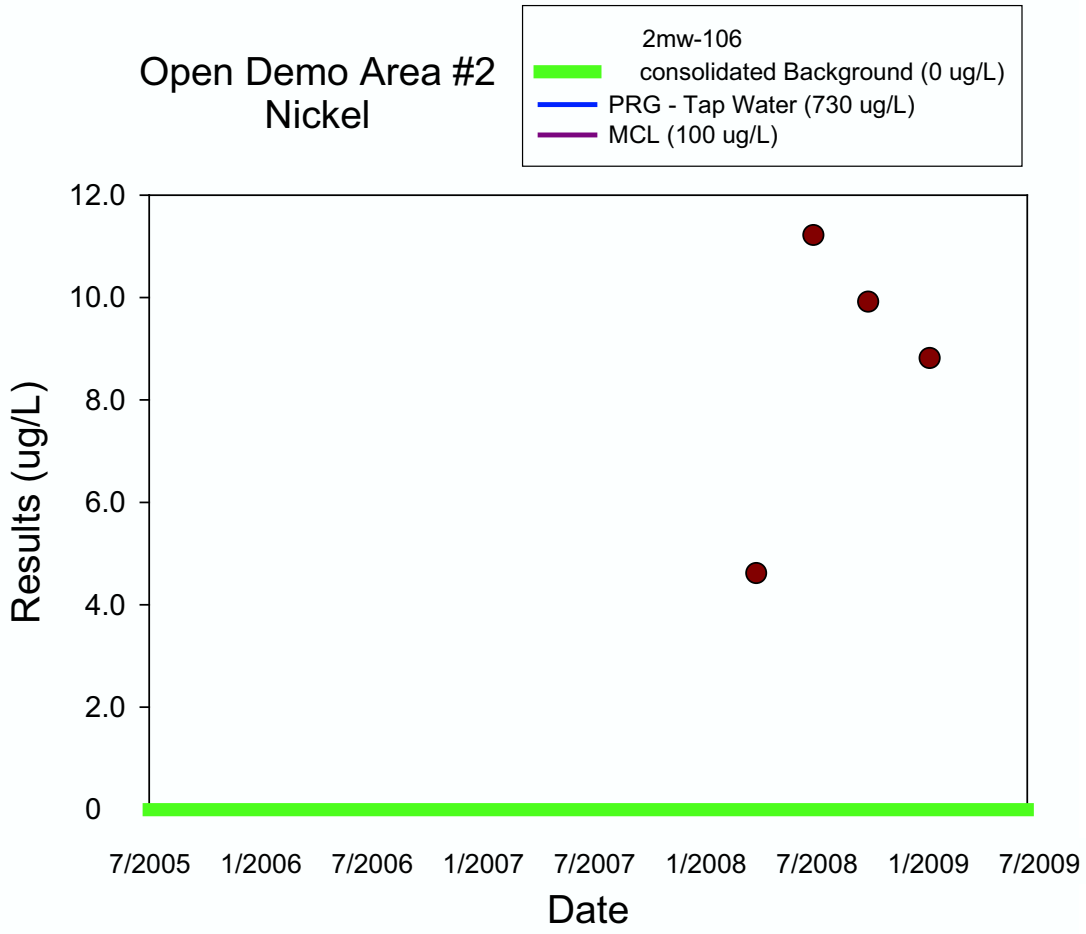

Open Demo Area #2
Calcium
DA2mw-105
DA2mw-106
DA2mw-107
DA2mw-108
DA2mw-109
DA2mw-110
DA2mw-111
DA2mw-112
DA2mw-113
DET-3
T-4
consolidated Background (115 mg/L)
200.0
150.0
100
50.0
0.0
Results (mg/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

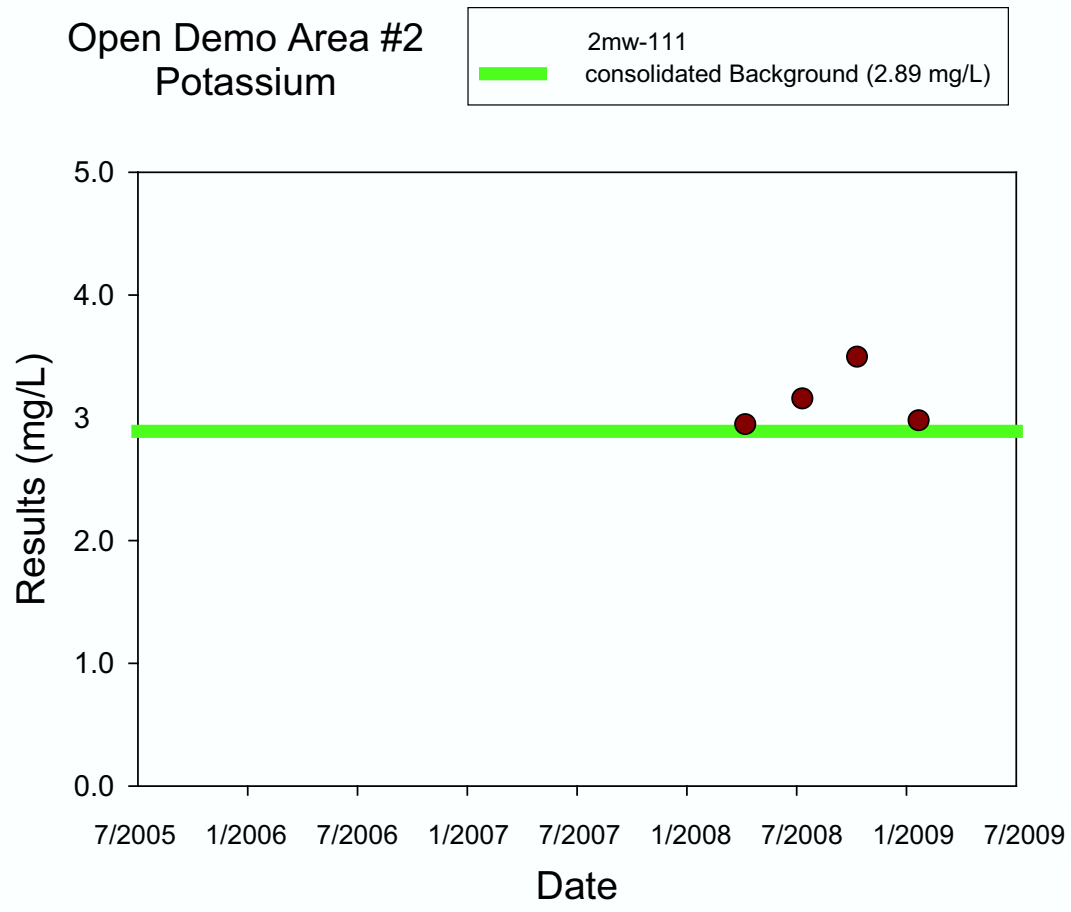

Open Demo Area #2
Cobalt
2mw-106
consolidated Background (0 ug/L)
PRG - Tap Water (730 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

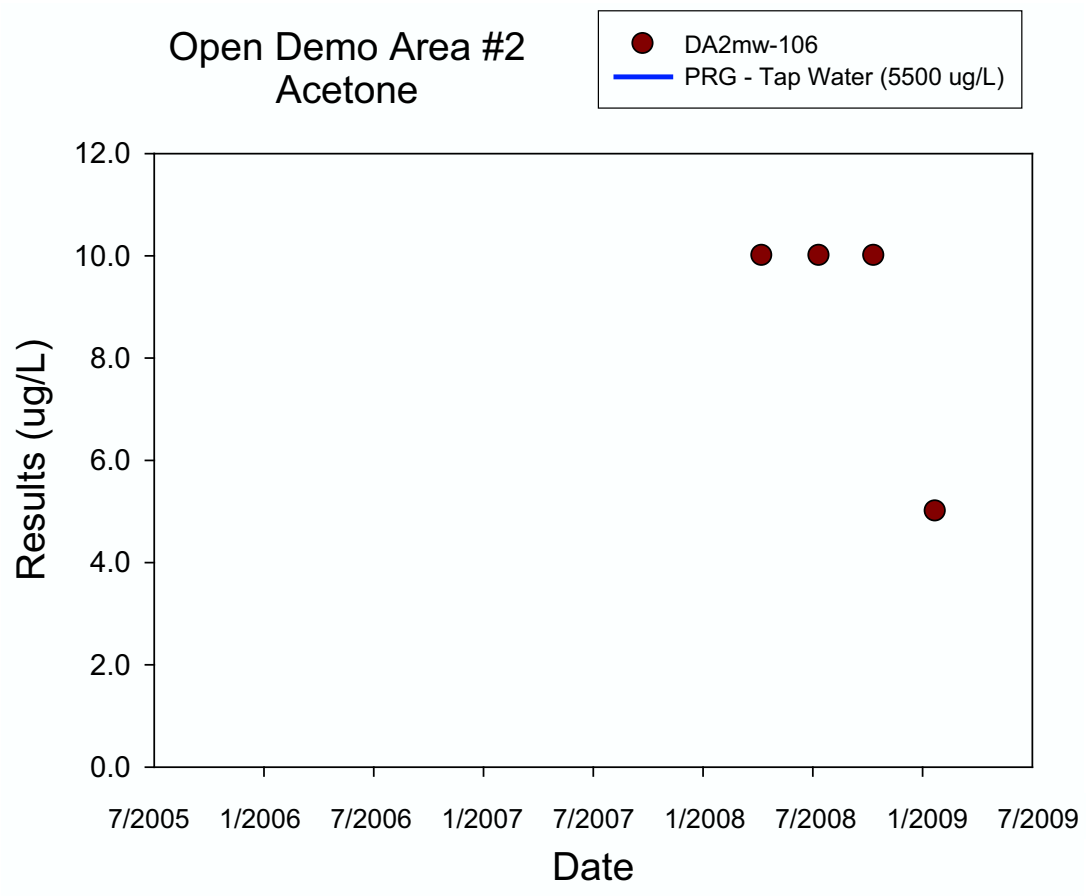

Open Demo Area #2
Iron
DA2mw-105
DA2mw-106
DA2mw-107
DA2mw-108
DA2mw-112
DA2mw-113
DET-3
T-4
consolidated Background (0.279 mg/L)
PRG - Tap Water (11 mg/L)
MCL (0.3 mg/L)
Results (mg/L)
10.0
8.0
6.0
4.0
2.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

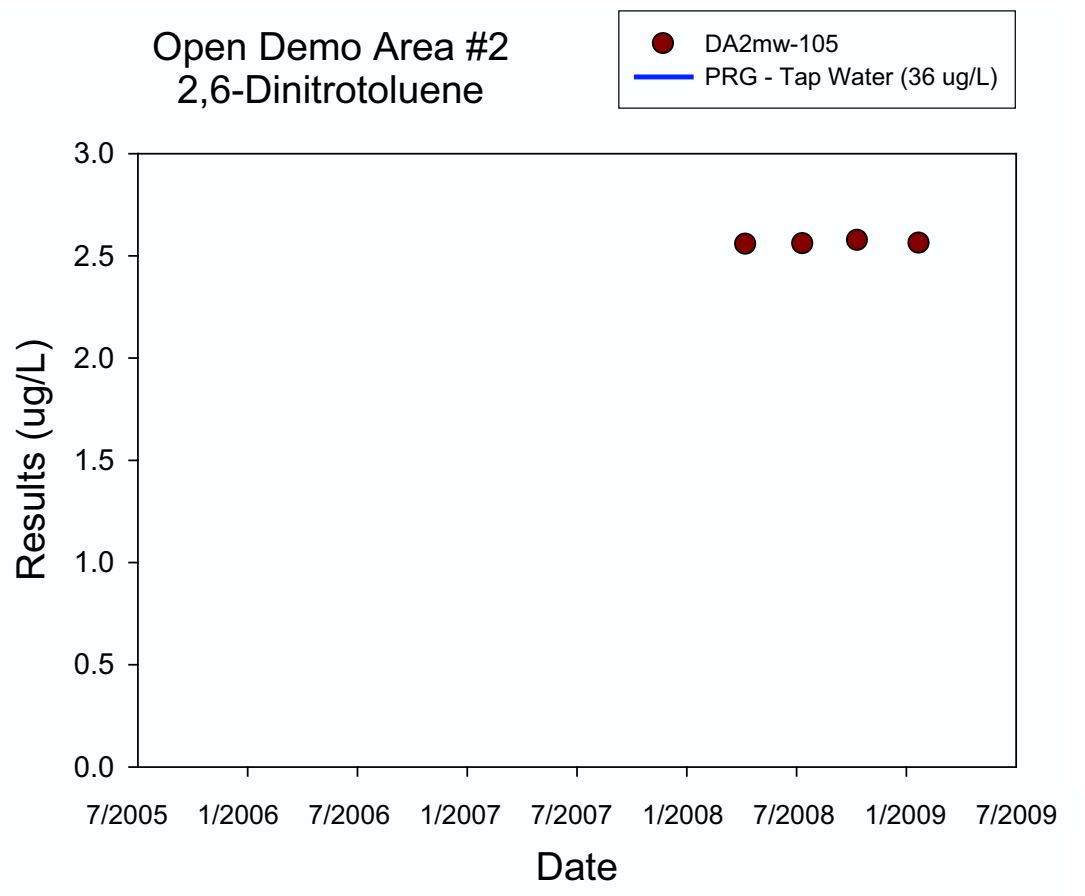

Open Demo Area #2
Magnesium
DA2mw-105
DA2mw-106
DA2mw-107
DA2mw-108
DA2mw-109
DA2mw-110
DA2mw-111
DA2mw-112
DA2mw-113
DET-3
T-4
consolidated Background (43.3 mg/L)
Results (mg/L)
60.0
50.0
40
30.0
20.0
10.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

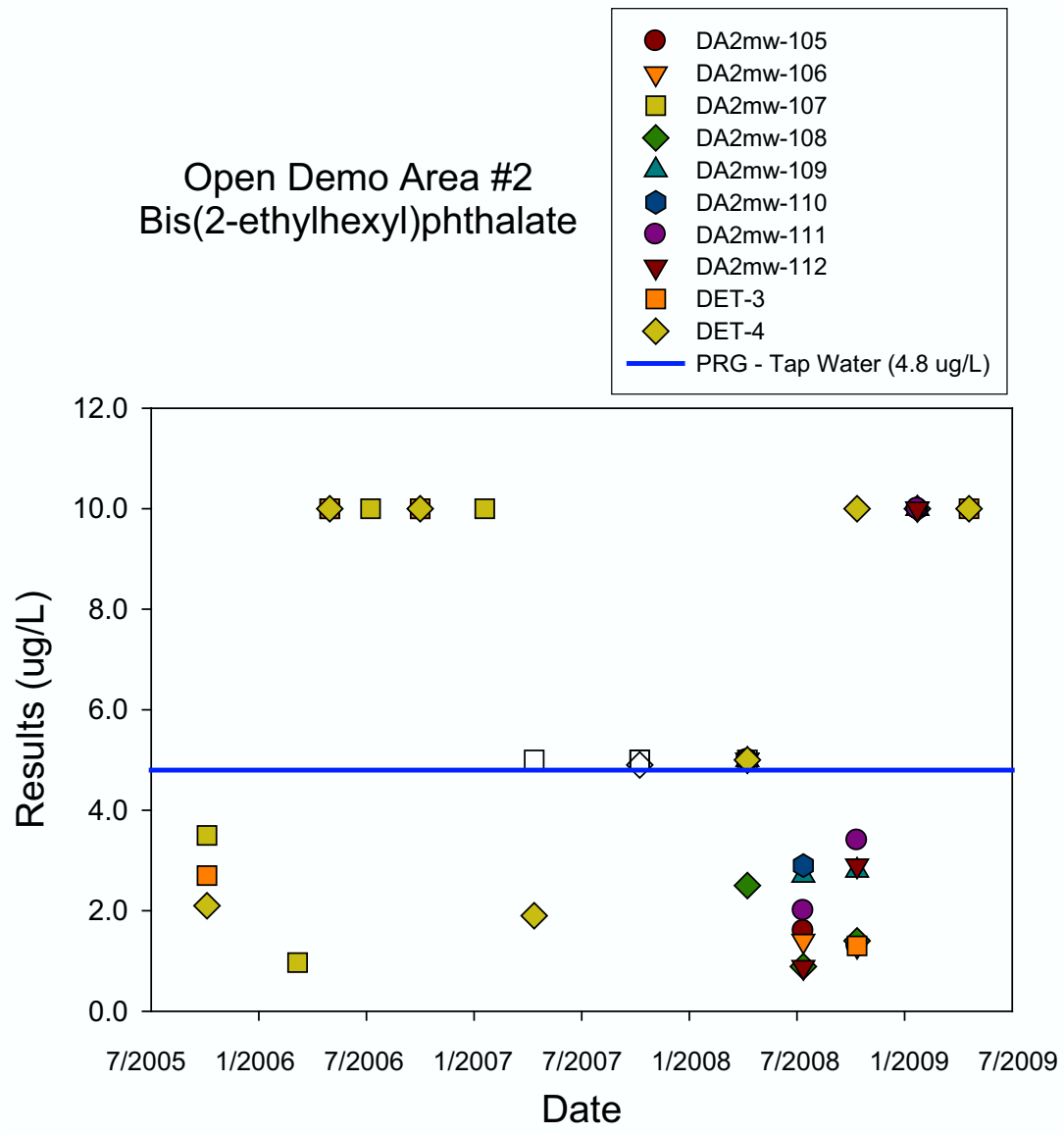

Open Demo Area #2
Manganese
2mw-106
consolidated Background (1.02 mg/L)
PRG - Tap Water (0.88 mg/L)
MCL (0.05 mg/L)
Results (mg/L)
6.0
5.0
4.0
3.0
2.0
1
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

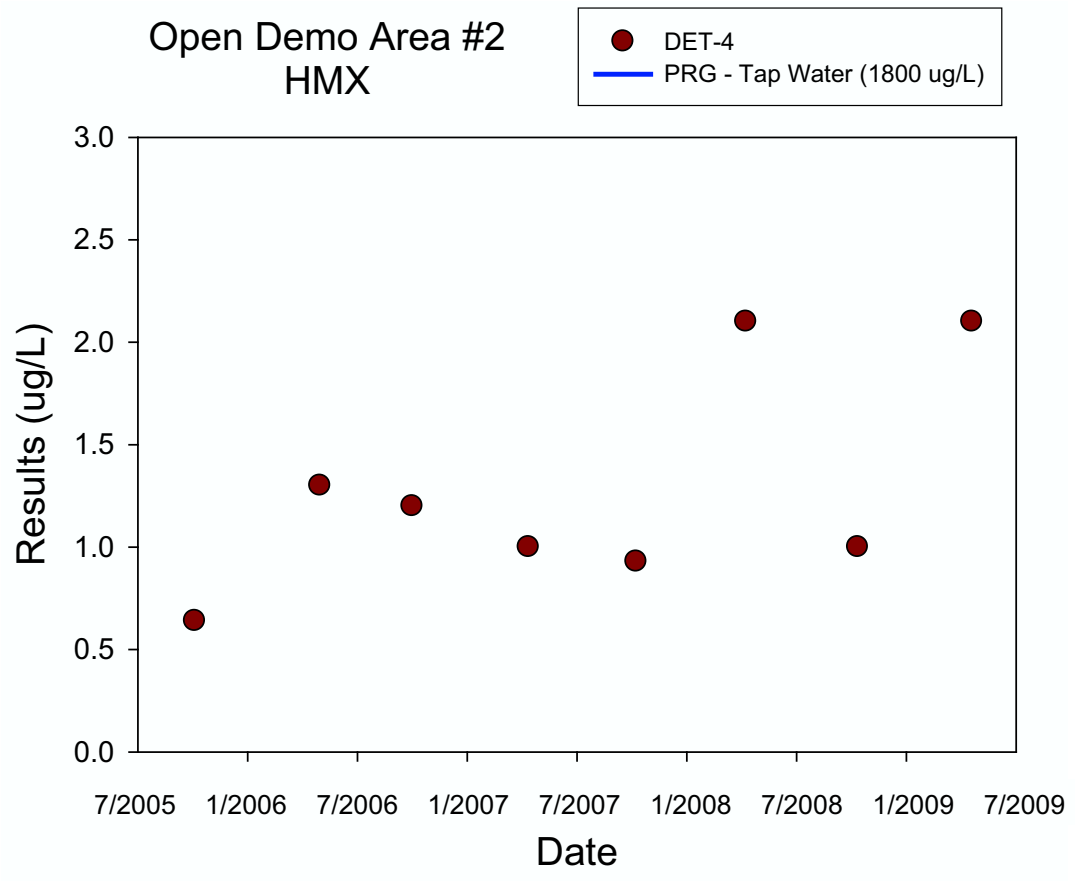

Open Demo Area #2
Nickel
2mw-106
consolidated Background (0 ug/L)
PRG - Tap Water (730 ug/L)
MCL (100 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

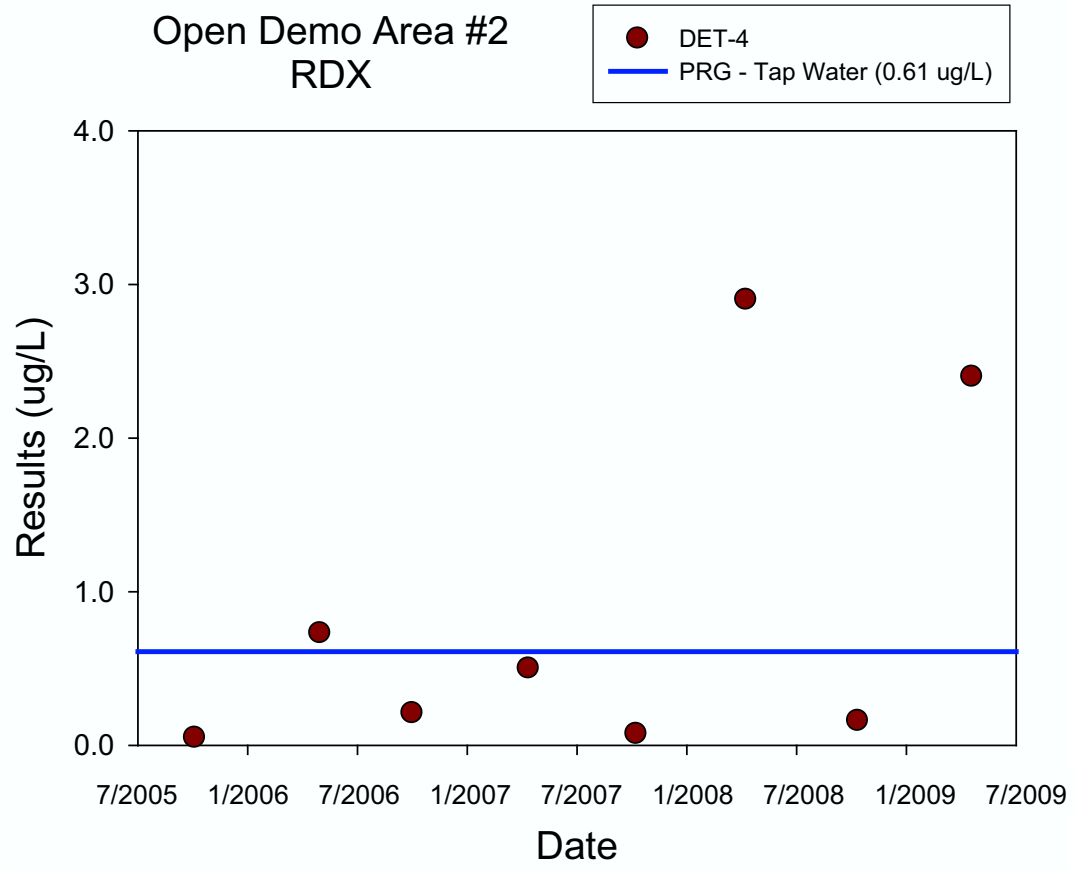

Open Demo Area #2
Potassium
2mw-111
consolidated Background (2.89 mg/L)
5.0
4.0
3
2.0
1.0
0.0
Results (mg/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

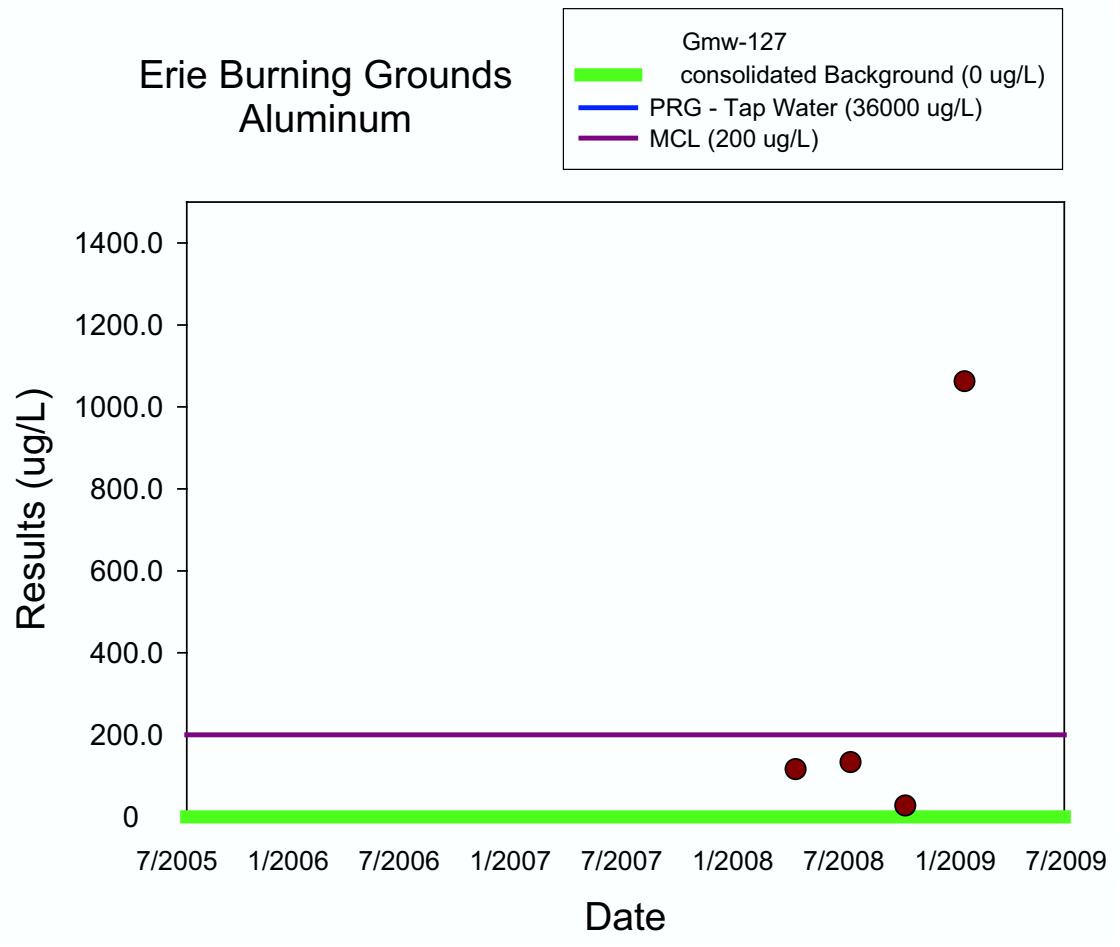

Open Demo Area #2
Acetone
DA2mw-106
PRG - Tap Water (5500 ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Results (ug/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

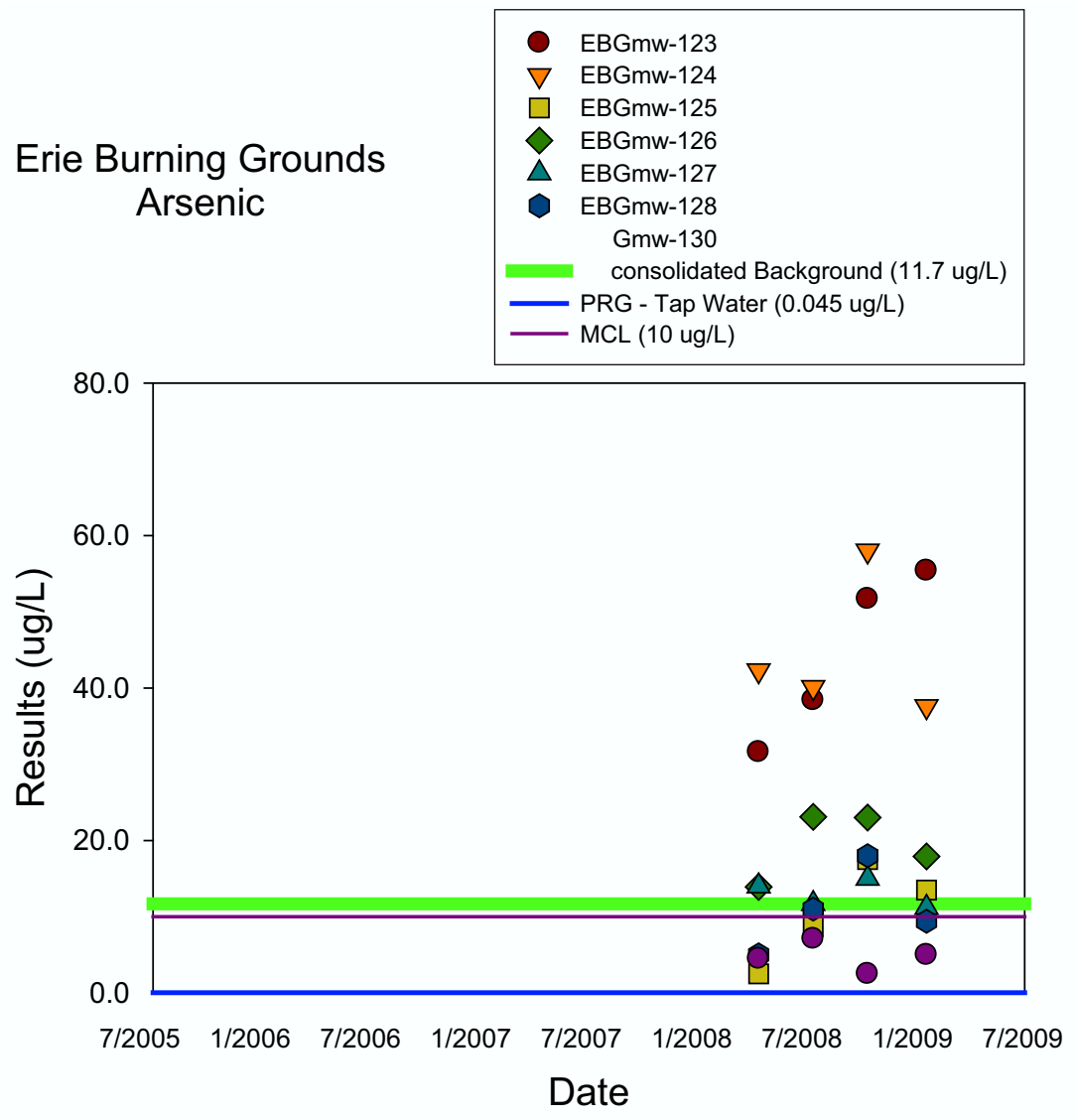

Open Demo Area #2
2,6-Dinitrotoluene
DA2mw-105
PRG - Tap Water (36 ug/L)
Results (ug/L)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

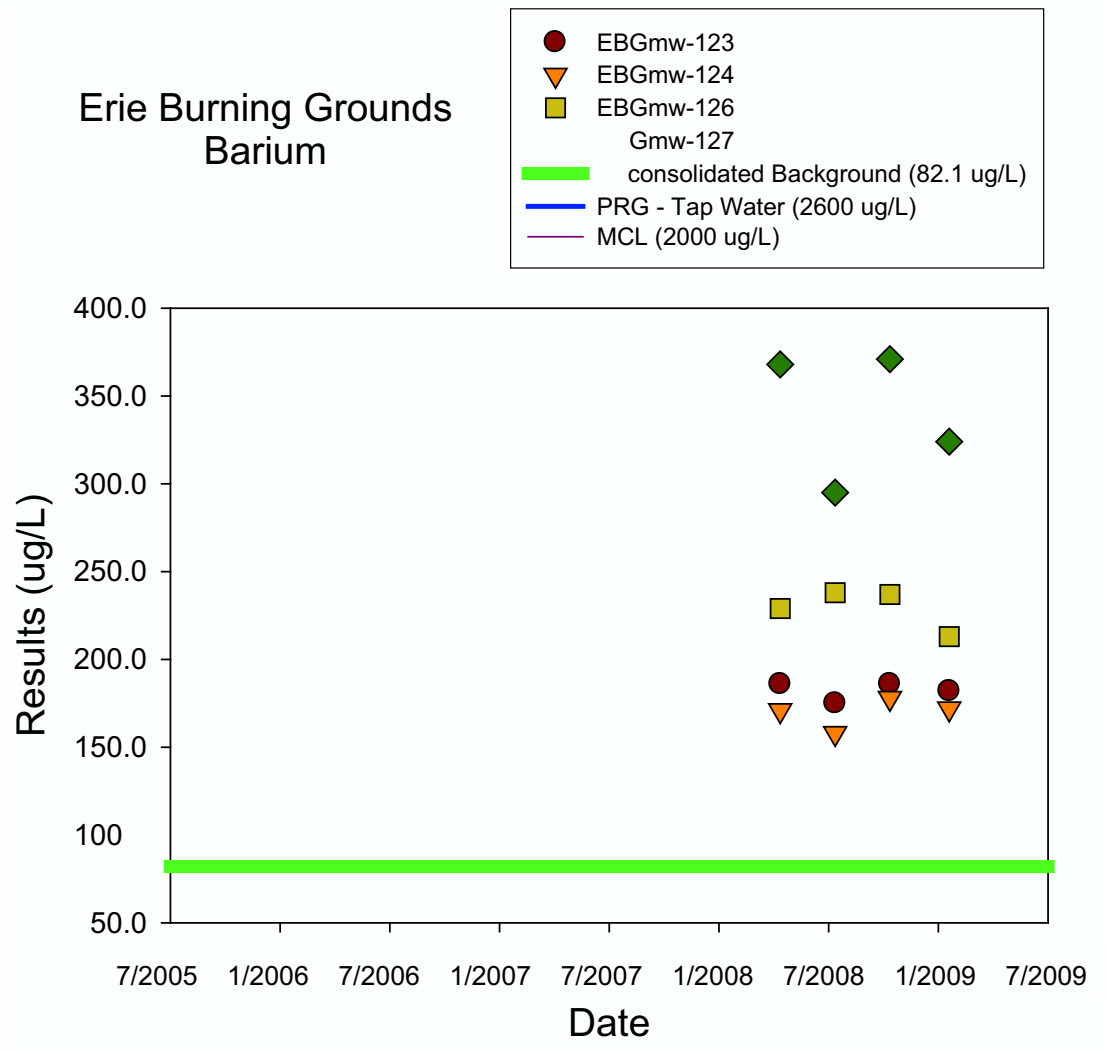

Open Demo Area #2
Bis(2-ethylhexyl)phthalate
DA2mw-105
DA2mw-106
DA2mw-107
DA2mw-108
DA2mw-109
DA2mw-110
DA2mw-111
DA2mw-112
DET-3
DET-4
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

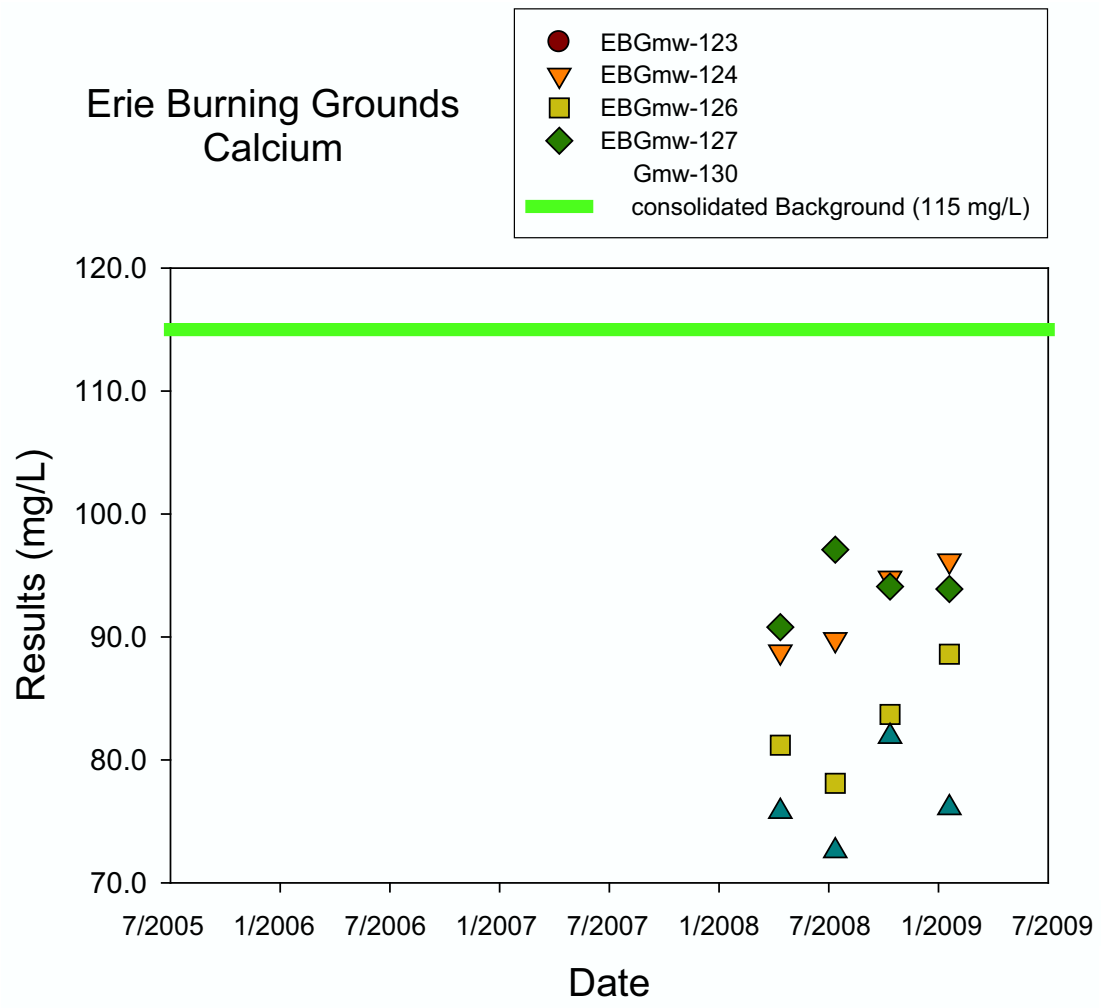

Open Demo Area #2
HMX
DET-4
PRG - Tap Water (1800 ug/L)
Results (ug/L)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

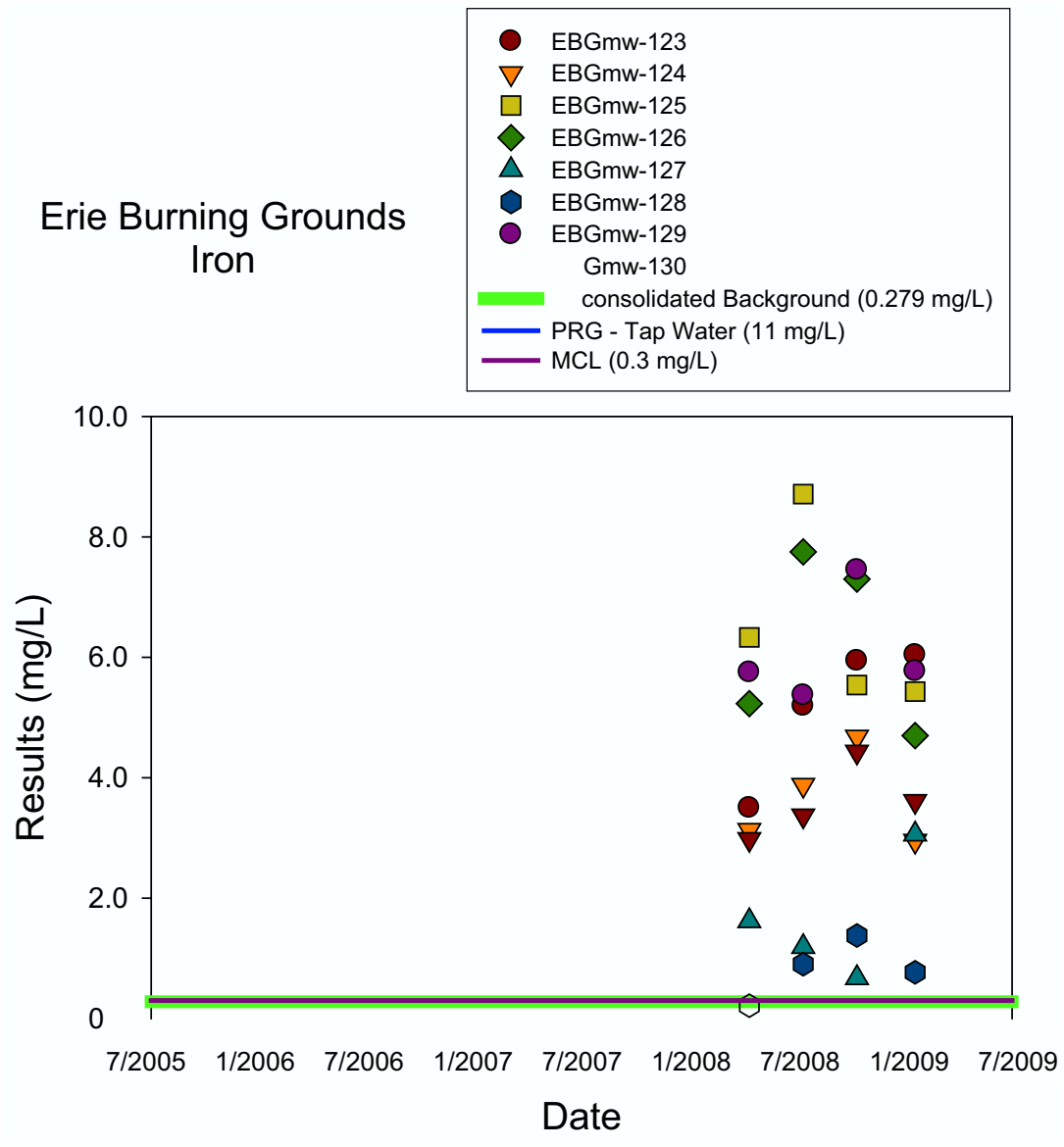

Open Demo Area #2
RDX
DET-4
PRG - Tap Water (0.61 ug/L)
Results (ug/L)
4.0
3.0
2.0
1.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

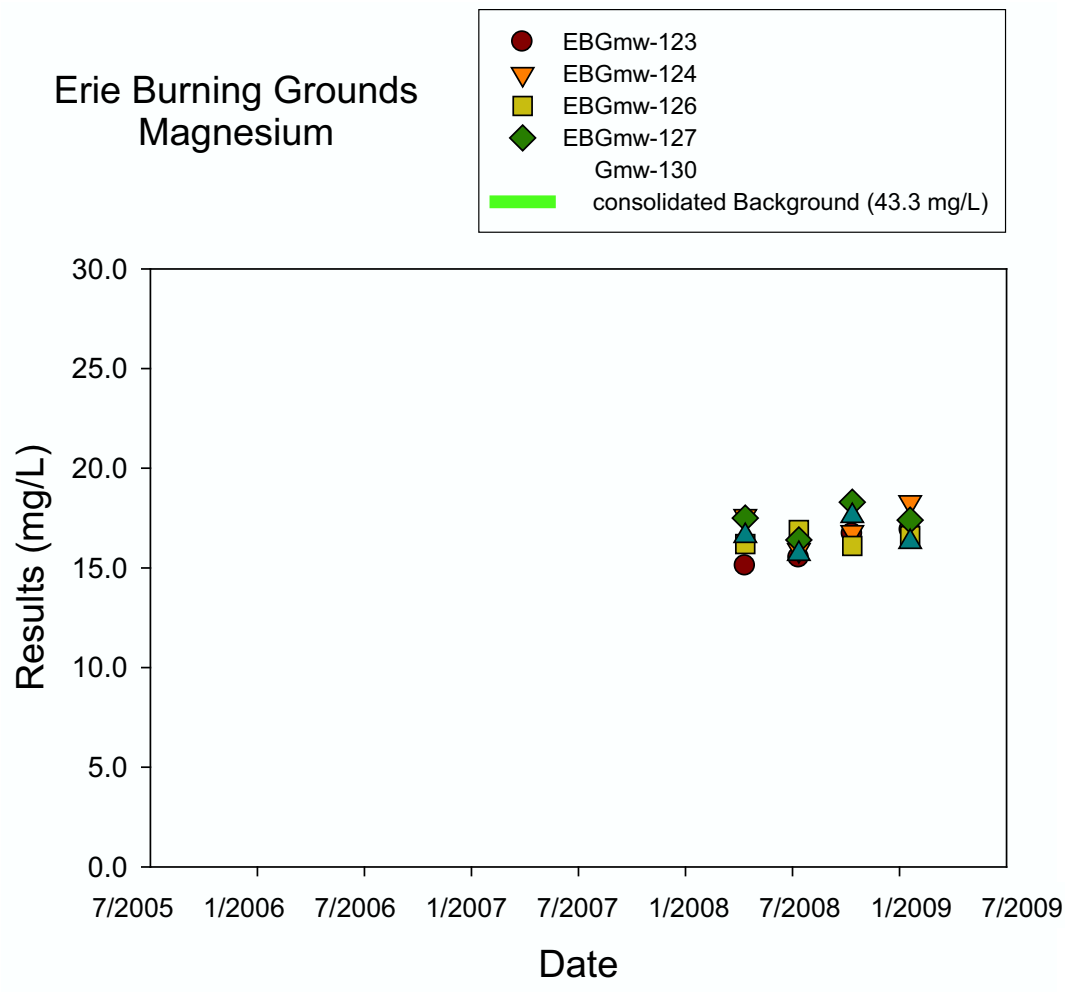

Erie Burning Grounds
Aluminum
Gmw-127
consolidated Background (0 ug/L)
PRG - Tap Water (36000 ug/L)
MCL (200 ug/L)
Results (ug/L)
1400.0
1200.0
1000.0
800.0
600.0
400.0
200.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

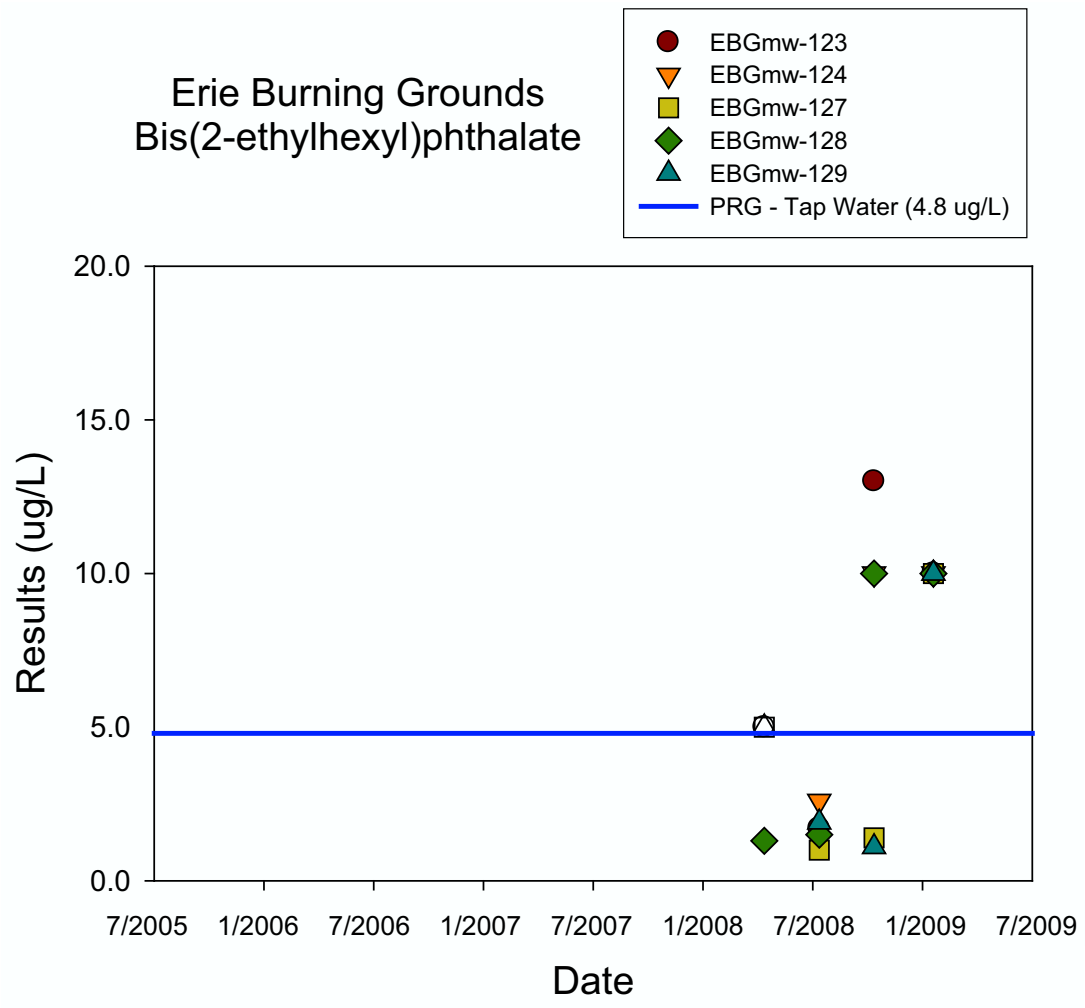

Erie Burning Grounds
Arsenic
EBGmw-123
EBGmw-124
EBGmw-125
EBGmw-126
EBGmw-127
EBGmw-128
Gmw-130
consolidated Background (11.7 ug/L)
PRG - Tap Water (0.045 ug/L)
MCL (10 ug/L)
Results (ug/L)
80.0
60.0
40.0
20.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

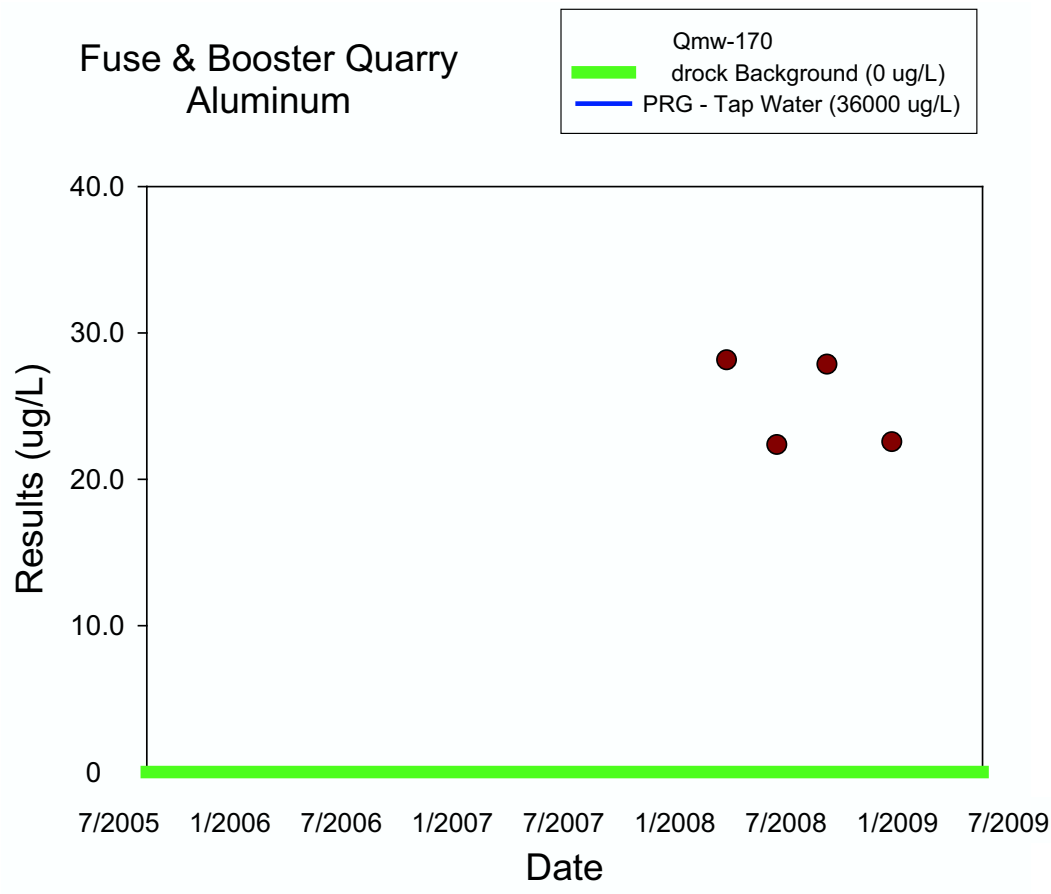

Erie Burning Grounds
Barium
EBGmw-123
EBGmw-124
EBGmw-126
Gmw-127
consolidated Background (82.1 ug/L)
PRG - Tap Water (2600 ug/L)
MCL (2000 ug/L)
Results (ug/L)
400.0
350.0
300.0
250.0
200.0
150.0
100
50.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

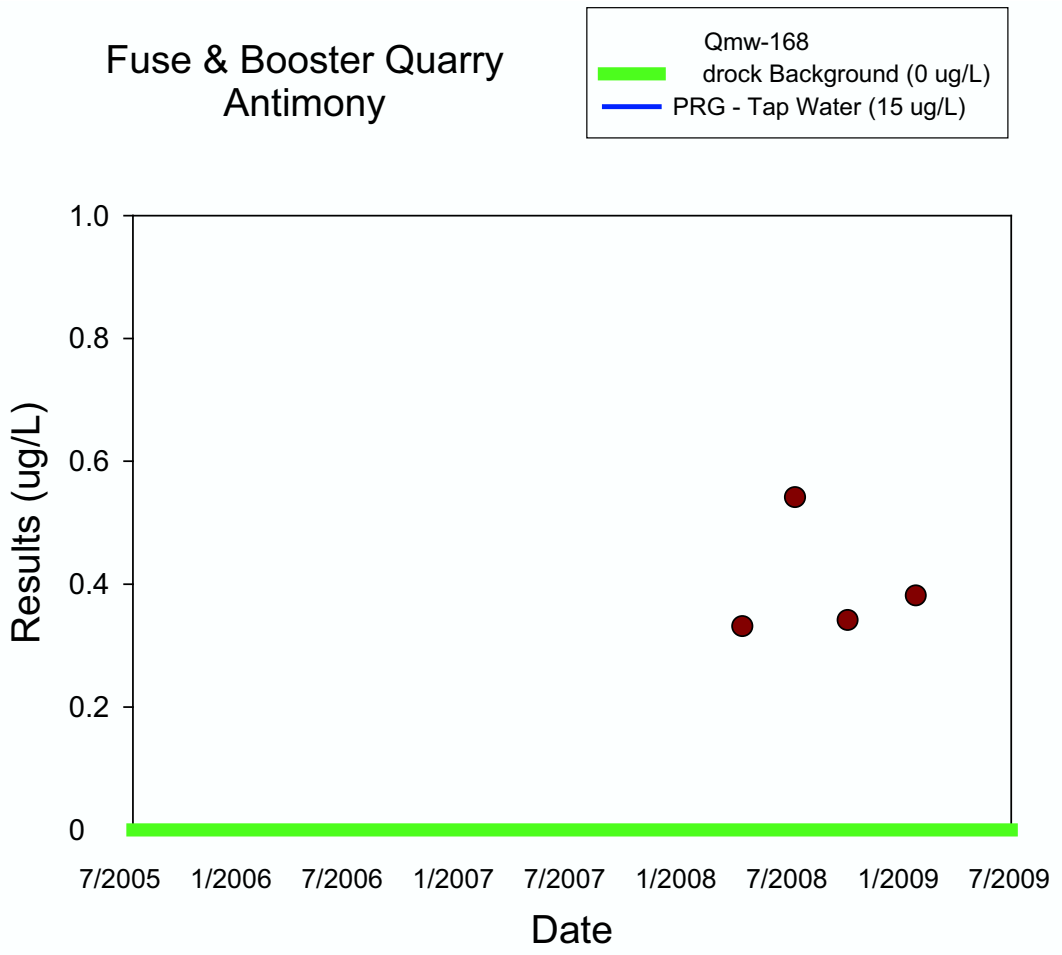

Erie Burning Grounds
Calcium
EBGmw-123
EBGmw-124
EBGmw-126
EBGmw-127
Gmw-130
consolidated Background (115 mg/L)
120.0
110.0
100.0
90.0
80.0
70.0
Results (mg/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

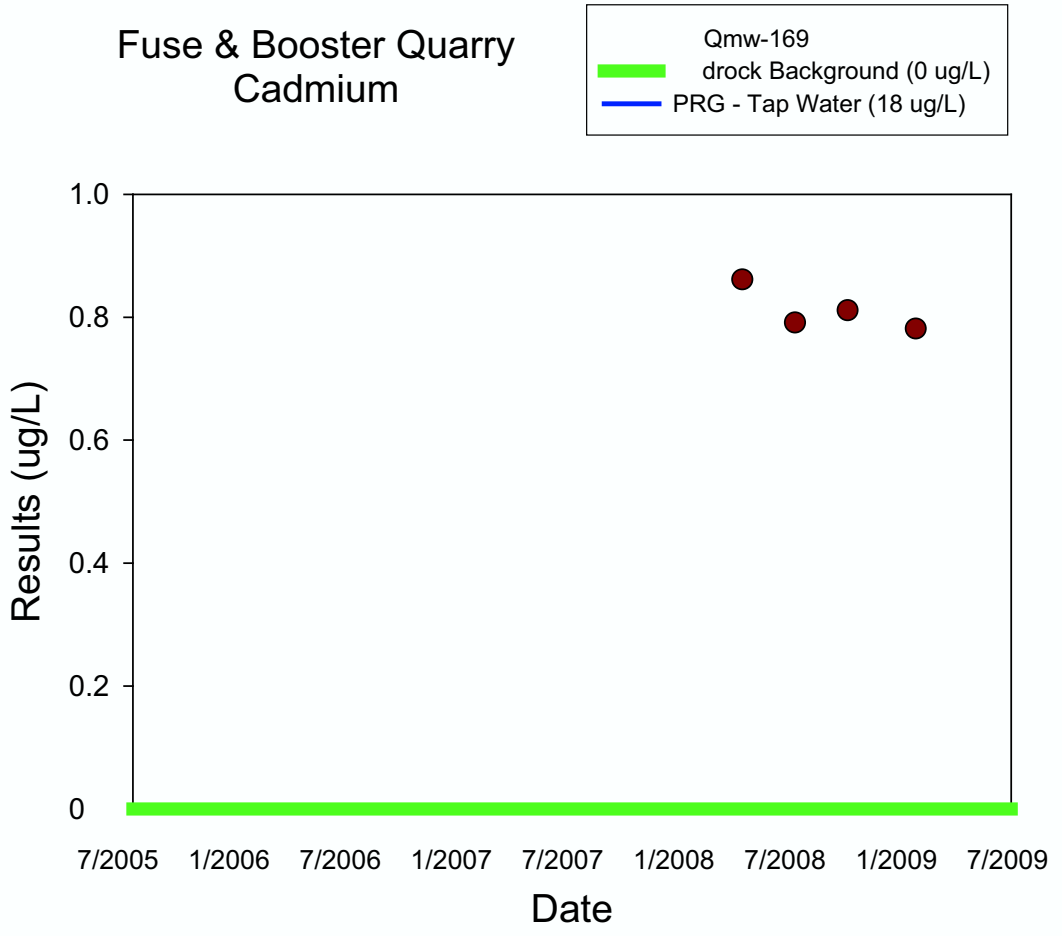

Erie Burning Grounds
Iron
EBGmw-123
EBGmw-124
EBGmw-125
EBGmw-126
EBGmw-127
EBGmw-128
EBGmw-129
Gmw-130
consolidated Background (0.279 mg/L)
PRG - Tap Water (11 mg/L)
MCL (0.3 mg/L)
Results (mg/L)
10.0
8.0
6.0
4.0
2.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

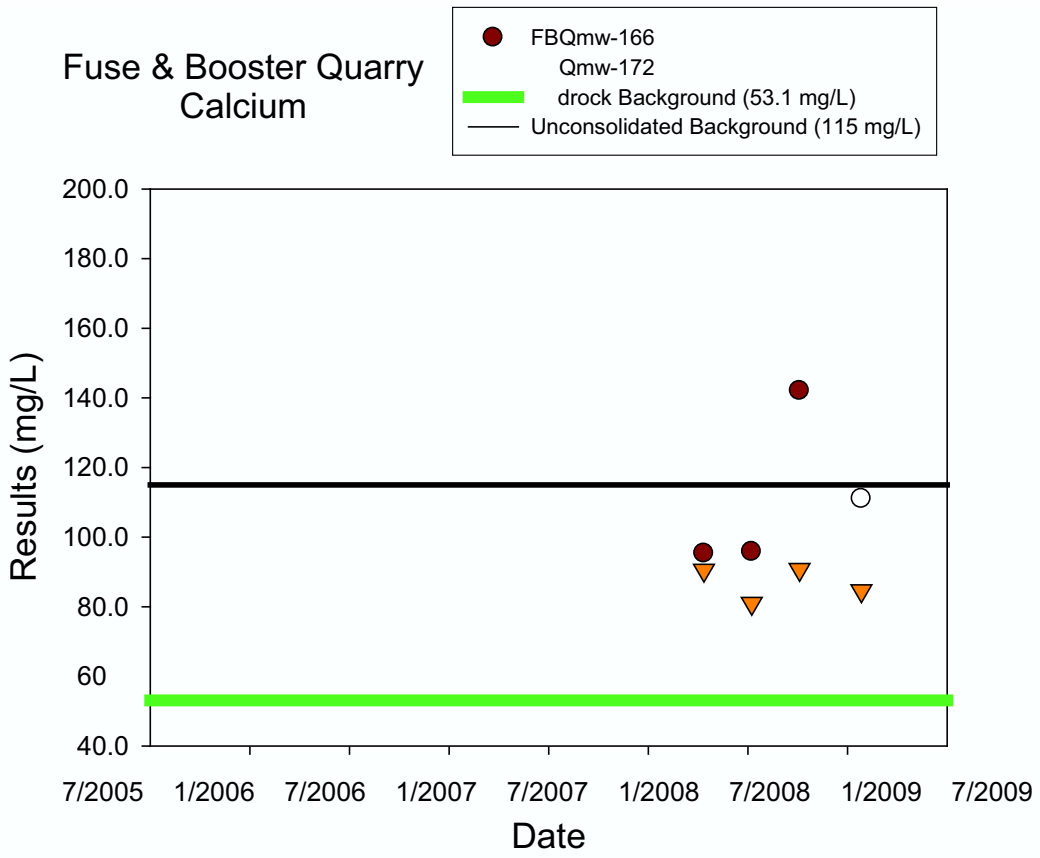

Erie Burning Grounds
Magnesium
EBGmw-123
EBGmw-124
EBGmw-126
EBGmw-127
Gmw-130
consolidated Background (43.3 mg/L)
Results (mg/L)
30.0
25.0
20.0
15.0
10.0
5.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date


Erie Burning Grounds
Bis(2-ethylhexyl)phthalate
EBGmw-123
EBGmw-124
EBGmw-127
EBGmw-128
EBGmw-129
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
20.0
15.0
10.0
5.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

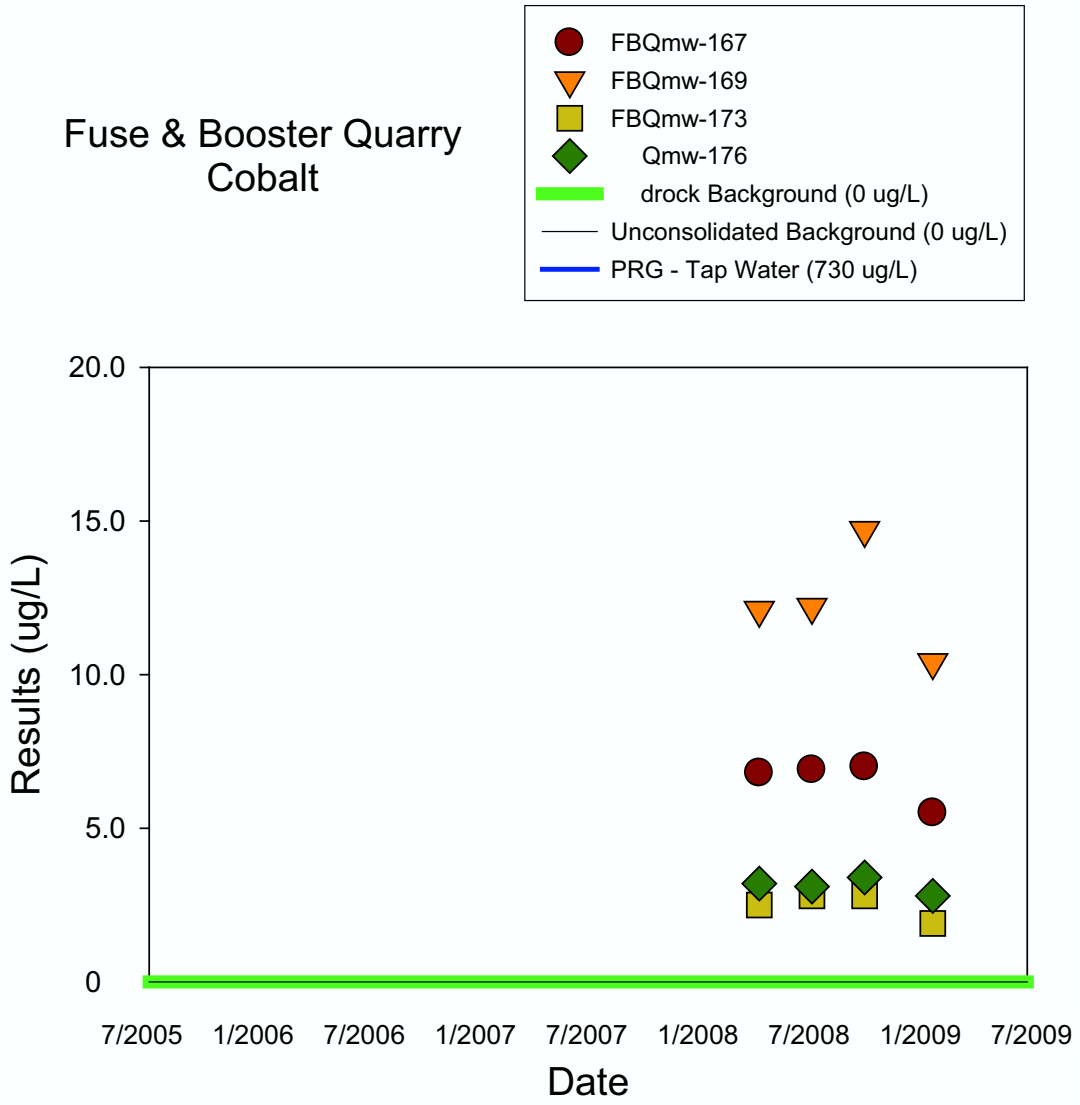

Fuse & Booster Quarry
Aluminum
Qmw-170
drock Background (0 ug/L)
PRG - Tap Water (36000 ug/L)
40.0
30.0
20.0
10.0
0
Results (ug/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date


Fuse & Booster Quarry
Antimony
Qmw-168
drock Background (0 ug/L)
PRG - Tap Water (15 ug/L)
Results (ug/L)
1.0
0.8
0.6
0.4
0.2
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

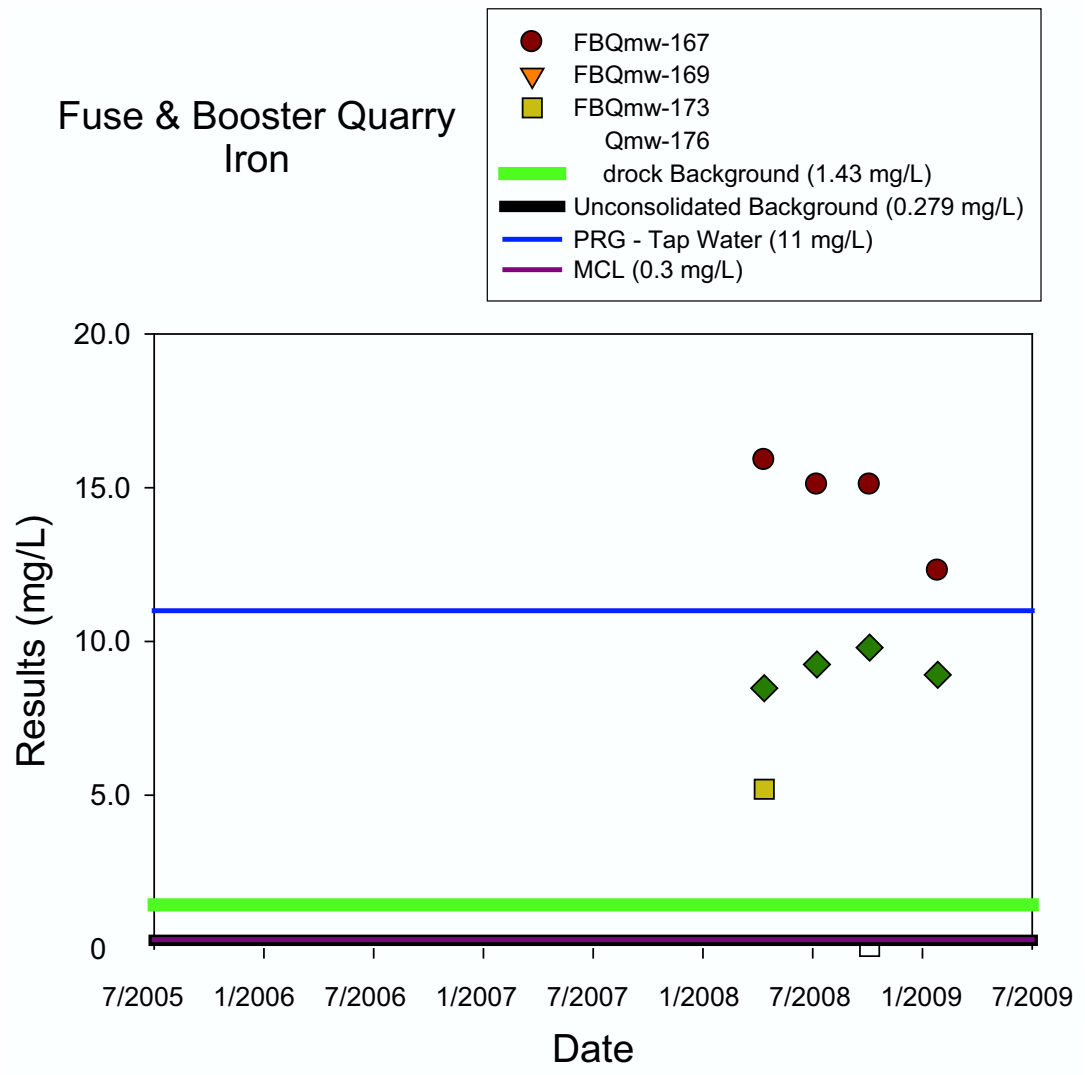

Fuse & Booster Quarry
Cadmium
Qmw-169
drock Background (0 ug/L)
PRG - Tap Water (18 ug/L)
Results (ug/L)
1.0
0.8
0.6
0.4
0.2
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date



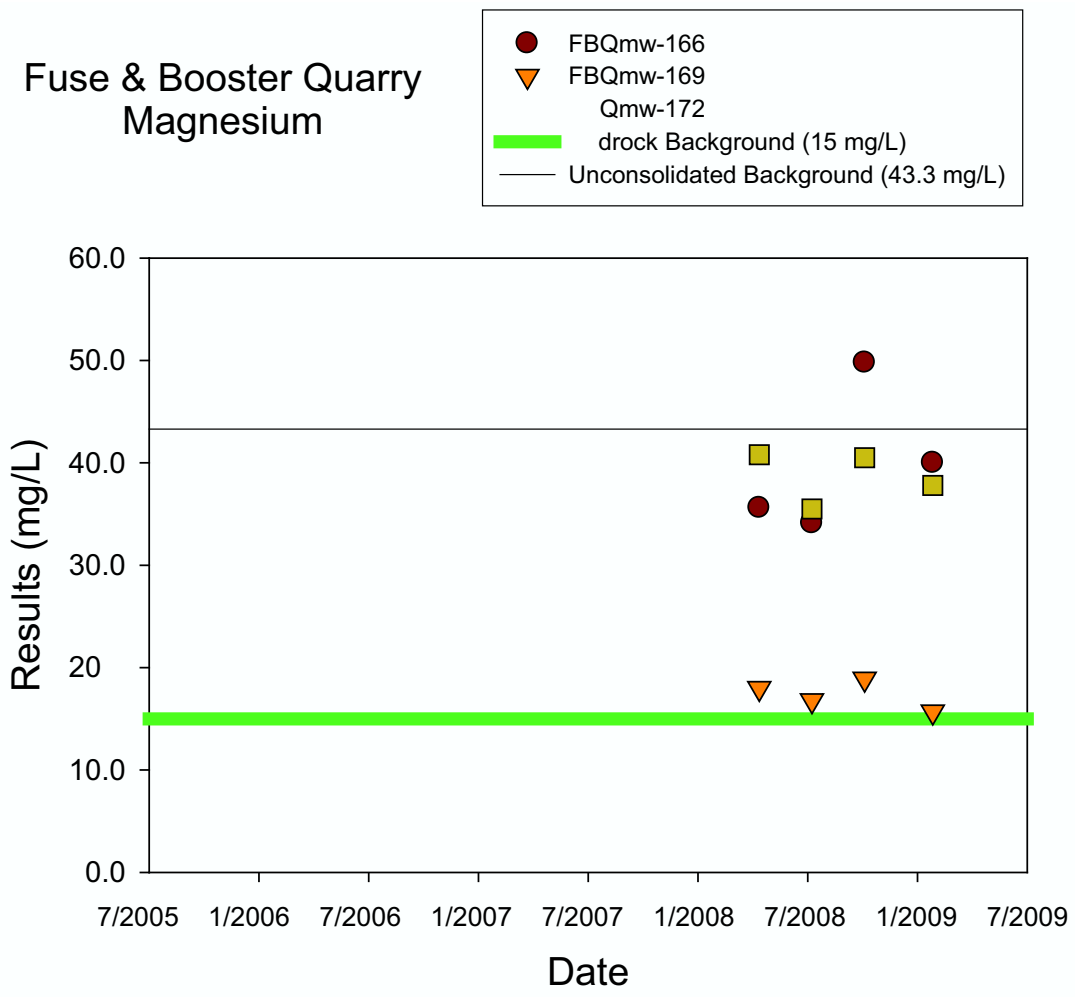
FBQmw-166 - Unconsolidated Background



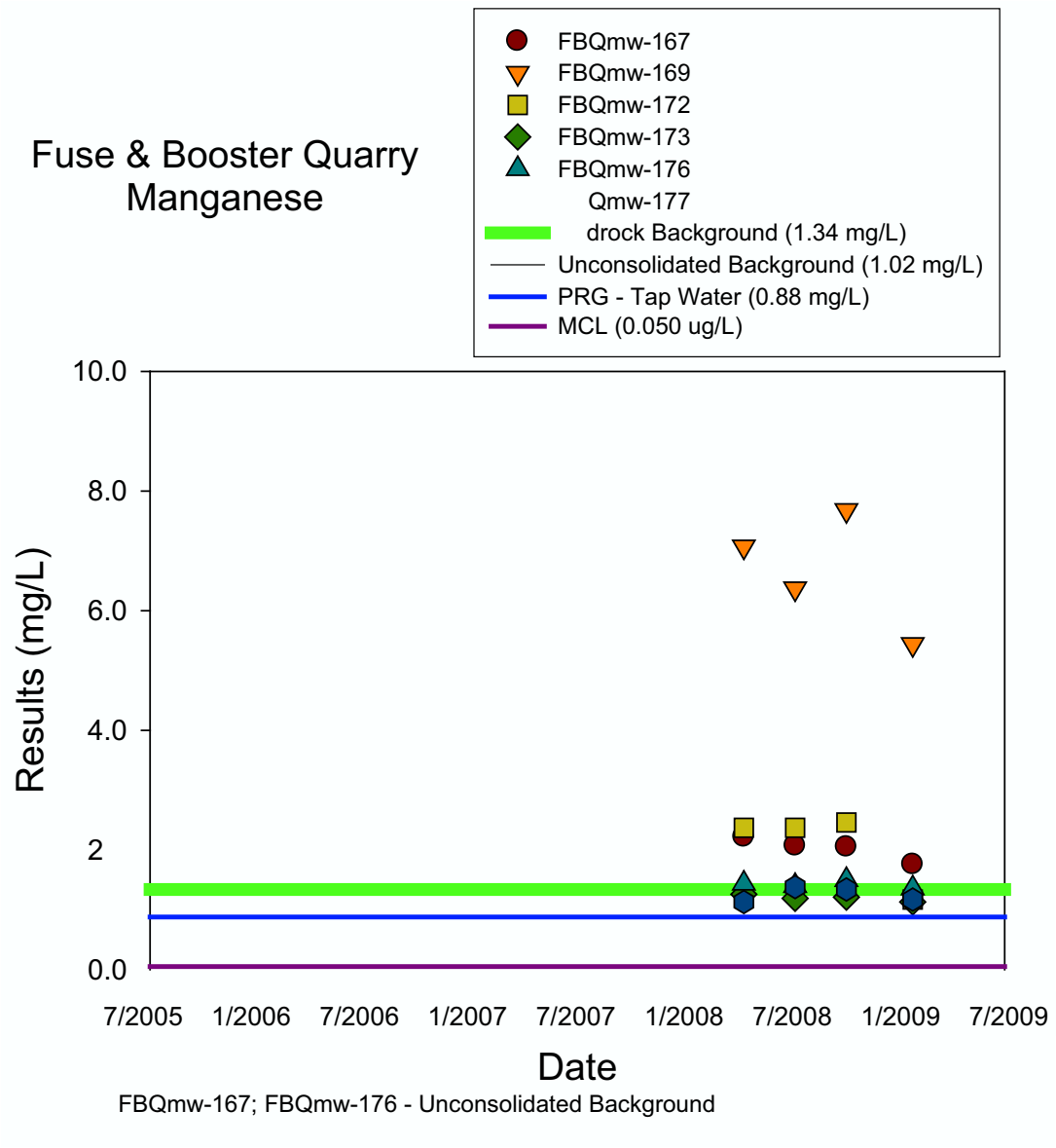
FBQmw-167; FBQmw-176 - Unconsolidated Background

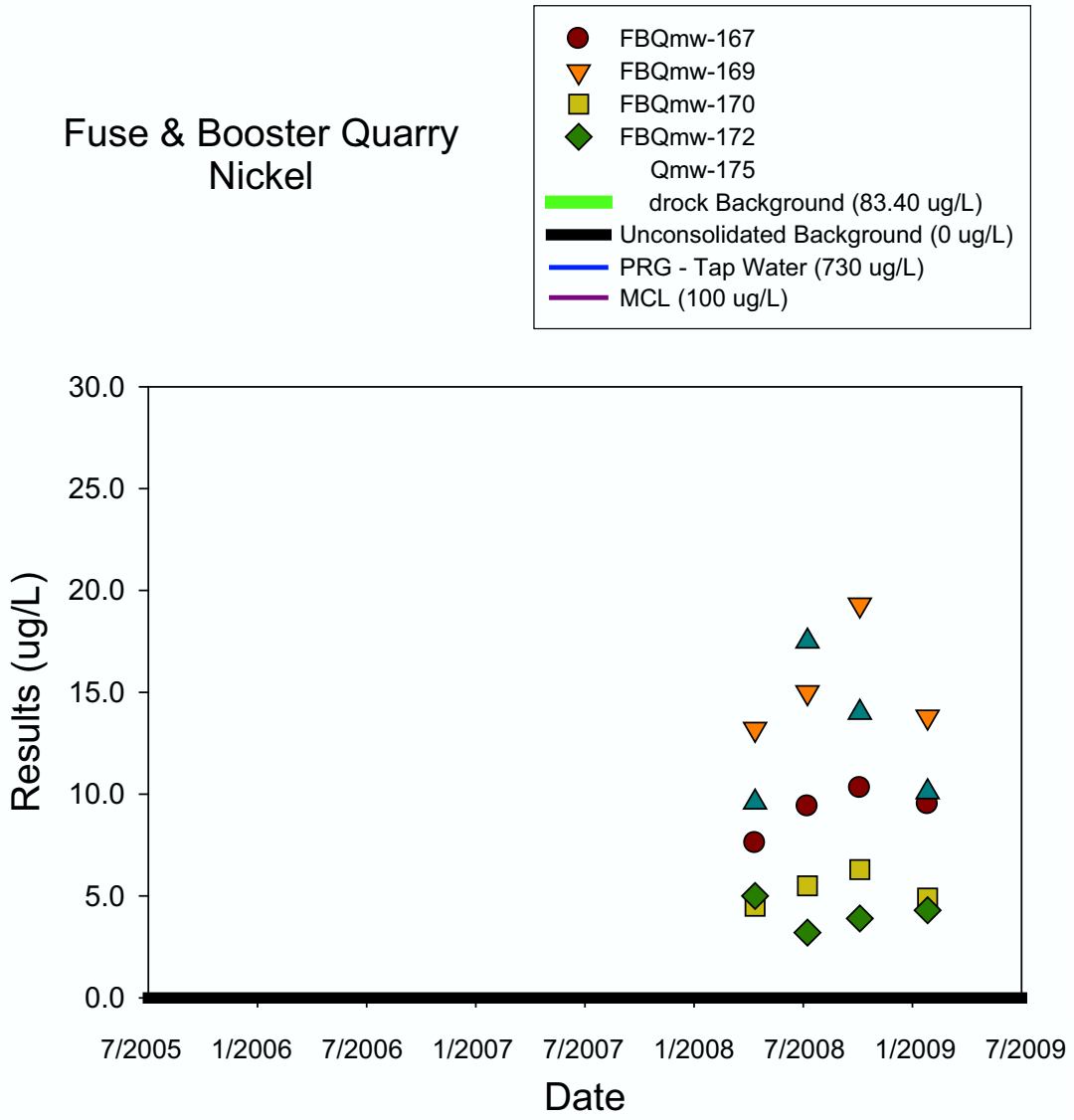


FBQmw-167; FBQmw-176 - Unconsolidated Background

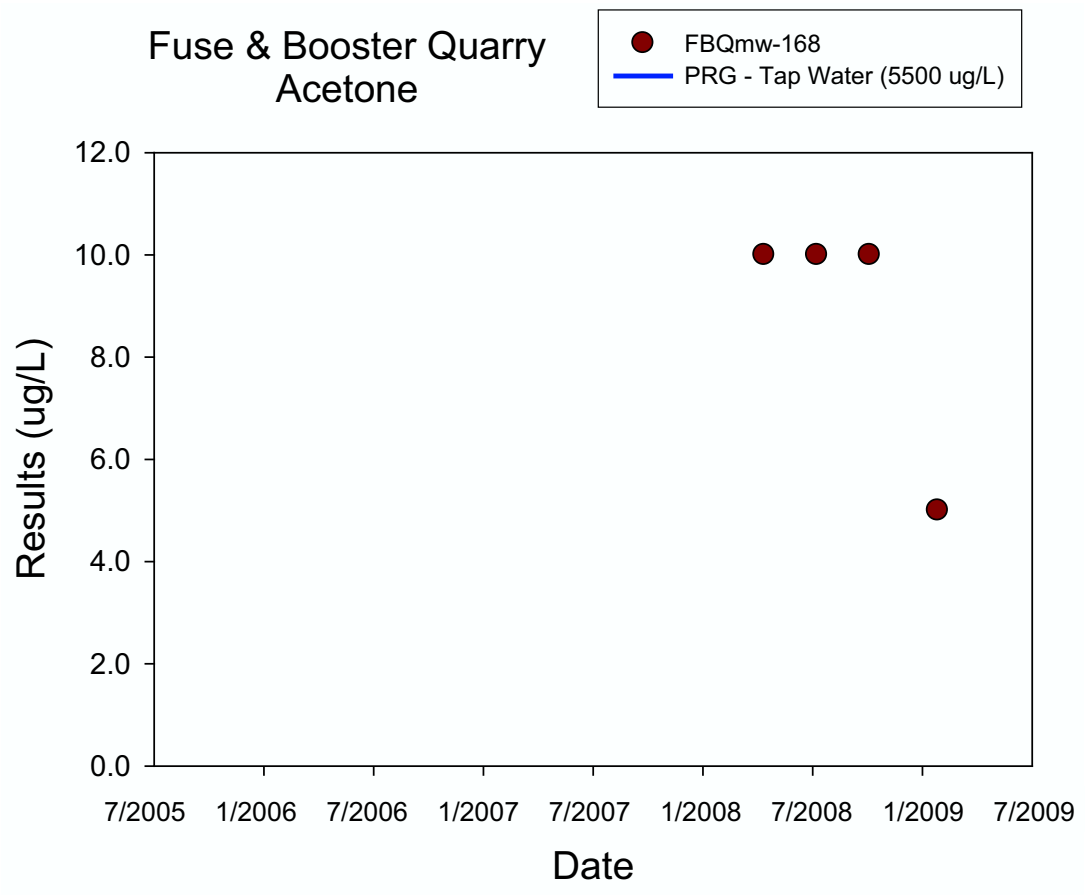


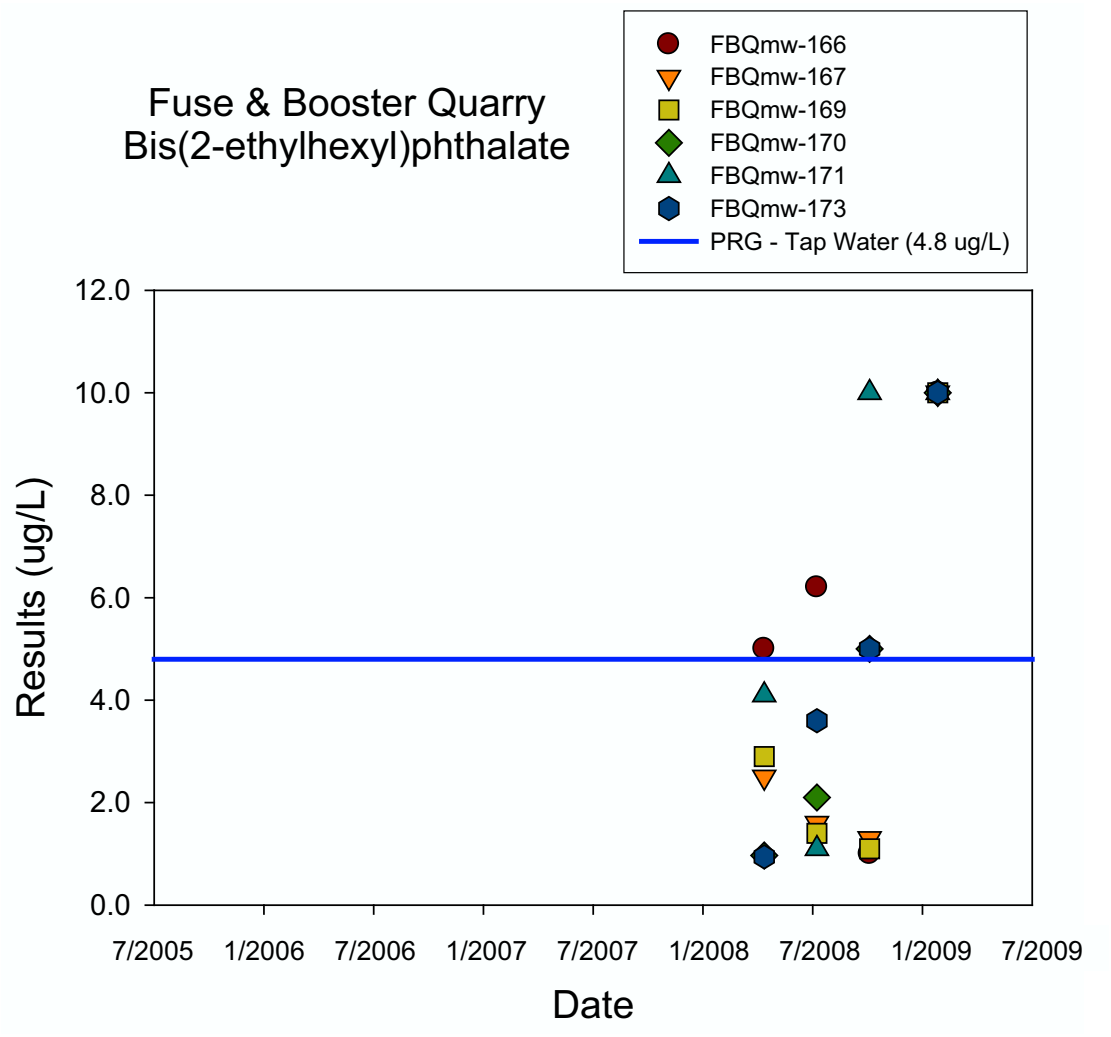
FBQmw-166 - Unconsolidated Background

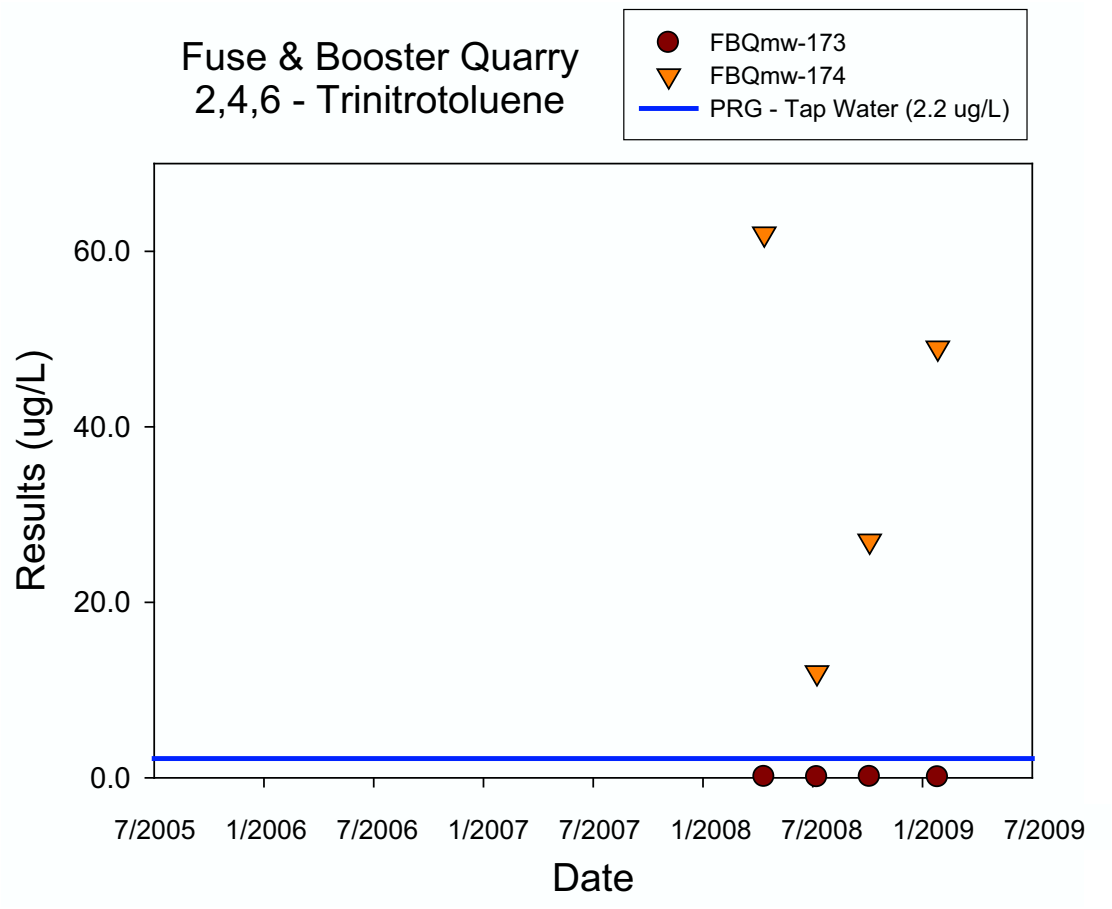

Fuse & Booster Quarry
Manganese
FBQmw-167
FBQmw-169
FBQmw-172
FBQmw-173
FBQmw-176
Qmw-177
drock Background (1.34 mg/L)
Unconsolidated Background (1.02 mg/L)
PRG - Tap Water (0.88 mg/L)
MCL (0.050 ug/L)
Results (mg/L)
10.0
8.0
6.0
4.0
2
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date
FBQmw-167; FBQmw-176 - Unconsolidated Background

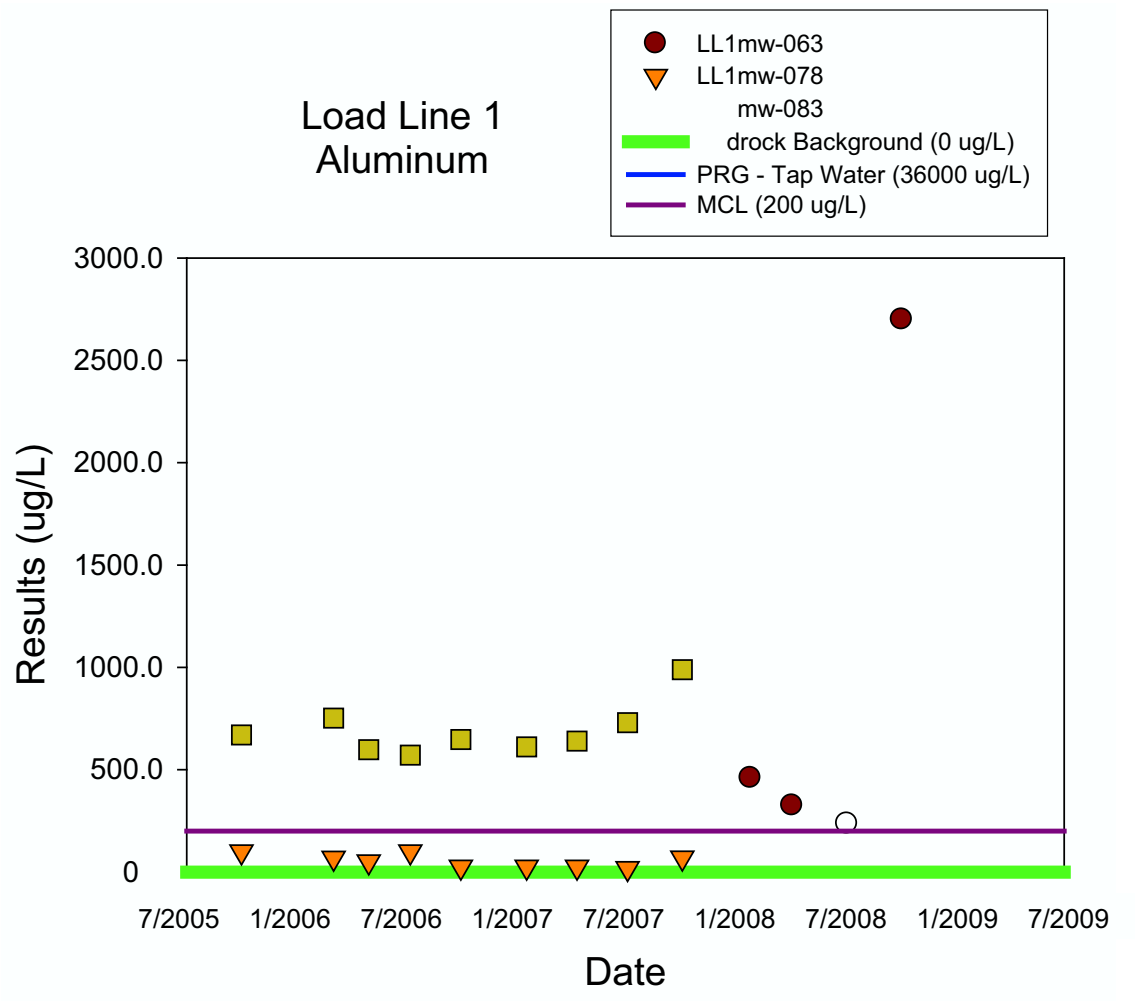


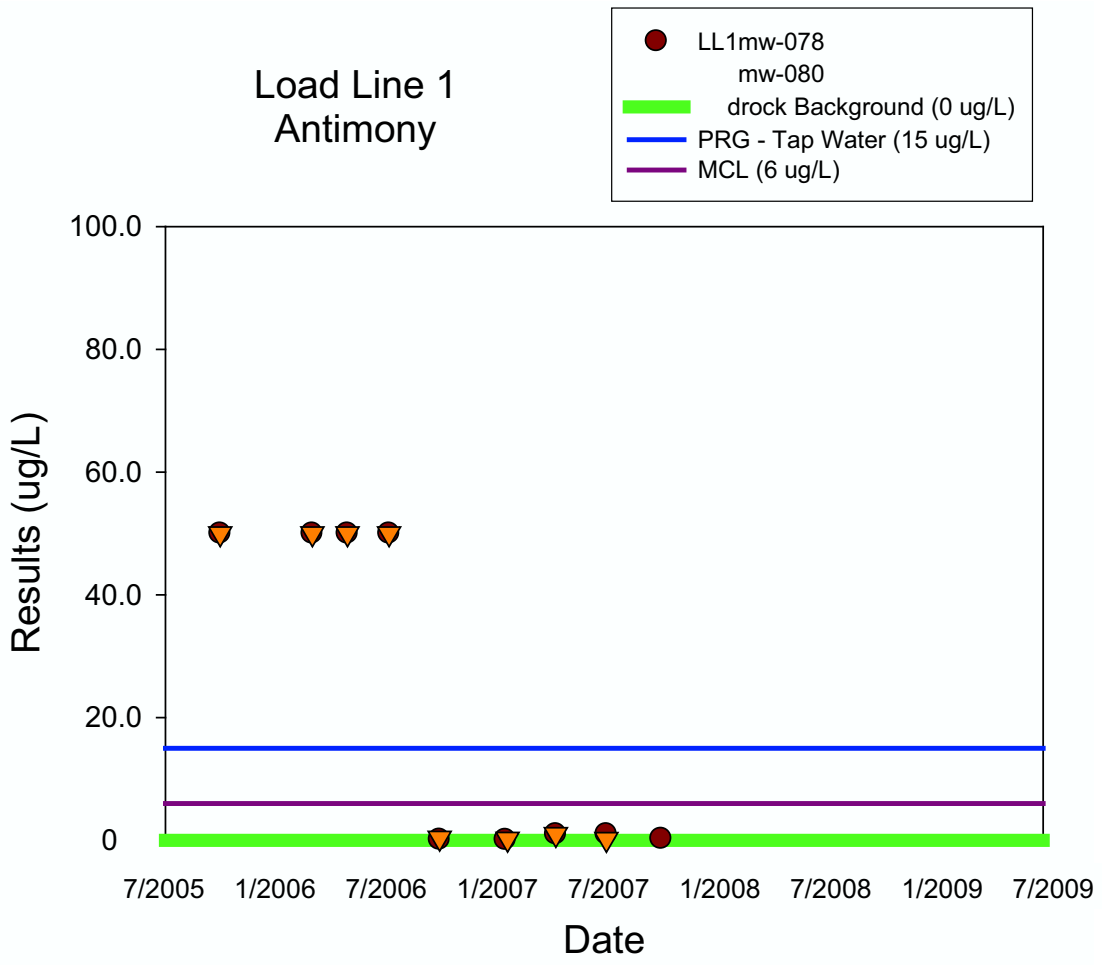
FBQmw-167 - Unconsolidated Background

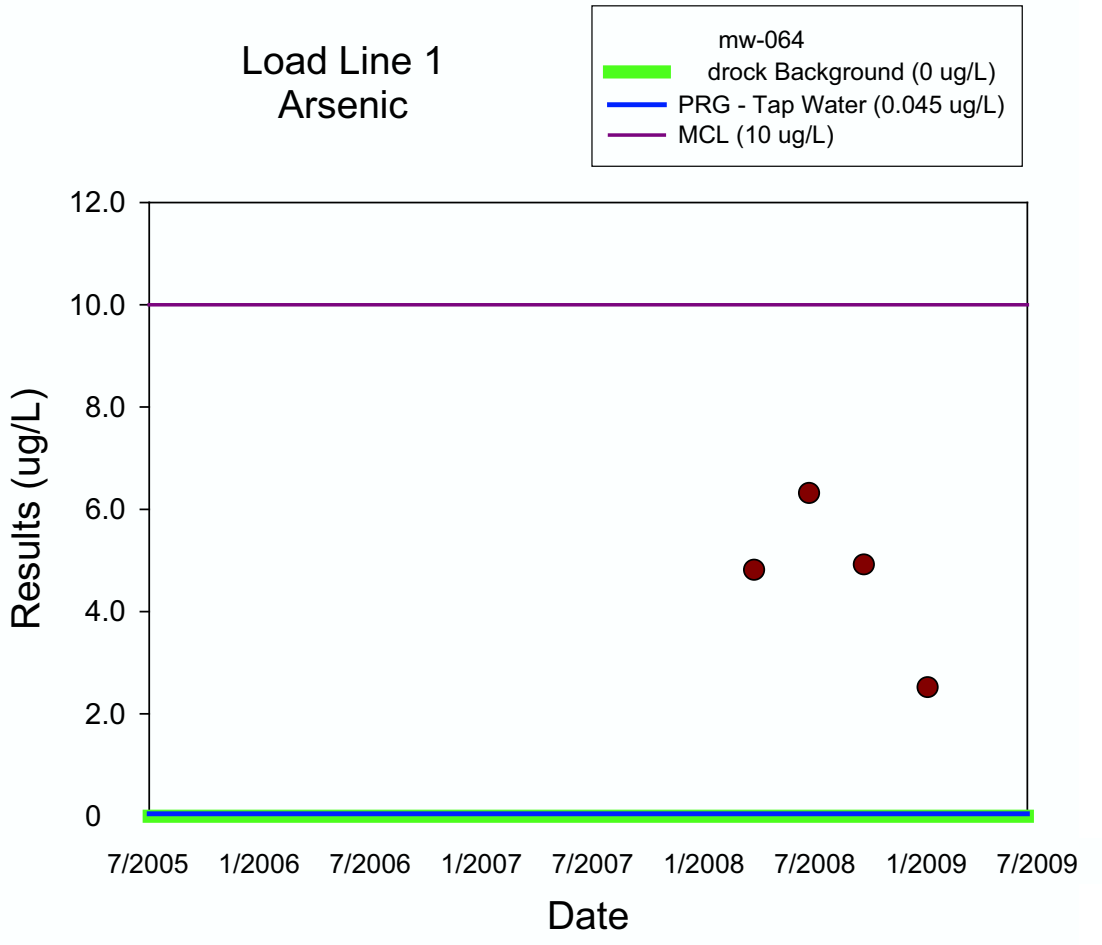

Fuse & Booster Quarry
Acetone
FBQmw-168
PRG - Tap Water (5500 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

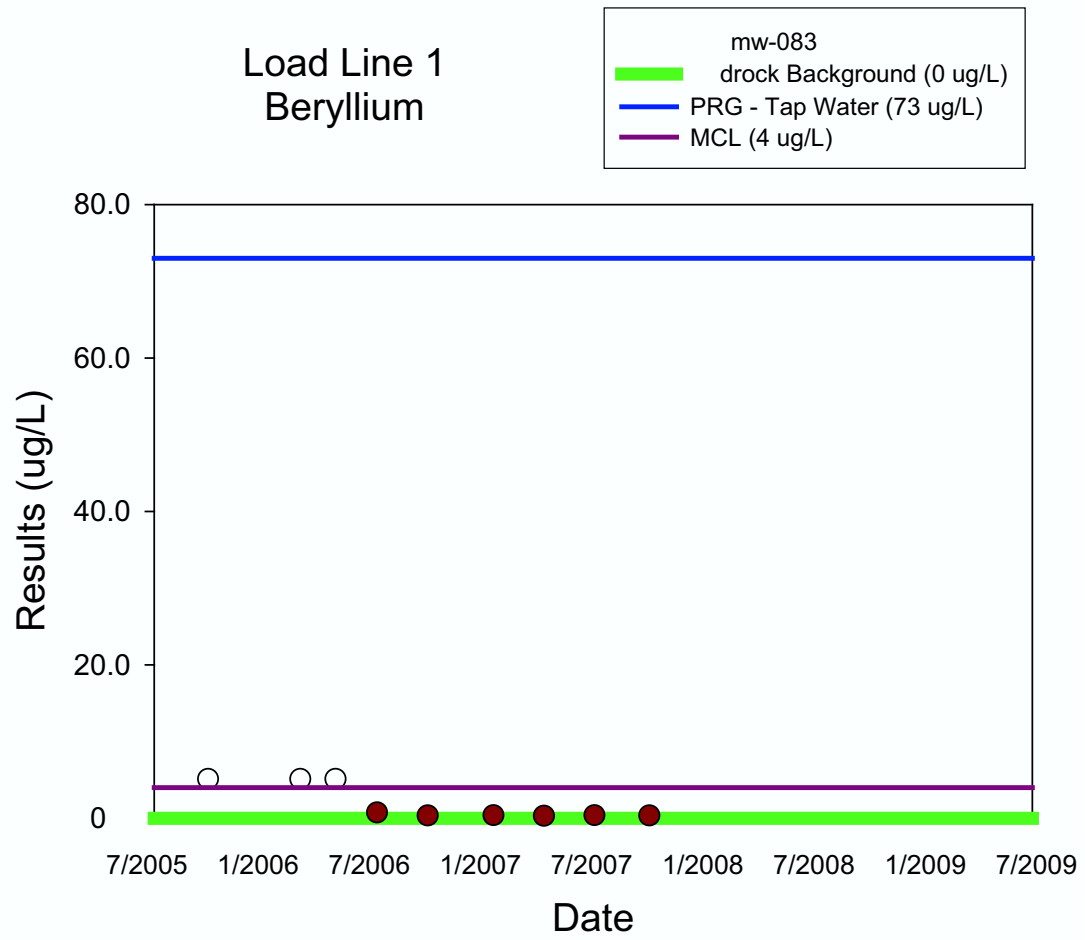

Fuse & Booster Quarry
Bis(2-ethylhexyl)phthalate
FBQmw-166
FBQmw-167
FBQmw-169
FBQmw-170
FBQmw-171
FBQmw-173
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

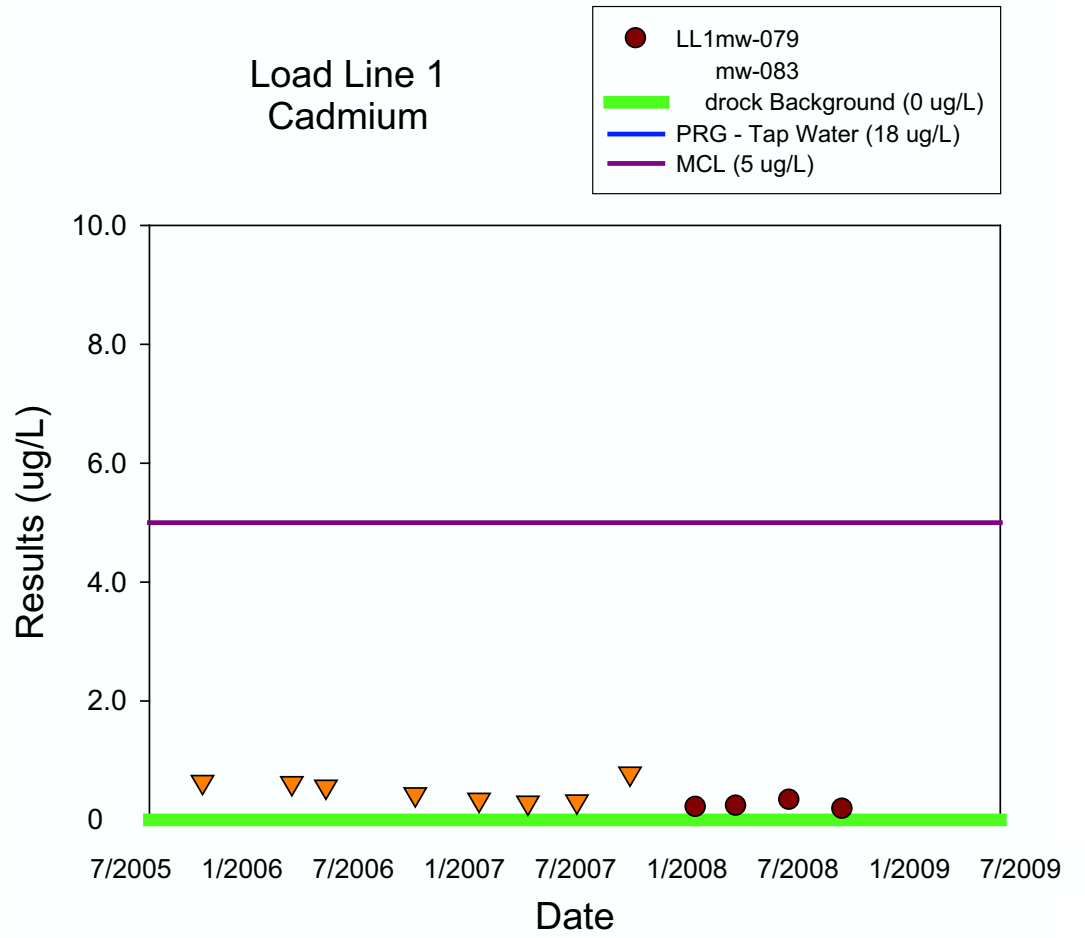

Fuse & Booster Quarry
2,4,6 - Trinitrotoluene
FBQmw-173
FBQmw-174
PRG - Tap Water (2.2 ug/L)
Results (ug/L)
60.0
40.0
20.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

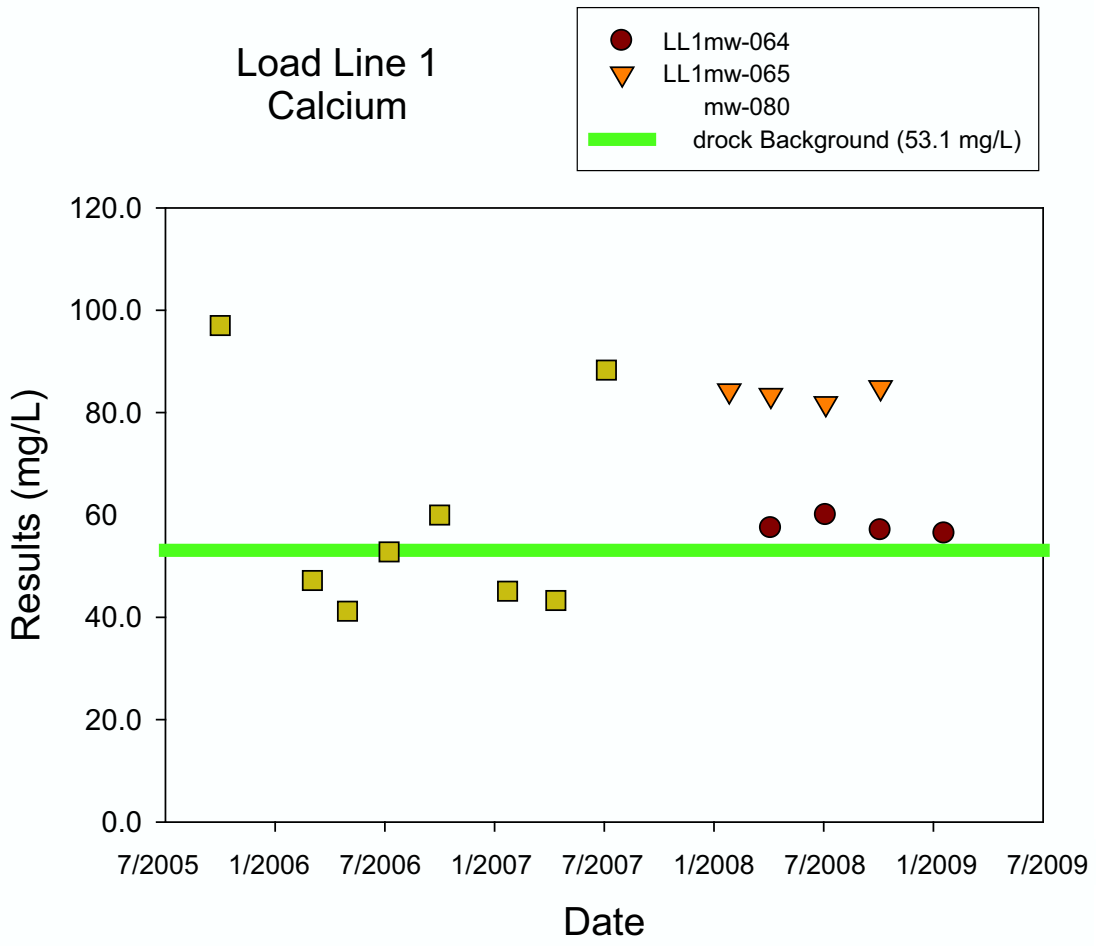

Load Line 1
Aluminum
LL1mw-063
LL1mw-078
mw-083
drock Background (0 ug/L)
PRG - Tap Water (36000 ug/L)
MCL (200 ug/L)
Results (ug/L)
3000.0
2500.0
2000.0
1500.0
1000.0
500.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

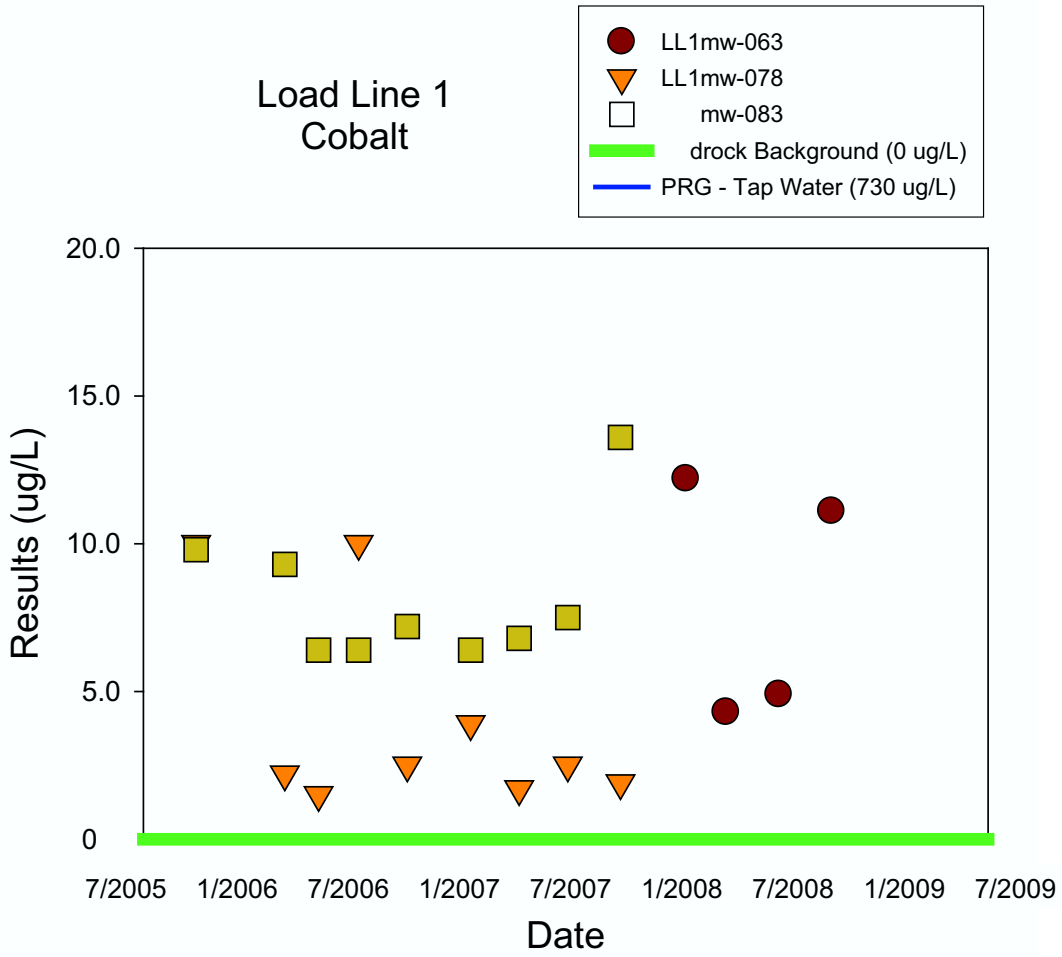

Load Line 1
Antimony
LL1mw-078
mw-080
drock Background (0 ug/L)
PRG - Tap Water (15 ug/L)
MCL (6 ug/L)
Results (ug/L)
100.0
80.0
60.0
40.0
20.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

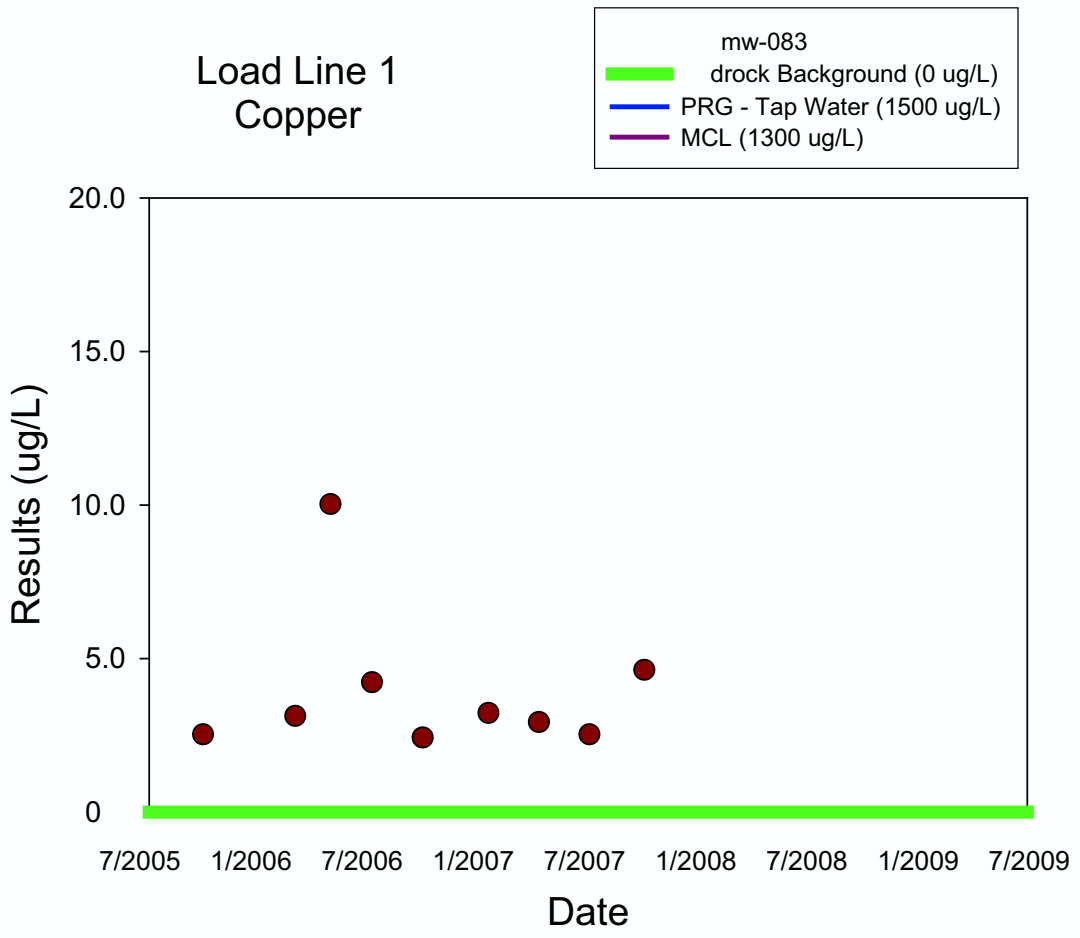

Load Line 1
Arsenic
mw-064
drock Background (0 ug/L)
PRG - Tap Water (0.045 ug/L)
MCL (10 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

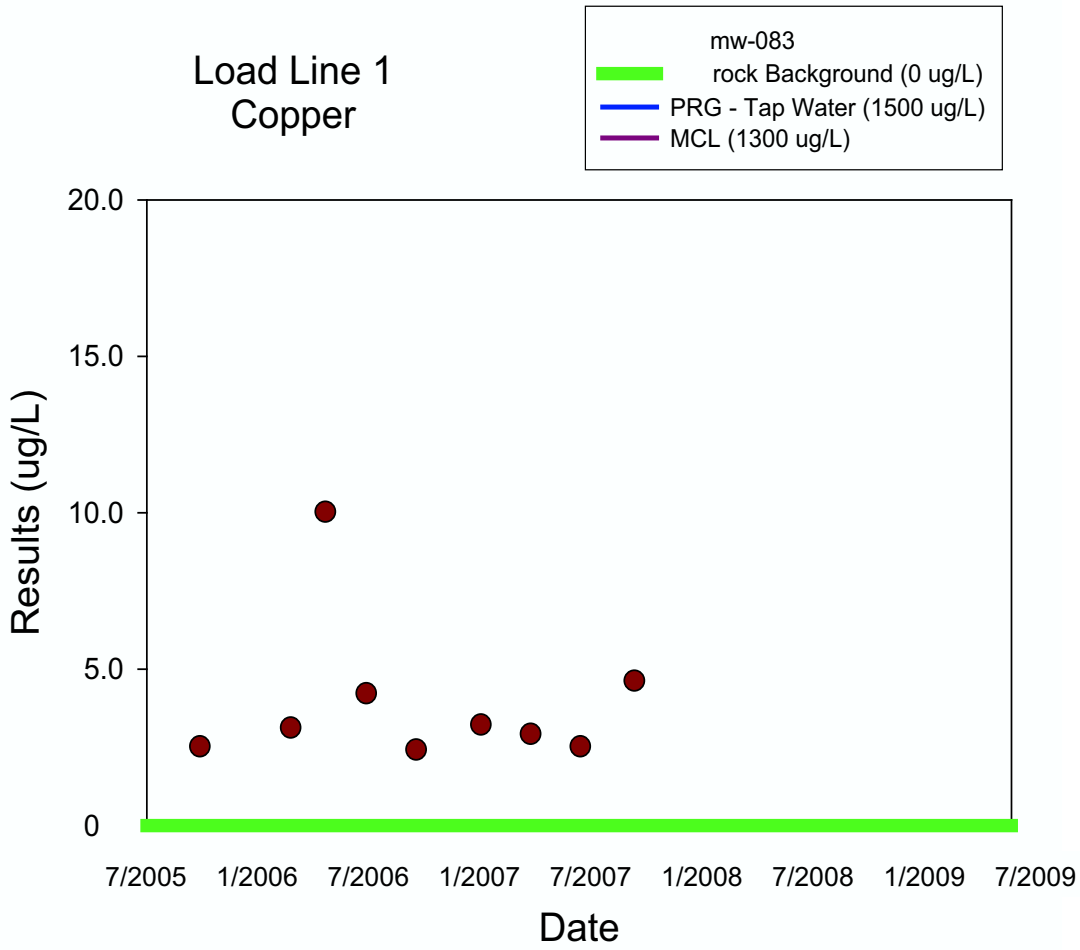

Load Line 1
Beryllium
mw-083
drock Background (0 ug/L)
PRG - Tap Water (73 ug/L)
MCL (4 ug/L)
Results (ug/L)
80.0
60.0
40.0
20.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

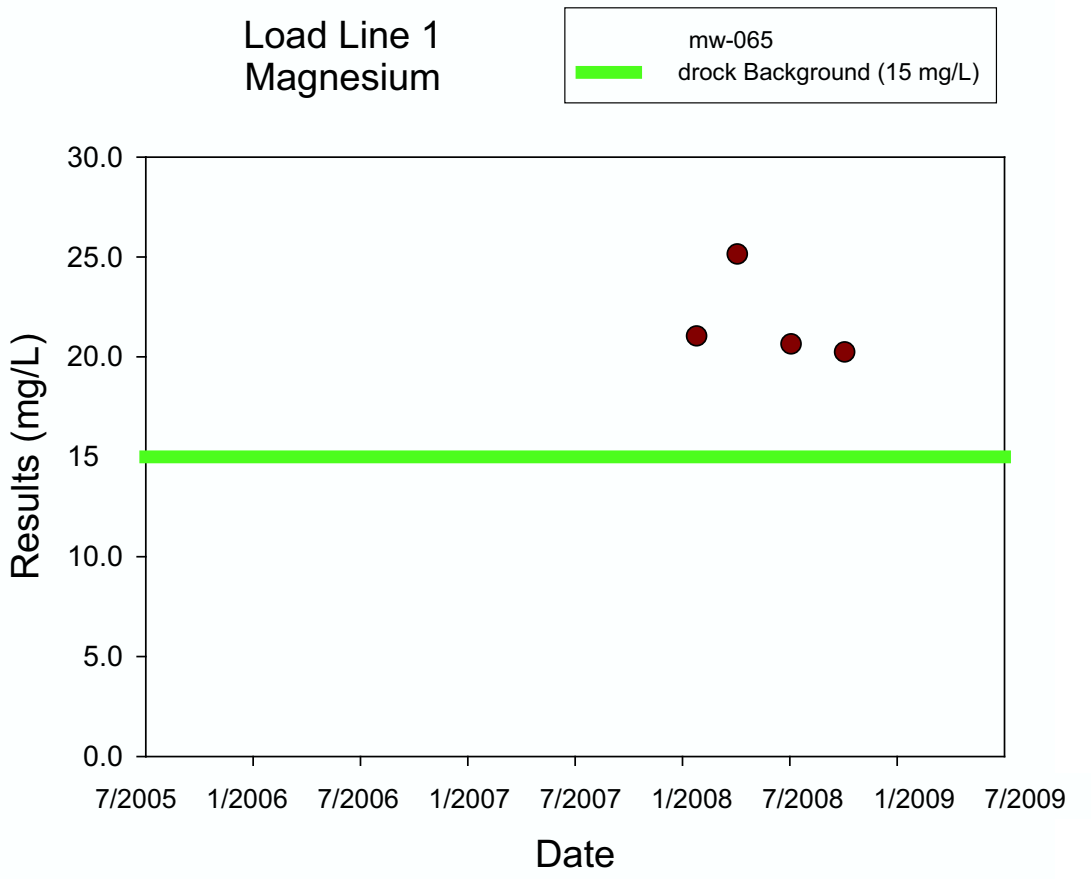

Load Line 1
Cadmium
LL1mw-079
mw-083
drock Background (0 ug/L)
PRG - Tap Water (18 ug/L)
MCL (5 ug/L)
Results (ug/L)
10.0
8.0
6.0
4.0
2.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

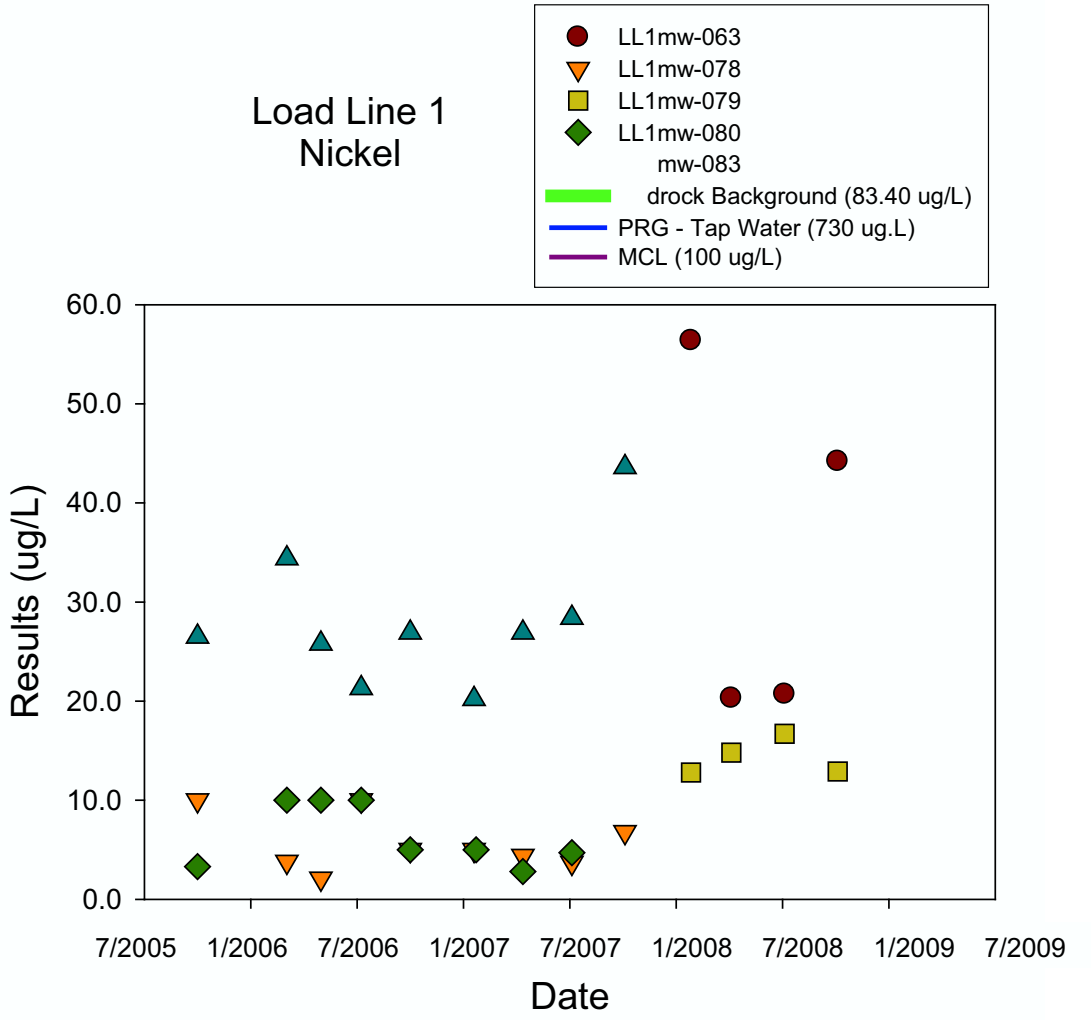

Load Line 1
Calcium
LL1mw-064
LL1mw-065
mw-080
drock Background (53.1 mg/L)
120.0
100.0
80.0
60
40.0
20.0
0.0
Results (mg/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

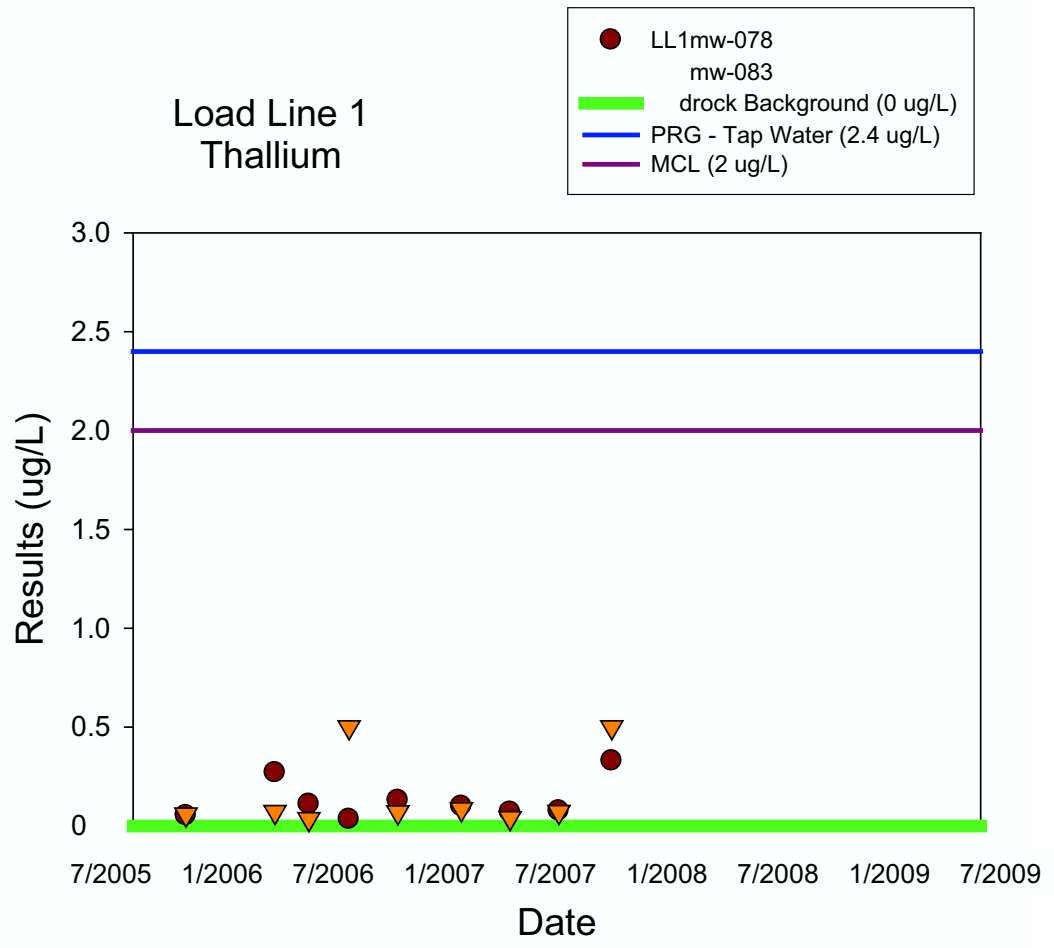

Load Line 1
Cobalt
LL1mw-063
LL1mw-078
mw-083
drock Background (0 ug/L)
PRG - Tap Water (730 ug/L)
20.0
15.0
10.0
5.0
0
Results (ug/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

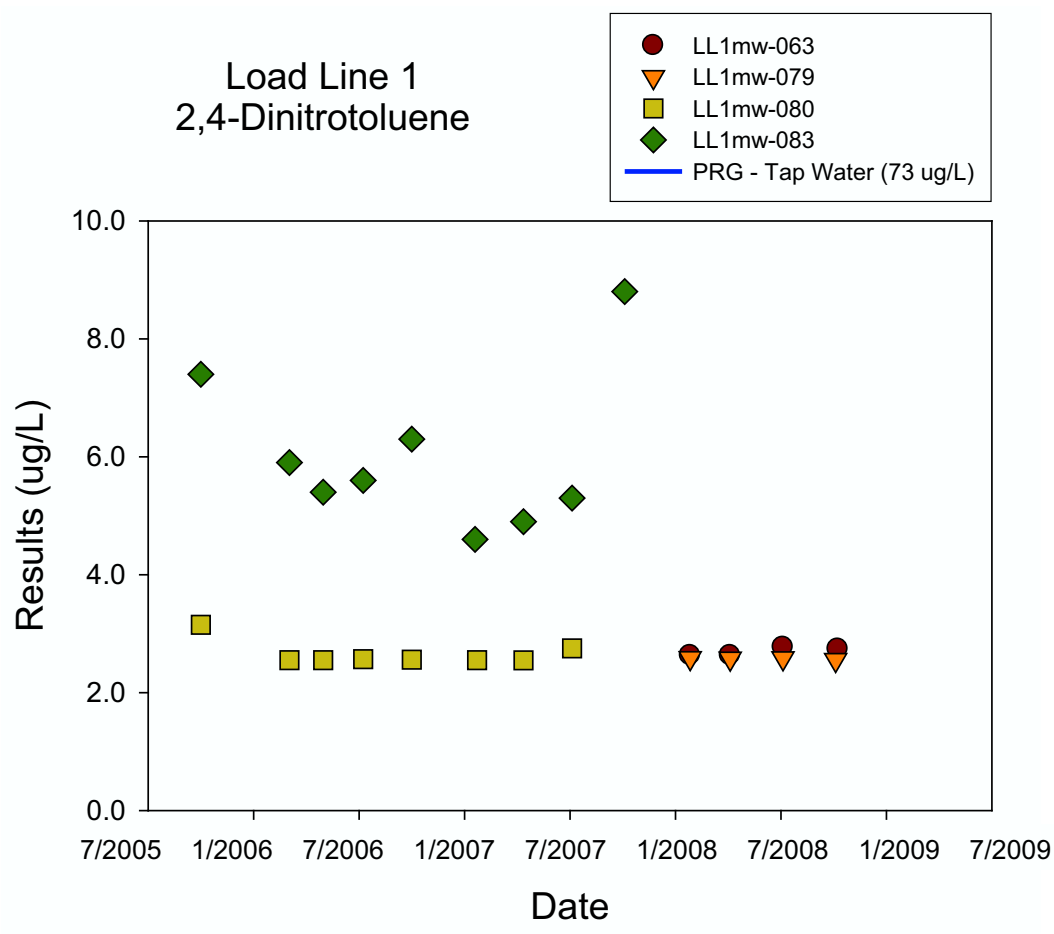

Load Line 1
Copper
mw-083
drock Background (0 ug/L)
PRG - Tap Water (1500 ug/L)
MCL (1300 ug/L)
20.0
15.0
10.0
5.0
0
Results (ug/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

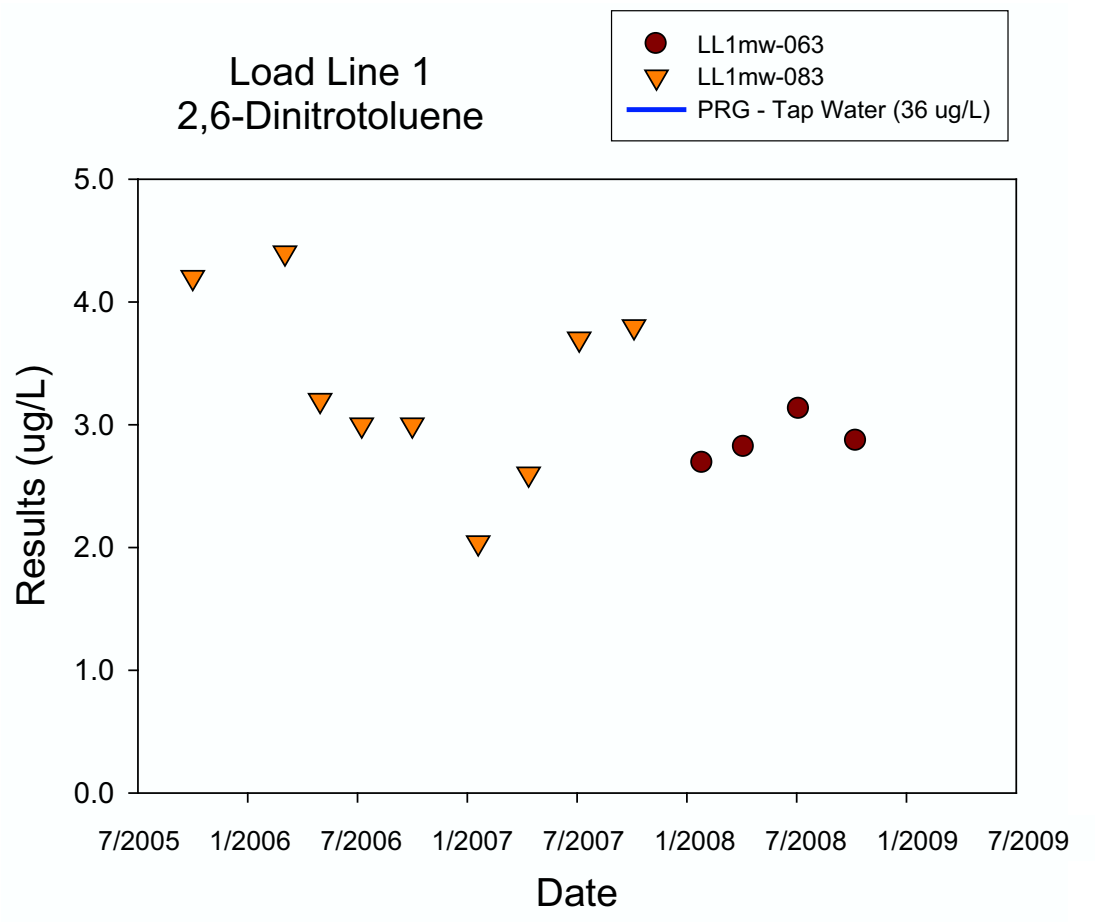

Load Line 1
Copper
mw-083
rock Background (0 ug/L)
PRG - Tap Water (1500 ug/L)
MCL (1300 ug/L)
20.0
15.0
10.0
5.0
0
Results (ug/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

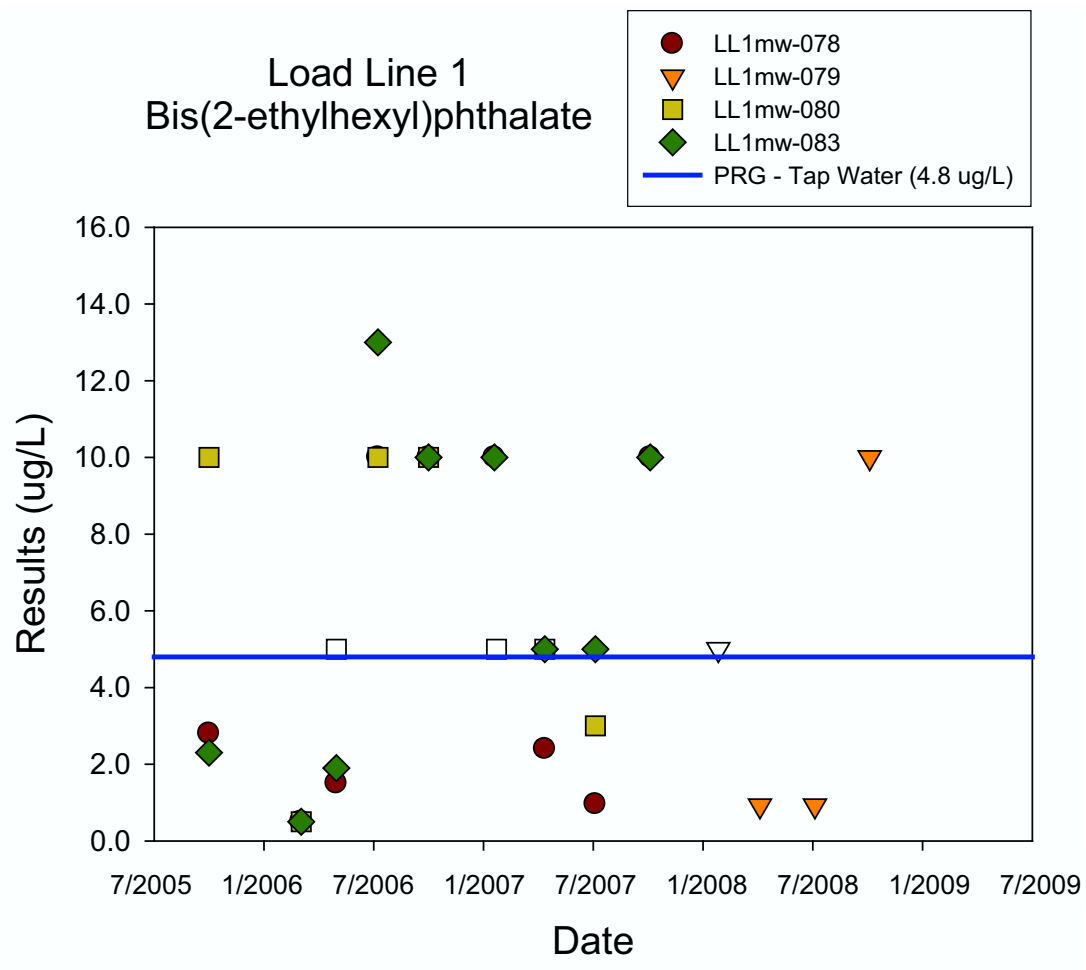

Load Line 1
Magnesium
mw-065
drock Background (15 mg/L)
Results (mg/L)
30.0
25.0
20.0
15
10.0
5.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

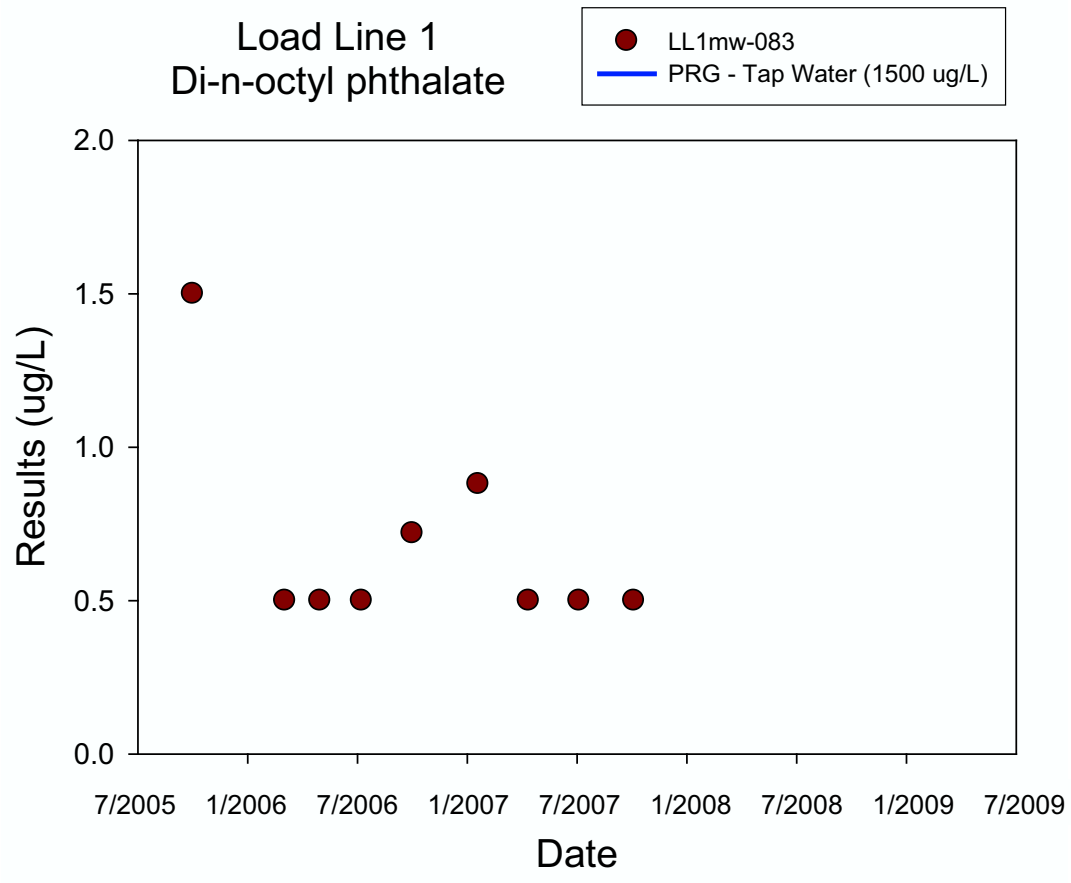

Load Line 1
Nickel
LL1mw-063
LL1mw-078
LL1mw-079
LL1mw-080
mw-083
drock Background (83.40 ug/L)
PRG - Tap Water (730 ug.L)
MCL (100 ug/L)
Results (ug/L)
60.0
50.0
40.0
30.0
20.0
10.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

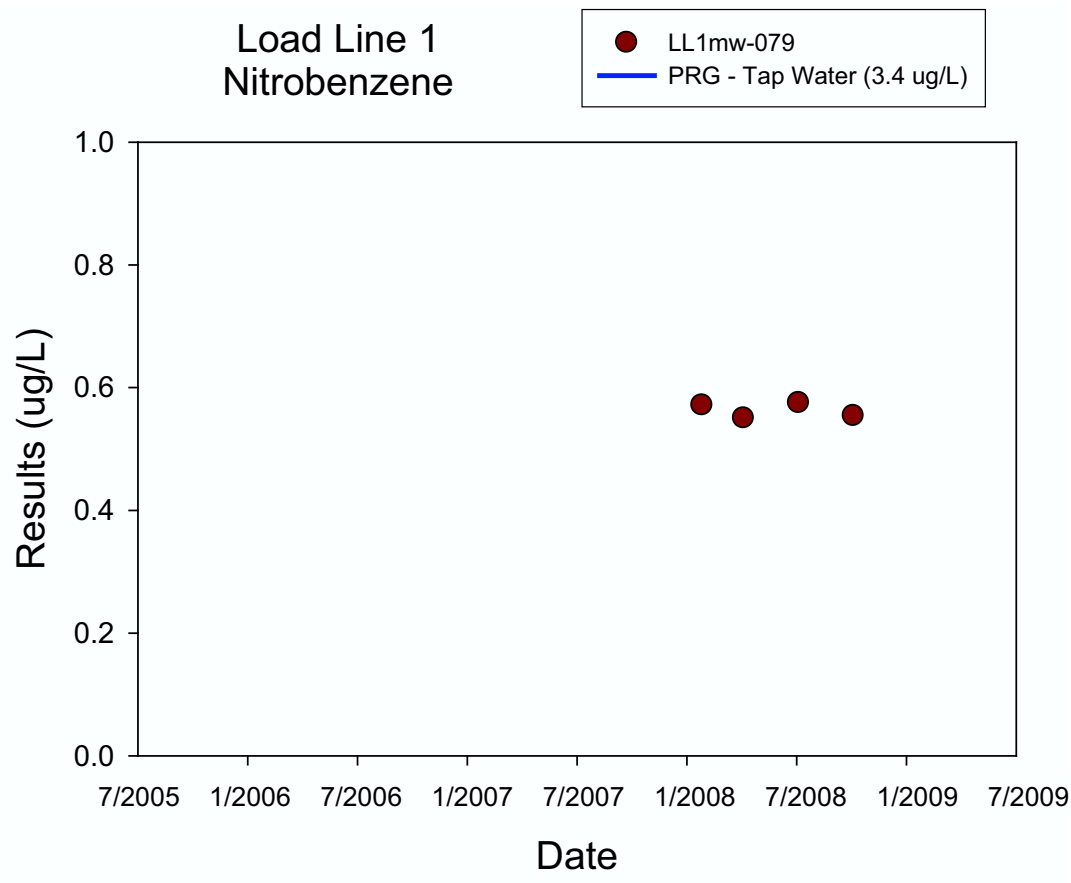

Load Line 1
Thallium
LL1mw-078
mw-083
drock Background (0 ug/L)
PRG - Tap Water (2.4 ug/L)
MCL (2 ug/L)
Results (ug/L)
3.0
2.5
2.0
1.5
1.0
0.5
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

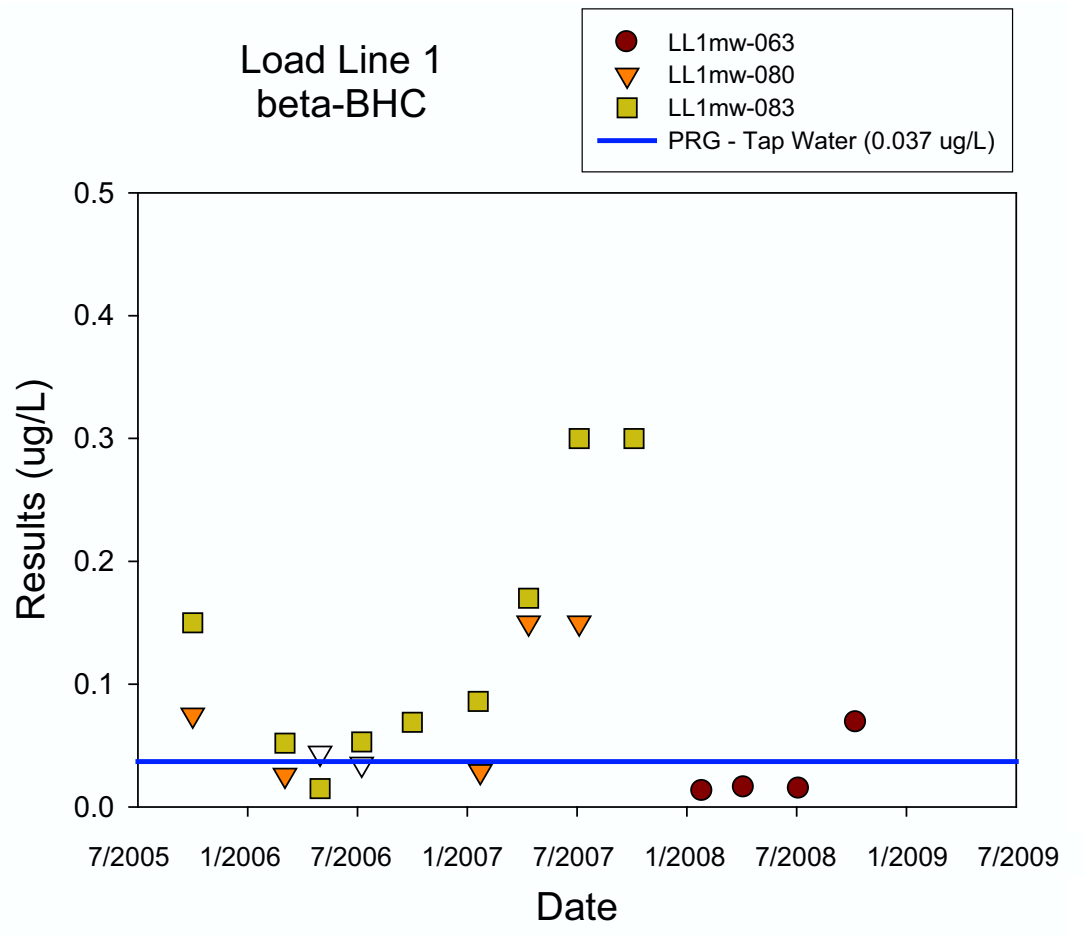

Load Line 1
2,4-Dinitrotoluene
LL1mw-063
LL1mw-079
LL1mw-080
LL1mw-083
PRG - Tap Water (73 ug/L)
Results (ug/L)
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

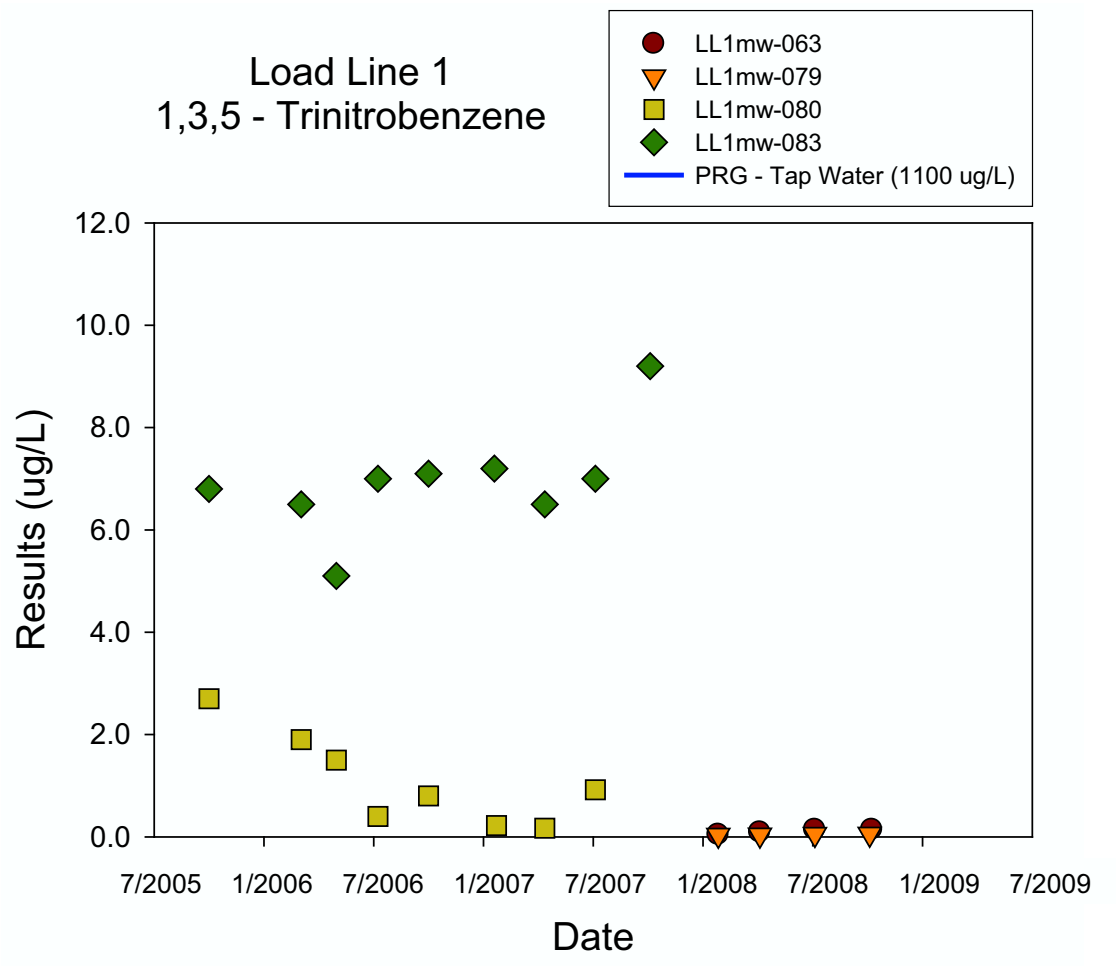

Load Line 1
2,6-Dinitrotoluene
LL1mw-063
LL1mw-083
PRG - Tap Water (36 ug/L)
Results (ug/L)
5.0
4.0
3.0
2.0
1.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

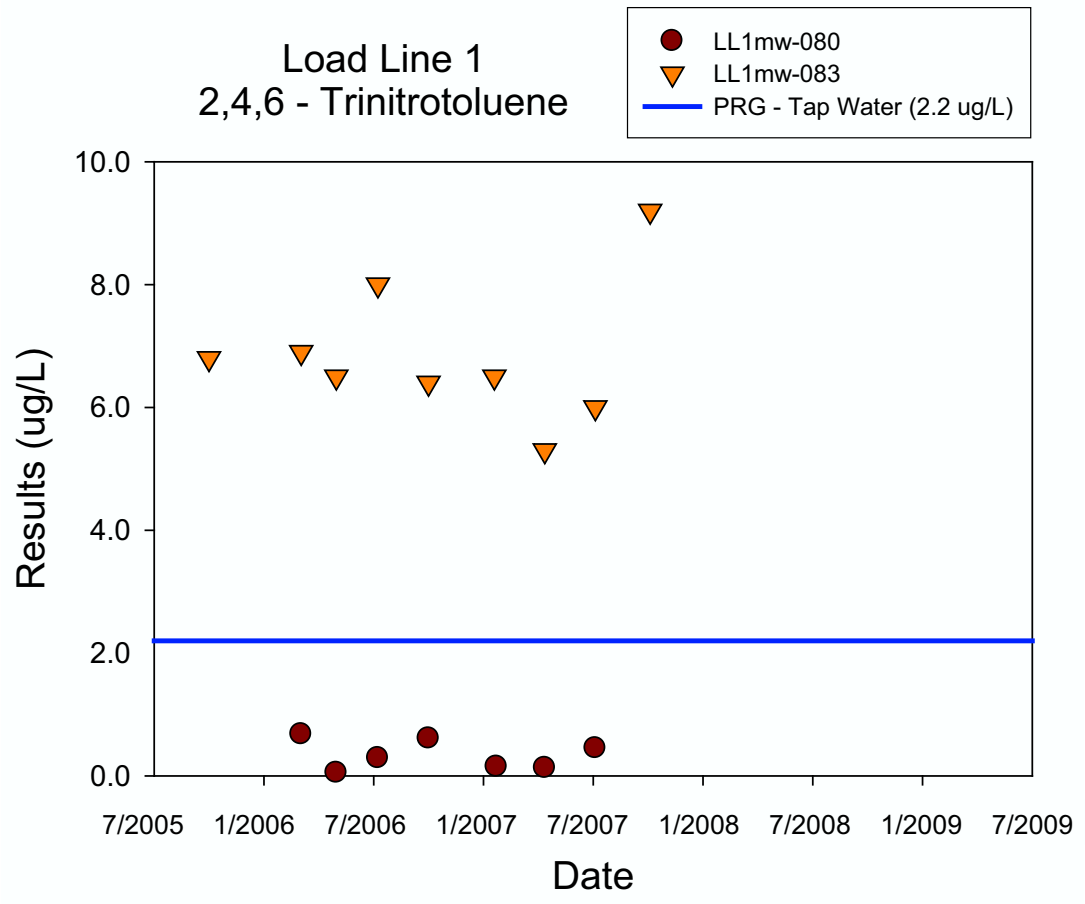

Load Line 1
Bis(2-ethylhexyl)phthalate
LL1mw-078
LL1mw-079
LL1mw-080
LL1mw-083
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

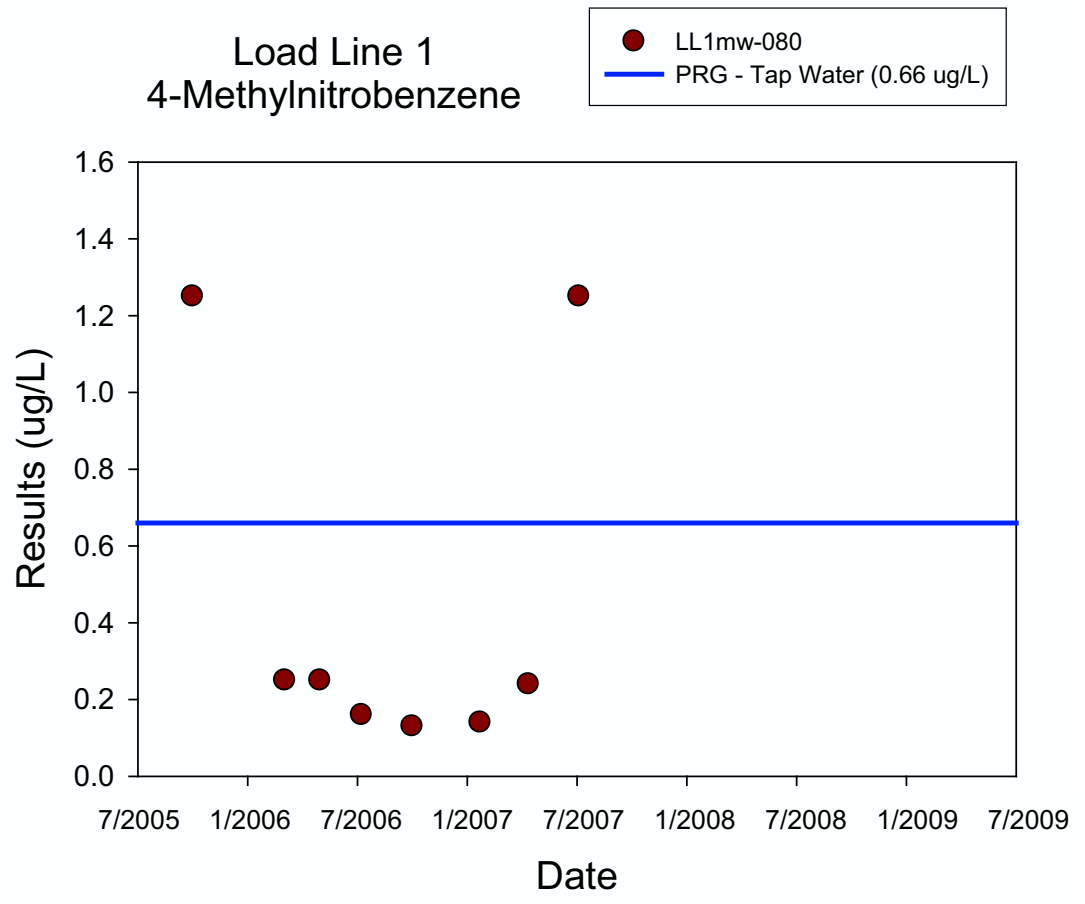

Load Line 1
Di-n-octyl phthalate
LL1mw-083
PRG - Tap Water (1500 ug/L)
Results (ug/L)
2.0
1.5
1.0
0.5
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

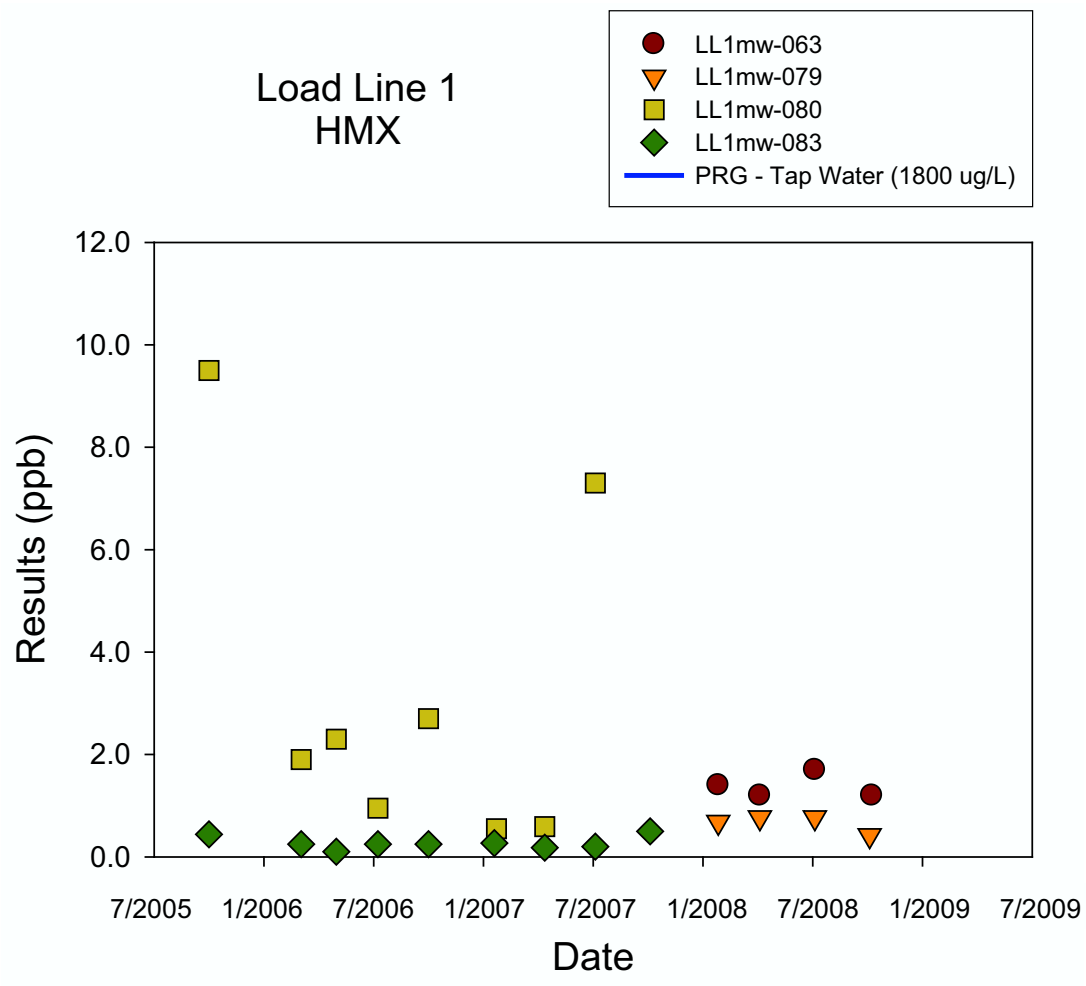

Load Line 1
Nitrobenzene
LL1mw-079
PRG - Tap Water (3.4 ug/L)
Results (ug/L)
1.0
0.8
0.6
0.4
0.2
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

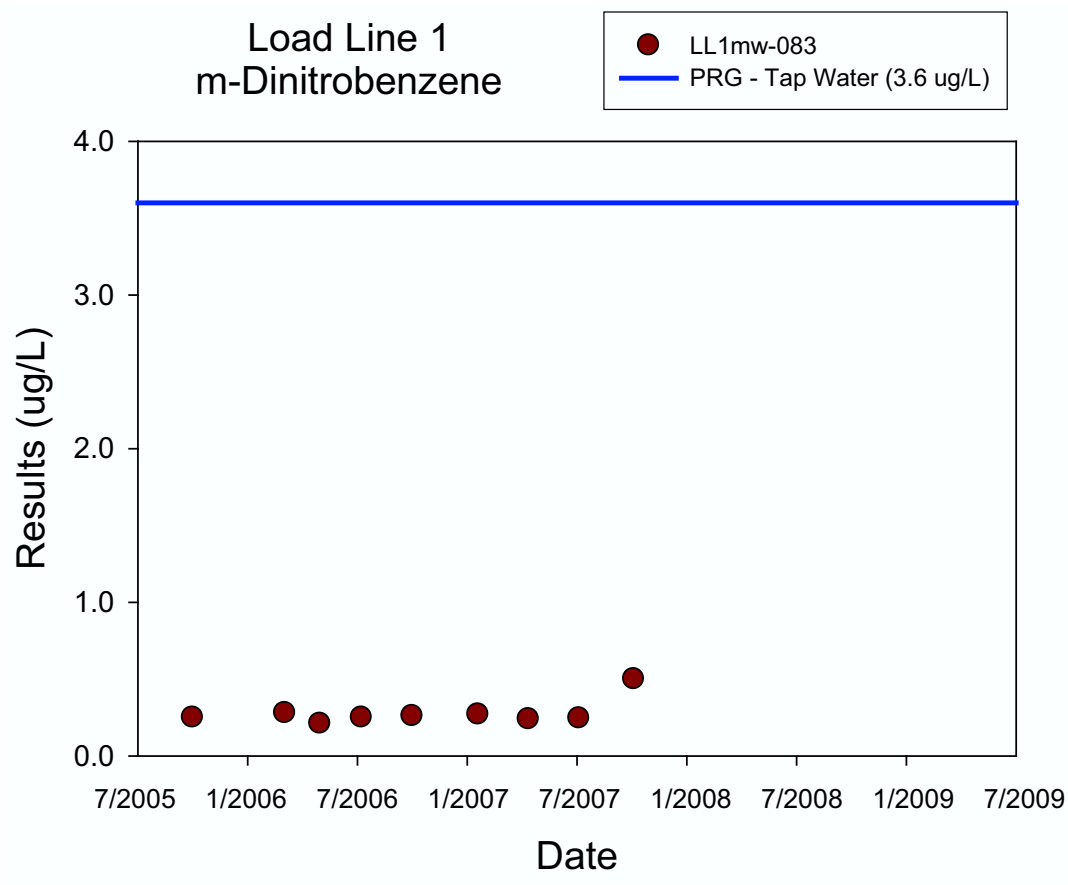

Load Line 1
beta-BHC
LL1mw-063
LL1mw-080
LL1mw-083
PRG - Tap Water (0.037 ug/L)
Results (ug/L)
0.5
0.4
0.3
0.2
0.1
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

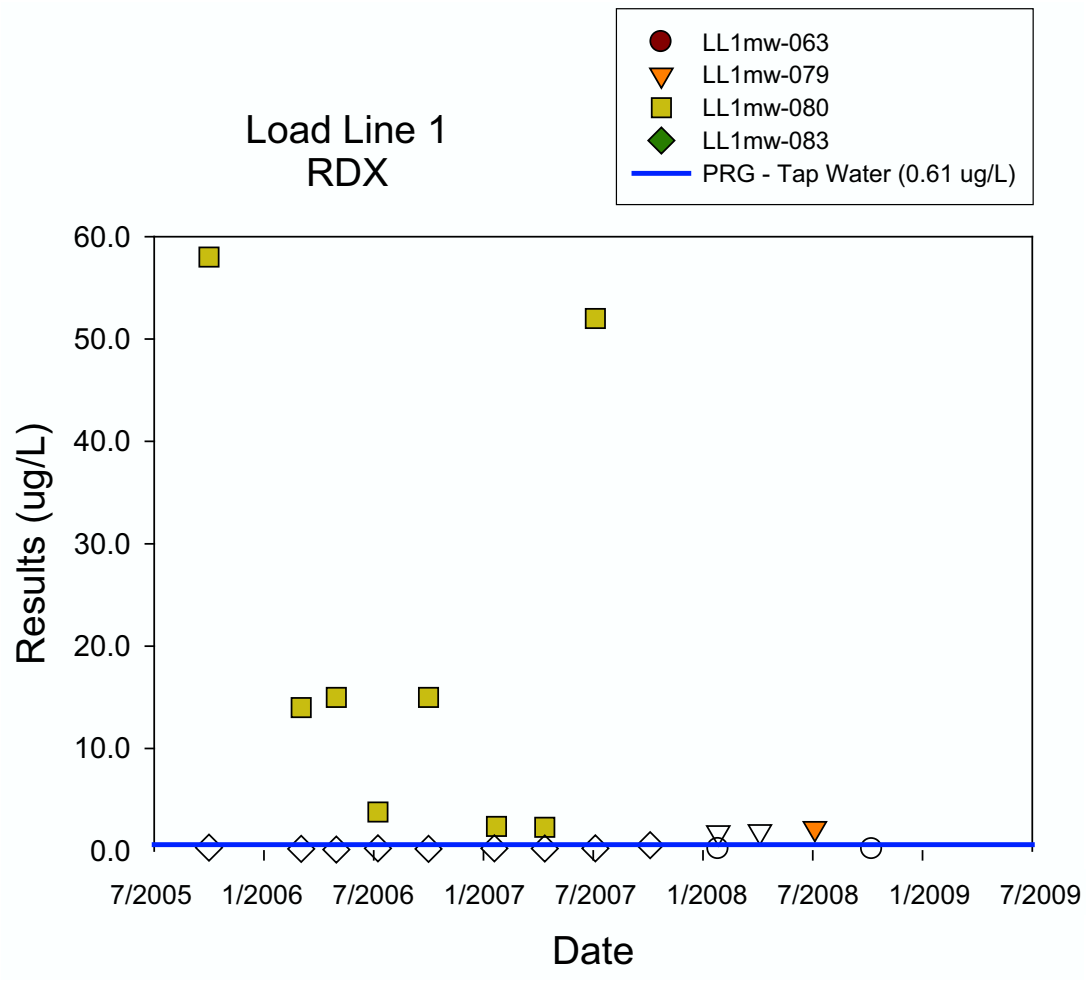

Load Line 1
1,3,5 - Trinitrobenzene
LL1mw-063
LL1mw-079
LL1mw-080
LL1mw-083
PRG - Tap Water (1100 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

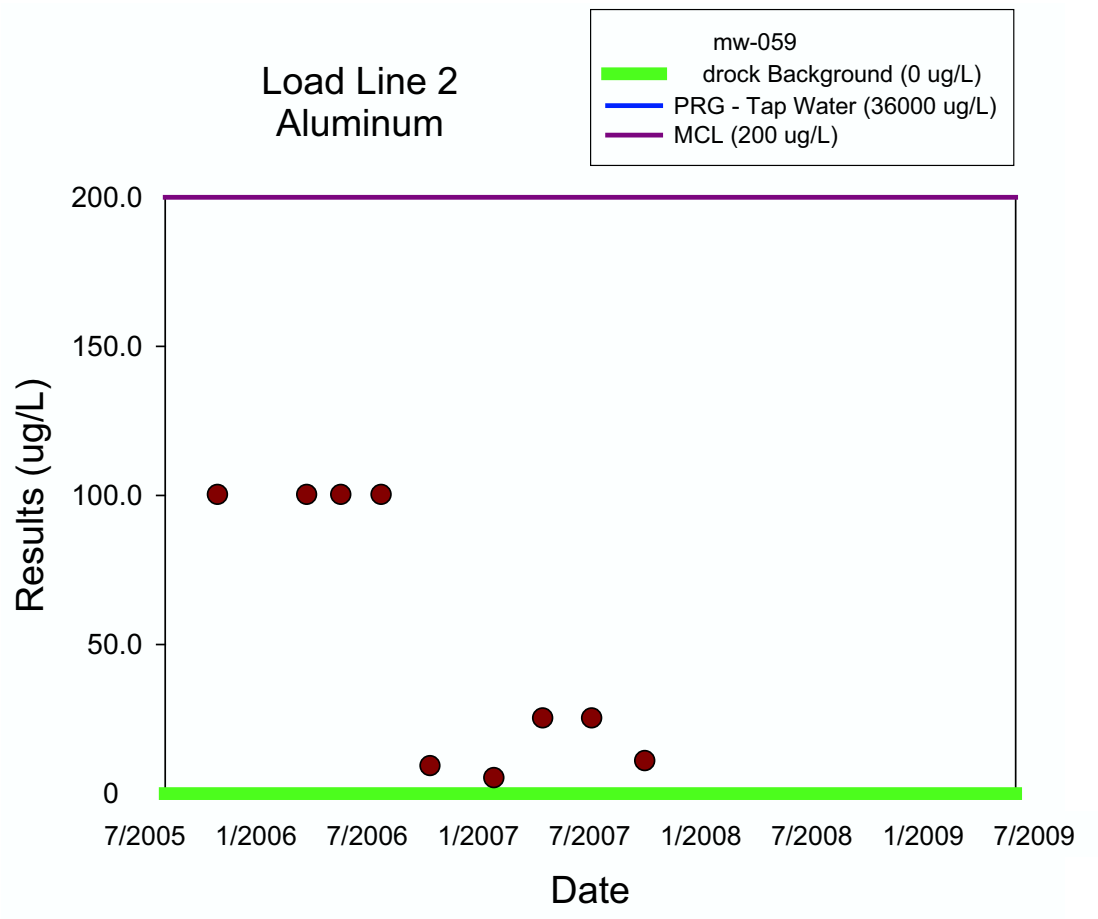

Load Line 1
2,4,6 - Trinitrotoluene
LL1mw-080
LL1mw-083
PRG - Tap Water (2.2 ug/L)
Results (ug/L)
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

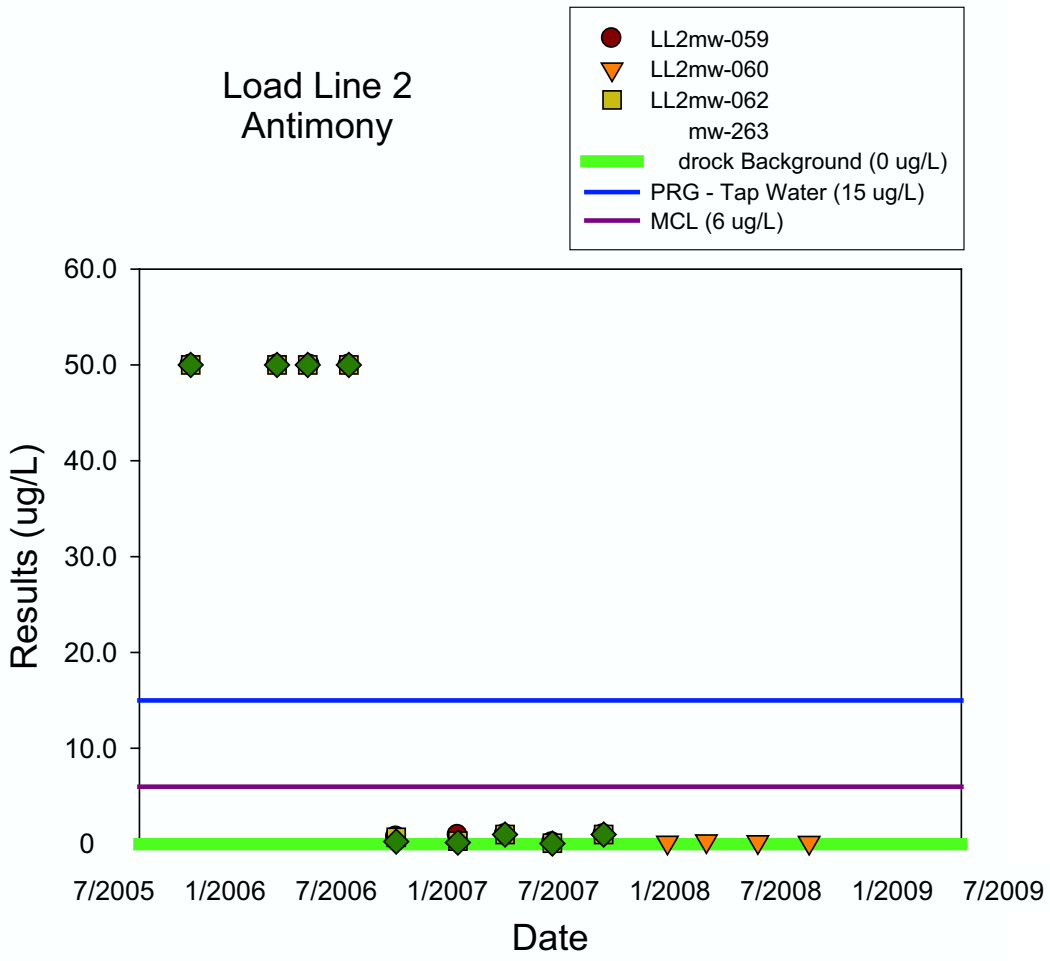

Load Line 1
4-Methylnitrobenzene
LL1mw-080
PRG - Tap Water (0.66 ug/L)
Results (ug/L)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

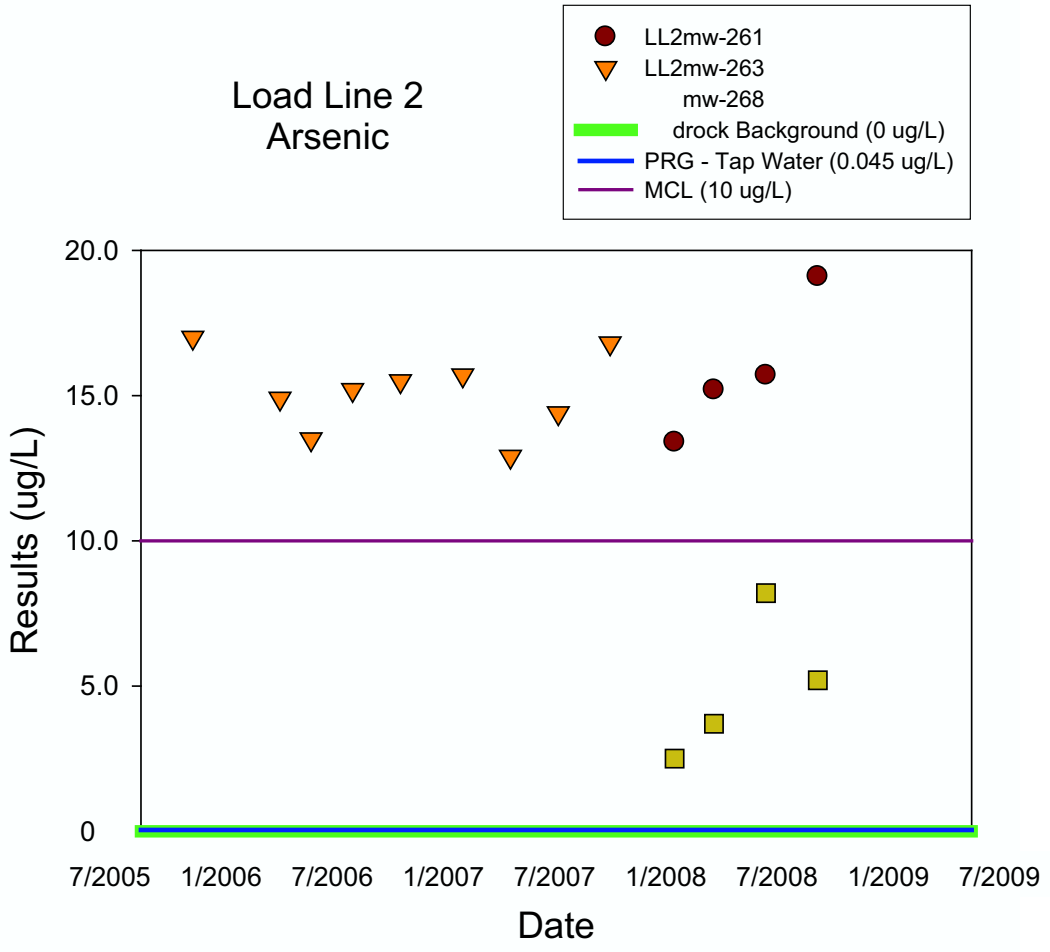

Load Line 1
HMX
LL1mw-063
LL1mw-079
LL1mw-080
LL1mw-083
PRG - Tap Water (1800 ug/L)
Results (ppb)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

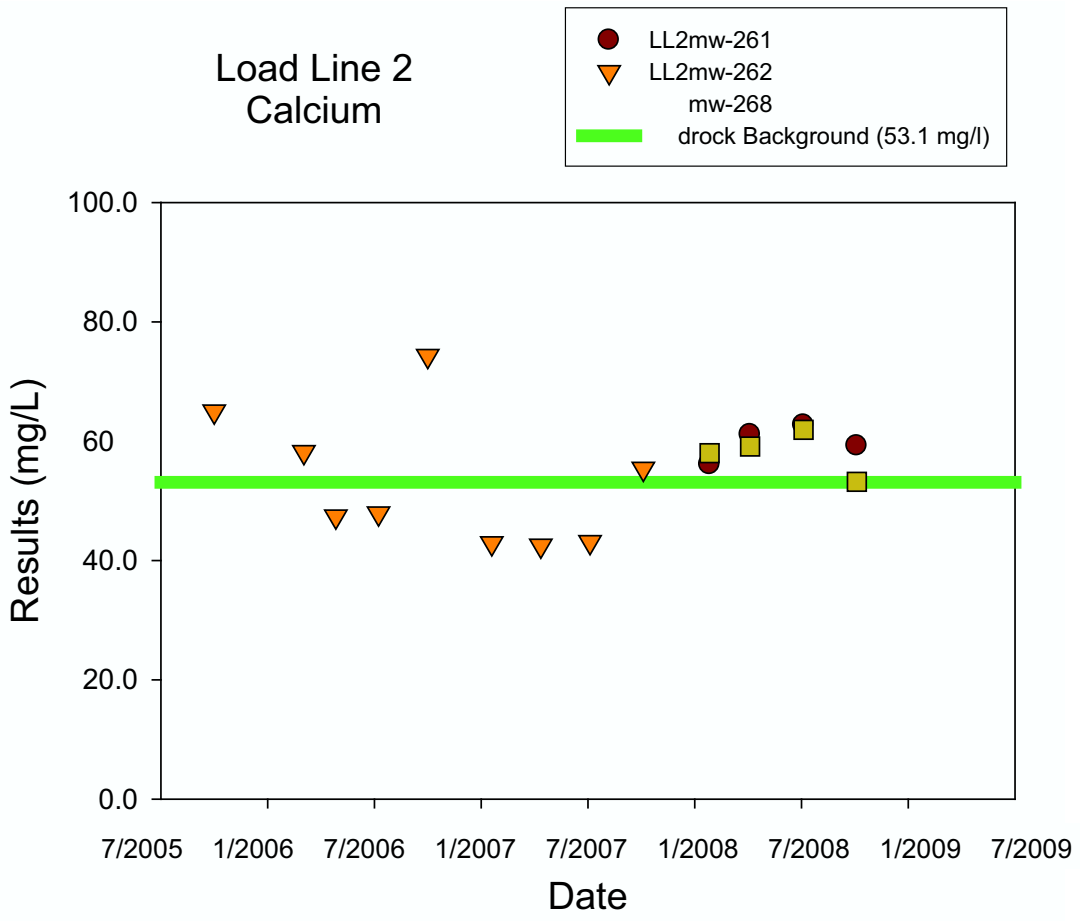

Load Line 1
m-Dinitrobenzene
LL1mw-083
PRG - Tap Water (3.6 ug/L)
Results (ug/L)
4.0
3.0
2.0
1.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

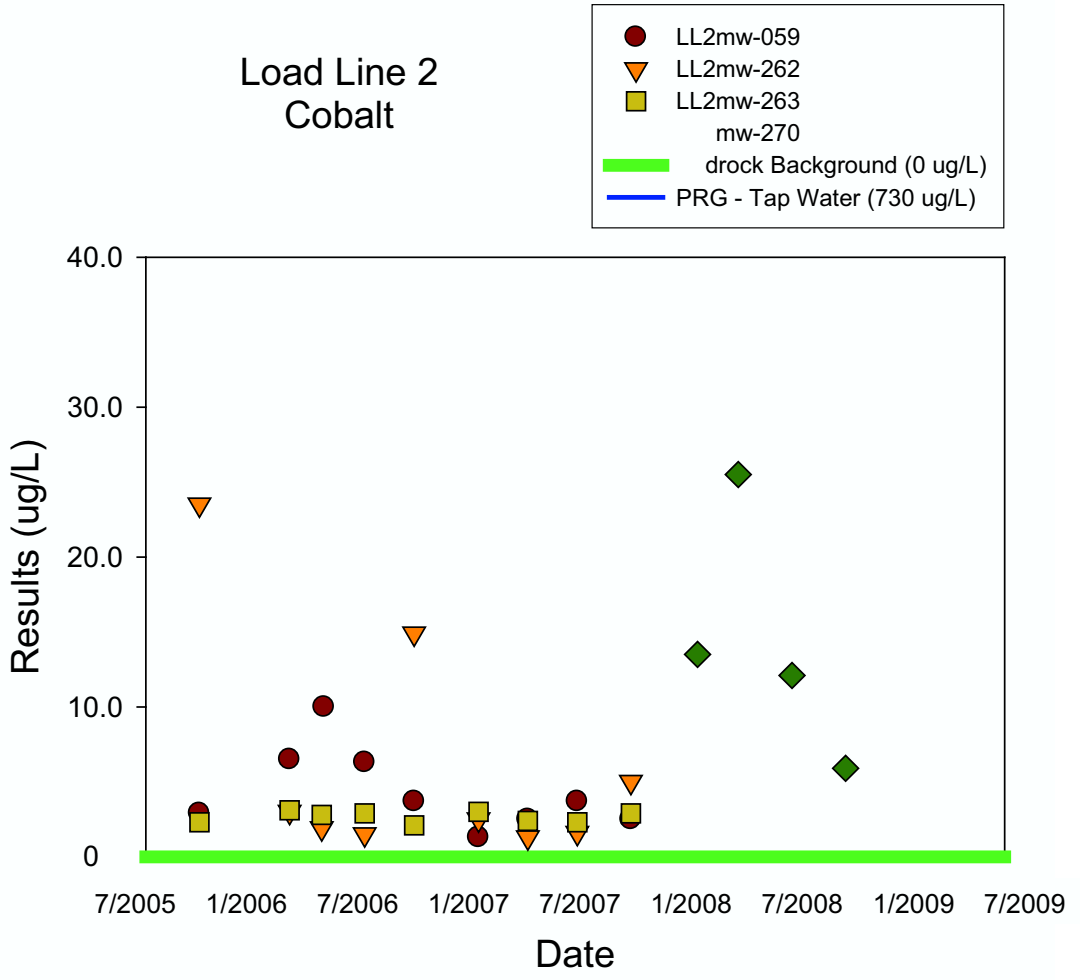

Load Line 1
RDX
LL1mw-063
LL1mw-079
LL1mw-080
LL1mw-083
PRG - Tap Water (0.61 ug/L)
Results (ug/L)
60.0
50.0
40.0
30.0
20.0
10.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

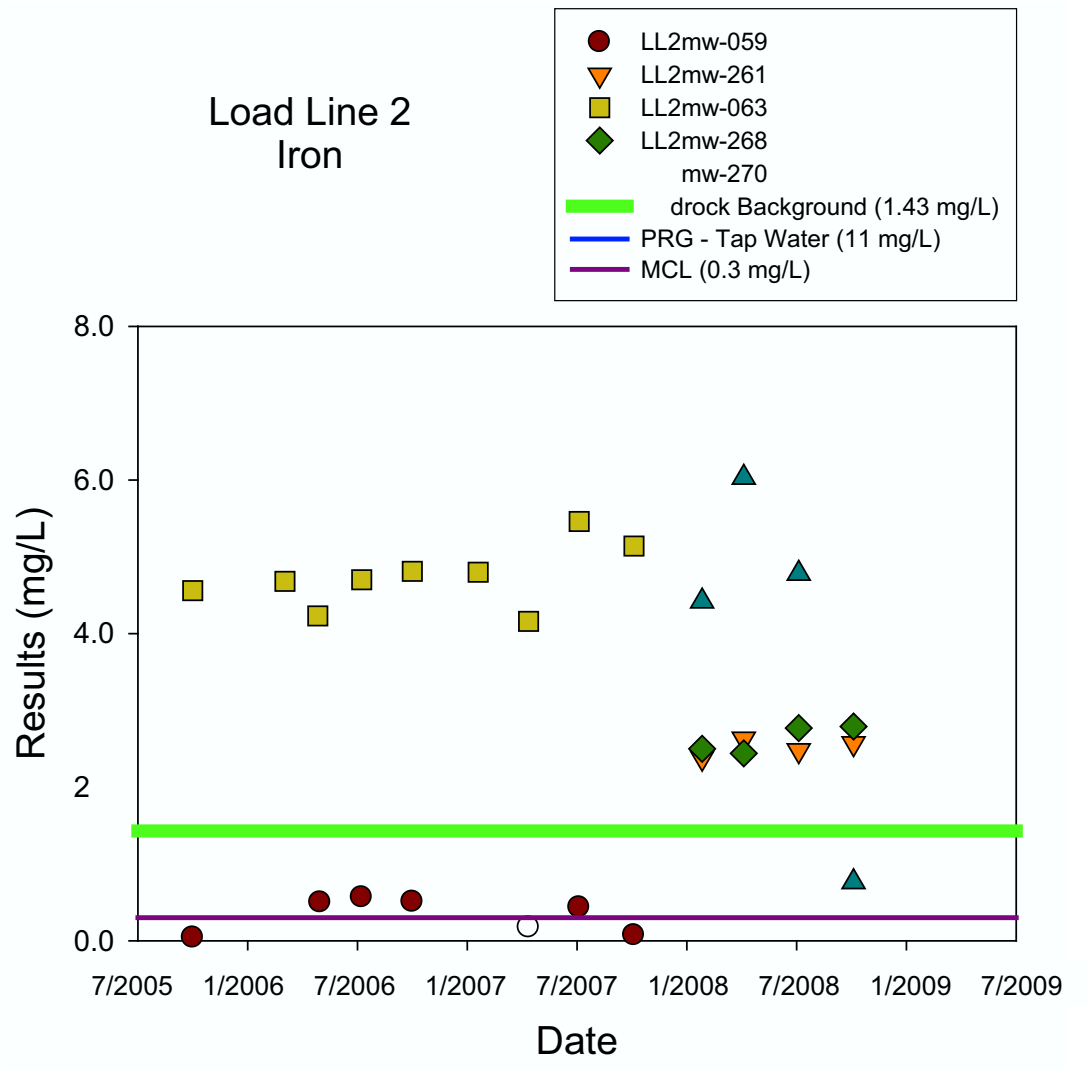

Load Line 2
Aluminum
mw-059
drock Background (0 ug/L)
PRG - Tap Water (36000 ug/L)
MCL (200 ug/L)
200.0
150.0
100.0
50.0
0
Results (ug/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

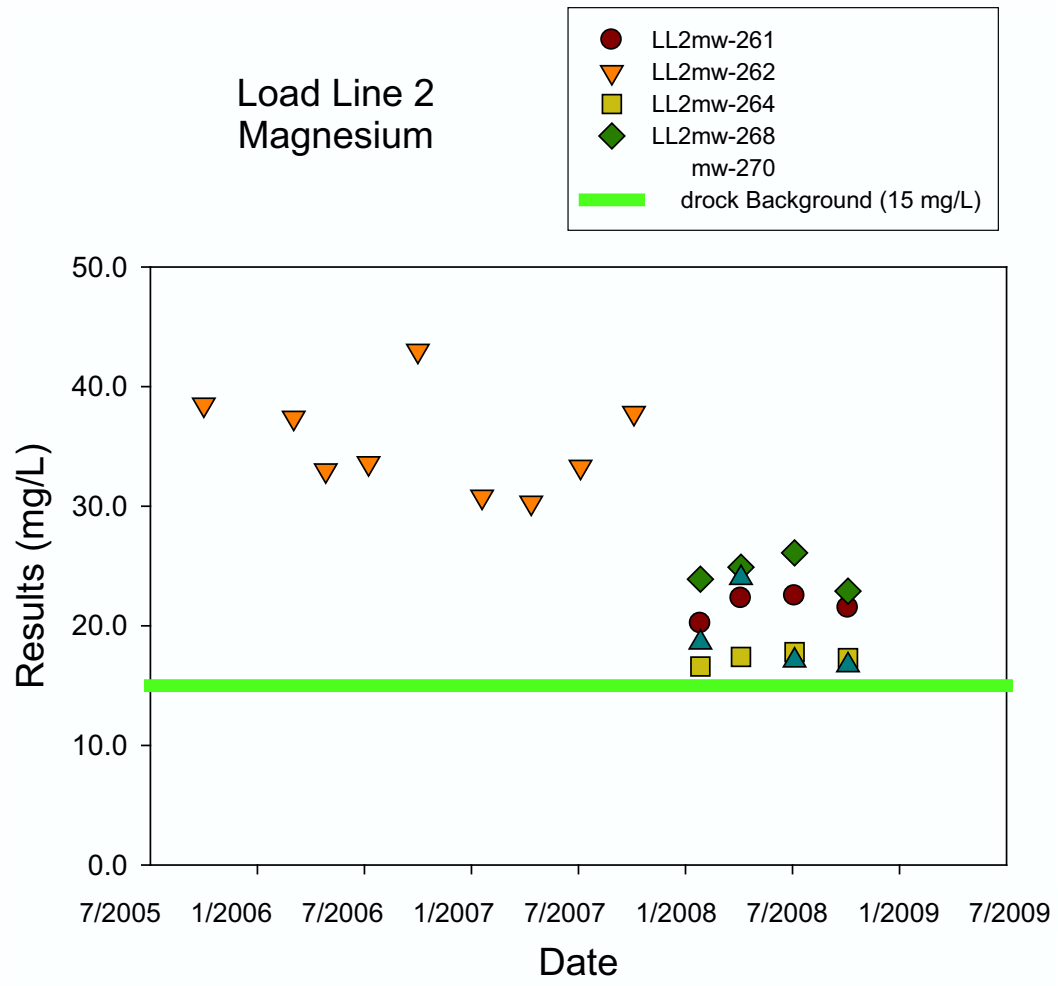

Load Line 2
Antimony
LL2mw-059
LL2mw-060
LL2mw-062
mw-263
drock Background (0 ug/L)
PRG - Tap Water (15 ug/L)
MCL (6 ug/L)
Results (ug/L)
60.0
50.0
40.0
30.0
20.0
10.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

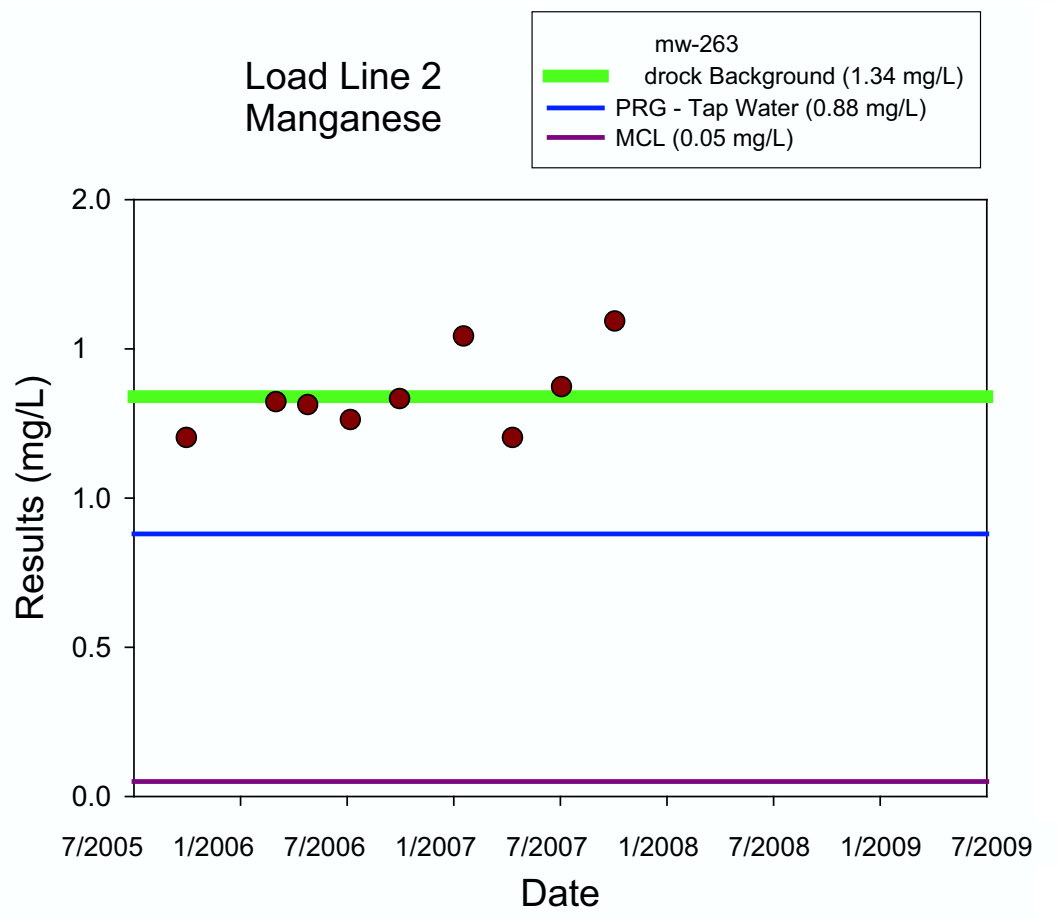

Load Line 2
Arsenic
LL2mw-261
LL2mw-263
mw-268
drock Background (0 ug/L)
PRG - Tap Water (0.045 ug/L)
MCL (10 ug/L)
Results (ug/L)
20.0
15.0
10.0
5.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

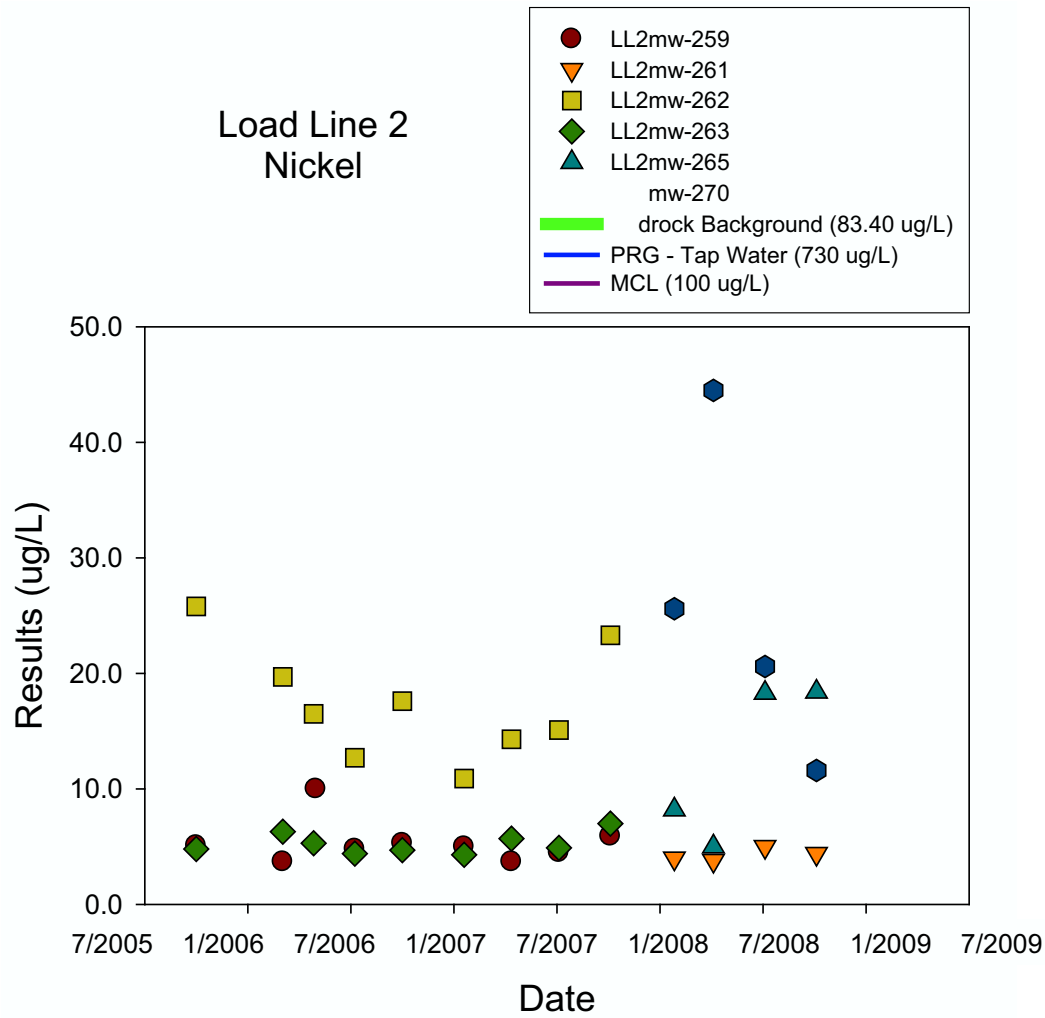

Load Line 2
Calcium
LL2mw-261
LL2mw-262
mw-268
drock Background (53.1 mg/l)
100.0
80.0
60
40.0
20.0
0.0
Results (mg/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

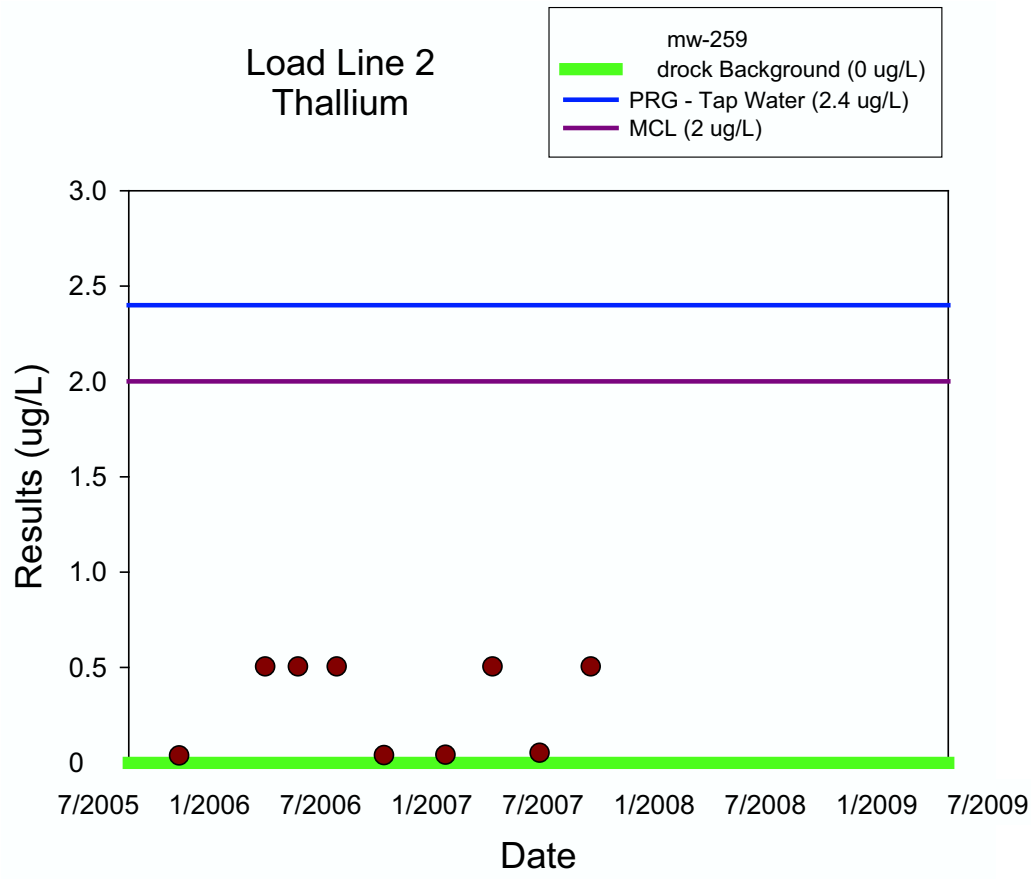

Load Line 2
Cobalt
LL2mw-059
LL2mw-262
LL2mw-263
mw-270
drock Background (0 ug/L)
PRG - Tap Water (730 ug/L)
40.0
30.0
20.0
10.0
0
Results (ug/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

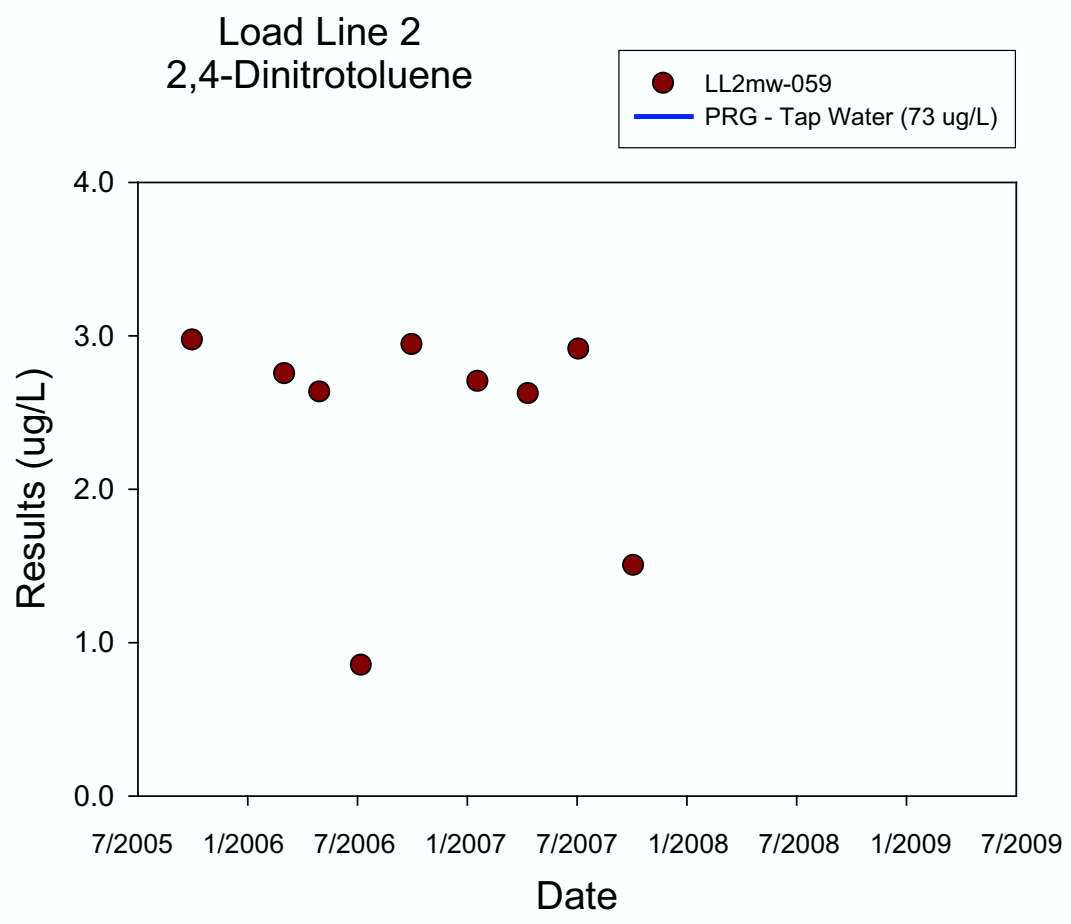

Load Line 2
Iron
LL2mw-059
LL2mw-261
LL2mw-063
LL2mw-268
mw-270
drock Background (1.43 mg/L)
PRG - Tap Water (11 mg/L)
MCL (0.3 mg/L)
Results (mg/L)
8.0
6.0
4.0
2
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

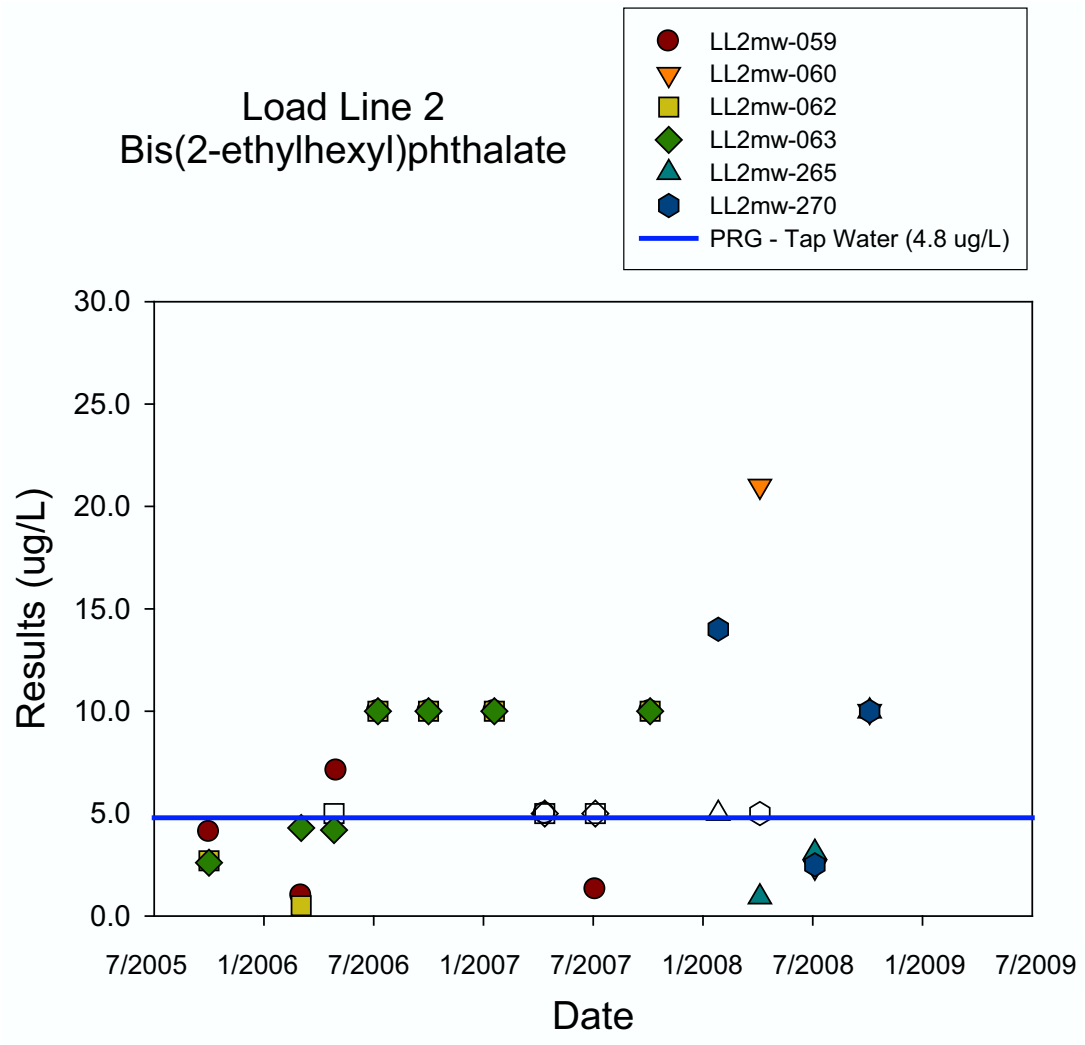

Load Line 2
Magnesium
LL2mw-261
LL2mw-262
LL2mw-264
LL2mw-268
mw-270
drock Background (15 mg/L)
Results (mg/L)
50.0
40.0
30.0
20.0
10.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

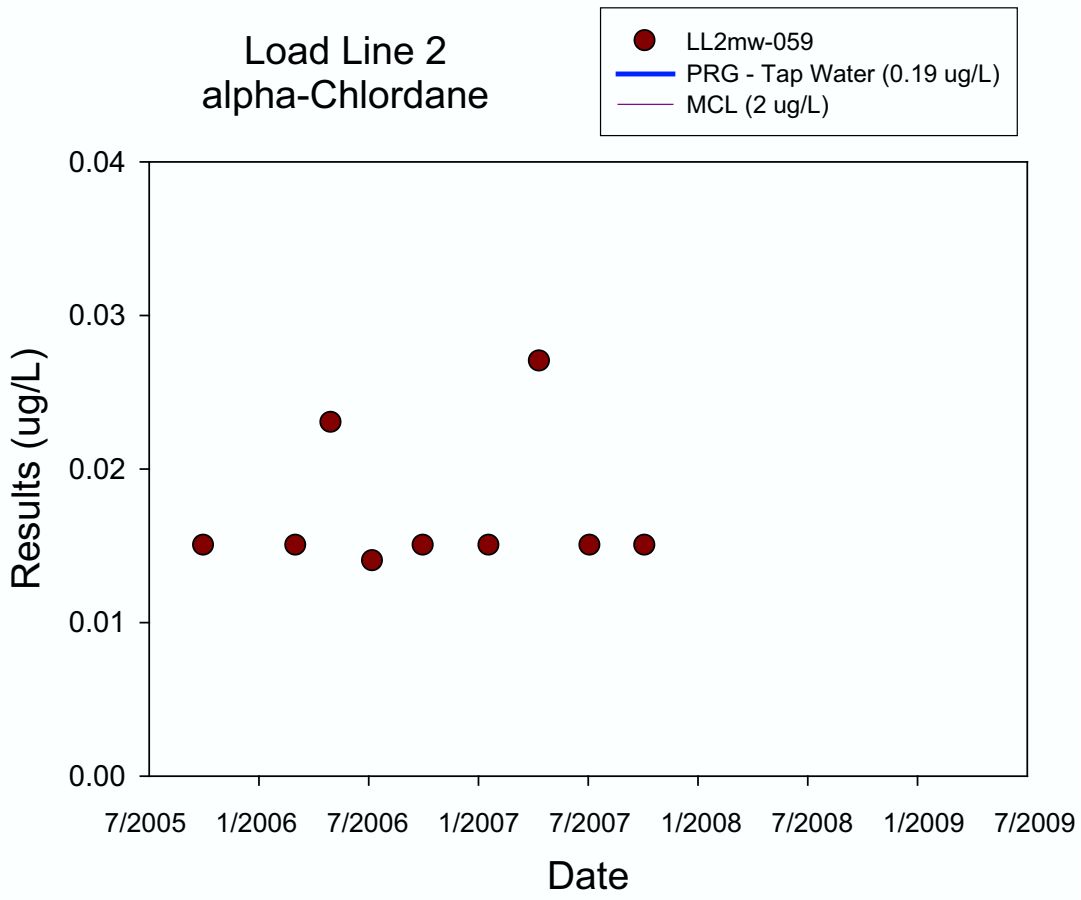

Load Line 2
Manganese
mw-263
drock Background (1.34 mg/L)
PRG - Tap Water (0.88 mg/L)
MCL (0.05 mg/L)
Results (mg/L)
2.0
1
1.0
0.5
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

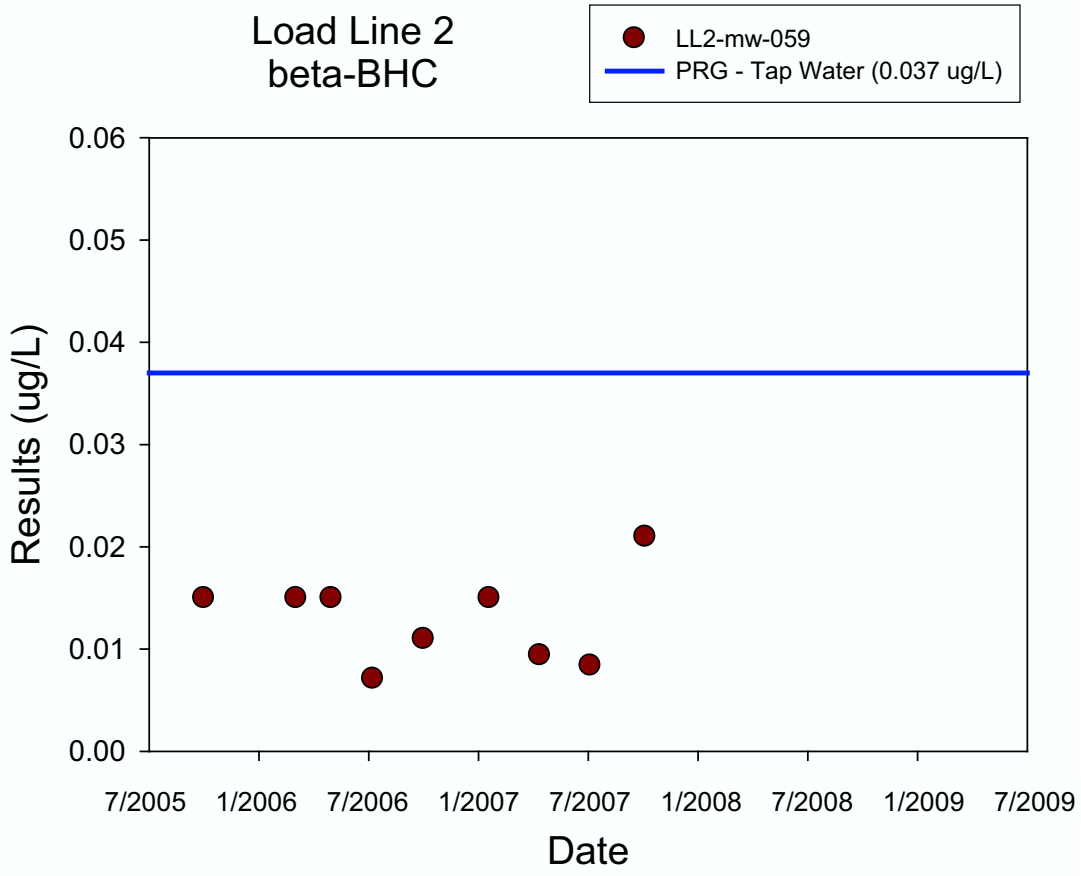

Load Line 2
Nickel
LL2mw-259
LL2mw-261
LL2mw-262
LL2mw-263
LL2mw-265
mw-270
drock Background (83.40 ug/L)
PRG - Tap Water (730 ug/L)
MCL (100 ug/L)
Results (ug/L)
50.0
40.0
30.0
20.0
10.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

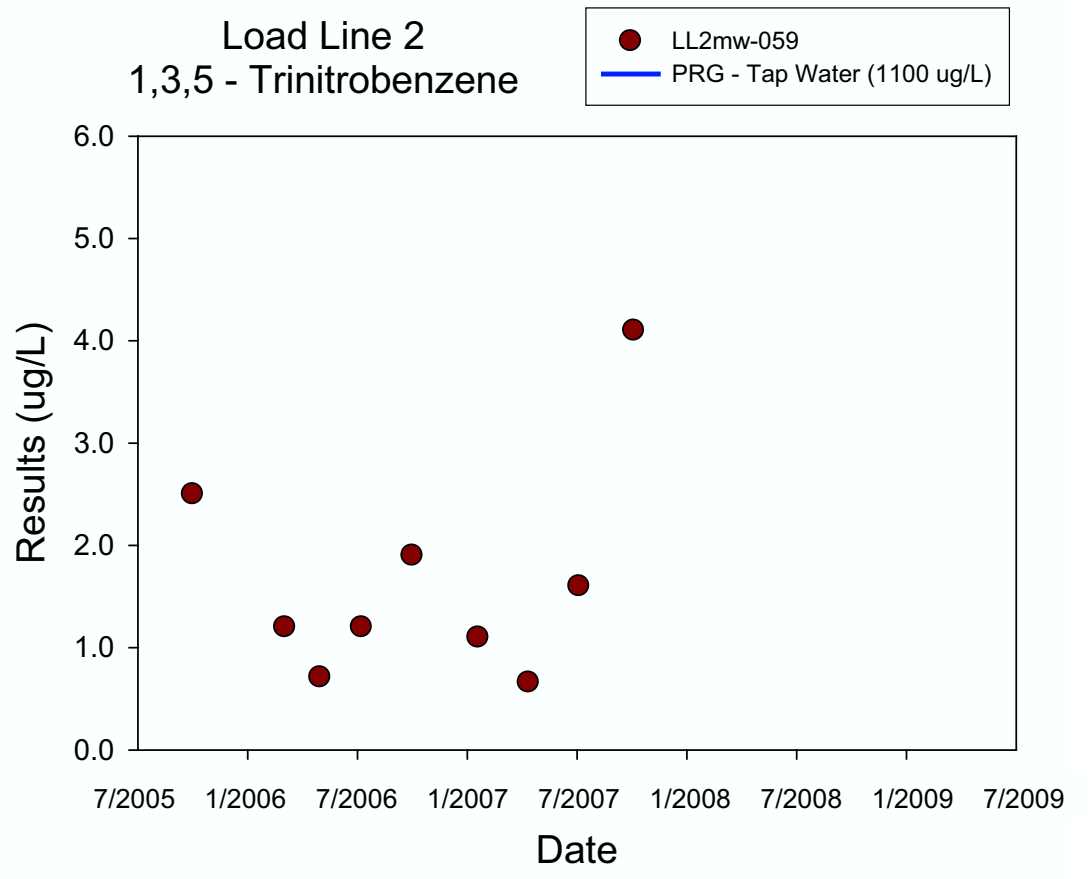

Load Line 2
Thallium
mw-259
drock Background (0 ug/L)
PRG - Tap Water (2.4 ug/L)
MCL (2 ug/L)
Results (ug/L)
3.0
2.5
2.0
1.5
1.0
0.5
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

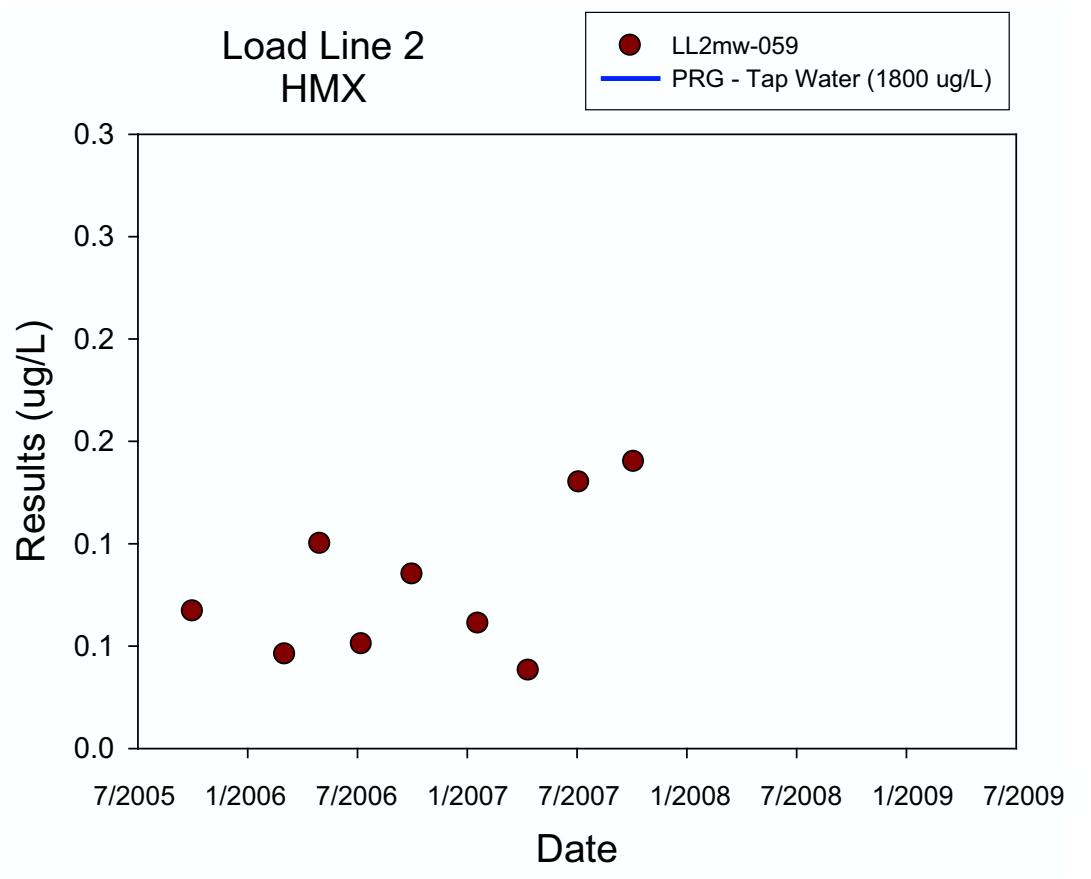

Load Line 2
2,4-Dinitrotoluene
LL2mw-059
PRG - Tap Water (73 ug/L)
Results (ug/L)
4.0
3.0
2.0
1.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

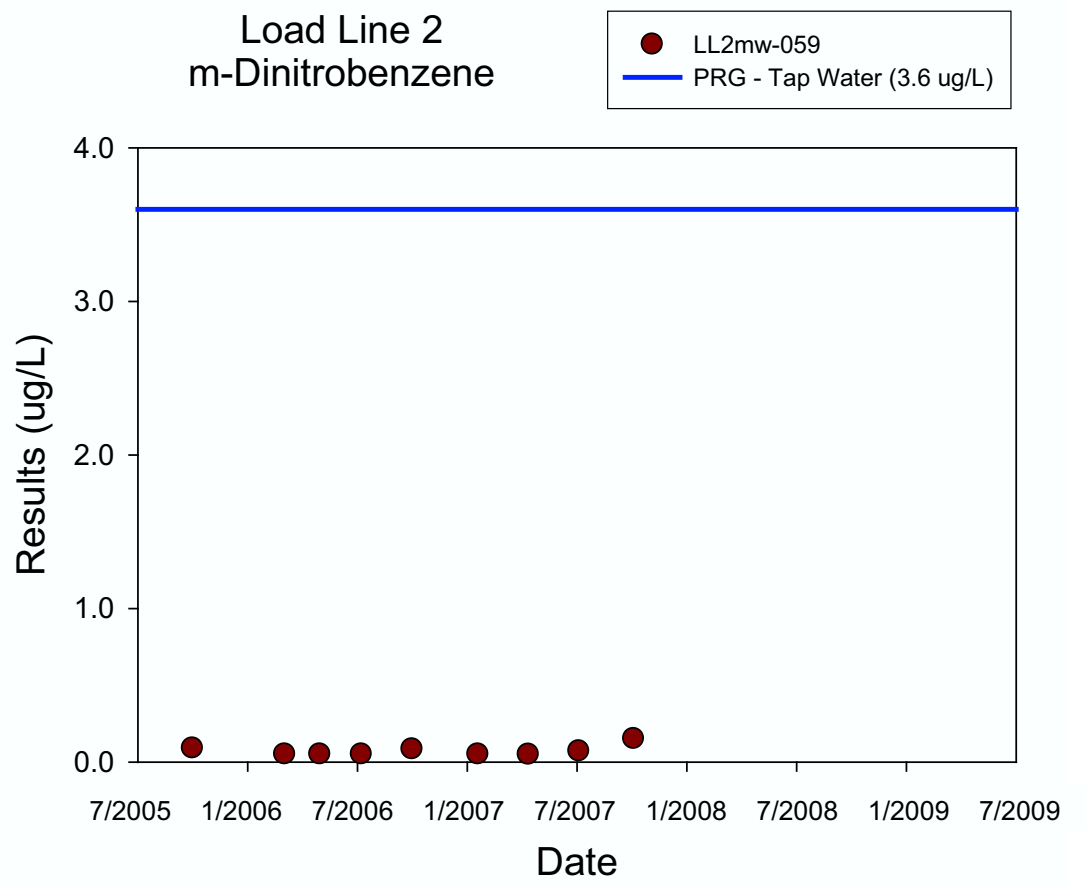

Load Line 2
Bis(2-ethylhexyl)phthalate
LL2mw-059
LL2mw-060
LL2mw-062
LL2mw-063
LL2mw-265
LL2mw-270
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
30.0
25.0
20.0
15.0
10.0
5.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

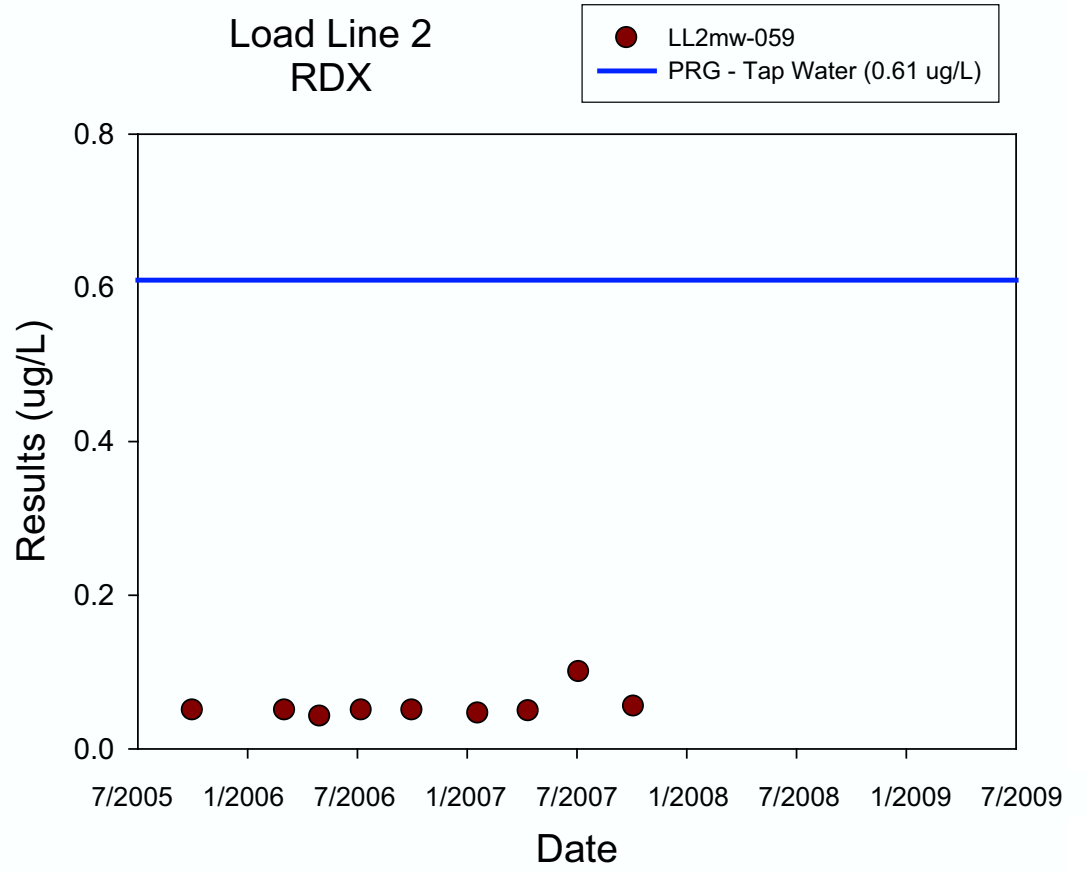

Load Line 2
alpha-Chlordane
LL2mw-059
PRG - Tap Water (0.19 ug/L)
MCL (2 ug/L)
Results (ug/L)
0.04
0.03
0.02
0.01
0.00
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

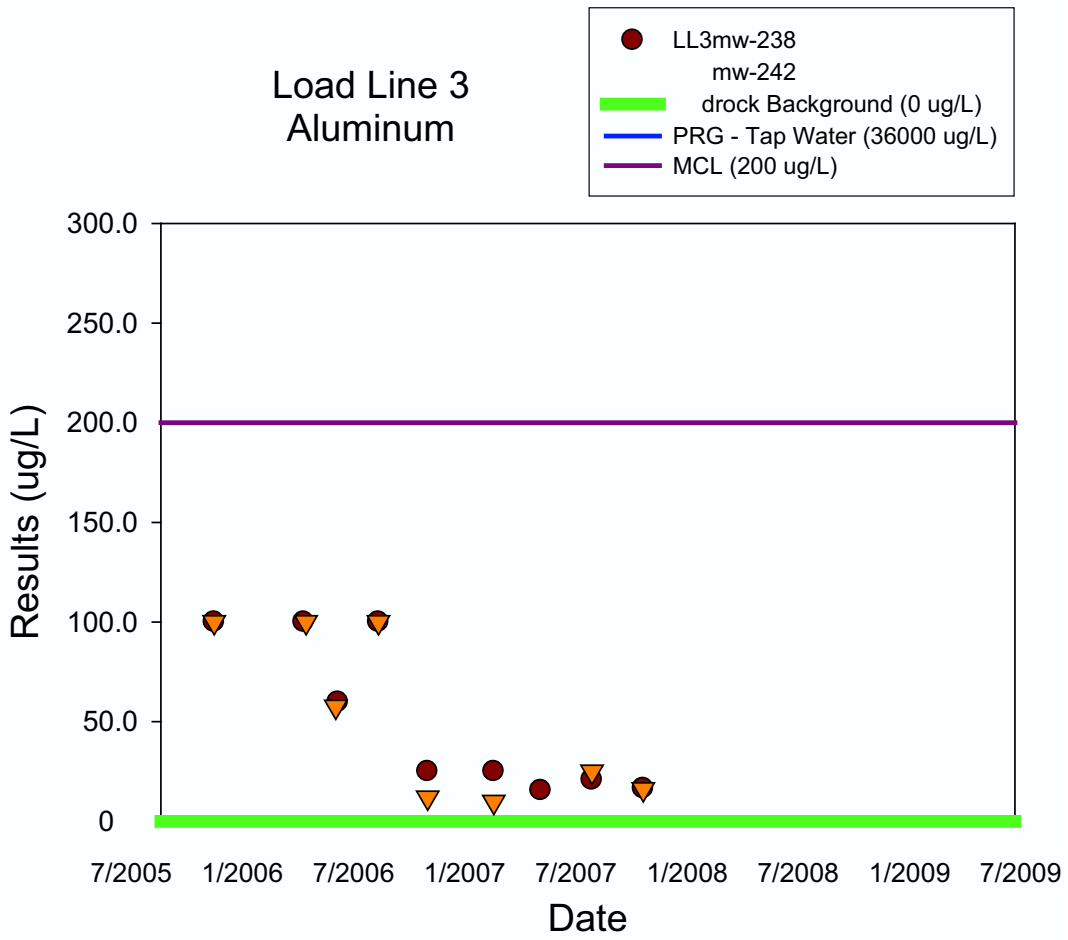

Load Line 2
beta-BHC
LL2-mw-059
PRG - Tap Water (0.037 ug/L)
Results (ug/L)
0.06
0.05
0.04
0.03
0.02
0.01
0.00
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

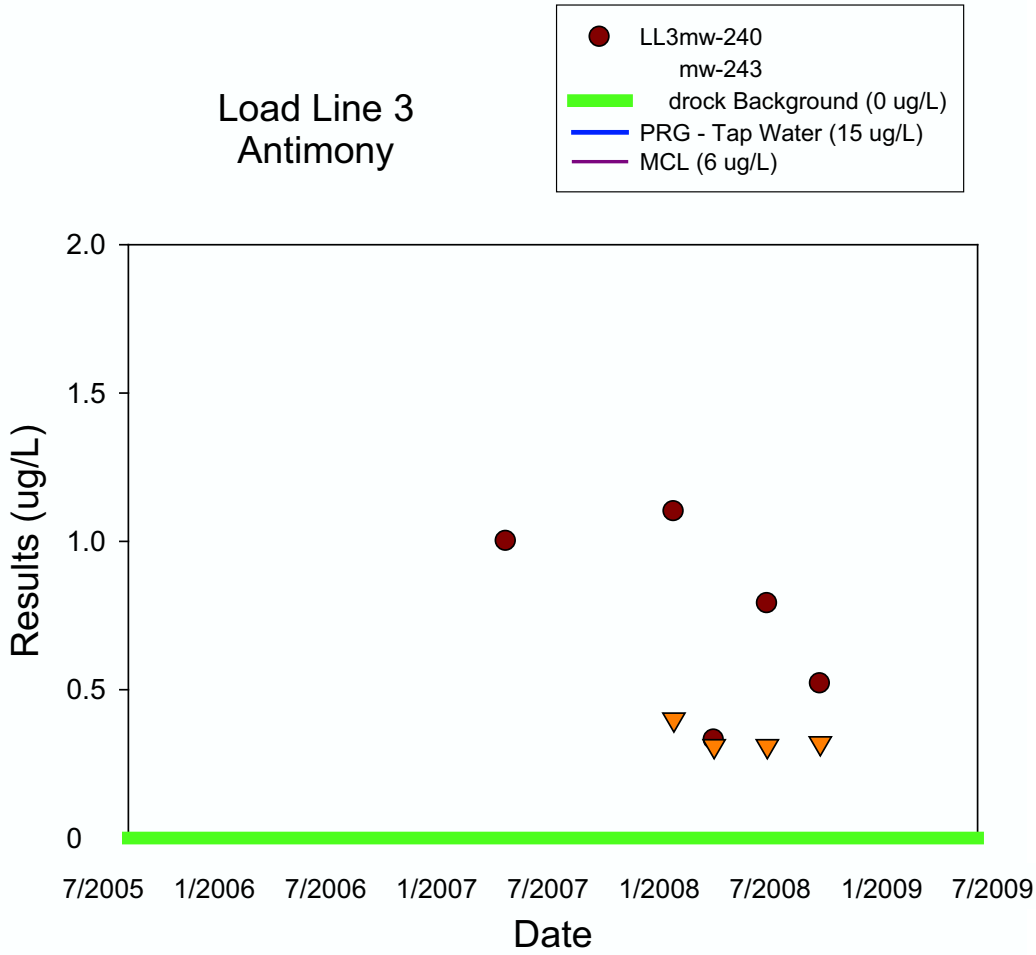

Load Line 2
1,3,5 - Trinitrobenzene
LL2mw-059
PRG - Tap Water (1100 ug/L)
Results (ug/L)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

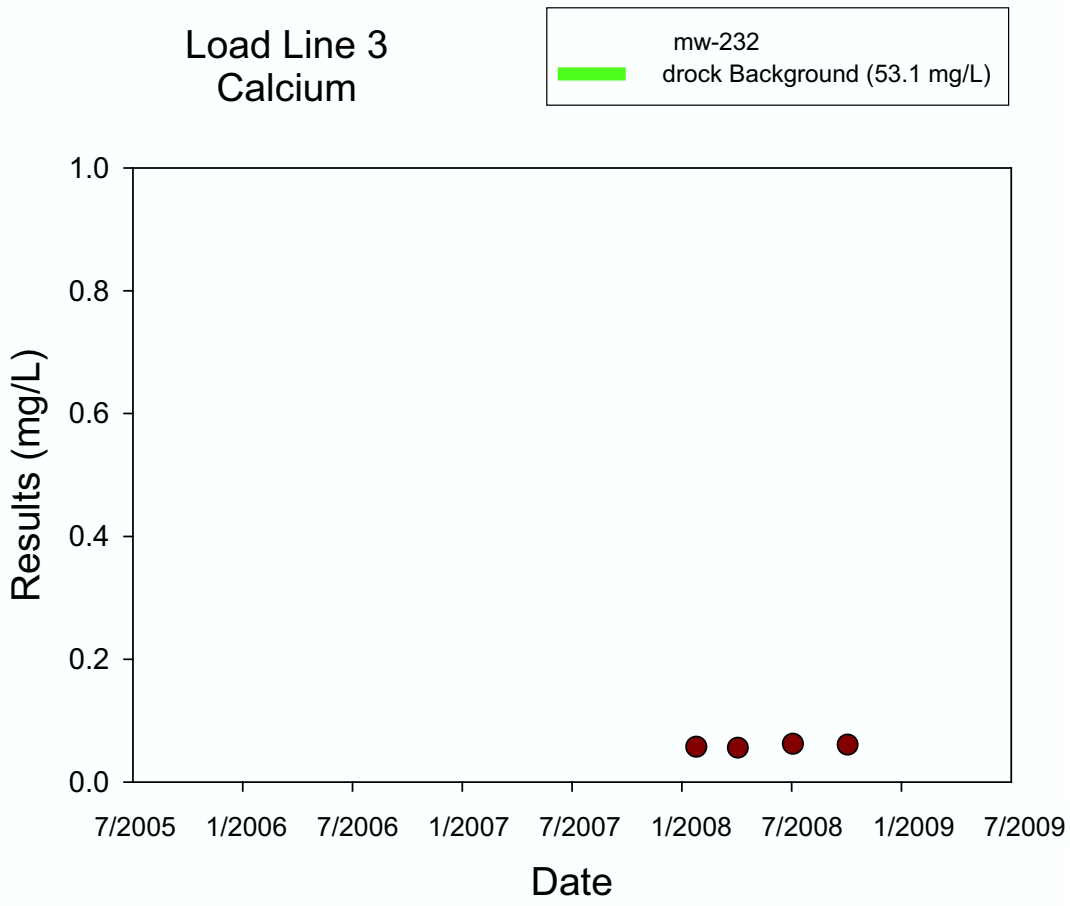

Load Line 2
HMX
LL2mw-059
PRG - Tap Water (1800 ug/L)
Results (ug/L)
0.3
0.3
0.2
0.2
0.1
0.1
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

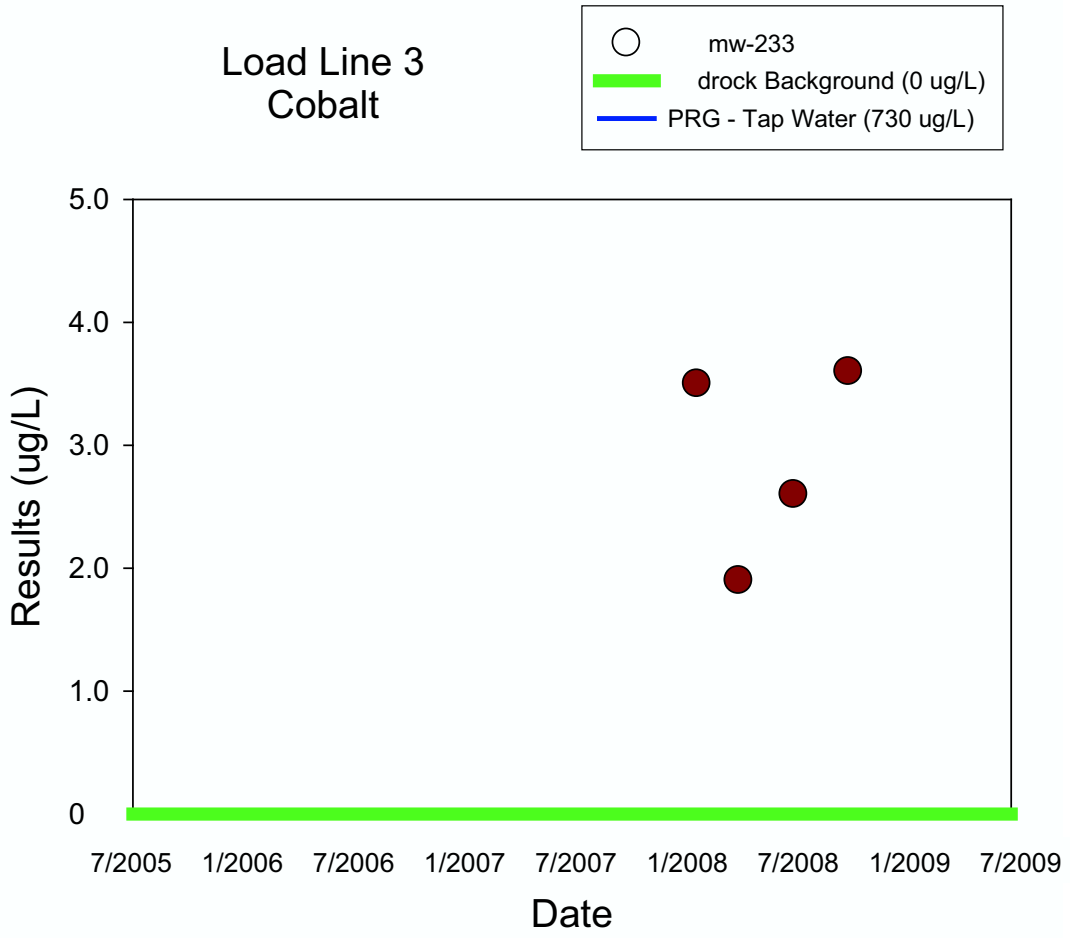

Load Line 2
m-Dinitrobenzene
LL2mw-059
PRG - Tap Water (3.6 ug/L)
Results (ug/L)
4.0
3.0
2.0
1.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

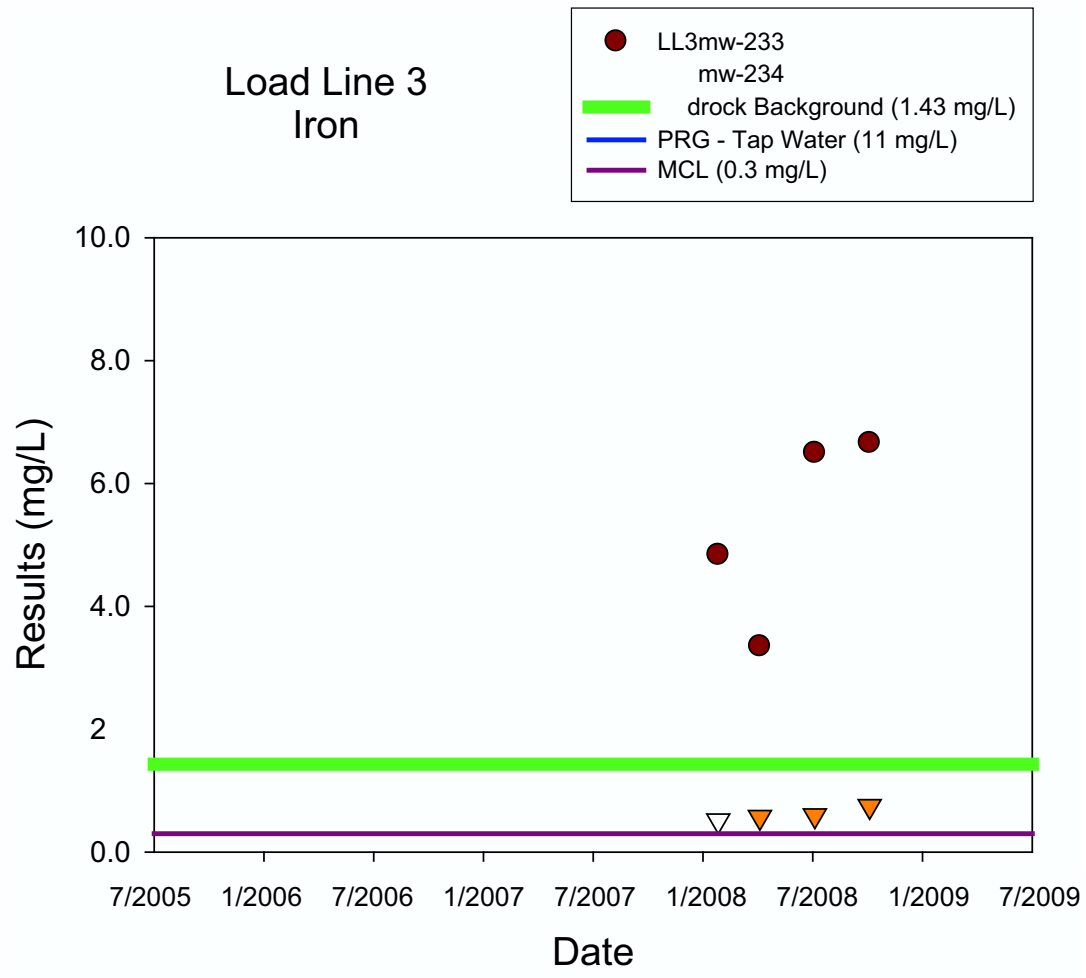

Load Line 2
RDX
LL2mw-059
PRG - Tap Water (0.61 ug/L)
Results (ug/L)
0.8
0.6
0.4
0.2
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

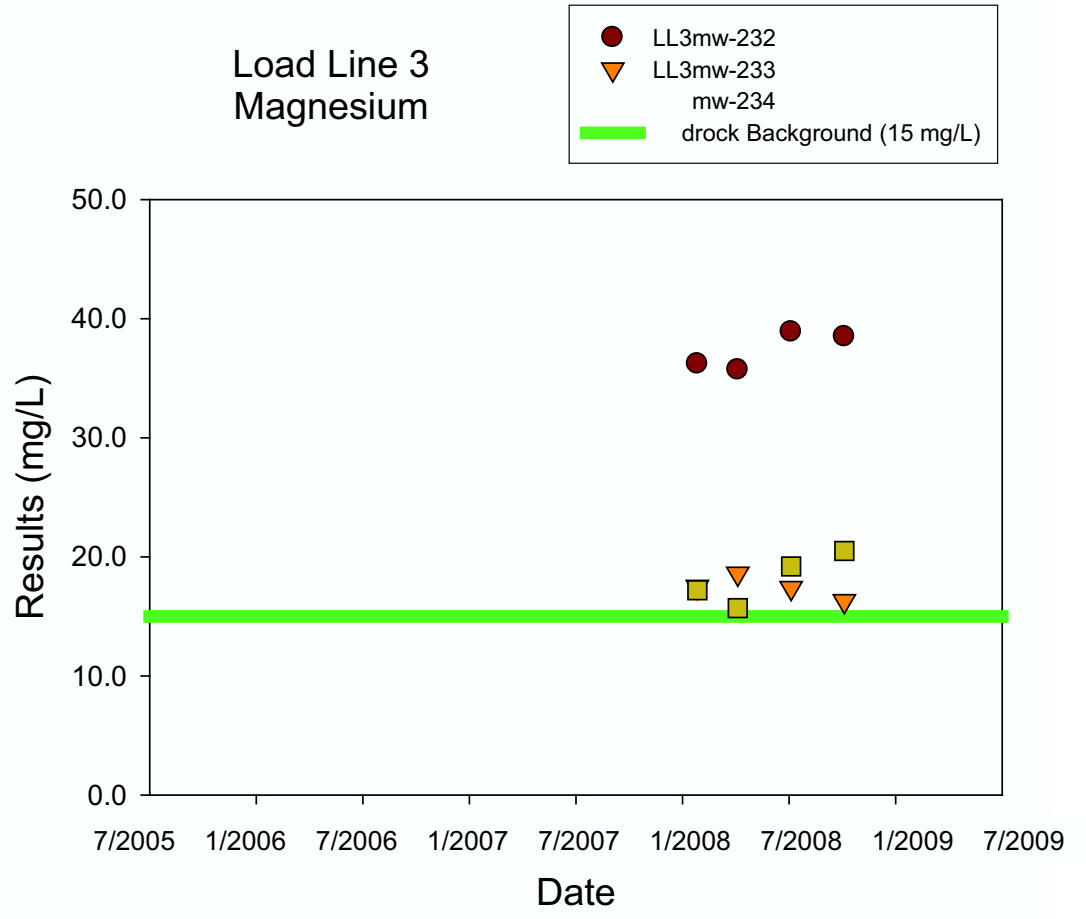

Load Line 3
Aluminum
LL3mw-238
mw-242
drock Background (0 ug/L)
PRG - Tap Water (36000 ug/L)
MCL (200 ug/L)
Results (ug/L)
300.0
250.0
200.0
150.0
100.0
50.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

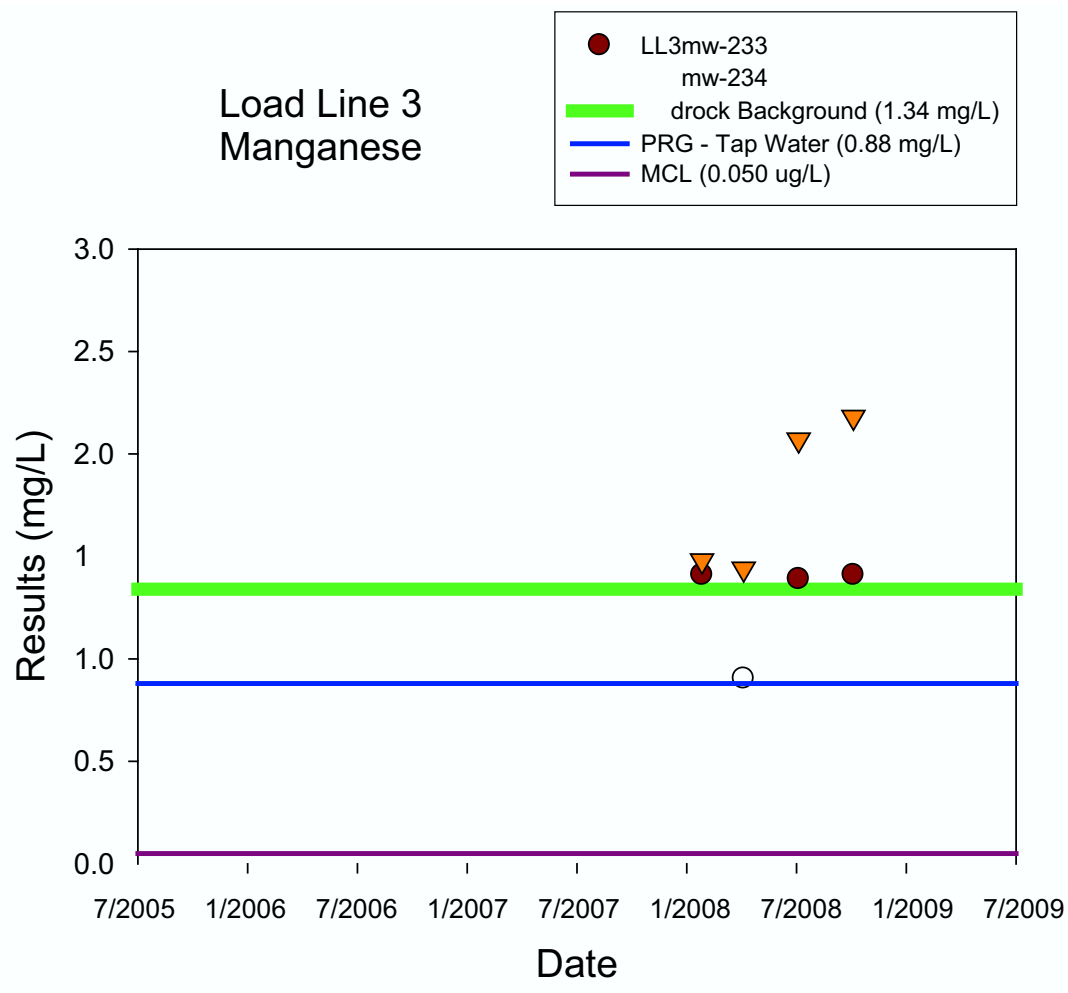

Load Line 3
Antimony
LL3mw-240
mw-243
drock Background (0 ug/L)
PRG - Tap Water (15 ug/L)
MCL (6 ug/L)
Results (ug/L)
2.0
1.5
1.0
0.5
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

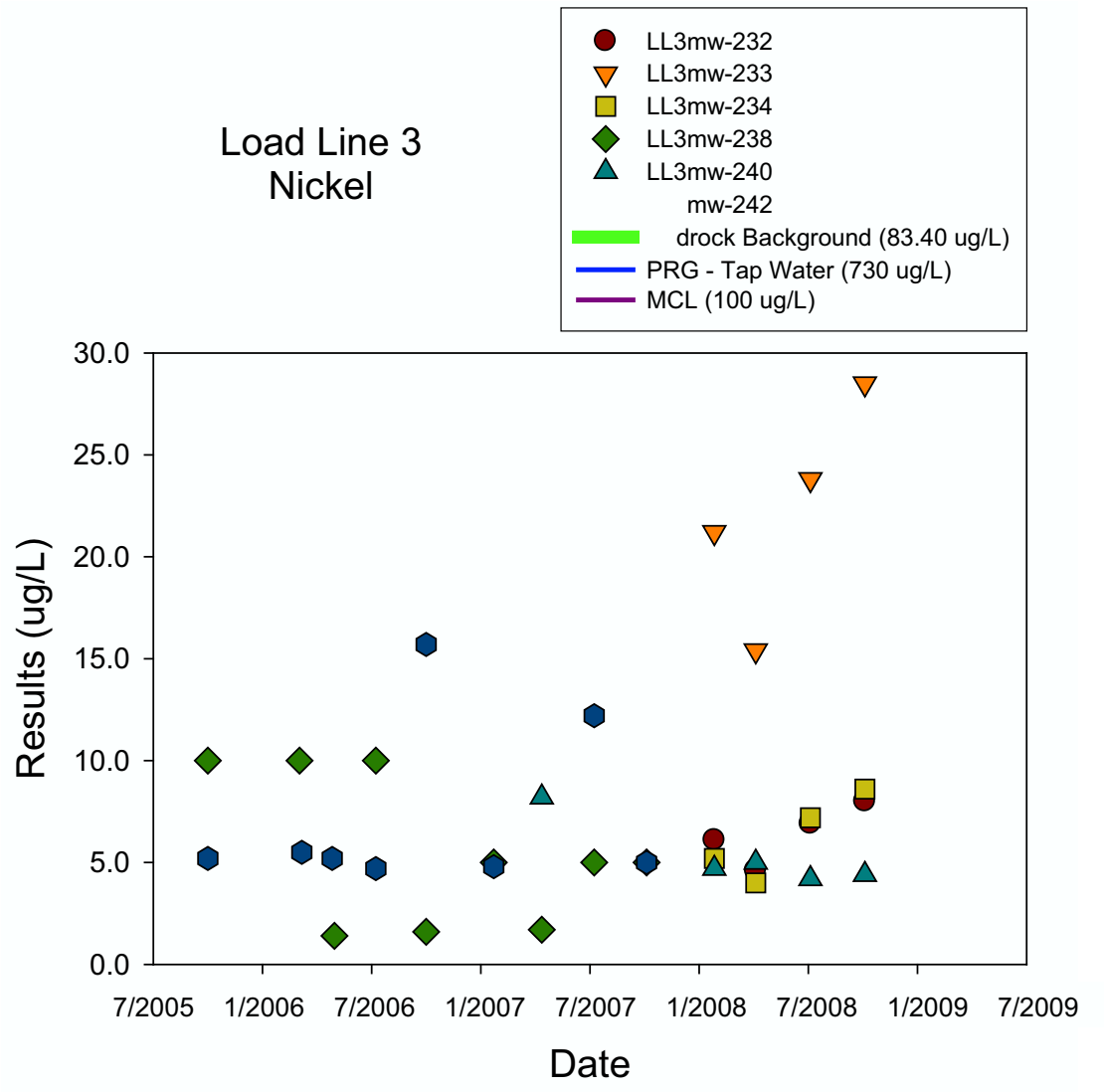

Load Line 3
Calcium
mw-232
drock Background (53.1 mg/L)
Results (mg/L)
1.0
0.8
0.6
0.4
0.2
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

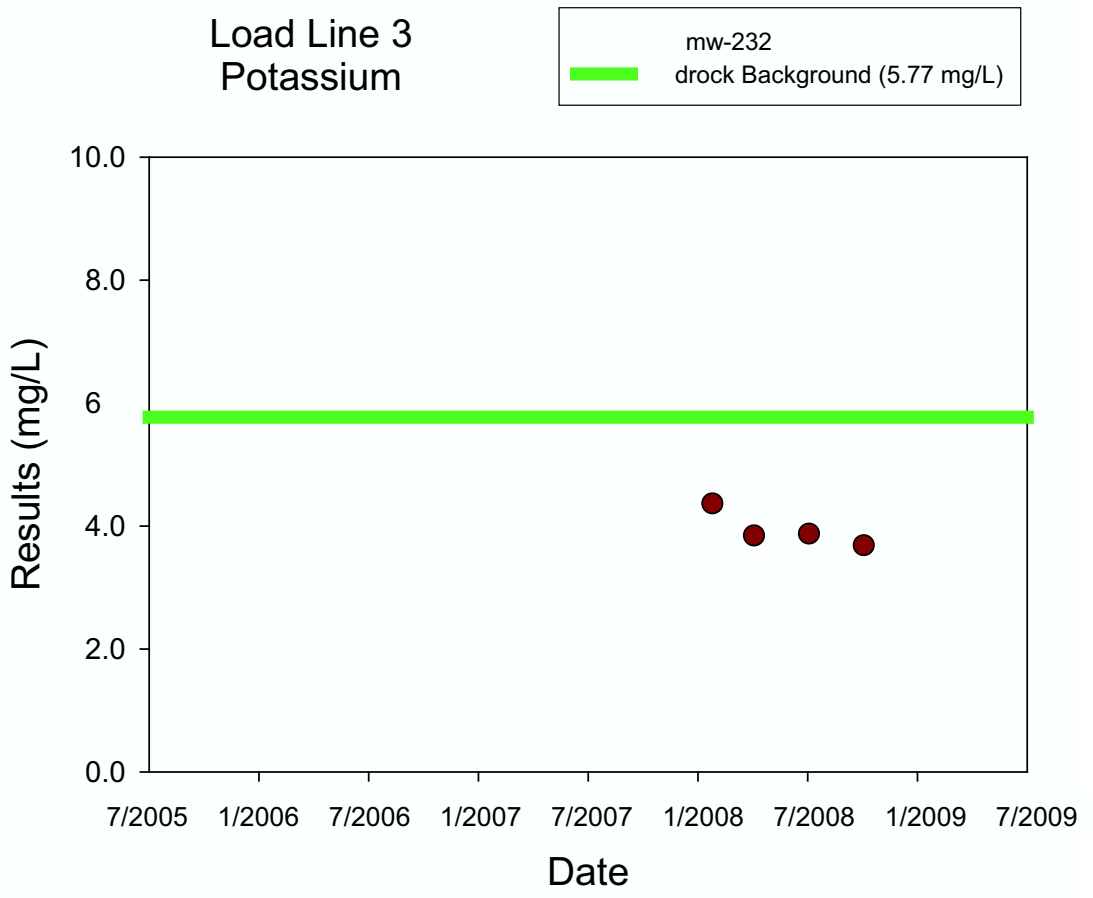

Load Line 3
Cobalt
mw-233
drock Background (0 ug/L)
PRG - Tap Water (730 ug/L)
Results (ug/L)
5.0
4.0
3.0
2.0
1.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

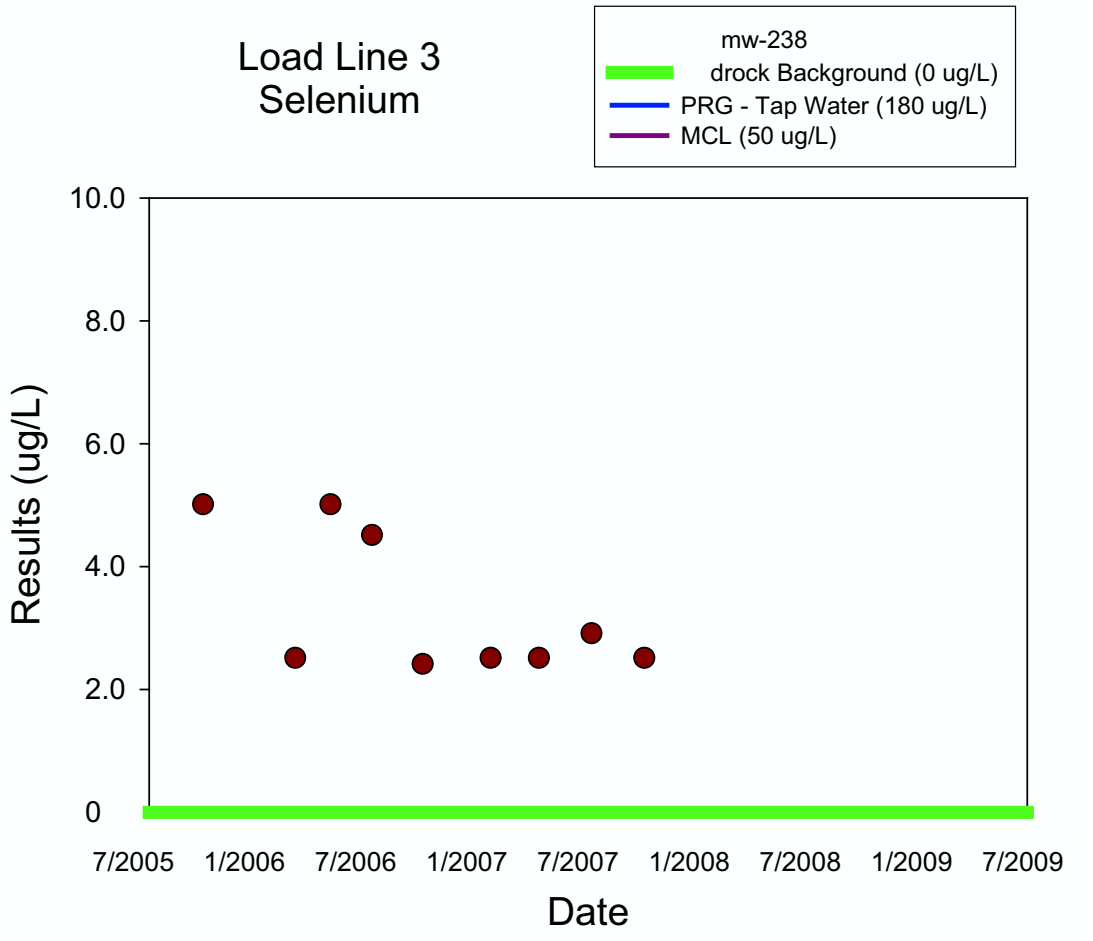

Load Line 3
Iron
LL3mw-233
mw-234
drock Background (1.43 mg/L)
PRG - Tap Water (11 mg/L)
MCL (0.3 mg/L)
Results (mg/L)
10.0
8.0
6.0
4.0
2
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

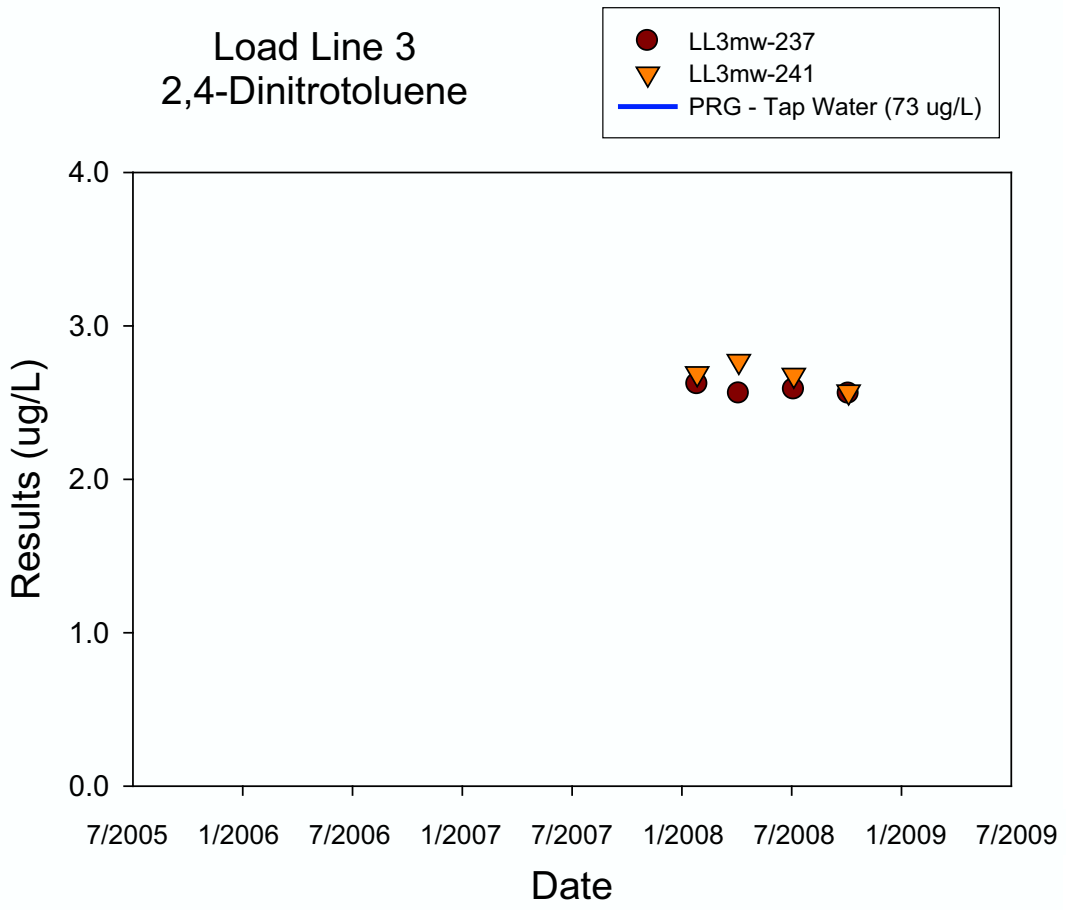

Load Line 3
Magnesium
LL3mw-232
LL3mw-233
mw-234
drock Background (15 mg/L)
Results (mg/L)
50.0
40.0
30.0
20.0
10.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

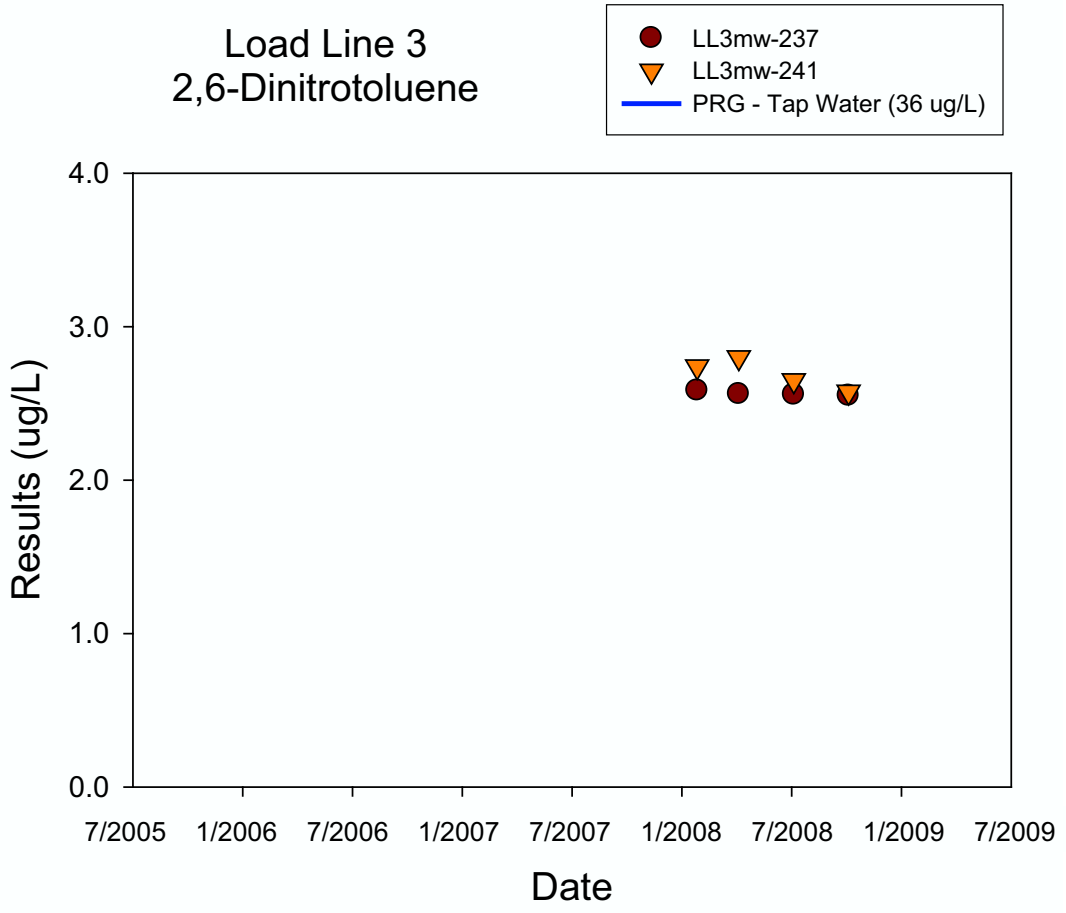

Load Line 3
Manganese
LL3mw-233
mw-234
drock Background (1.34 mg/L)
PRG - Tap Water (0.88 mg/L)
MCL (0.050 ug/L)
Results (mg/L)
3.0
2.5
2.0
1
1.0
0.5
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

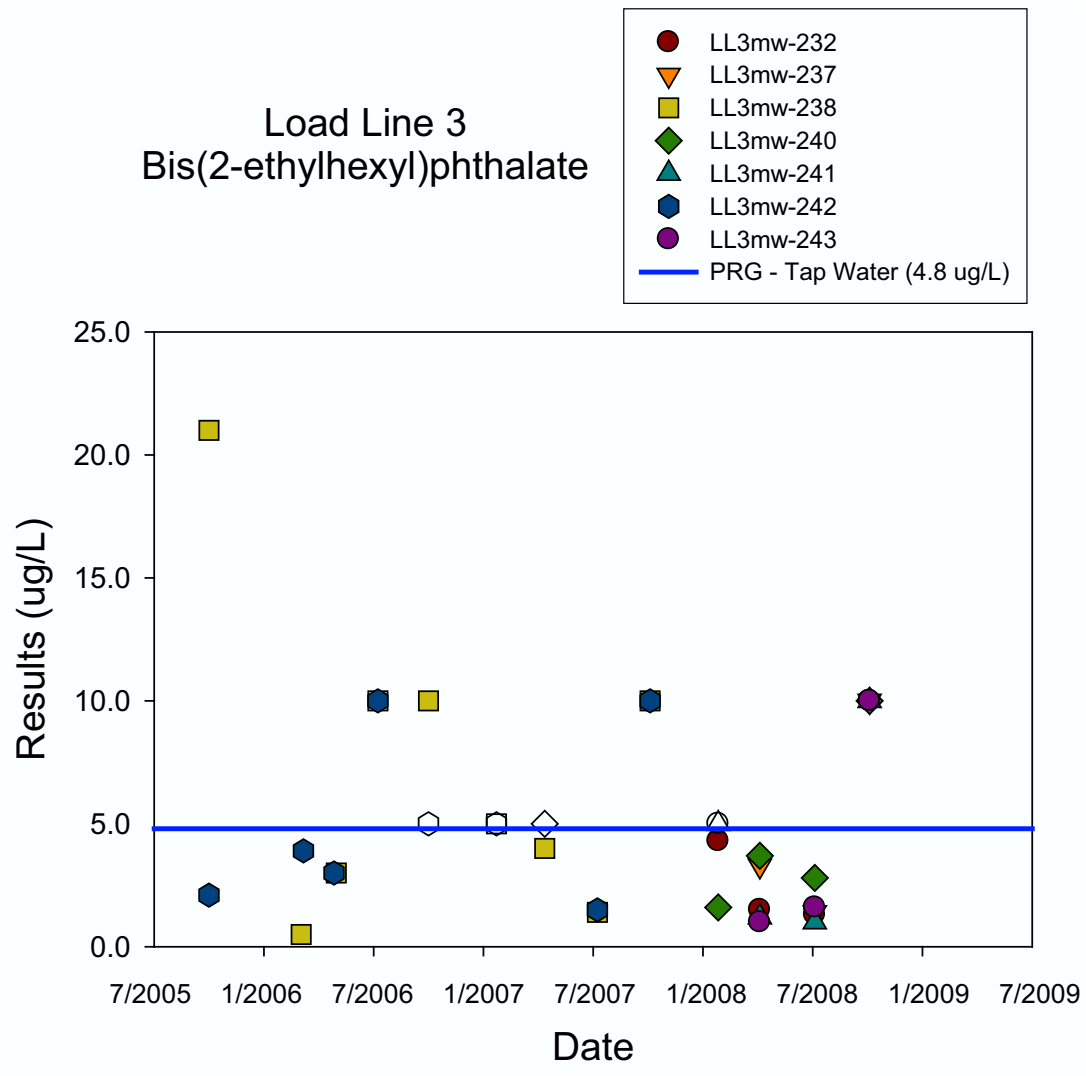

Load Line 3
Nickel
LL3mw-232
LL3mw-233
LL3mw-234
LL3mw-238
LL3mw-240
mw-242
drock Background (83.40 ug/L)
PRG - Tap Water (730 ug/L)
MCL (100 ug/L)
Results (ug/L)
30.0
25.0
20.0
15.0
10.0
5.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

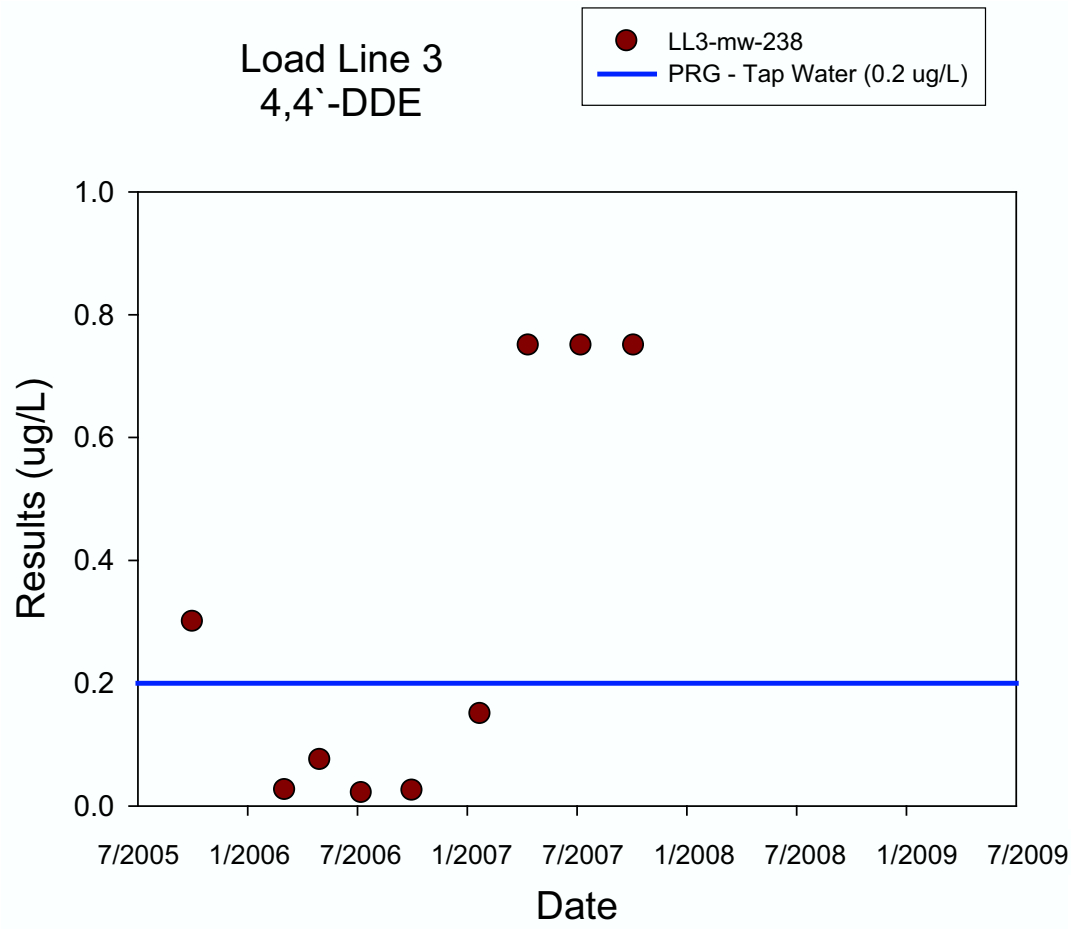

Load Line 3
Potassium
mw-232
drock Background (5.77 mg/L)
10.0
8.0
6
4.0
2.0
0.0
Results (mg/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

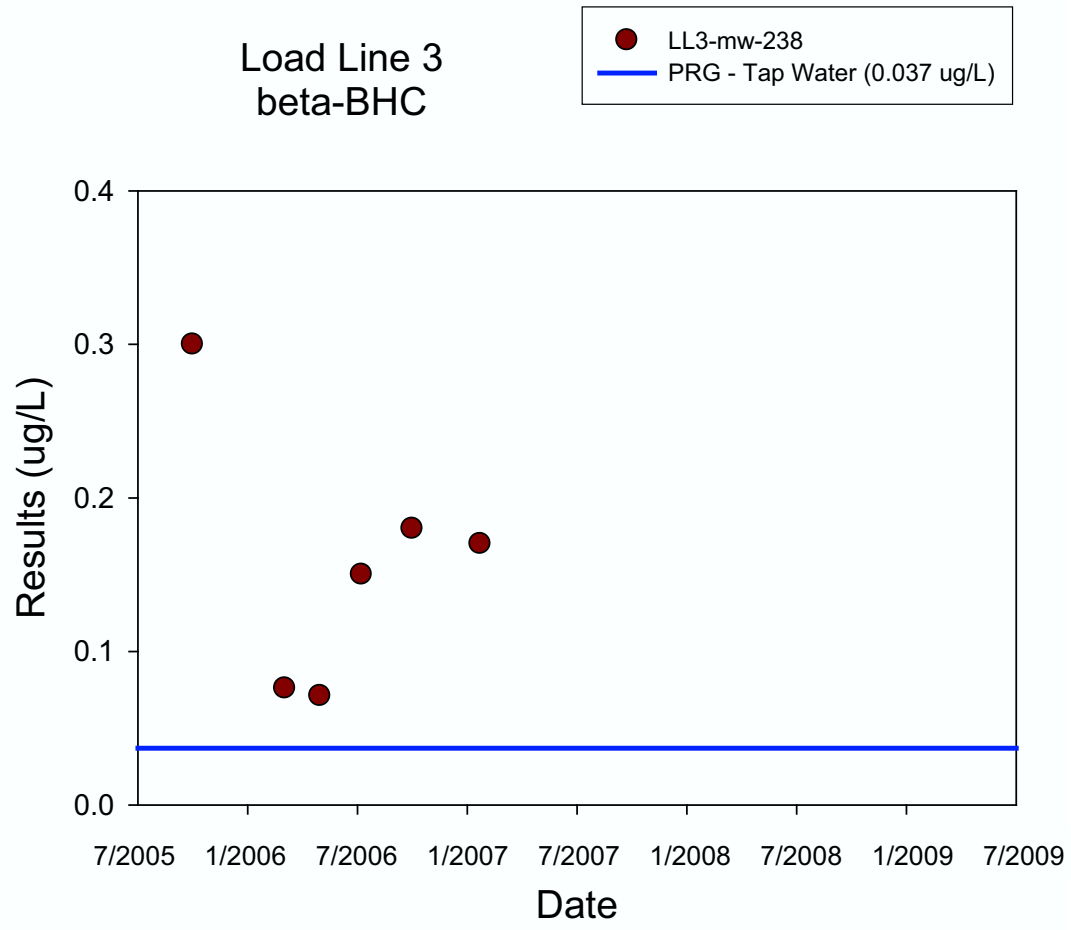

Load Line 3
Selenium
mw-238
drock Background (0 ug/L)
PRG - Tap Water (180 ug/L)
MCL (50 ug/L)
10.0
8.0
6.0
4.0
2.0
0
Results (ug/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

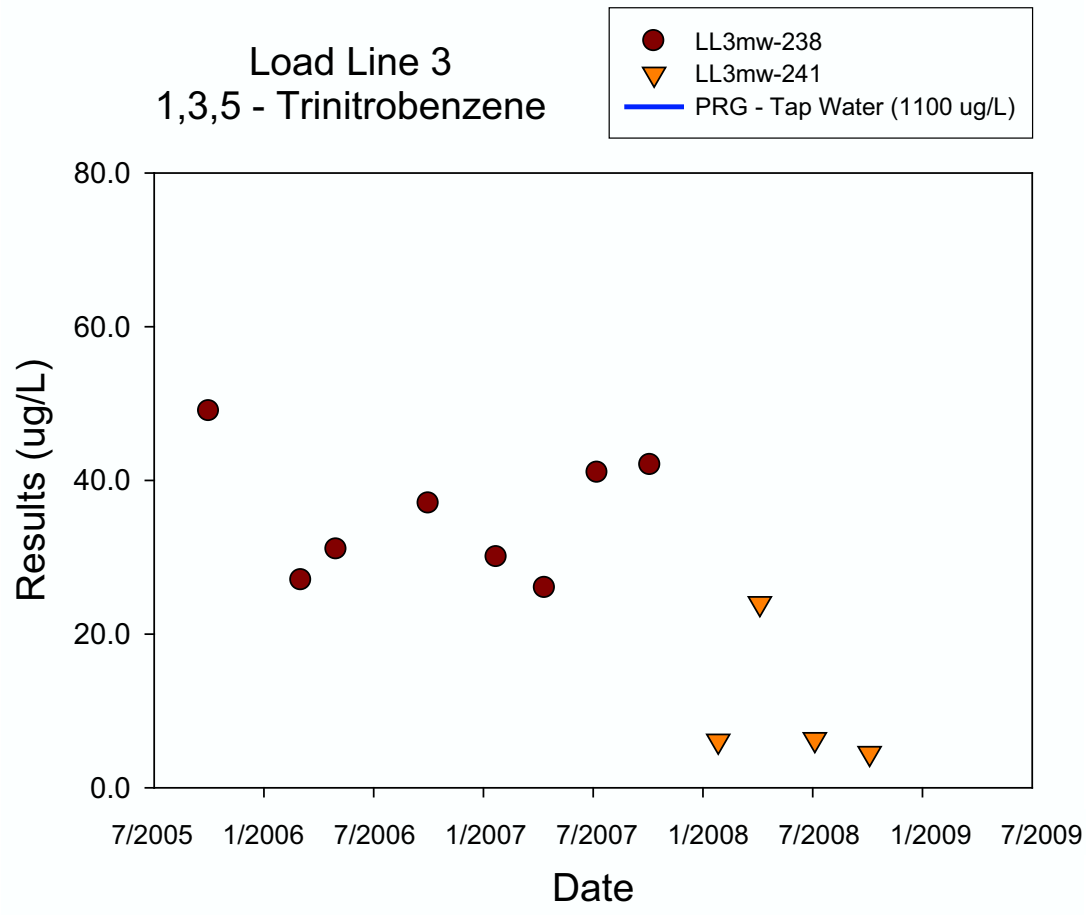

Load Line 3
2,4-Dinitrotoluene
LL3mw-237
LL3mw-241
PRG - Tap Water (73 ug/L)
Results (ug/L)
4.0
3.0
2.0
1.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

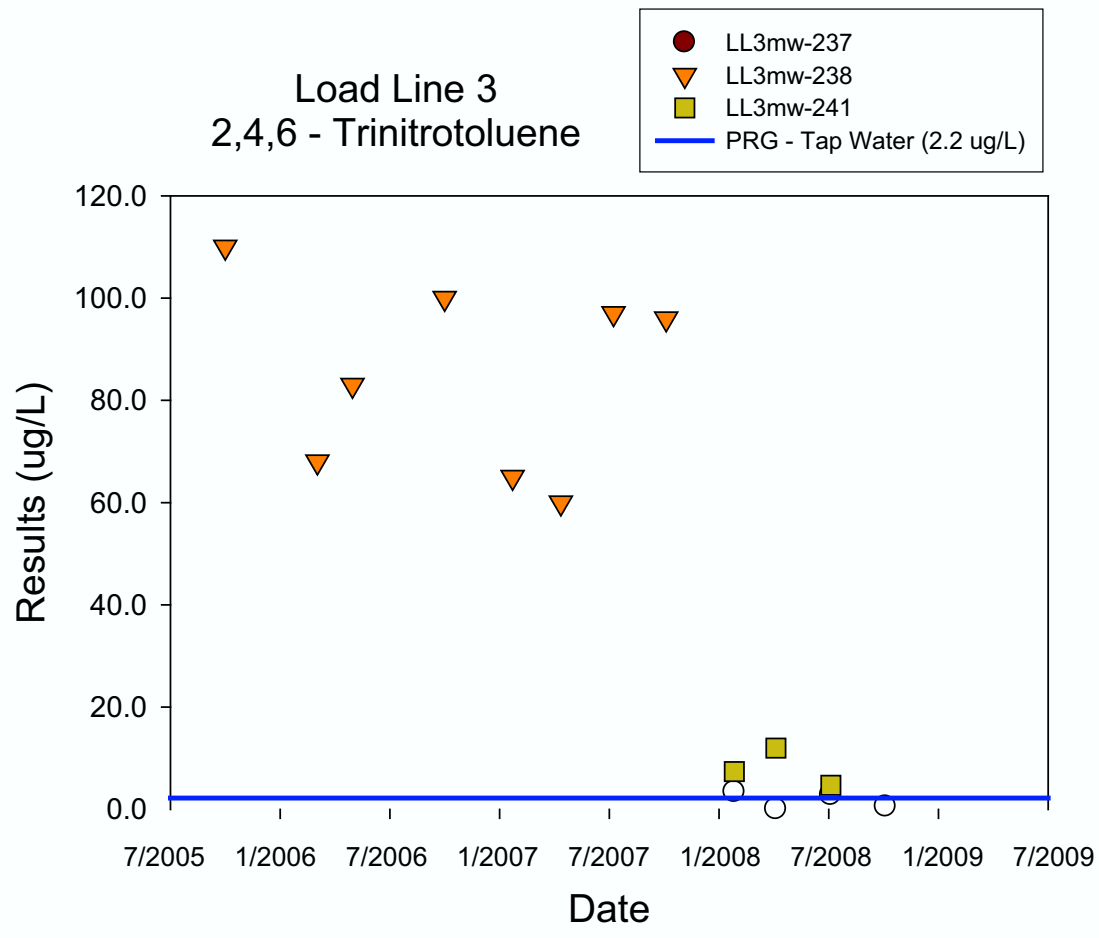

Load Line 3
2,6-Dinitrotoluene
LL3mw-237
LL3mw-241
PRG - Tap Water (36 ug/L)
Results (ug/L)
4.0
3.0
2.0
1.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

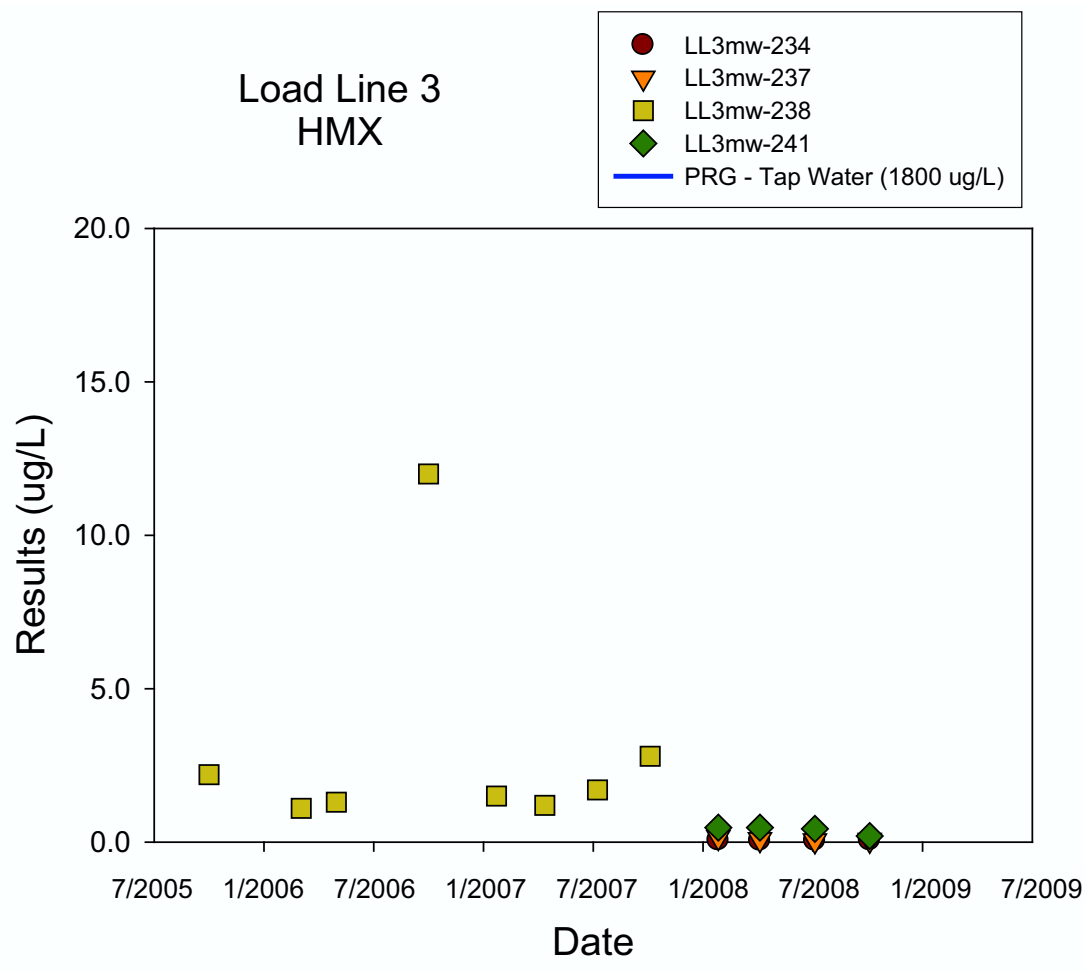

Load Line 3
Bis(2-ethylhexyl)phthalate
LL3mw-232
LL3mw-237
LL3mw-238
LL3mw-240
LL3mw-241
LL3mw-242
LL3mw-243
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
25.0
20.0
15.0
10.0
5.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

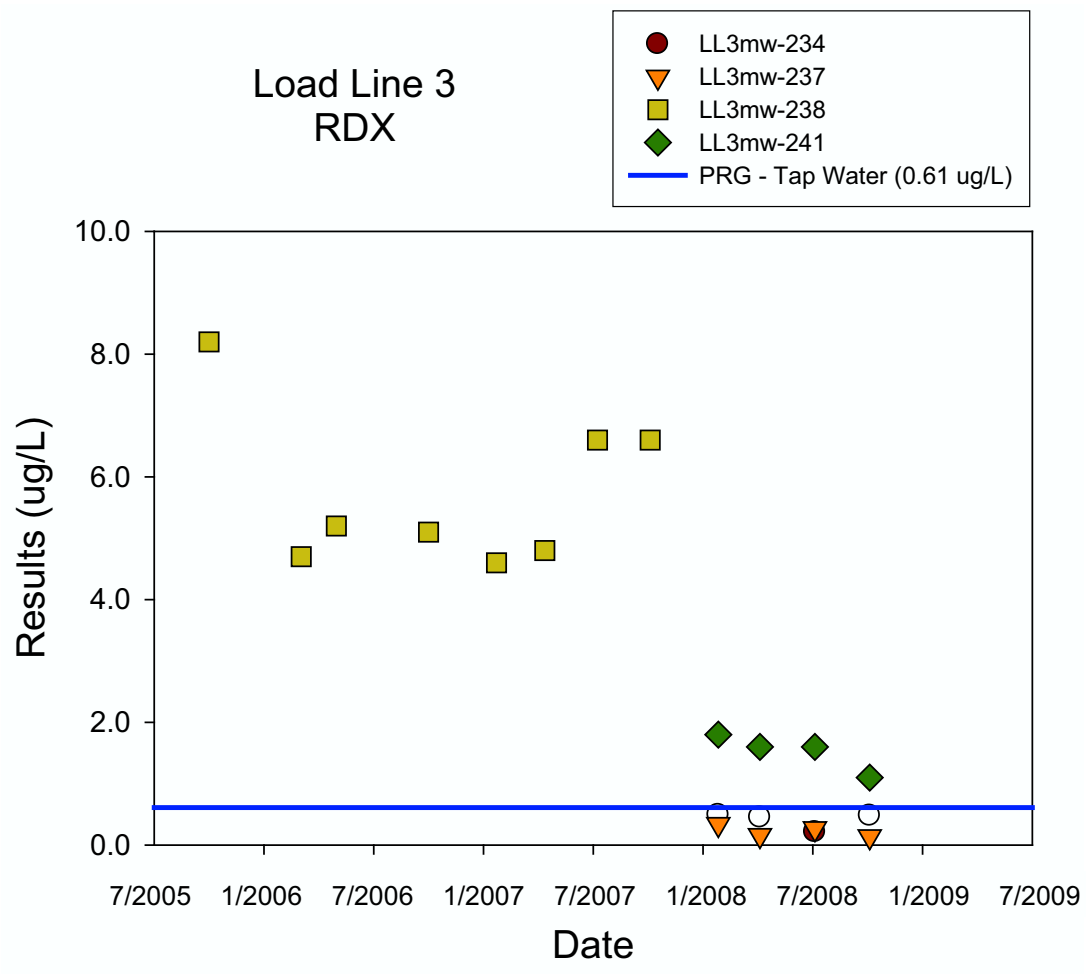

Load Line 3
4,4`-DDE
LL3-mw-238
PRG - Tap Water (0.2 ug/L)
Results (ug/L)
1.0
0.8
0.6
0.4
0.2
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

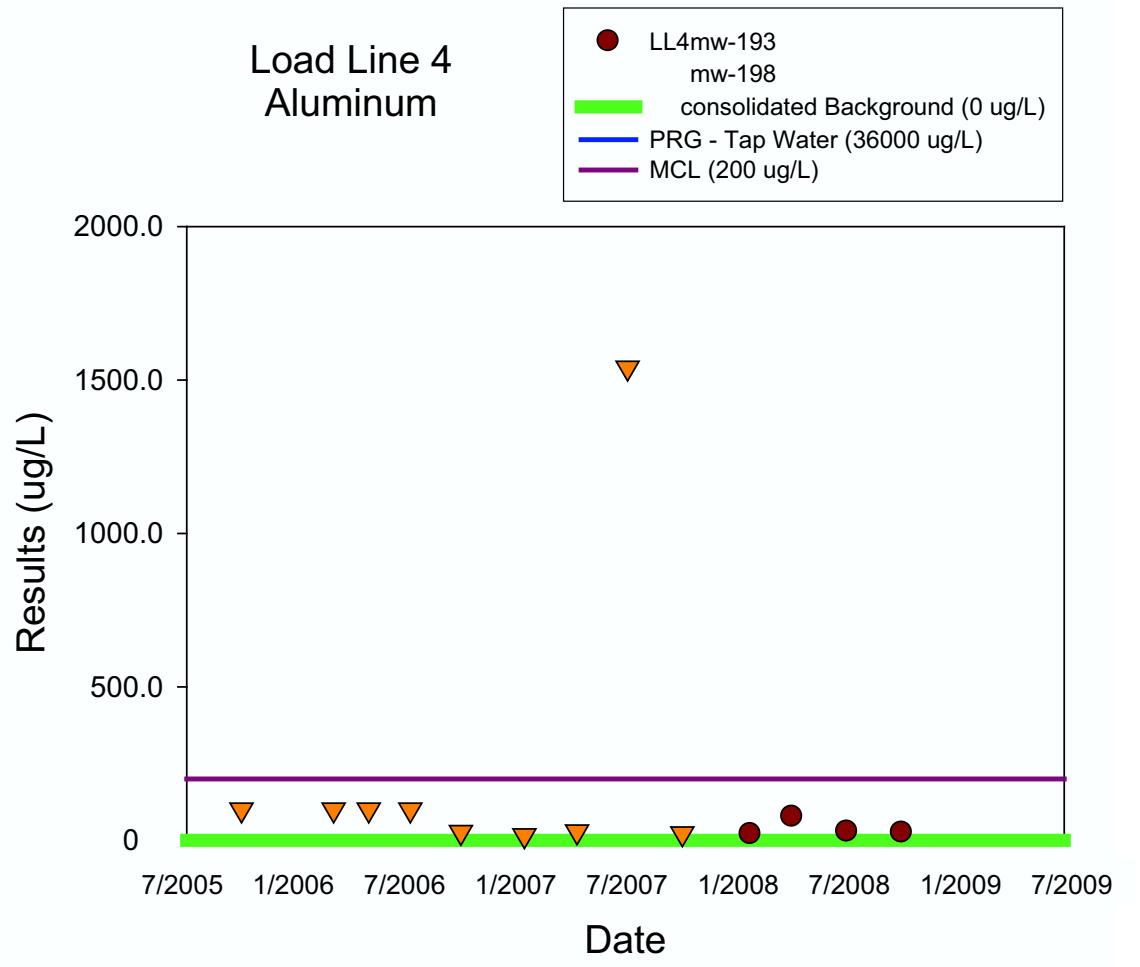

Load Line 3
beta-BHC
LL3-mw-238
PRG - Tap Water (0.037 ug/L)
Results (ug/L)
0.4
0.3
0.2
0.1
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

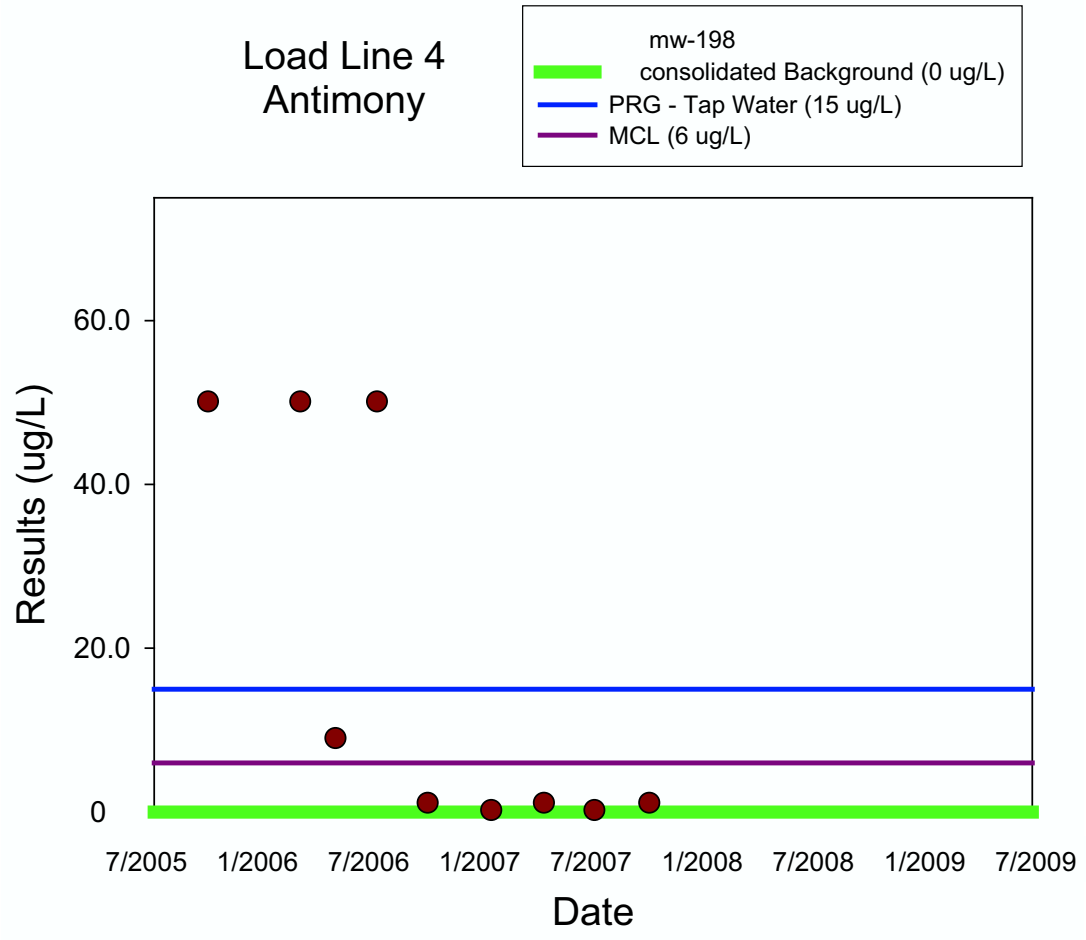

Load Line 3
1,3,5 - Trinitrobenzene
LL3mw-238
LL3mw-241
PRG - Tap Water (1100 ug/L)
Results (ug/L)
80.0
60.0
40.0
20.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

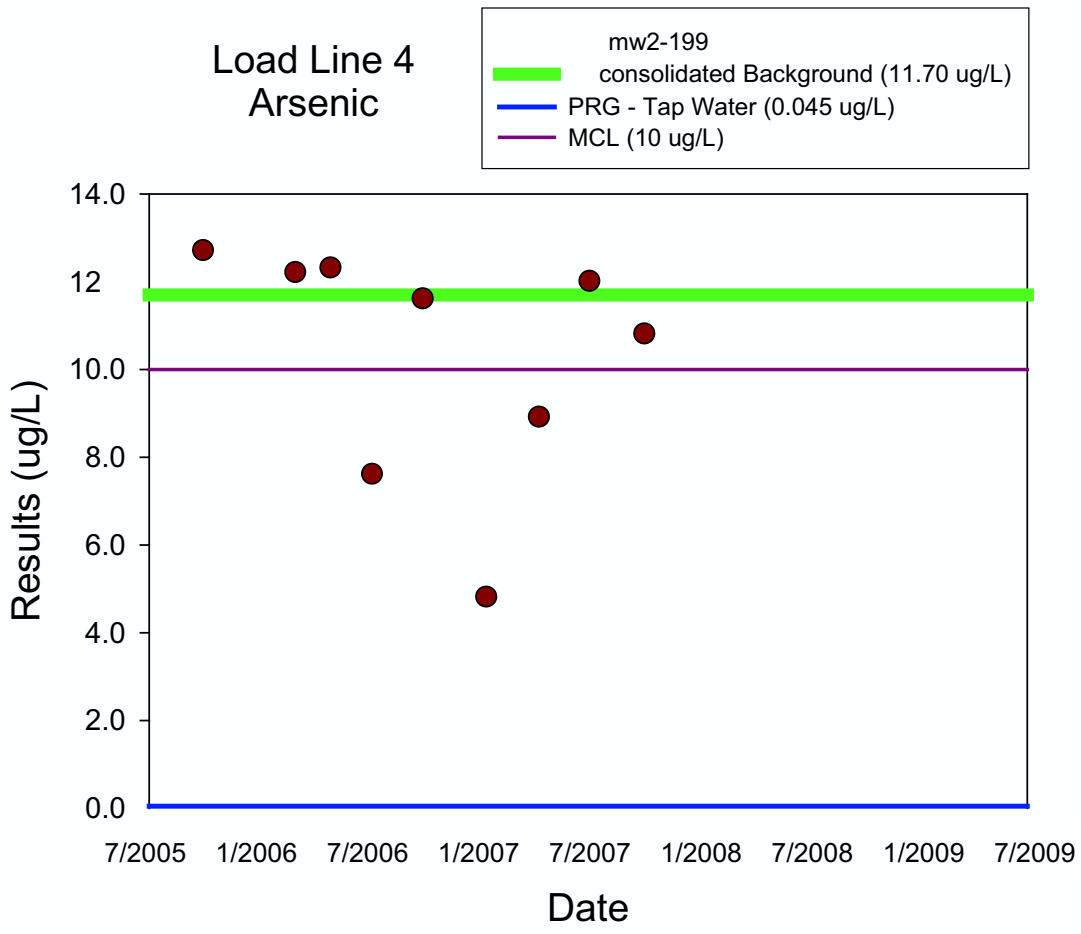

Load Line 3
2,4,6 - Trinitrotoluene
LL3mw-237
LL3mw-238
LL3mw-241
PRG - Tap Water (2.2 ug/L)
Results (ug/L)
120.0
100.0
80.0
60.0
40.0
20.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

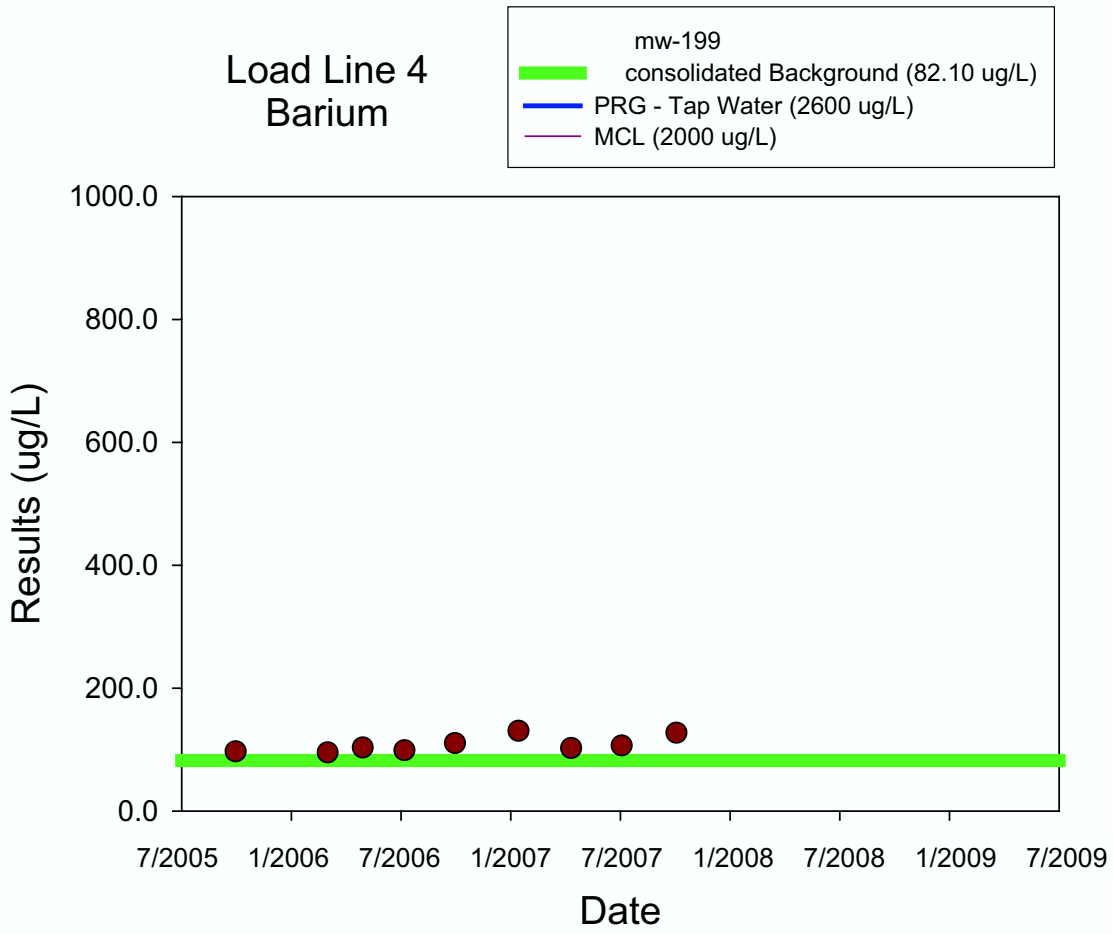

Load Line 3
HMX
LL3mw-234
LL3mw-237
LL3mw-238
LL3mw-241
PRG - Tap Water (1800 ug/L)
Results (ug/L)
20.0
15.0
10.0
5.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

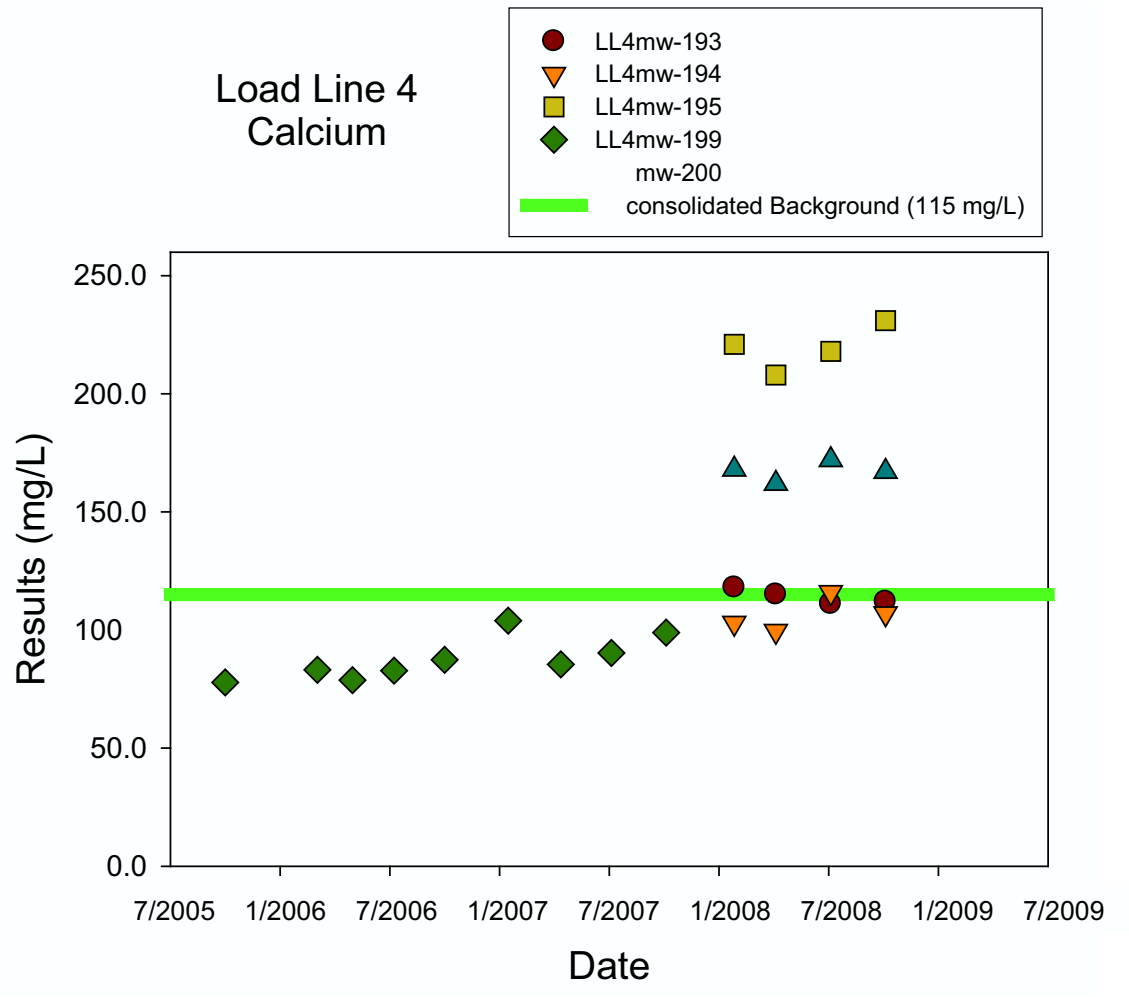

Load Line 3
RDX
LL3mw-234
LL3mw-237
LL3mw-238
LL3mw-241
PRG - Tap Water (0.61 ug/L)
Results (ug/L)
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

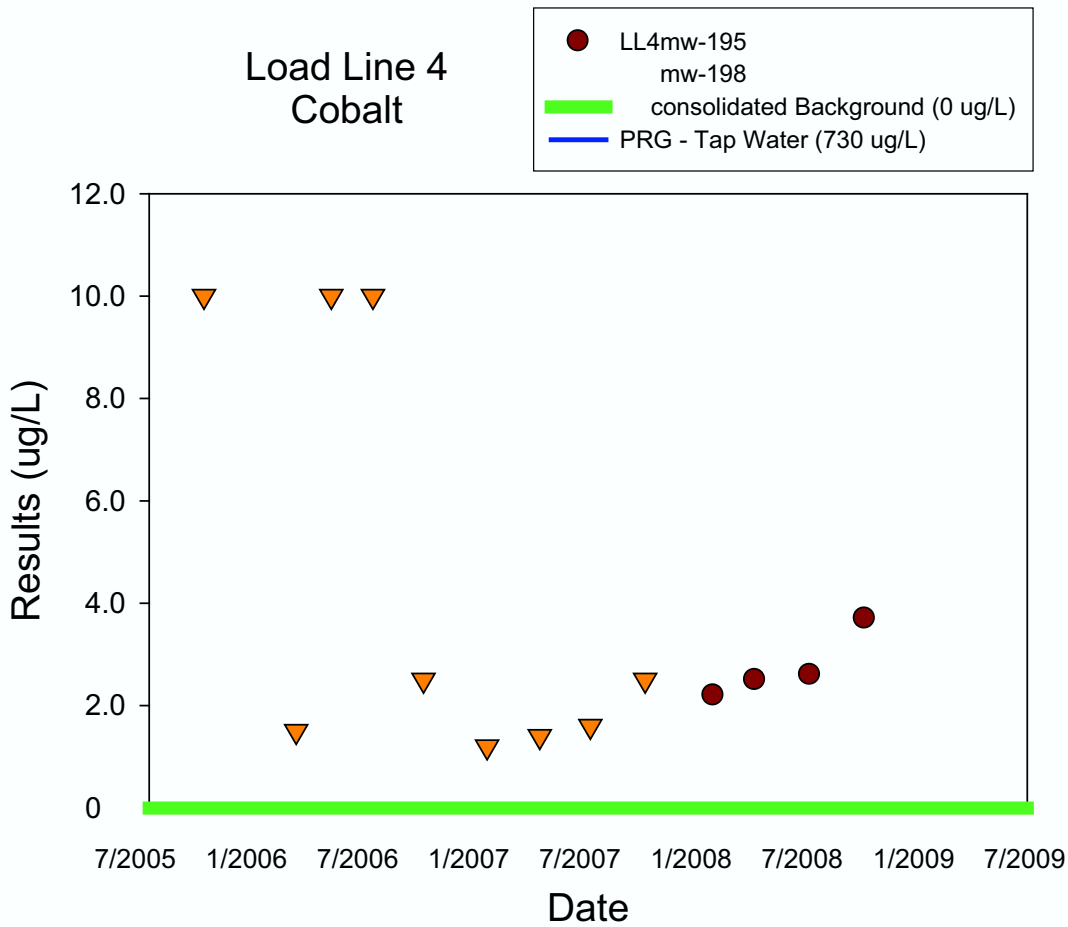

Load Line 4
Aluminum
LL4mw-193
mw-198
consolidated Background (0 ug/L)
PRG - Tap Water (36000 ug/L)
MCL (200 ug/L)
Results (ug/L)
2000.0
1500.0
1000.0
500.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

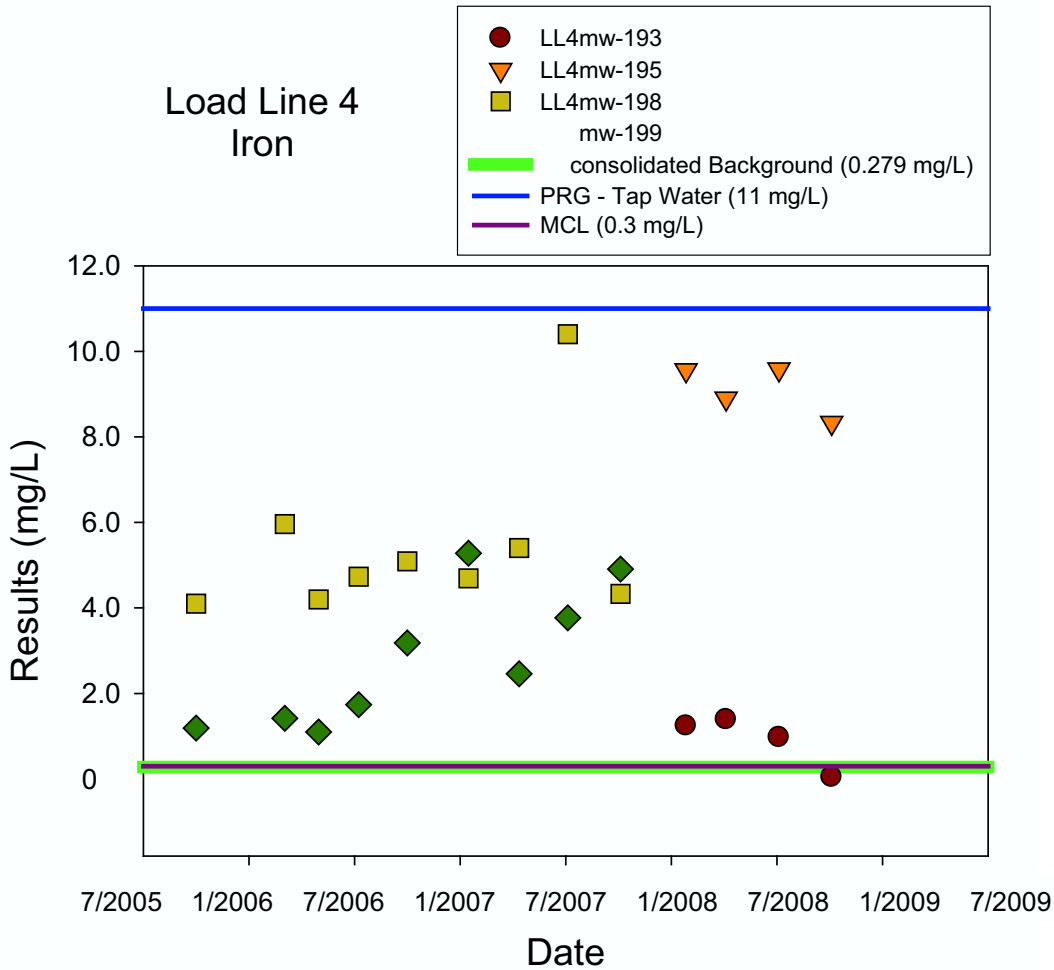

Load Line 4
Antimony
mw-198
consolidated Background (0 ug/L)
PRG - Tap Water (15 ug/L)
MCL (6 ug/L)
Results (ug/L)
60.0
40.0
20.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

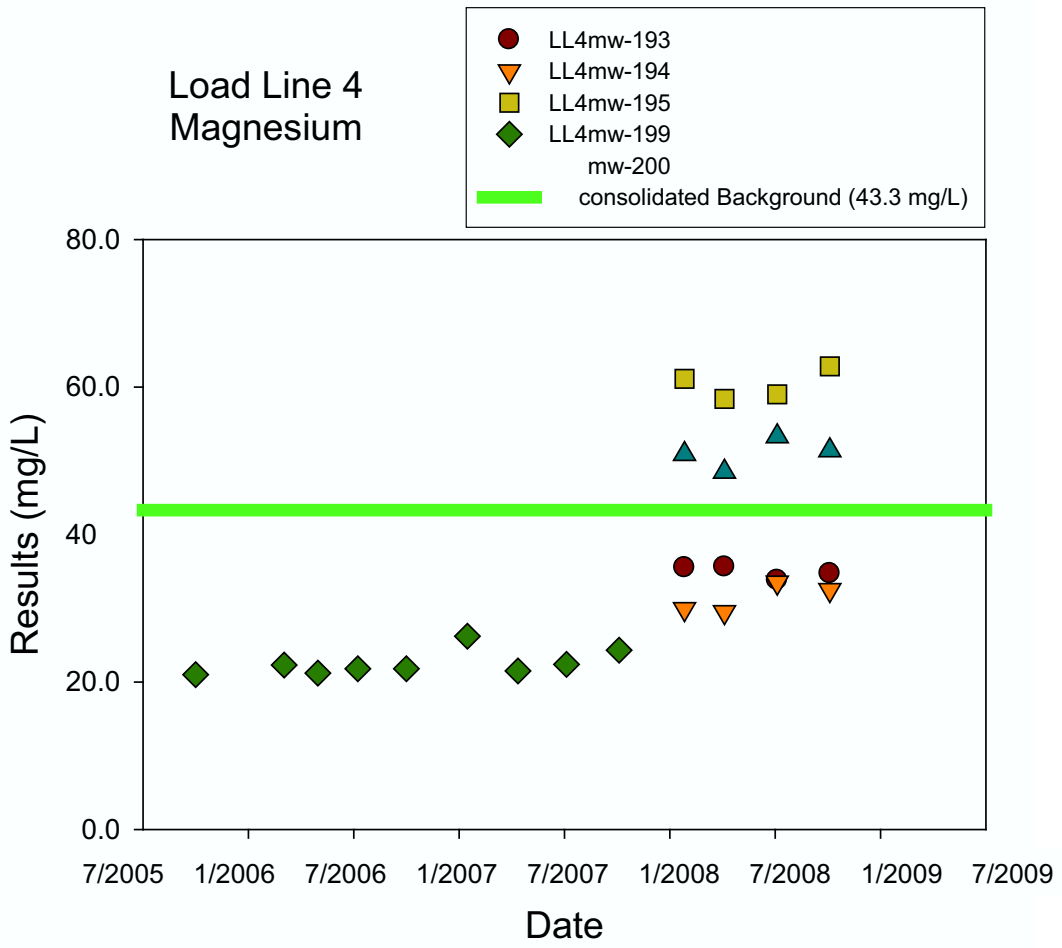

Load Line 4
Arsenic
mw2-199
consolidated Background (11.70 ug/L)
PRG - Tap Water (0.045 ug/L)
MCL (10 ug/L)
14.0
12
10.0
8.0
6.0
4.0
2.0
0.0
Results (ug/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

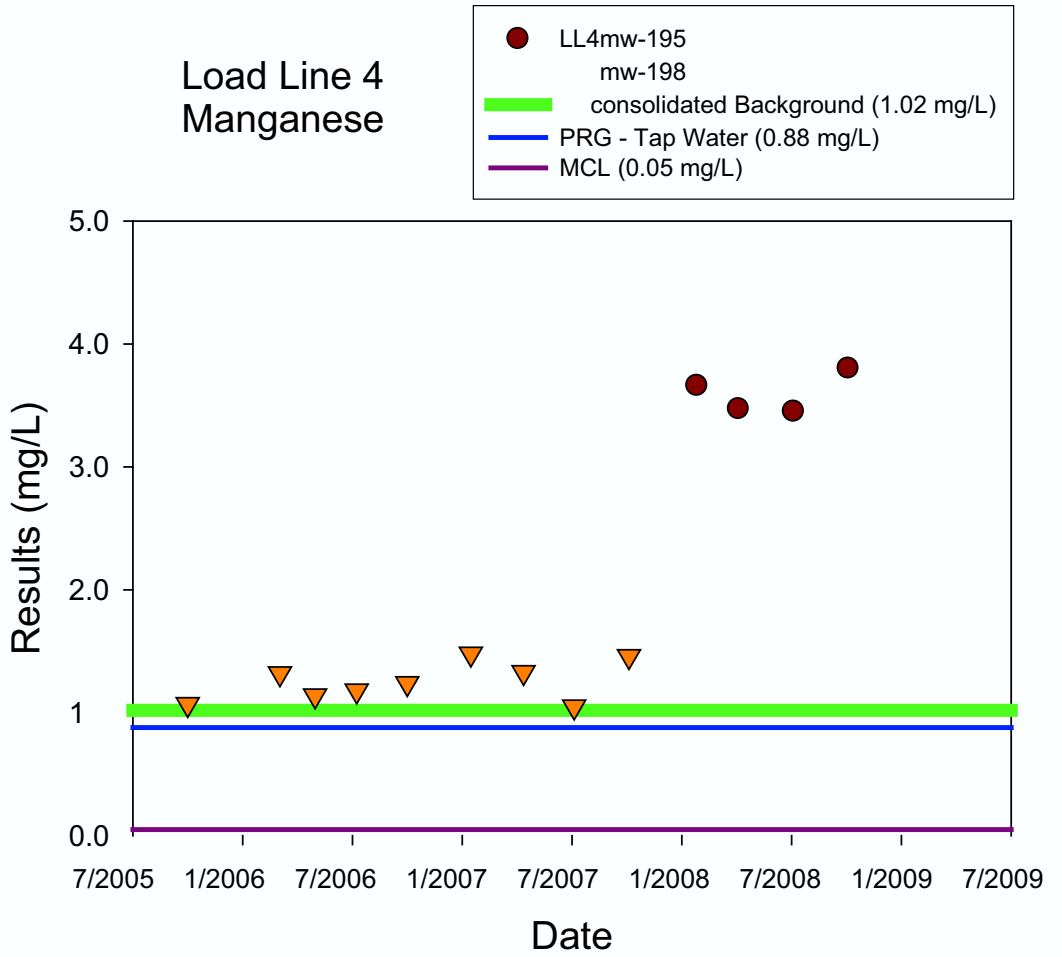

Load Line 4
Barium
mw-199
consolidated Background (82.10 ug/L)
PRG - Tap Water (2600 ug/L)
MCL (2000 ug/L)
1000.0
800.0
600.0
400.0
200.0
0.0
Results (ug/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

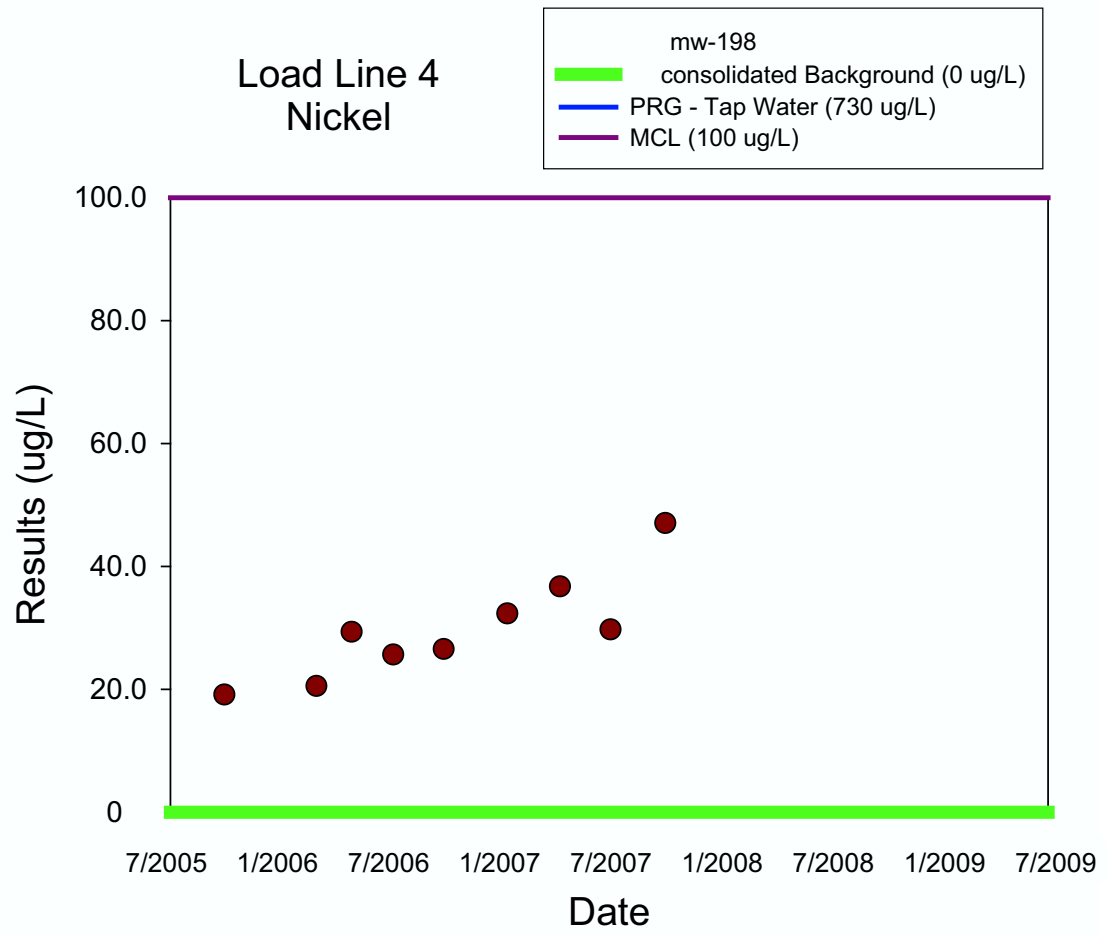

Load Line 4
Calcium
LL4mw-193
LL4mw-194
LL4mw-195
LL4mw-199
mw-200
consolidated Background (115 mg/L)
Results (mg/L)
250.0
200.0
150.0
100
50.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

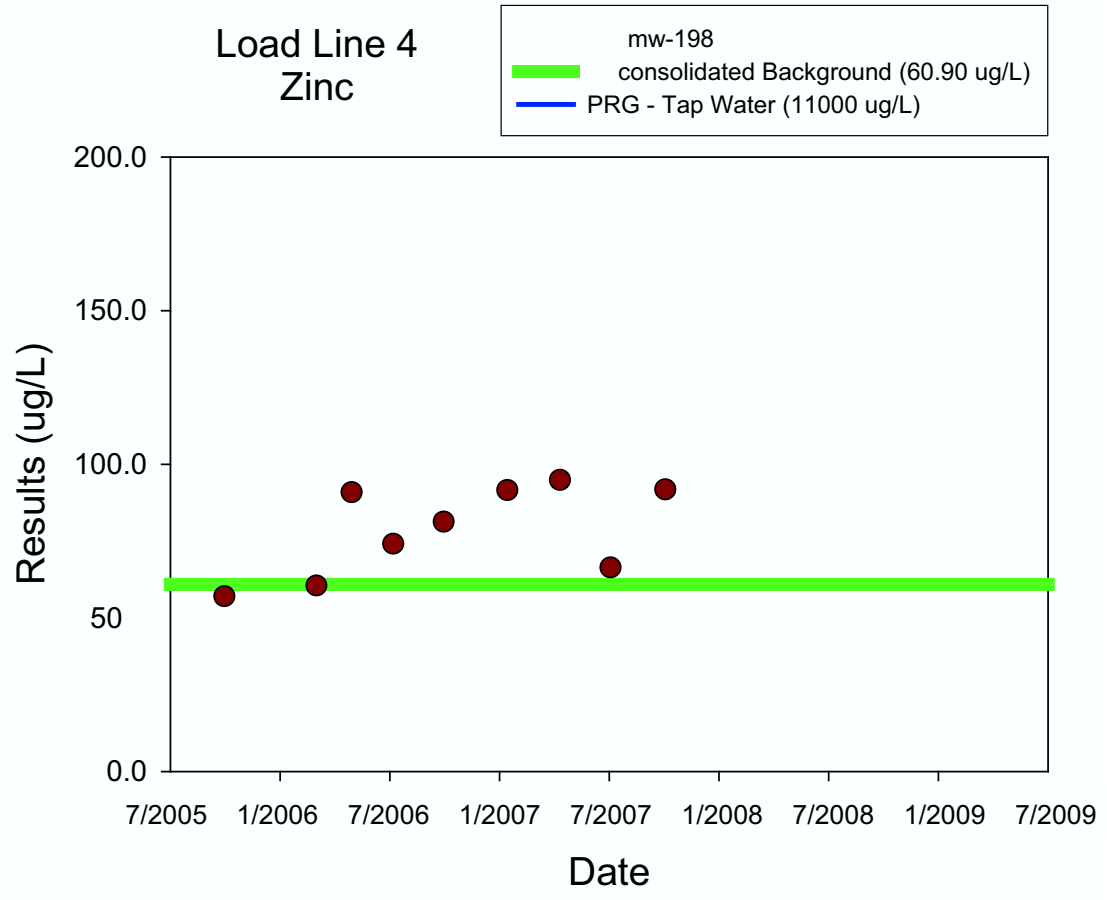

Load Line 4
Cobalt
LL4mw-195
mw-198
consolidated Background (0 ug/L)
PRG - Tap Water (730 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

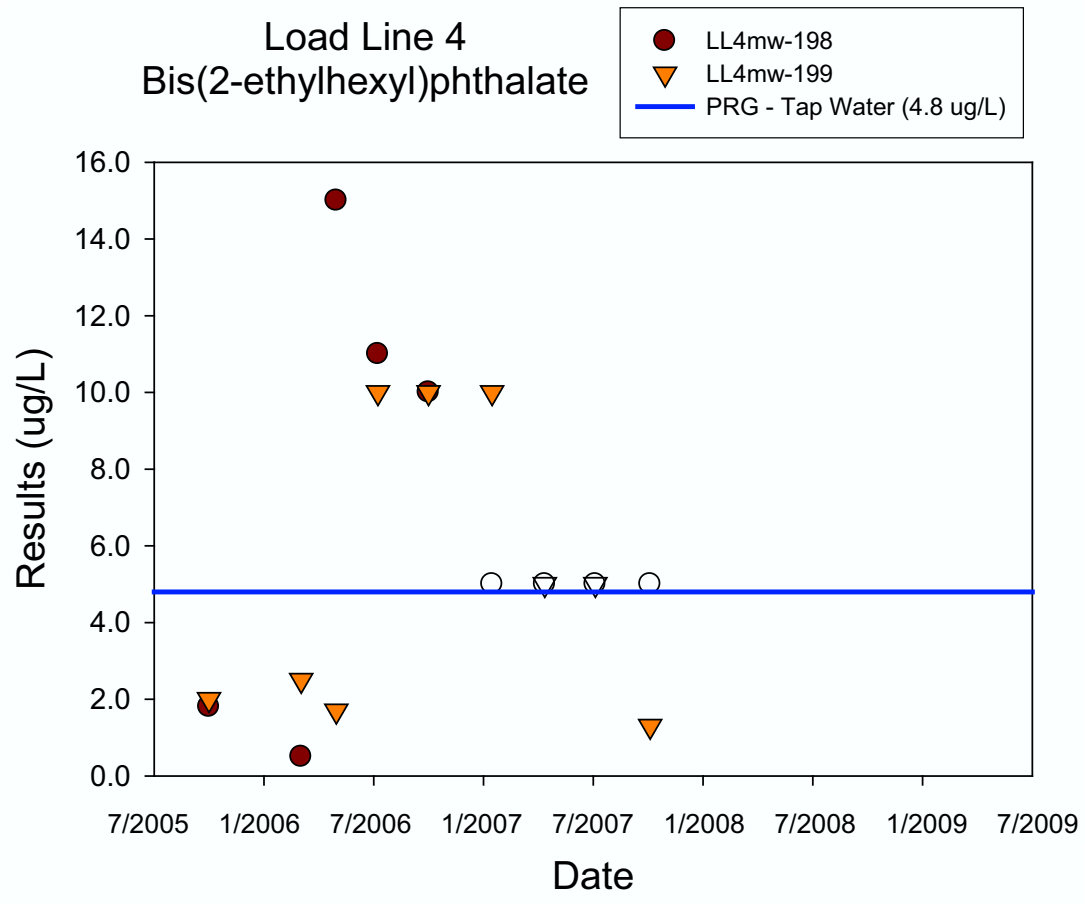

Load Line 4
Iron
LL4mw-193
LL4mw-195
LL4mw-198
mw-199
consolidated Background (0.279 mg/L)
PRG - Tap Water (11 mg/L)
MCL (0.3 mg/L)
Results (mg/L)
12.0
10.0
8.0
6.0
4.0
2.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

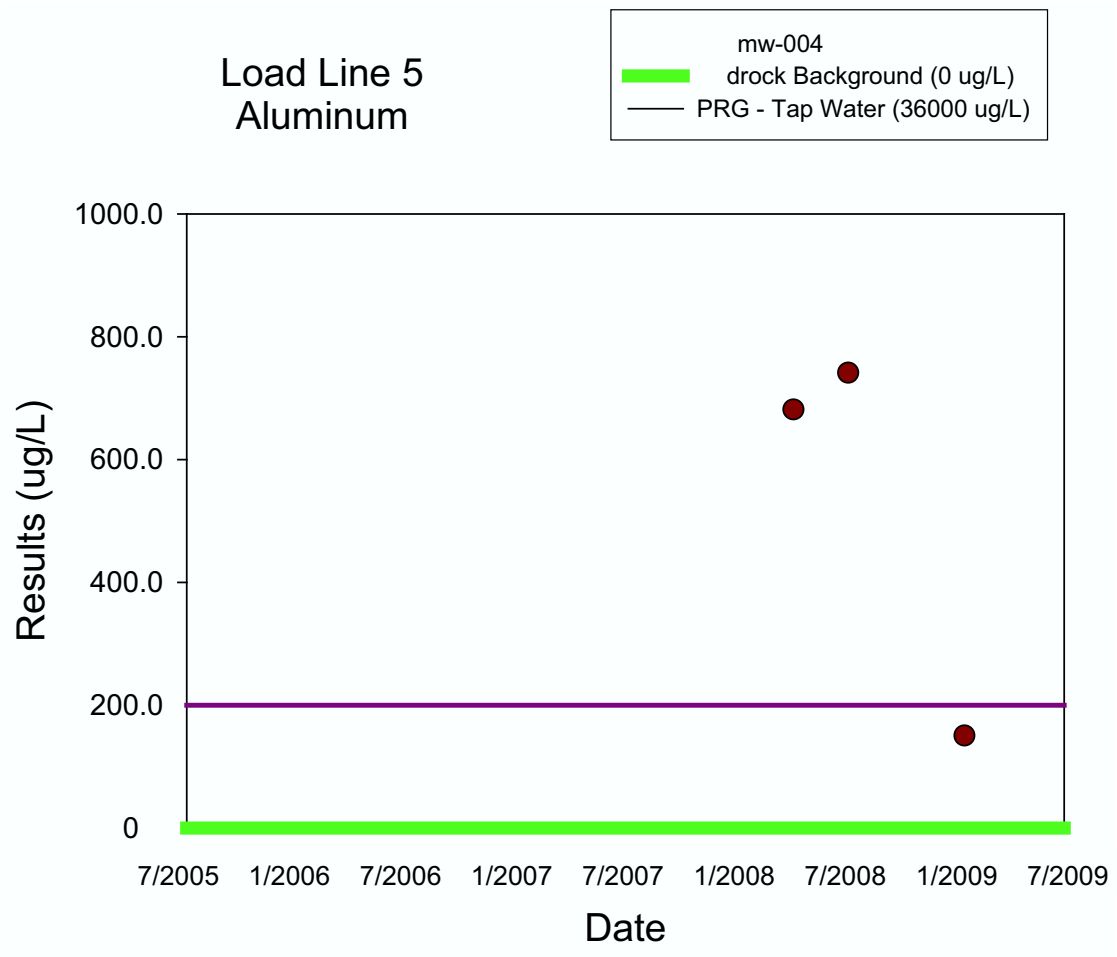

Load Line 4
Magnesium
LL4mw-193
LL4mw-194
LL4mw-195
LL4mw-199
mw-200
consolidated Background (43.3 mg/L)
80.0
60.0
40
20.0
0.0
Results (mg/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

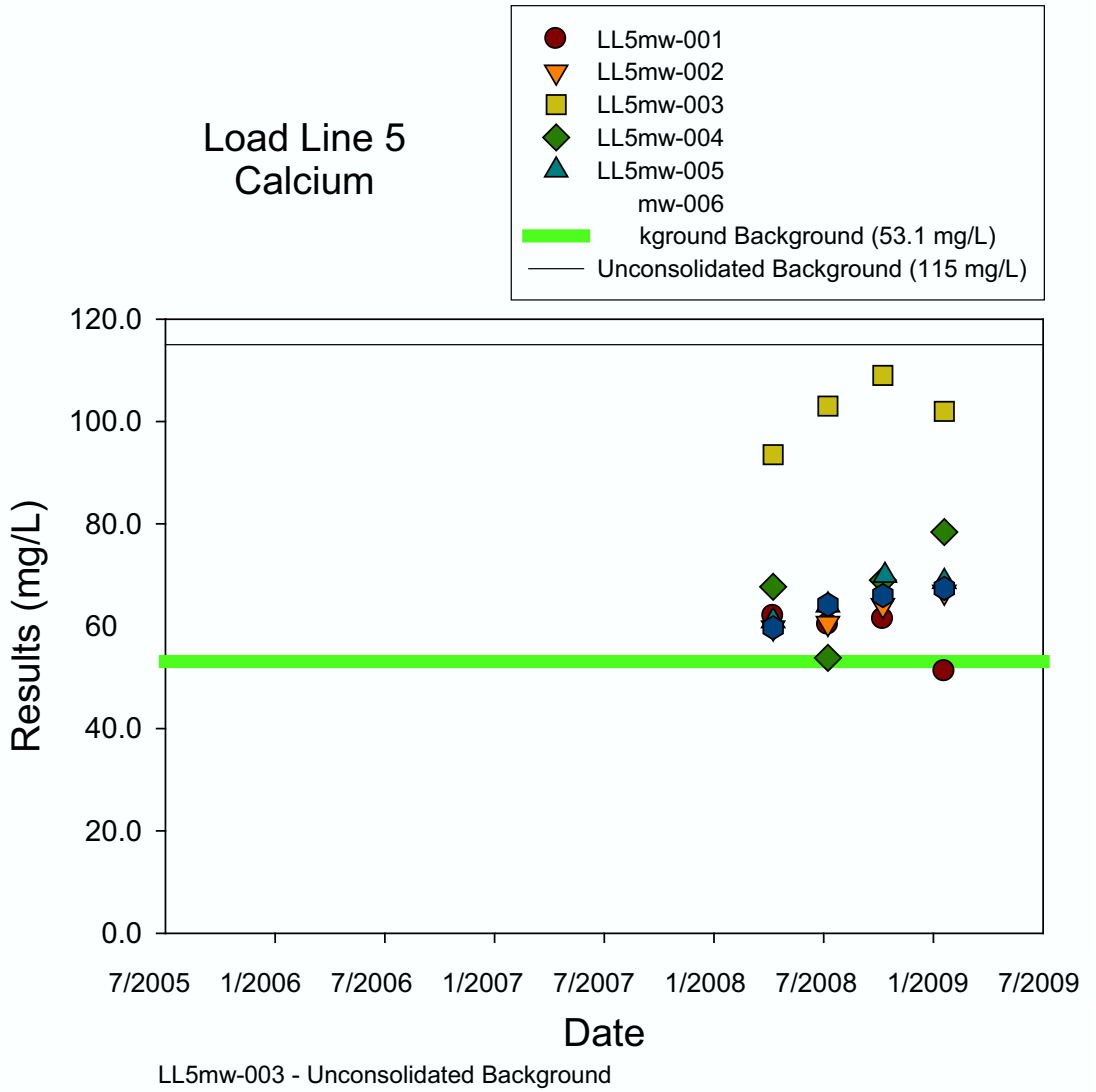

Load Line 4
Manganese
LL4mw-195
mw-198
consolidated Background (1.02 mg/L)
PRG - Tap Water (0.88 mg/L)
MCL (0.05 mg/L)
5.0
4.0
3.0
2.0
1
0.0
Results (mg/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

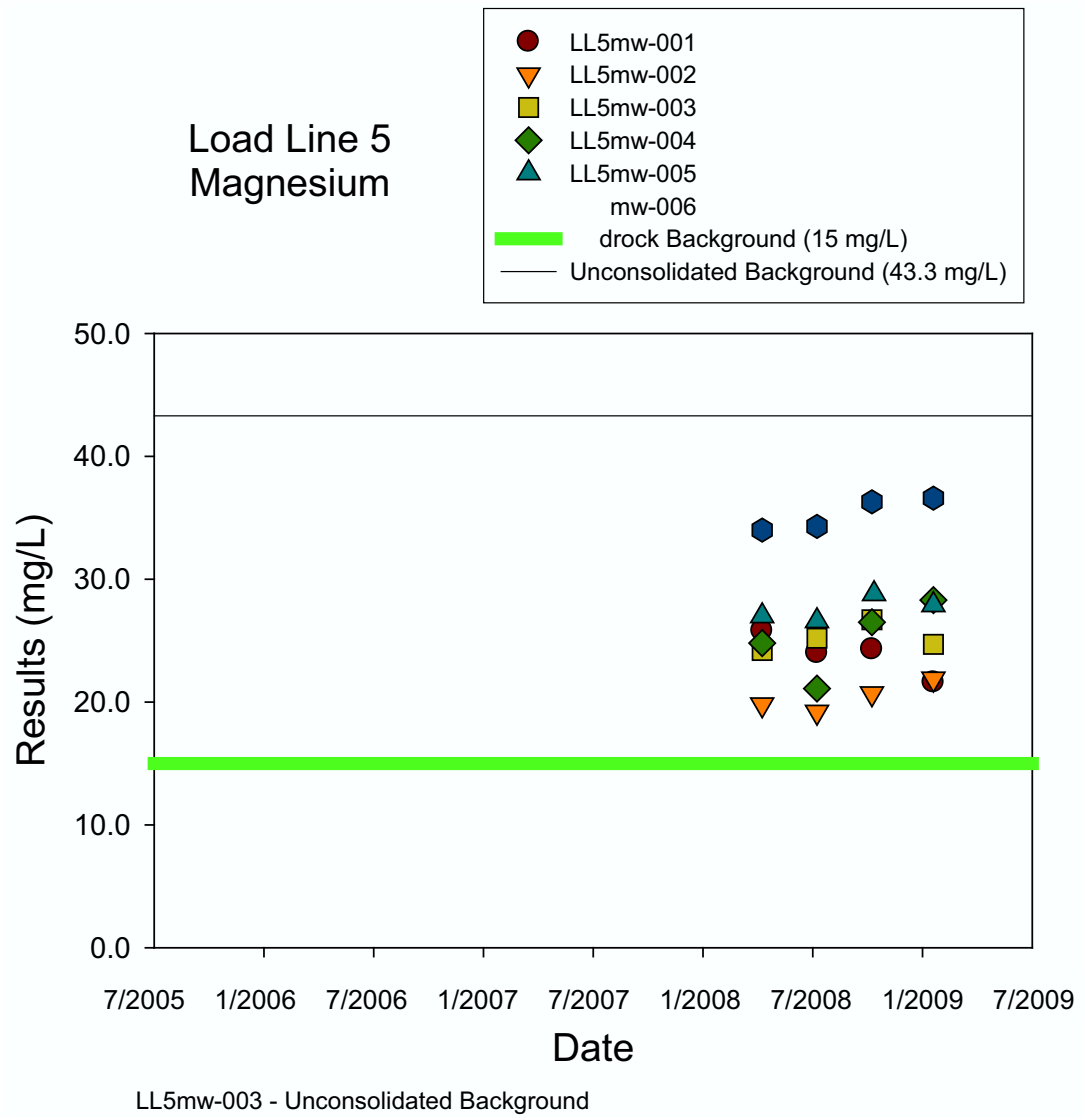

Load Line 4
Nickel
mw-198
consolidated Background (0 ug/L)
PRG - Tap Water (730 ug/L)
MCL (100 ug/L)
Results (ug/L)
100.0
80.0
60.0
40.0
20.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

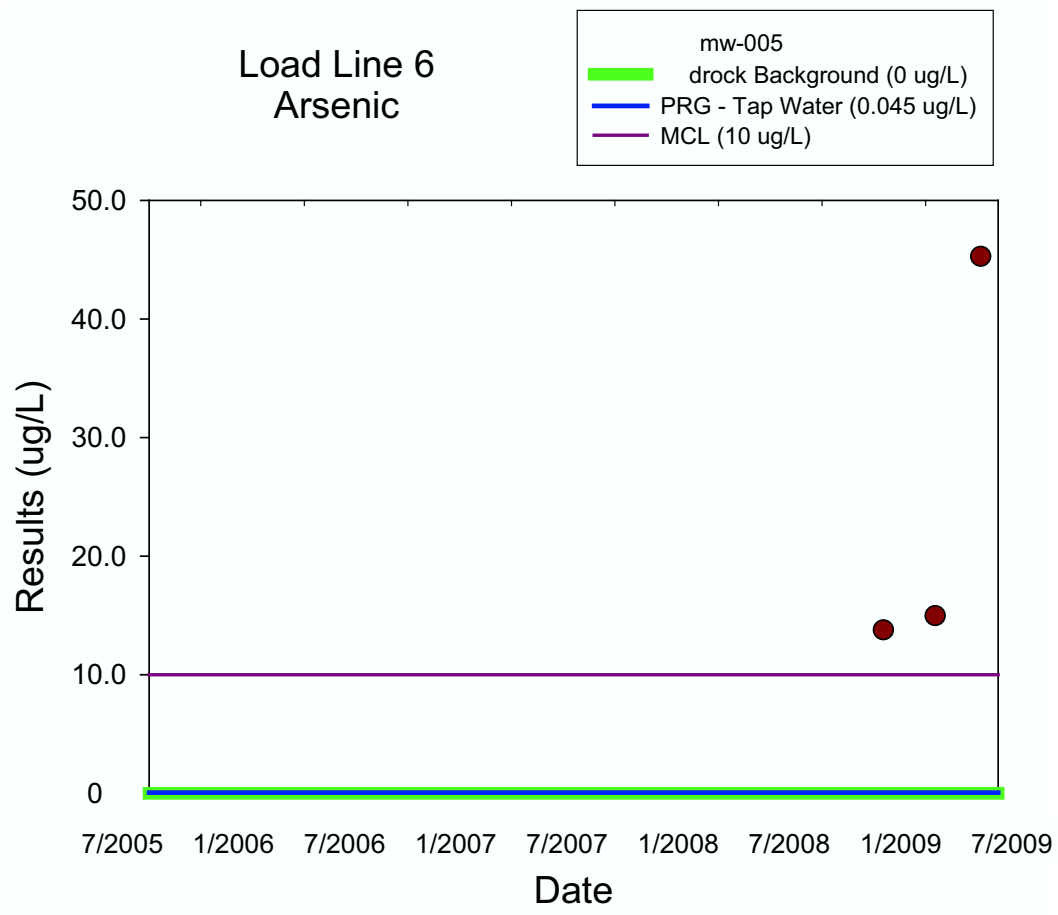

Load Line 4
Zinc
mw-198
consolidated Background (60.90 ug/L)
PRG - Tap Water (11000 ug/L)
Results (ug/L)
200.0
150.0
100.0
50
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

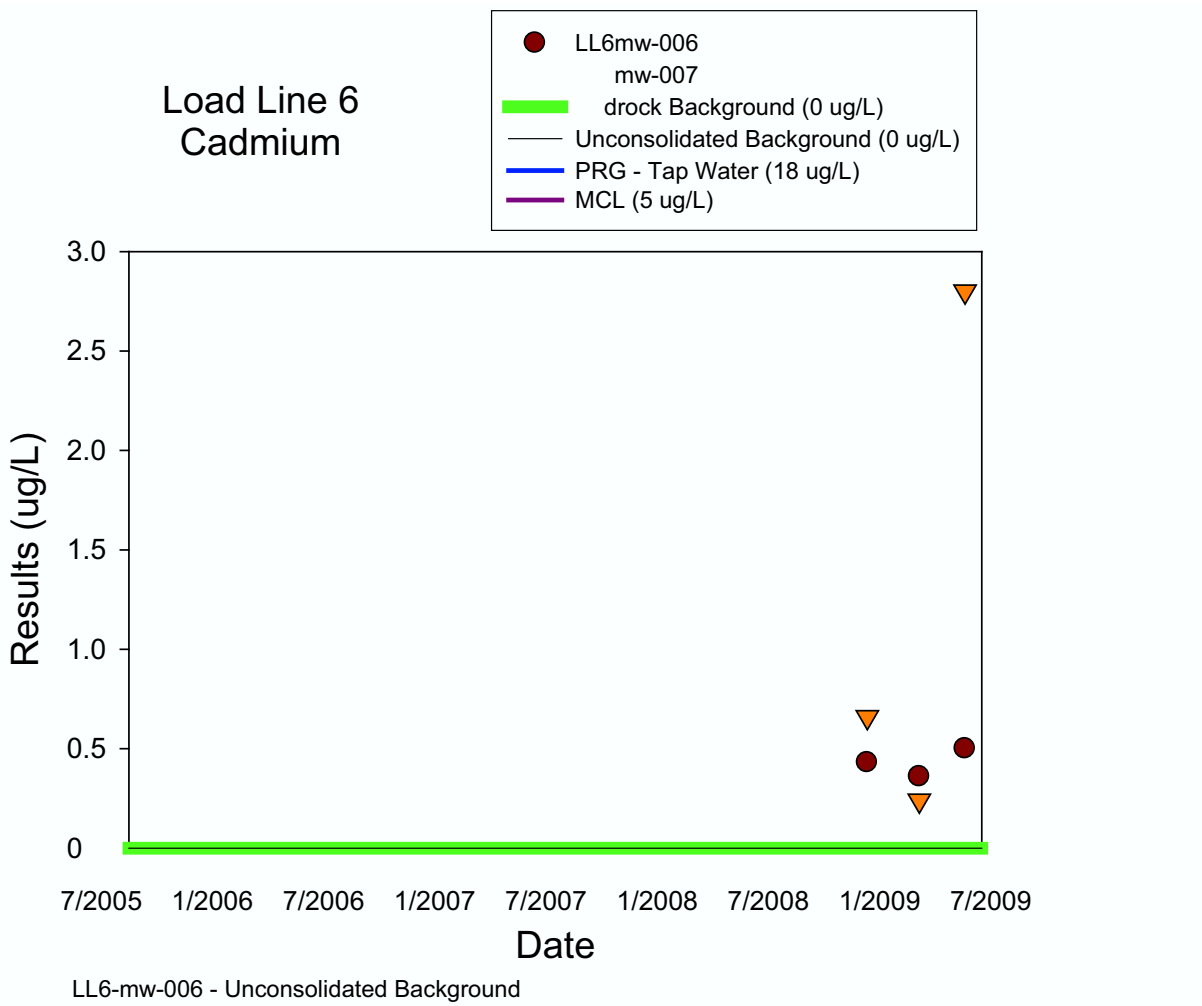

Load Line 4
Bis(2-ethylhexyl)phthalate
LL4mw-198
LL4mw-199
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

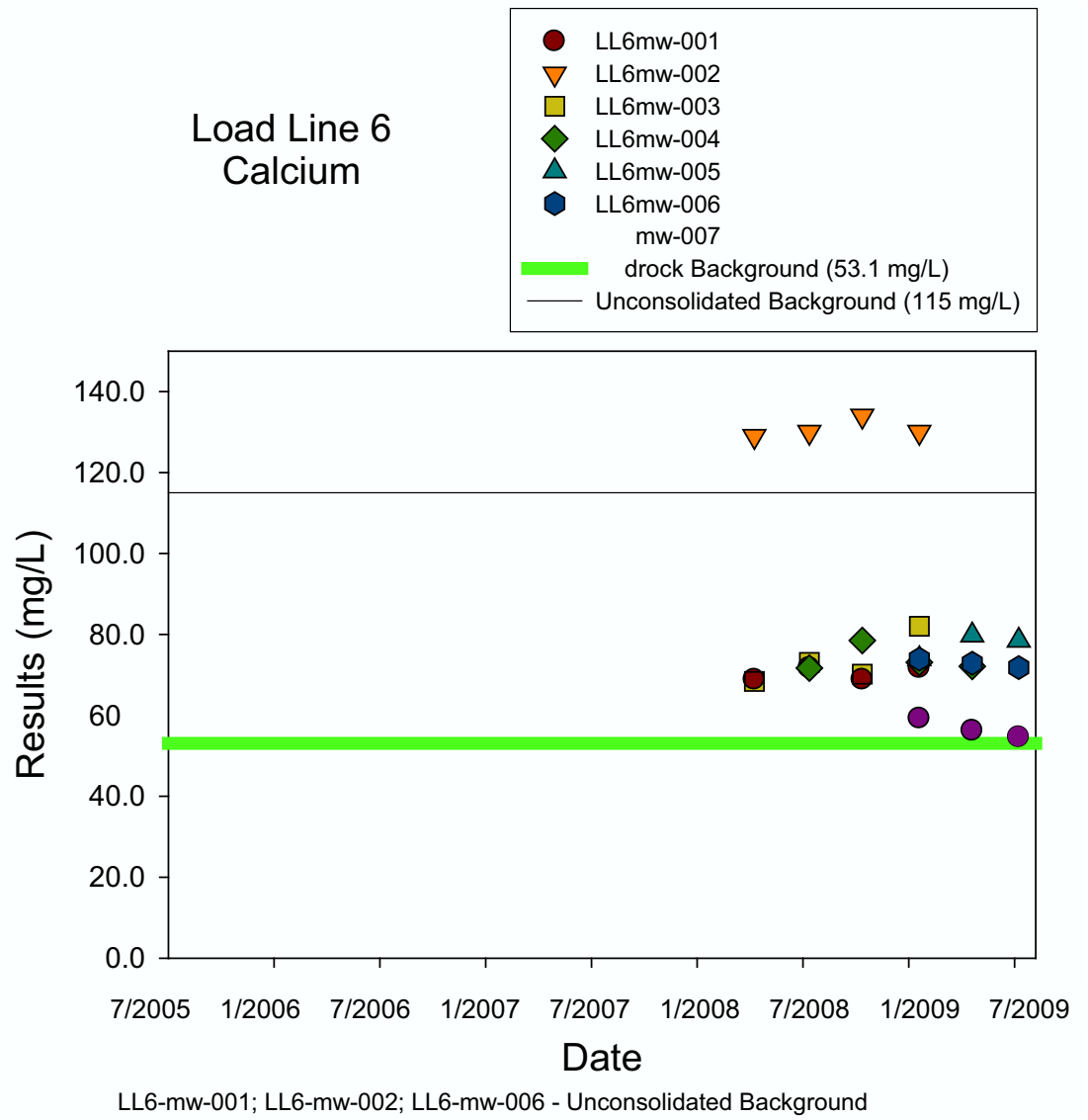

Load Line 5
Aluminum
mw-004
drock Background (0 ug/L)
PRG - Tap Water (36000 ug/L)
Results (ug/L)
1000.0
800.0
600.0
400.0
200.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

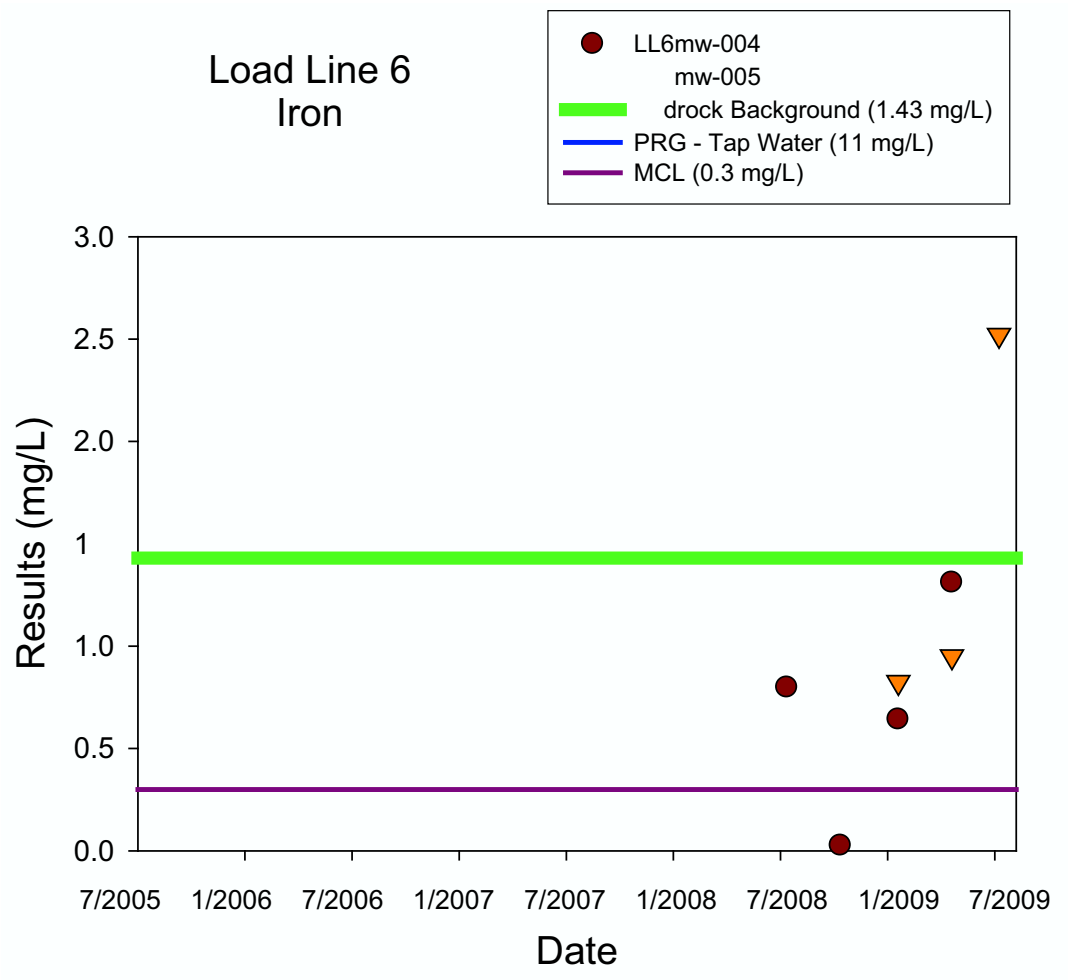

Load Line 5
Calcium
LL5mw-001
LL5mw-002
LL5mw-003
LL5mw-004
LL5mw-005
mw-006
kground Background (53.1 mg/L)
Unconsolidated Background (115 mg/L)
Results (mg/L)
120.0
100.0
80.0
60
40.0
20.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date
LL5mw-003 - Unconsolidated Background

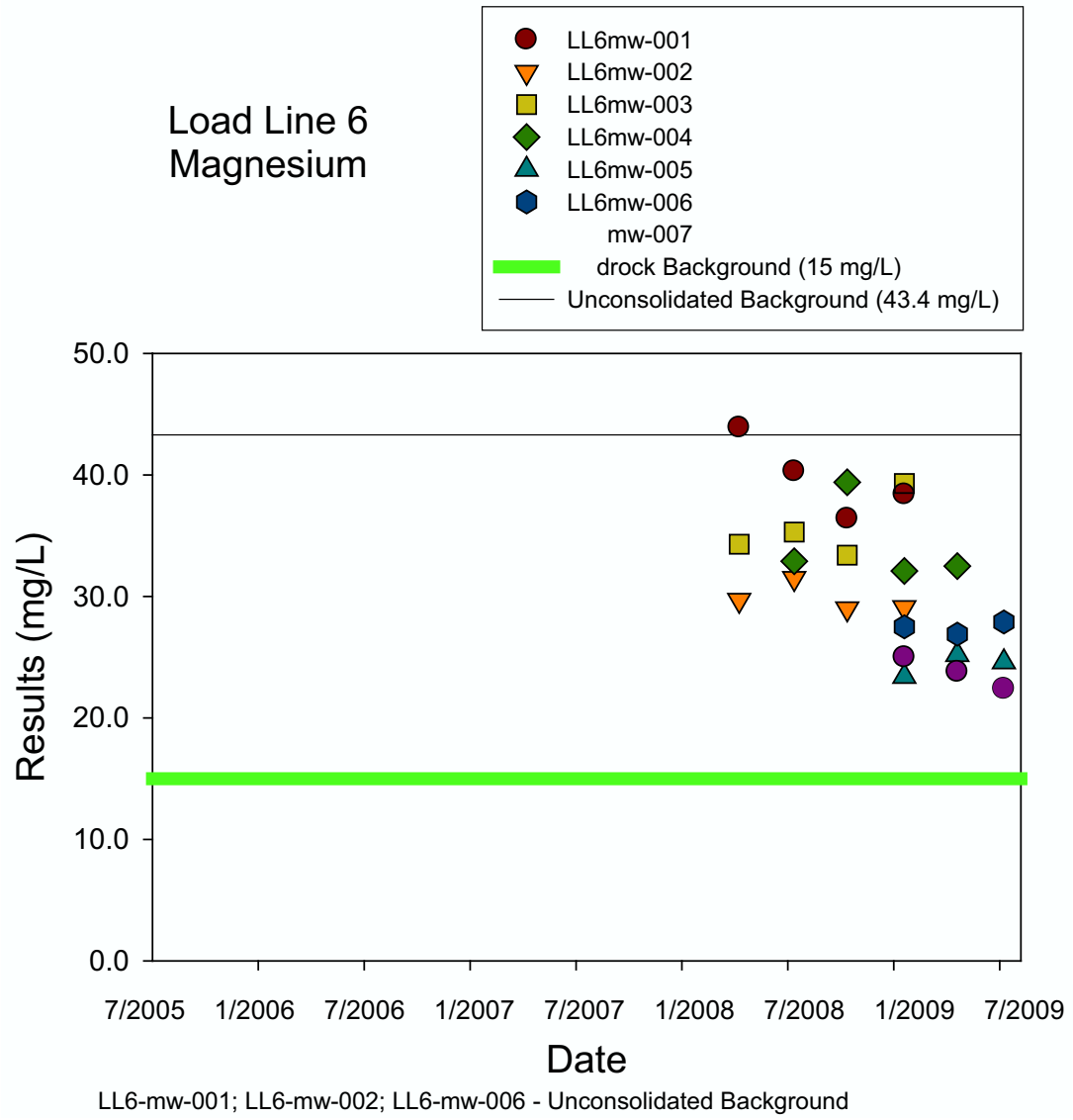

Load Line 5
Magnesium
LL5mw-001
LL5mw-002
LL5mw-003
LL5mw-004
LL5mw-005
mw-006
drock Background (15 mg/L)
Unconsolidated Background (43.3 mg/L)
Results (mg/L)
50.0
40.0
30.0
20.0
10.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date
LL5mw-003 - Unconsolidated Background

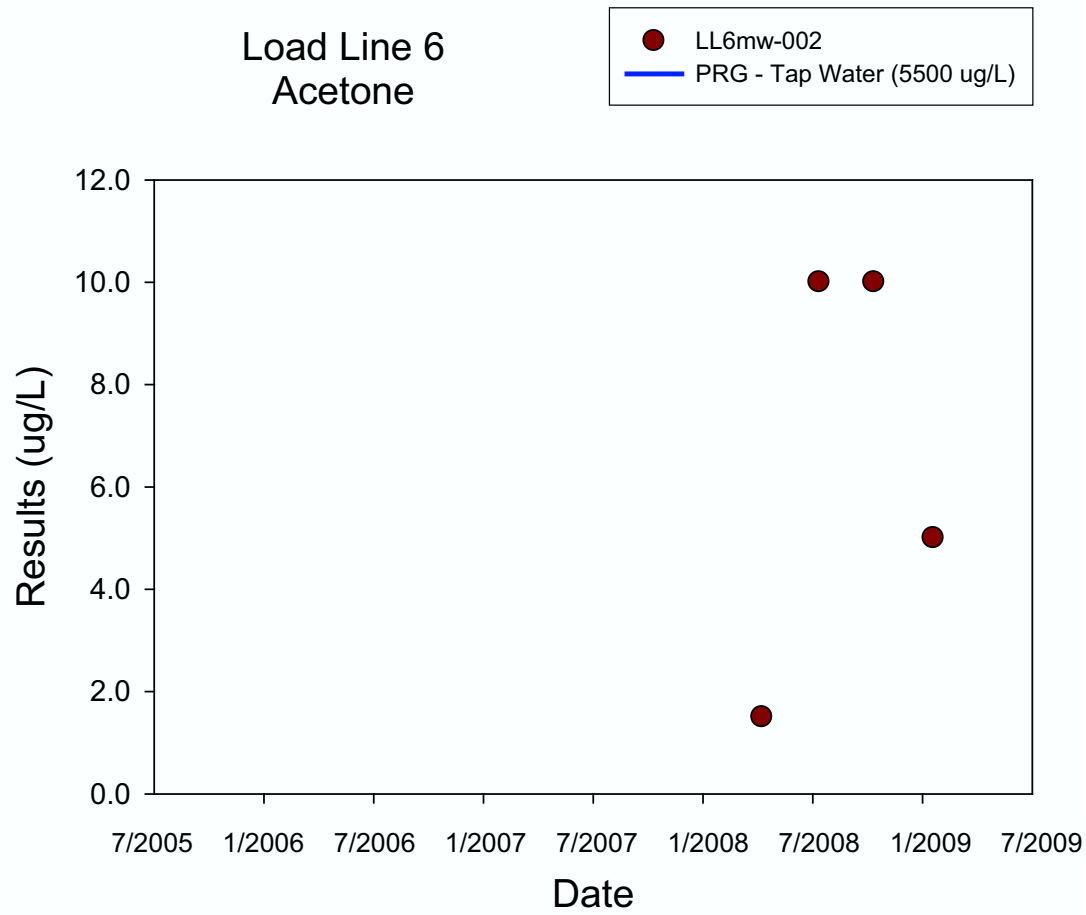

Load Line 6
Arsenic
mw-005
drock Background (0 ug/L)
PRG - Tap Water (0.045 ug/L)
MCL (10 ug/L)
Results (ug/L)
50.0
40.0
30.0
20.0
10.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

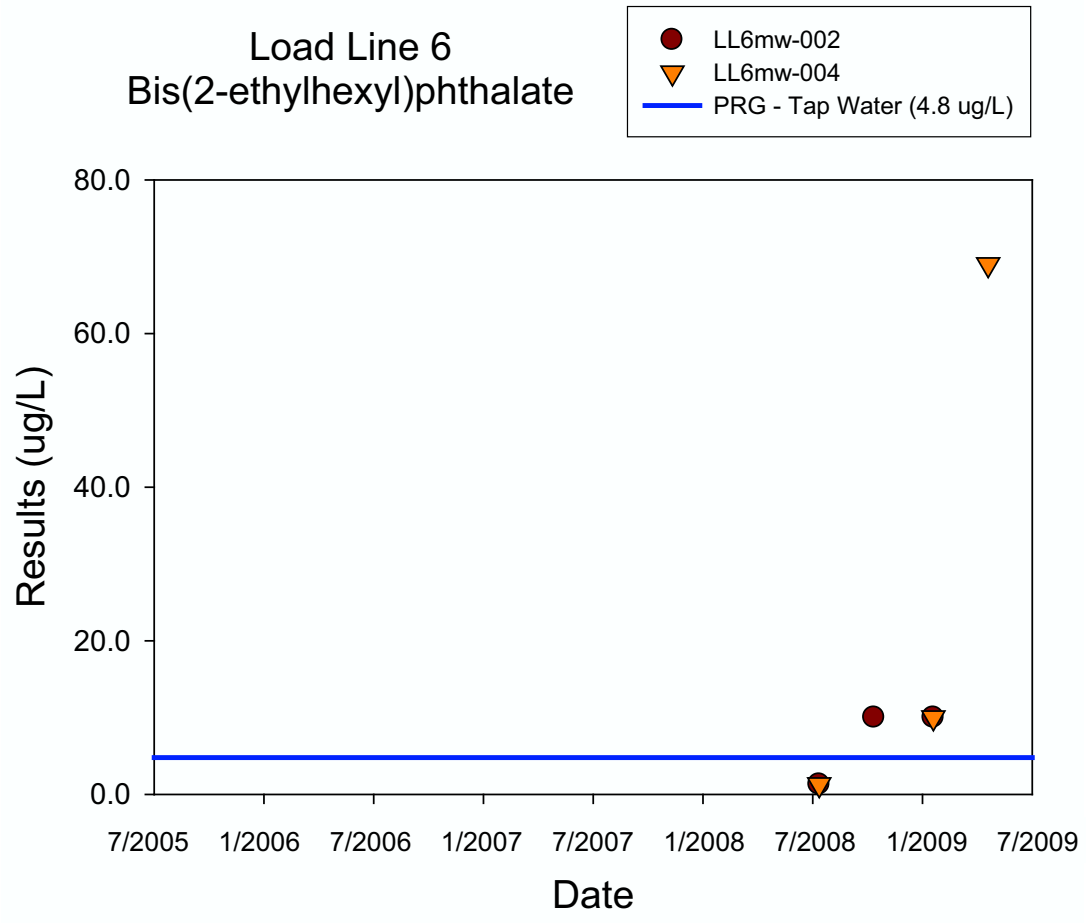

Load Line 6
Cadmium
LL6mw-006
mw-007
drock Background (0 ug/L)
Unconsolidated Background (0 ug/L)
PRG - Tap Water (18 ug/L)
MCL (5 ug/L)
Results (ug/L)
3.0
2.5
2.0
1.5
1.0
0.5
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date
LL6-mw-006 - Unconsolidated Background

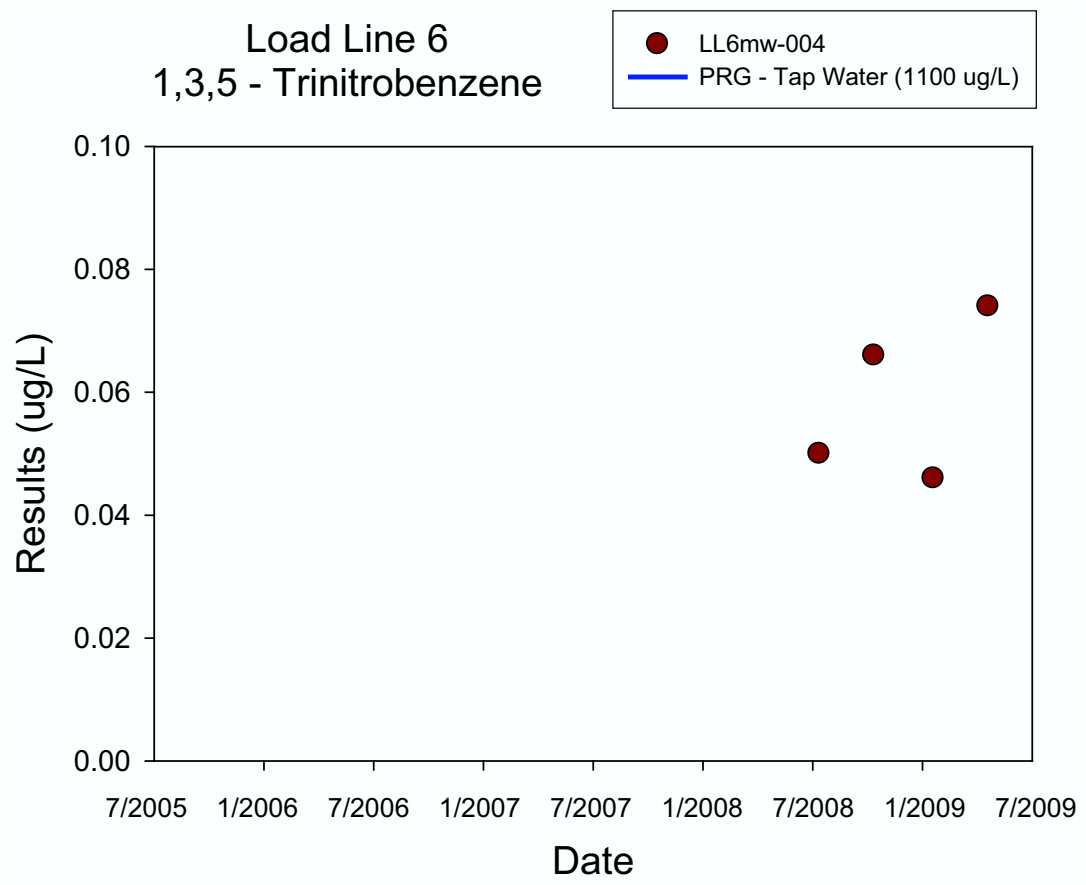

Load Line 6
Calcium
LL6mw-001
LL6mw-002
LL6mw-003
LL6mw-004
LL6mw-005
LL6mw-006
mw-007
drock Background (53.1 mg/L)
Unconsolidated Background (115 mg/L)
Results (mg/L)
140.0
120.0
100.0
80.0
60
40.0
20.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date
LL6-mw-001; LL6-mw-002; LL6-mw-006 - Unconsolidated Background

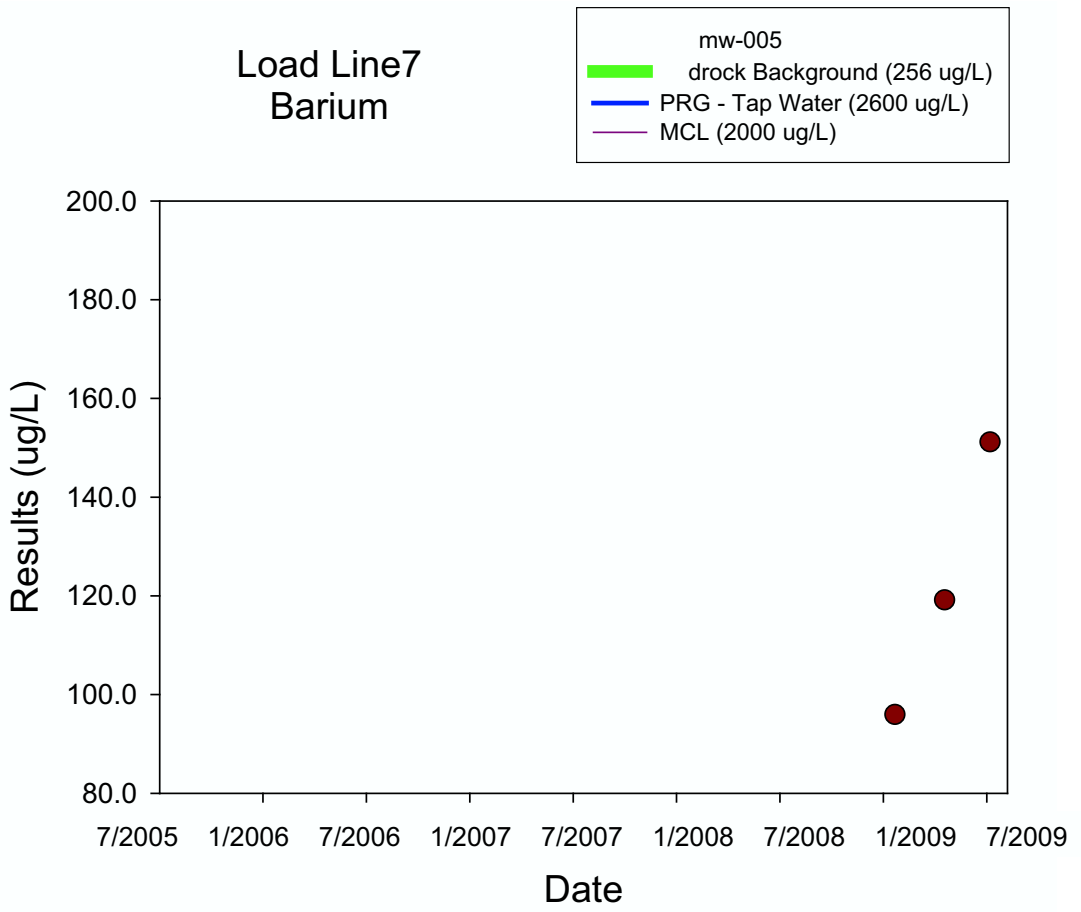

Load Line 6
Iron
LL6mw-004
mw-005
drock Background (1.43 mg/L)
PRG - Tap Water (11 mg/L)
MCL (0.3 mg/L)
Results (mg/L)
3.0
2.5
2.0
1
1.0
0.5
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

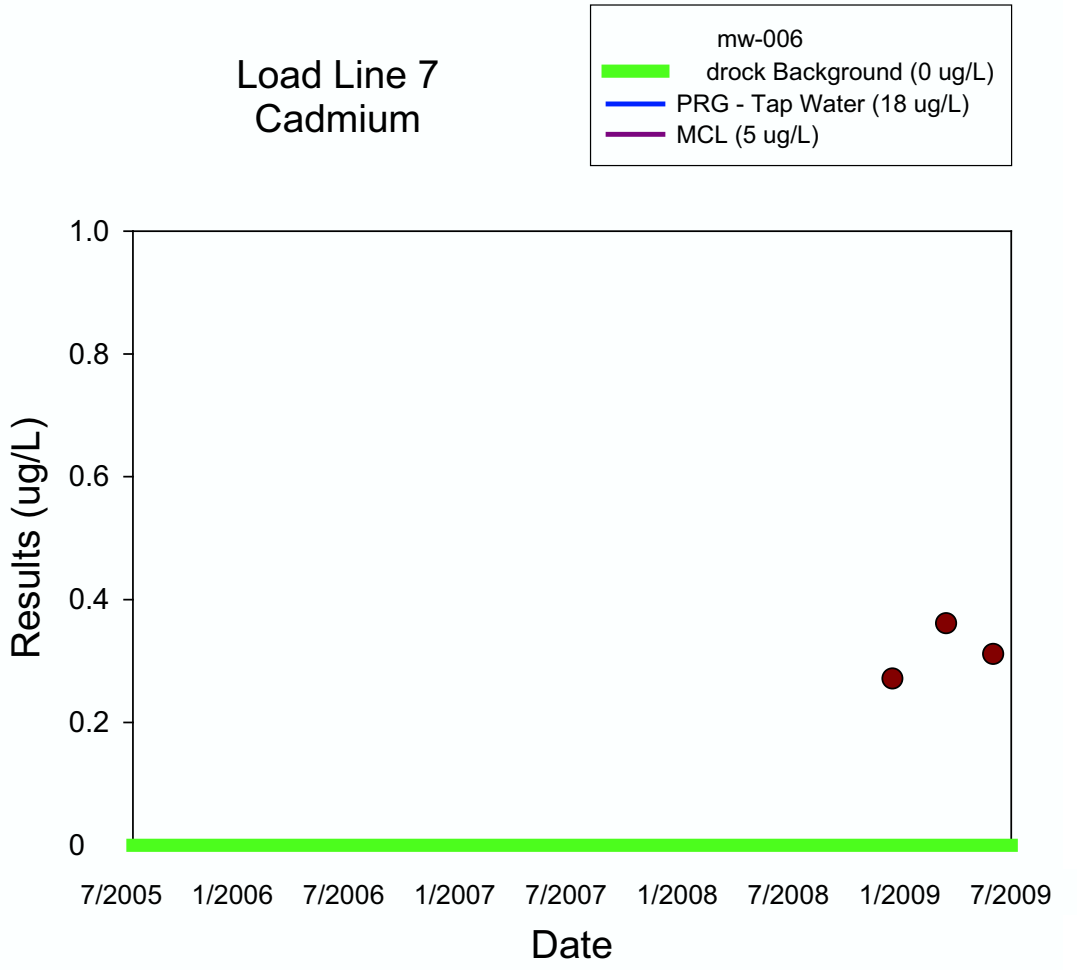

Load Line 6
Magnesium
LL6mw-001
LL6mw-002
LL6mw-003
LL6mw-004
LL6mw-005
LL6mw-006
mw-007
drock Background (15 mg/L)
Unconsolidated Background (43.4 mg/L)
Results (mg/L)
50.0
40.0
30.0
20.0
10.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date
LL6-mw-001; LL6-mw-002; LL6-mw-006 - Unconsolidated Background

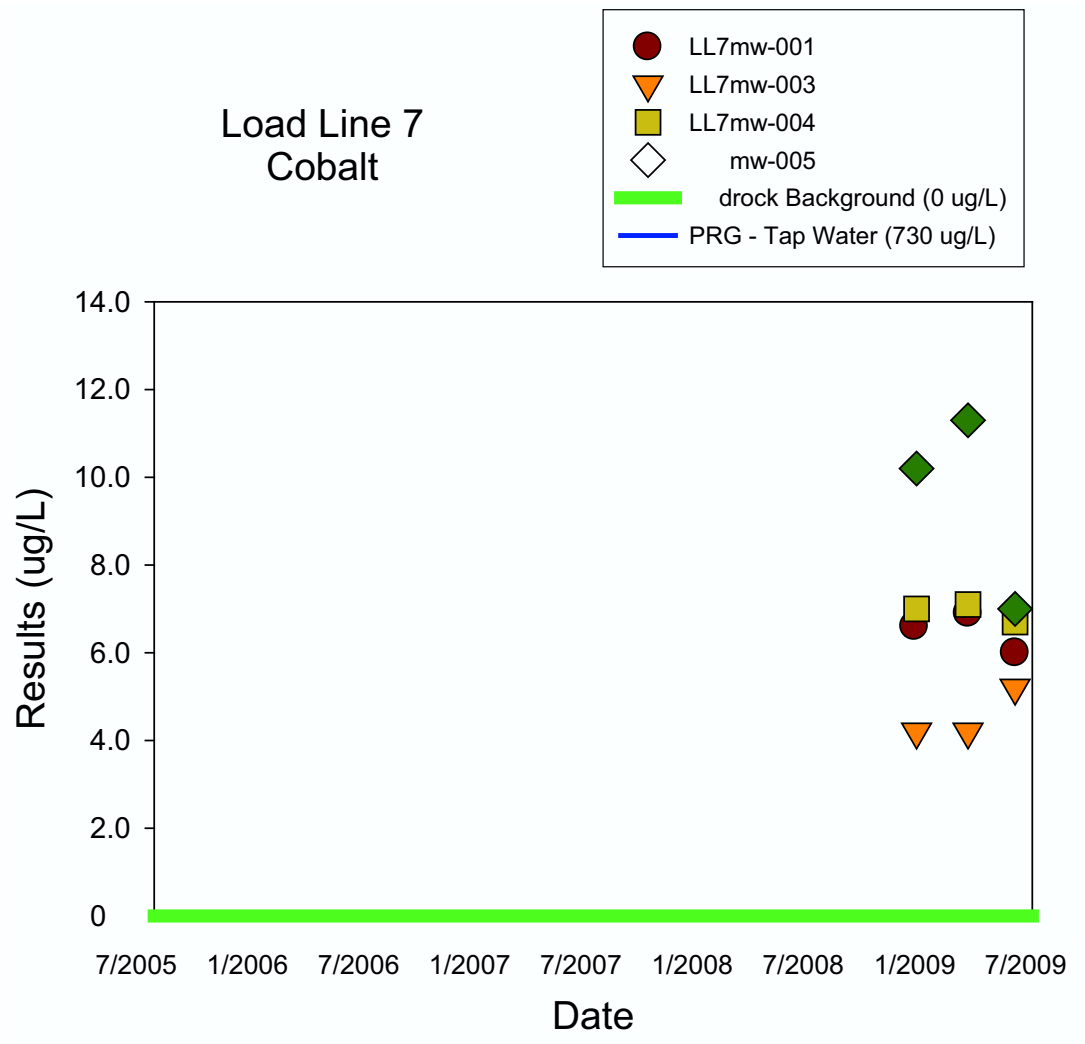

Load Line 6
Acetone
LL6mw-002
PRG - Tap Water (5500 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

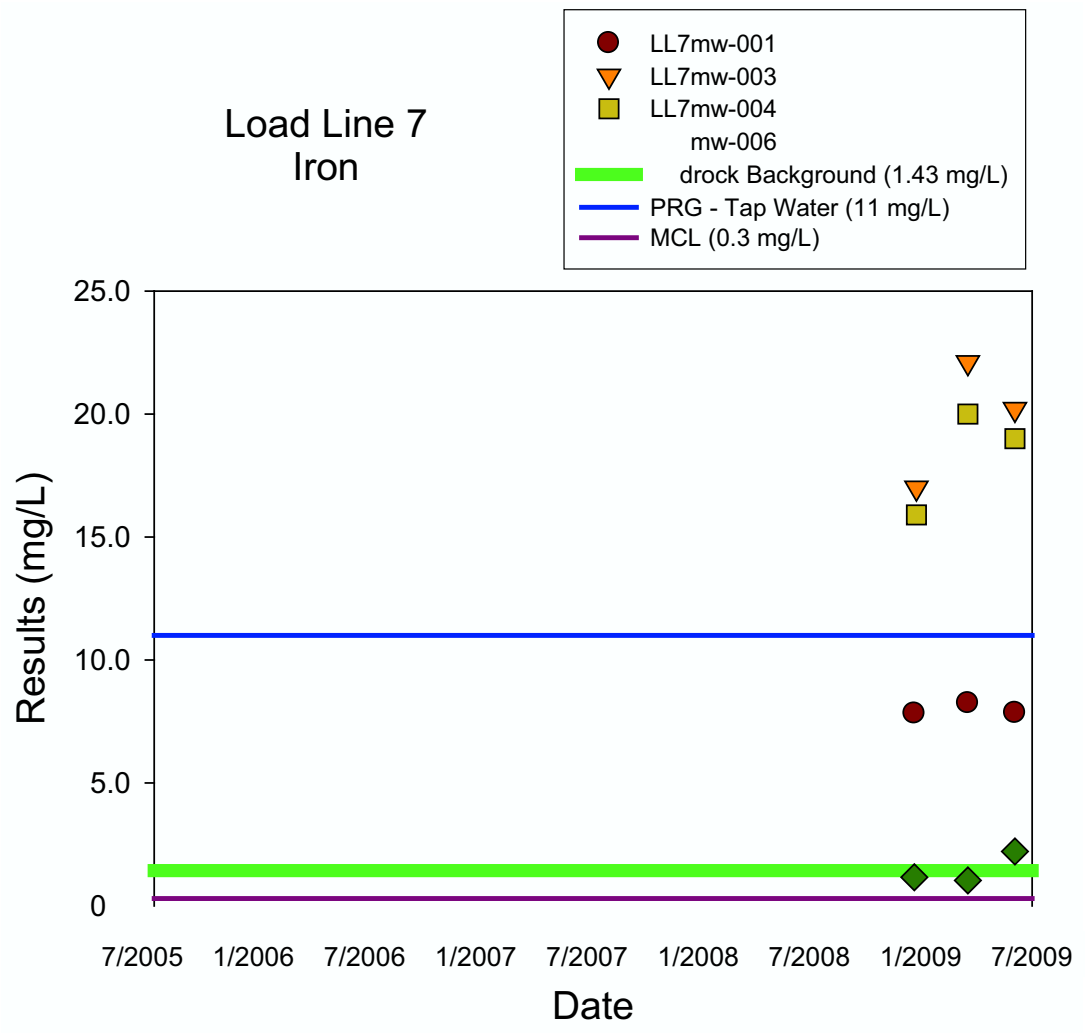

Load Line 6
Bis(2-ethylhexyl)phthalate
LL6mw-002
LL6mw-004
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
80.0
60.0
40.0
20.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

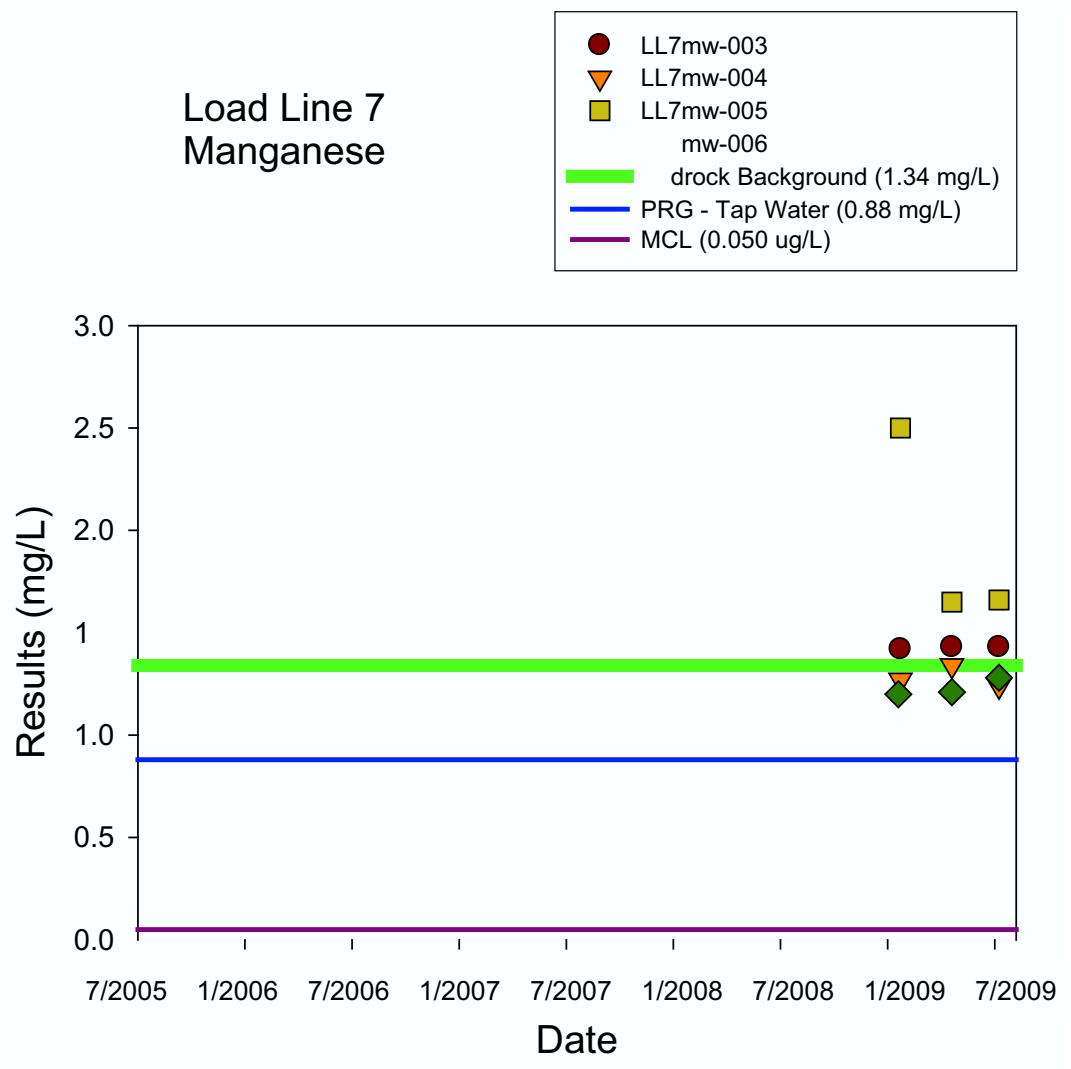

Load Line 6
1,3,5 - Trinitrobenzene
LL6mw-004
PRG - Tap Water (1100 ug/L)
Results (ug/L)
0.10
0.08
0.06
0.04
0.02
0.00
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

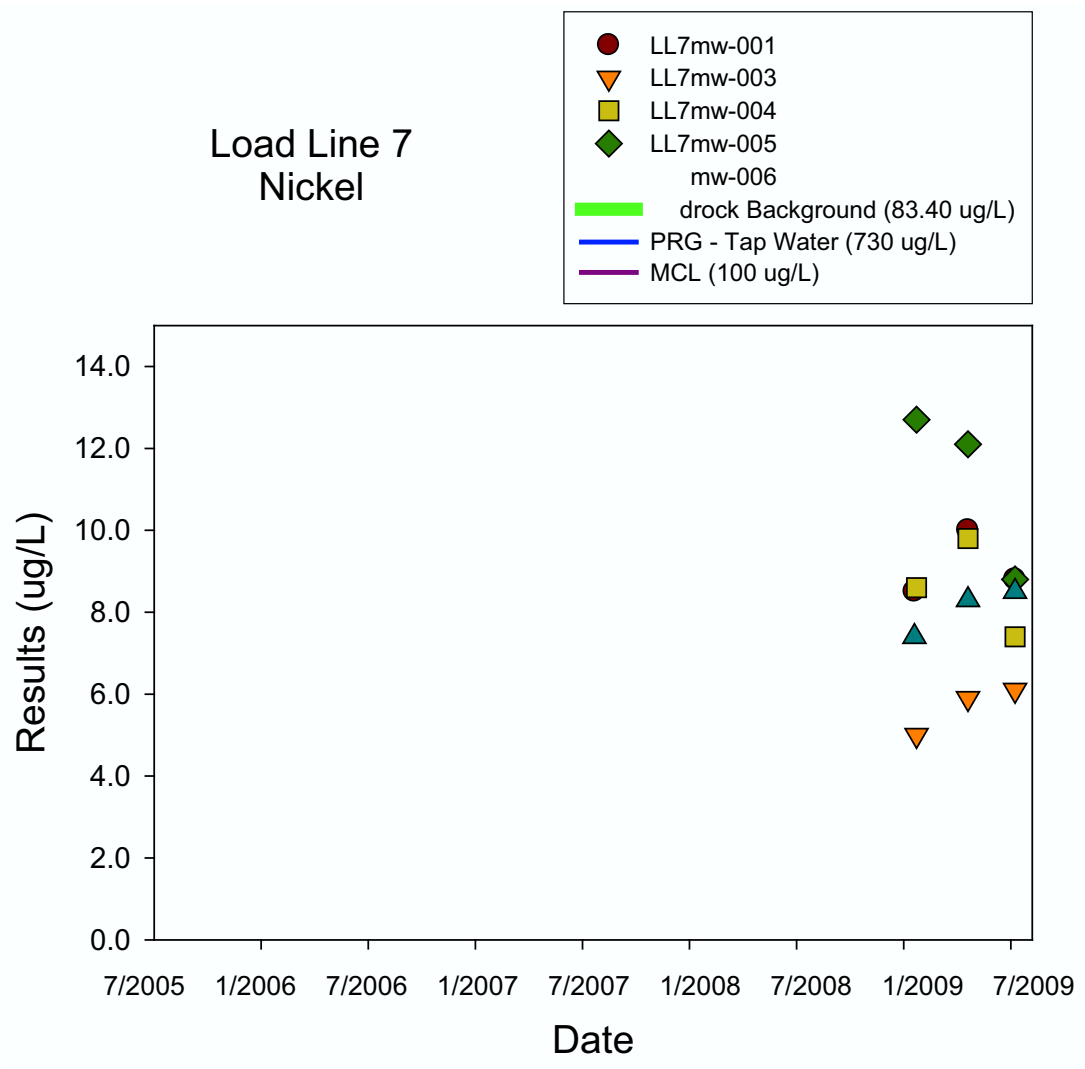

Load Line7
Barium
mw-005
drock Background (256 ug/L)
PRG - Tap Water (2600 ug/L)
MCL (2000 ug/L)
Results (ug/L)
200.0
180.0
160.0
140.0
120.0
100.0
80.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

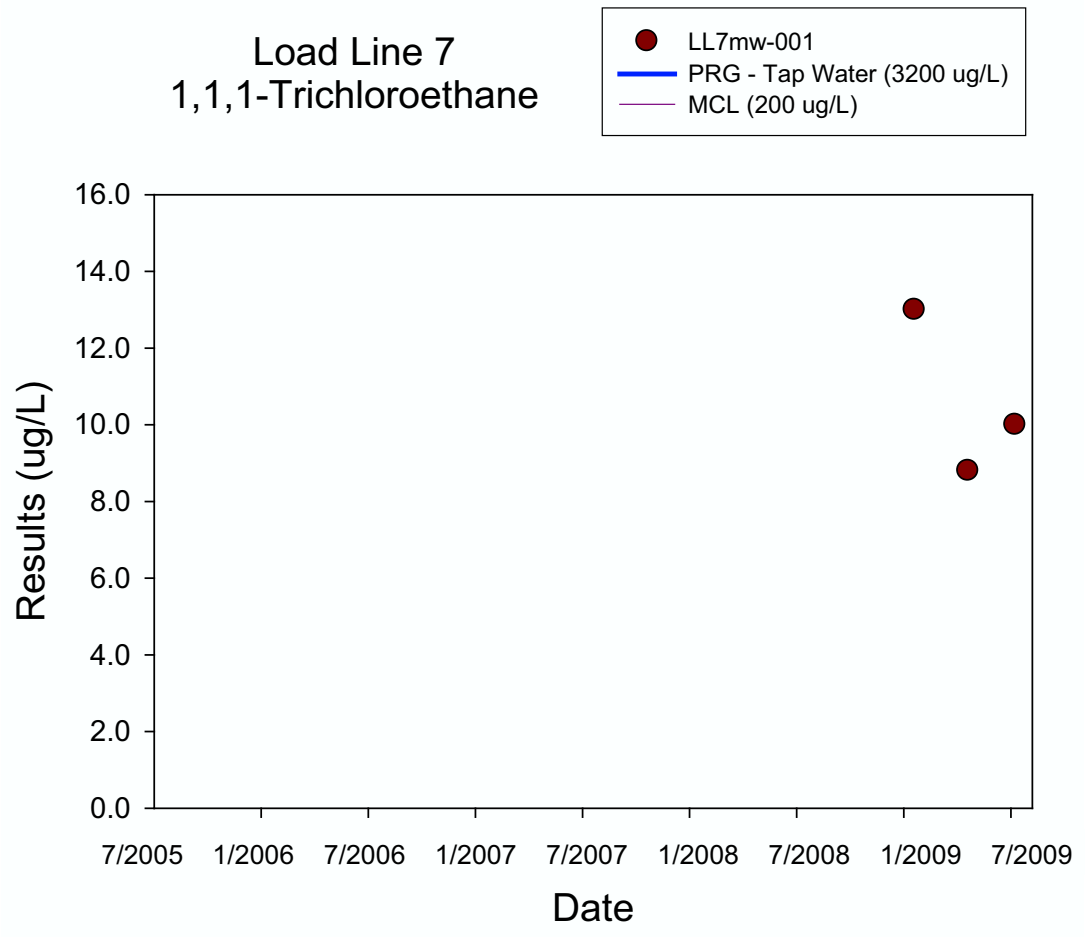

Load Line 7
Cadmium
mw-006
drock Background (0 ug/L)
PRG - Tap Water (18 ug/L)
MCL (5 ug/L)
Results (ug/L)
1.0
0.8
0.6
0.4
0.2
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

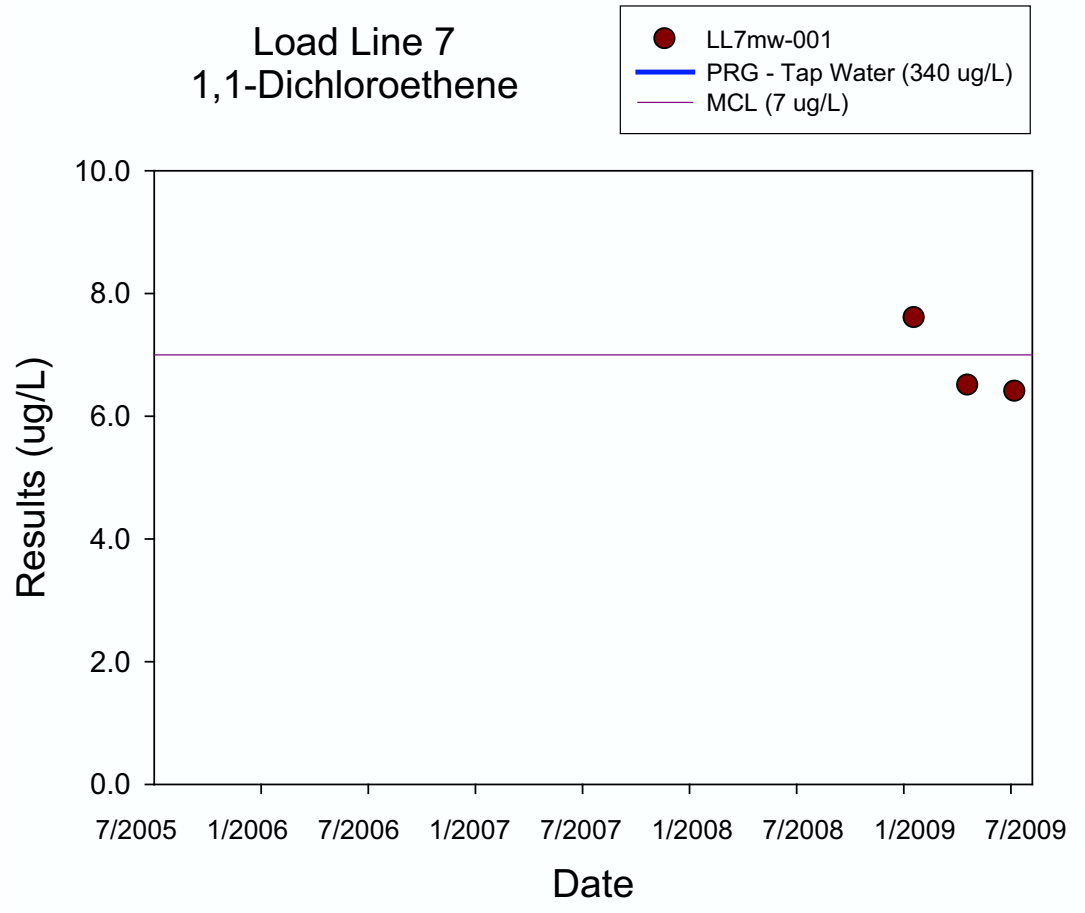

Load Line 7
Cobalt
LL7mw-001
LL7mw-003
LL7mw-004
mw-005
drock Background (0 ug/L)
PRG - Tap Water (730 ug/L)
Results (ug/L)
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

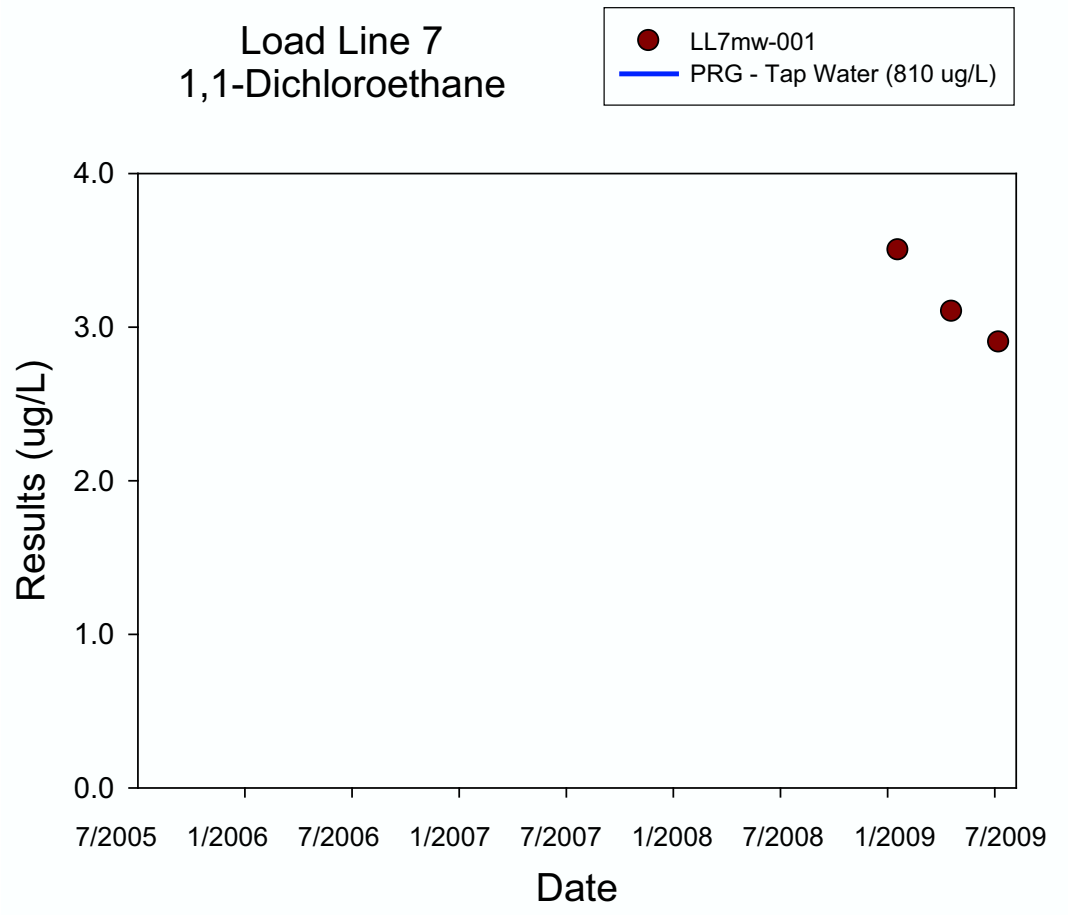

Load Line 7
Iron
LL7mw-001
LL7mw-003
LL7mw-004
mw-006
drock Background (1.43 mg/L)
PRG - Tap Water (11 mg/L)
MCL (0.3 mg/L)
Results (mg/L)
25.0
20.0
15.0
10.0
5.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

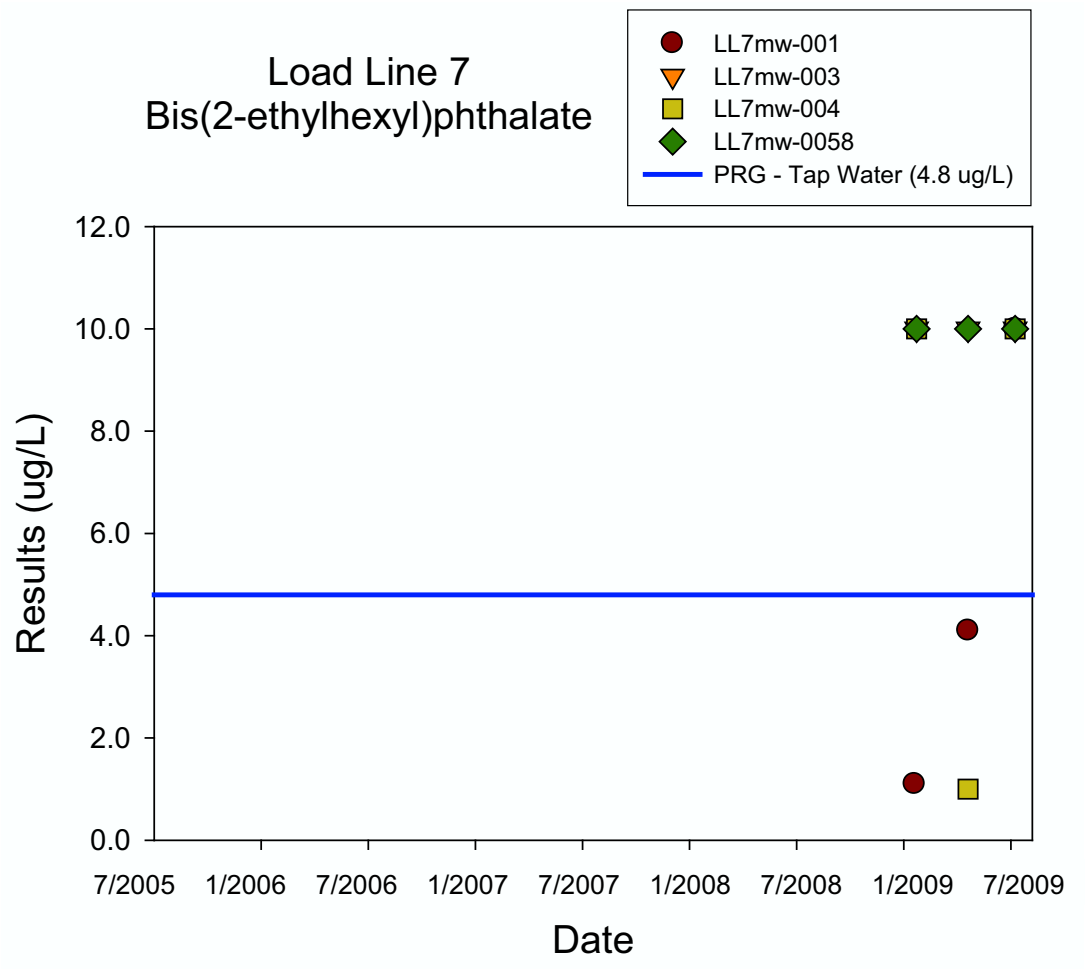

Load Line 7
Manganese
LL7mw-003
LL7mw-004
LL7mw-005
mw-006
drock Background (1.34 mg/L)
PRG - Tap Water (0.88 mg/L)
MCL (0.050 ug/L)
Results (mg/L)
3.0
2.5
2.0
1
1.0
0.5
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

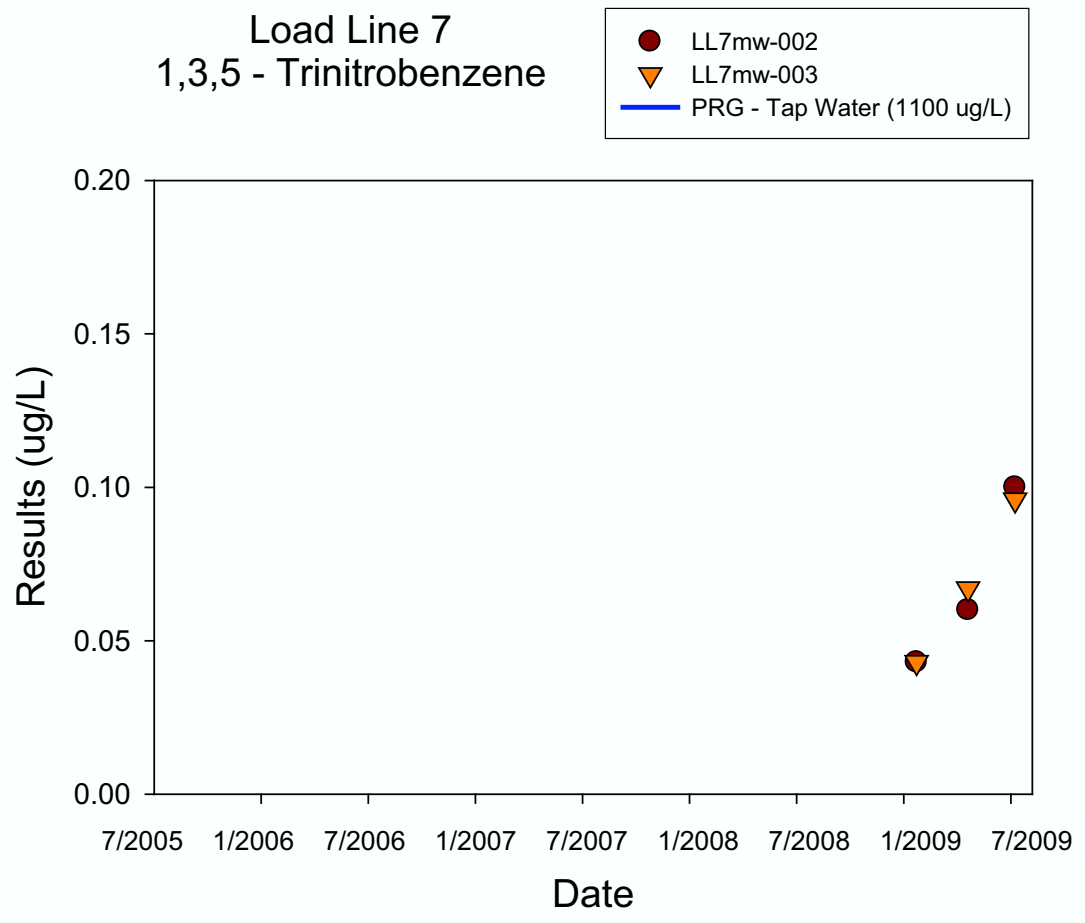

Load Line 7
Nickel
LL7mw-001
LL7mw-003
LL7mw-004
LL7mw-005
mw-006
drock Background (83.40 ug/L)
PRG - Tap Water (730 ug/L)
MCL (100 ug/L)
Results (ug/L)
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

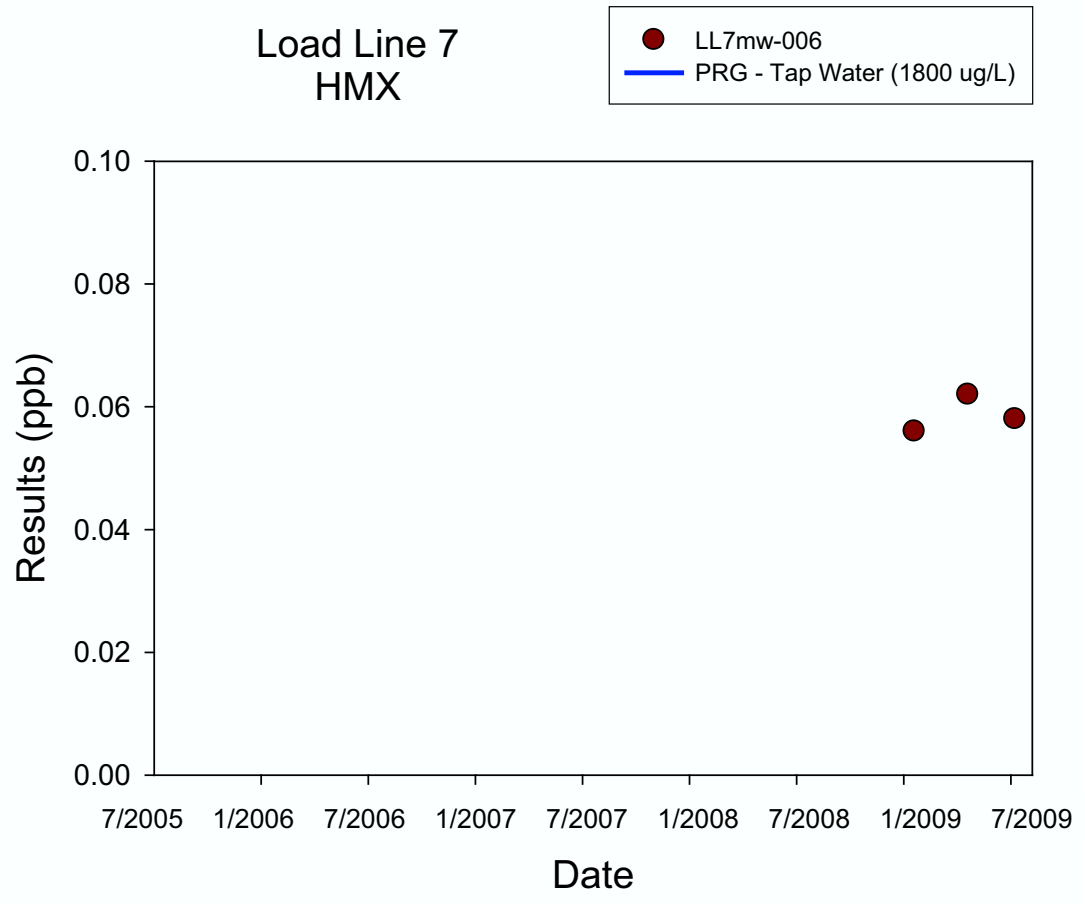

Load Line 7
1,1,1-Trichloroethane
LL7mw-001
PRG - Tap Water (3200 ug/L)
MCL (200 ug/L)
Results (ug/L)
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

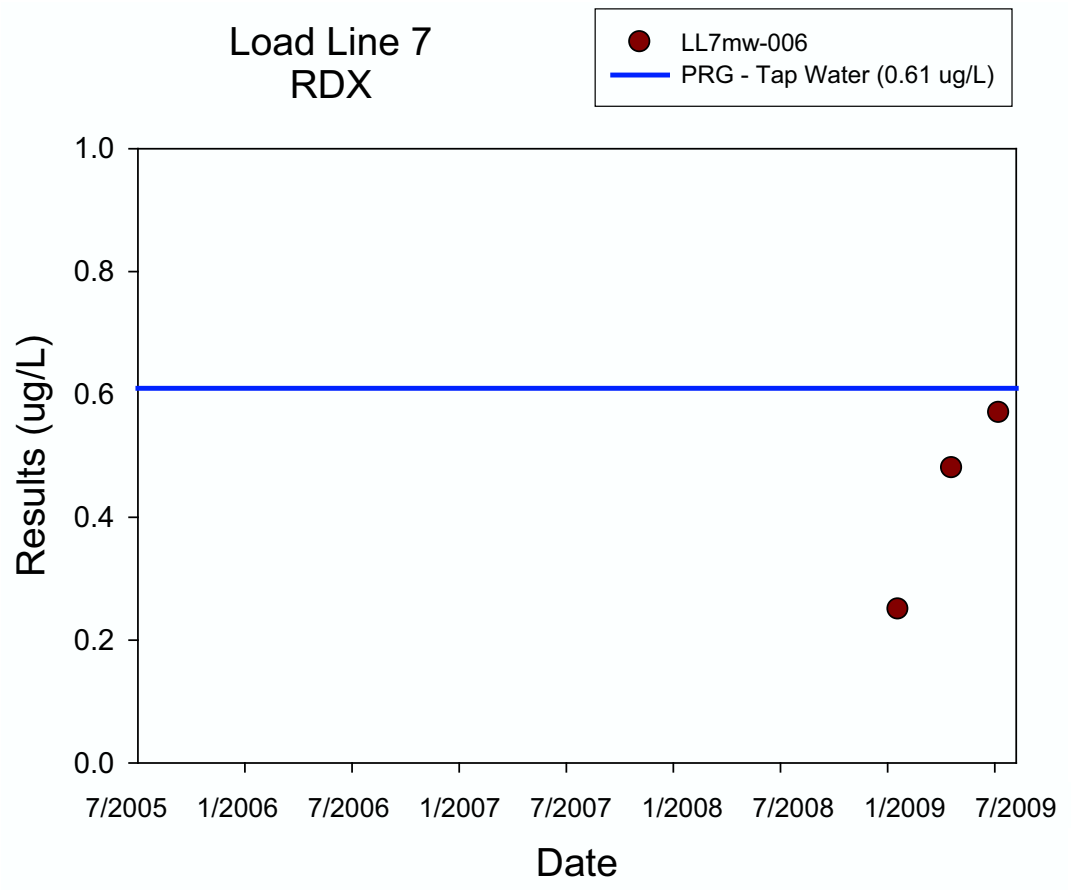

Load Line 7
1,1-Dichloroethene
LL7mw-001
PRG - Tap Water (340 ug/L)
MCL (7 ug/L)
Results (ug/L)
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

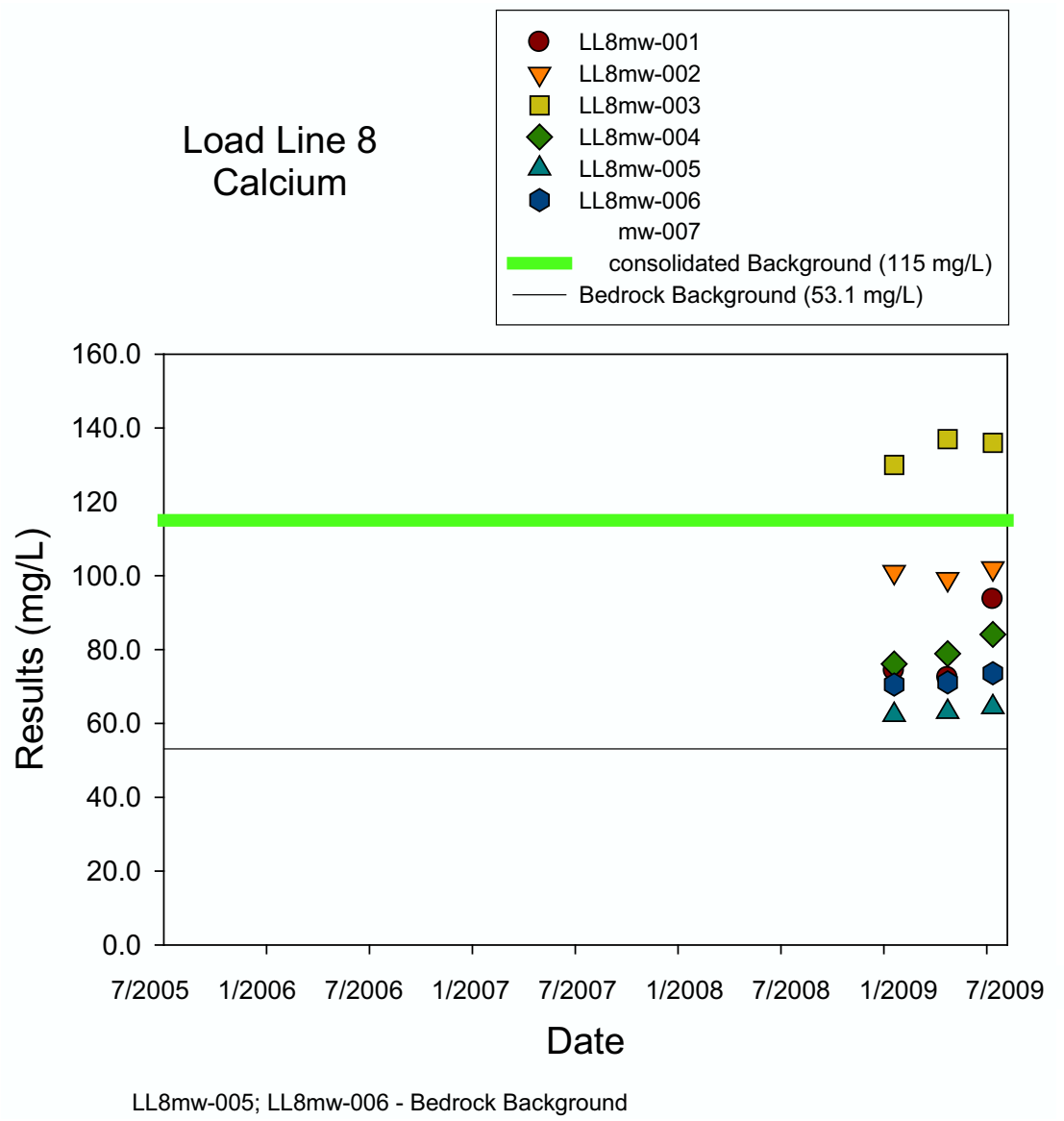

Load Line 7
1,1-Dichloroethane
LL7mw-001
PRG - Tap Water (810 ug/L)
Results (ug/L)
4.0
3.0
2.0
1.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

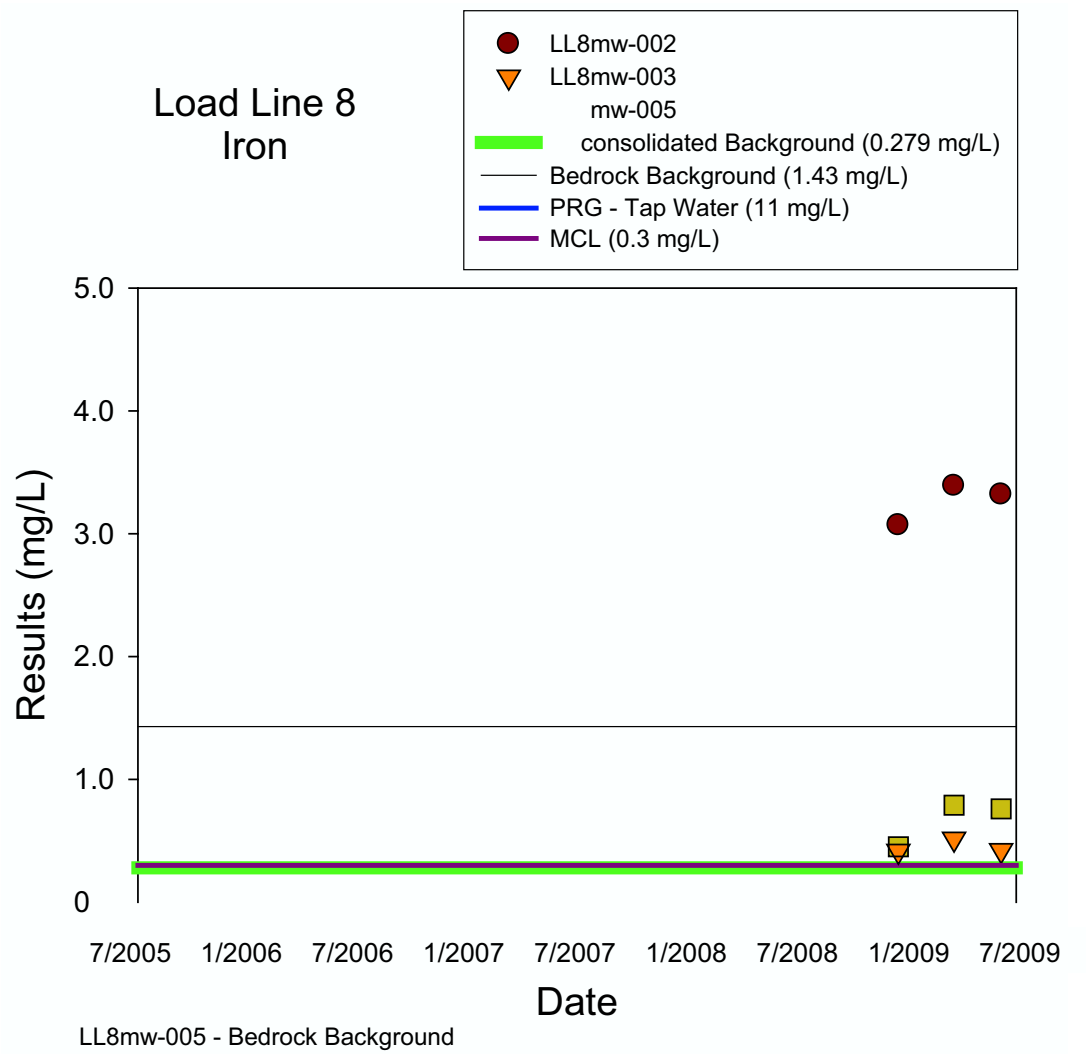

Load Line 7
Bis(2-ethylhexyl)phthalate
LL7mw-001
LL7mw-003
LL7mw-004
LL7mw-0058
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

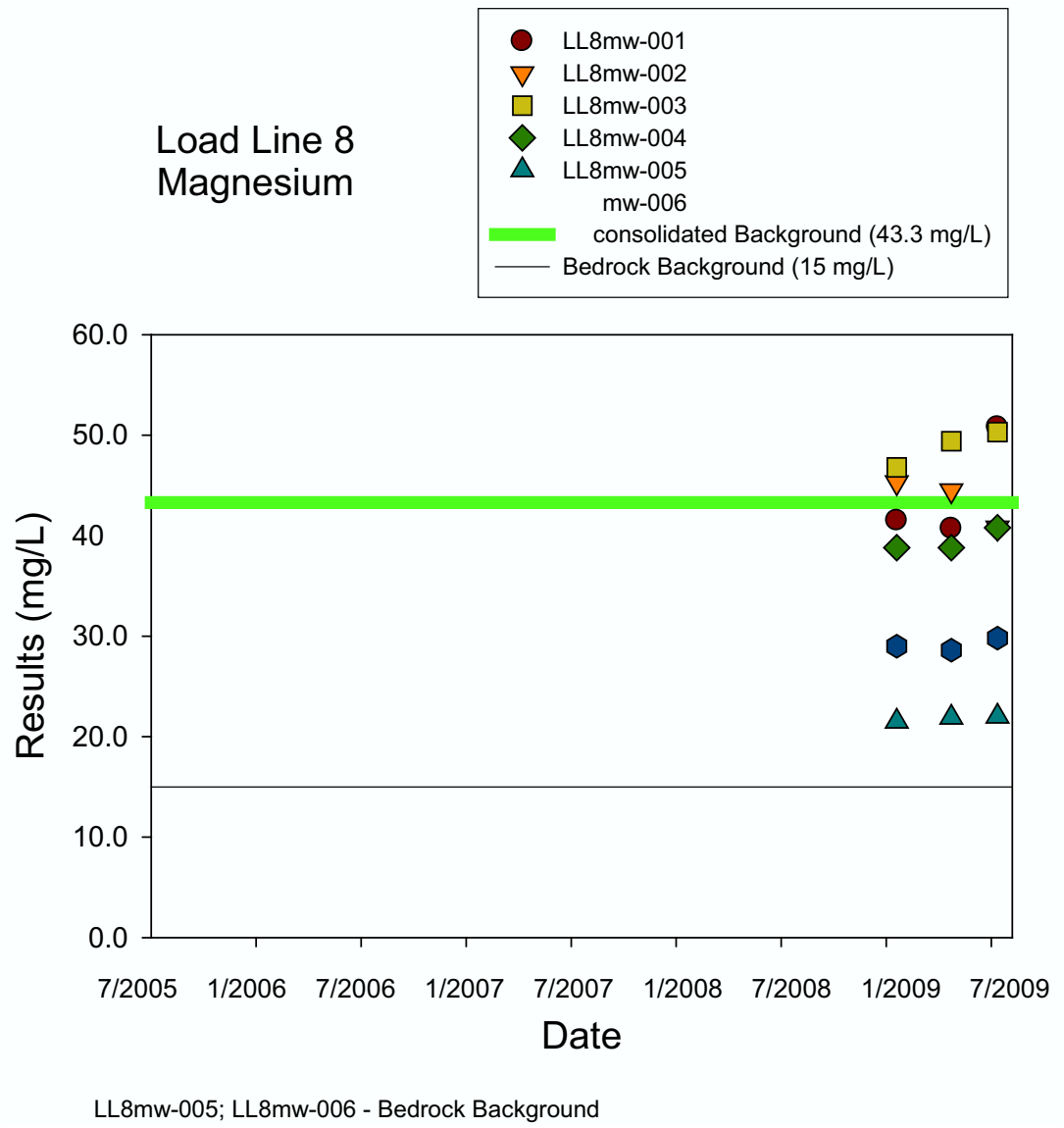

Load Line 7
1,3,5 - Trinitrobenzene
LL7mw-002
LL7mw-003
PRG - Tap Water (1100 ug/L)
Results (ug/L)
0.20
0.15
0.10
0.05
0.00
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

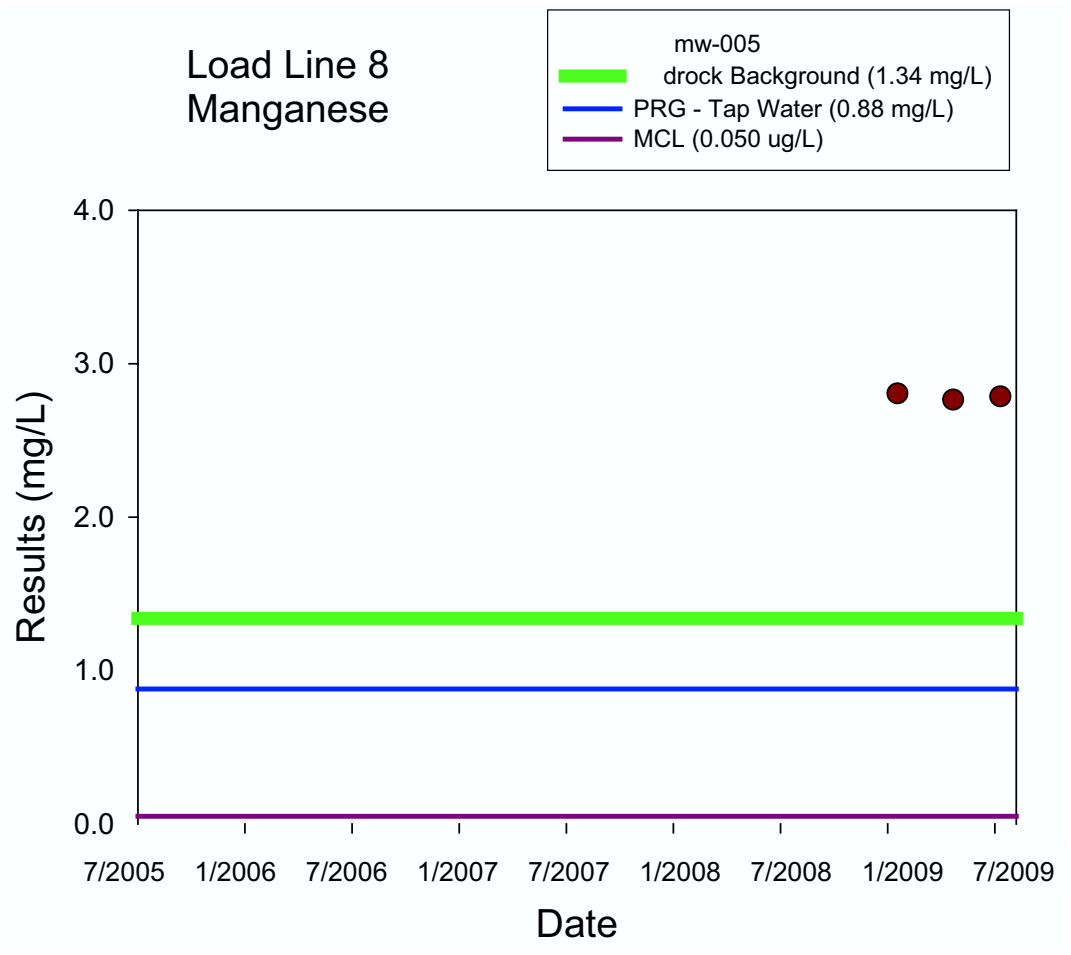

Load Line 7
HMX
LL7mw-006
PRG - Tap Water (1800 ug/L)
Results (ppb)
0.10
0.08
0.06
0.04
0.02
0.00
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

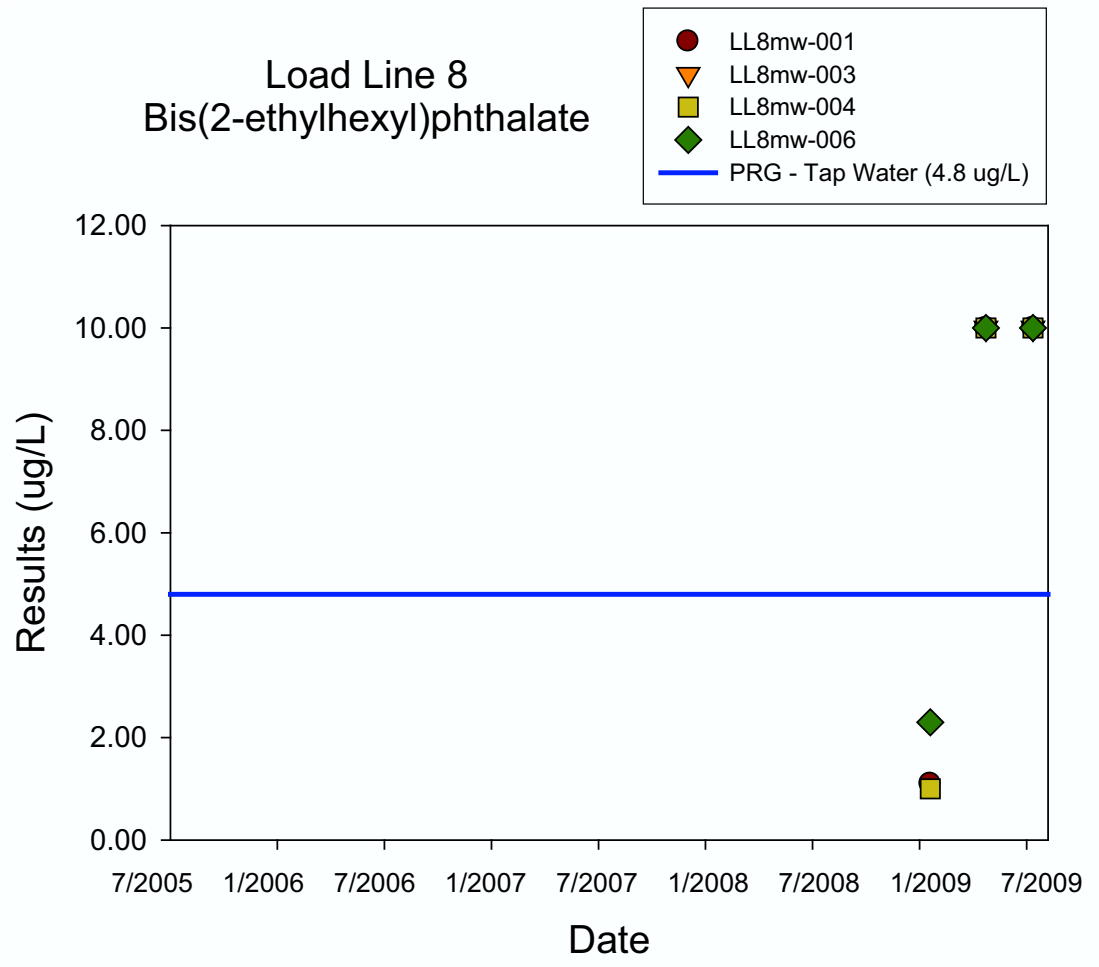

Load Line 7
RDX
LL7mw-006
PRG - Tap Water (0.61 ug/L)
Results (ug/L)
1.0
0.8
0.6
0.4
0.2
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

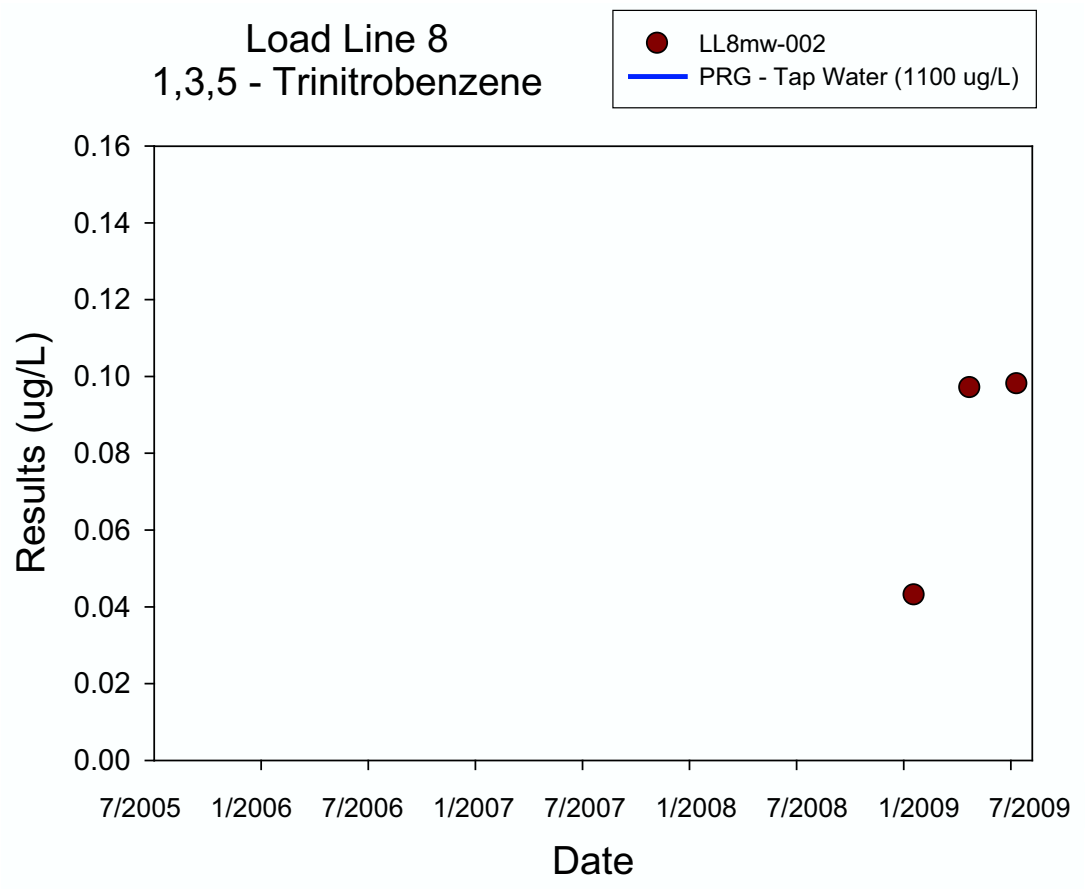

Load Line 8
Calcium
LL8mw-001
LL8mw-002
LL8mw-003
LL8mw-004
LL8mw-005
LL8mw-006
mw-007
consolidated Background (115 mg/L)
Bedrock Background (53.1 mg/L)
Results (mg/L)
160.0
140.0
120
100.0
80.0
60.0
40.0
20.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date
LL8mw-005; LL8mw-006 - Bedrock Background

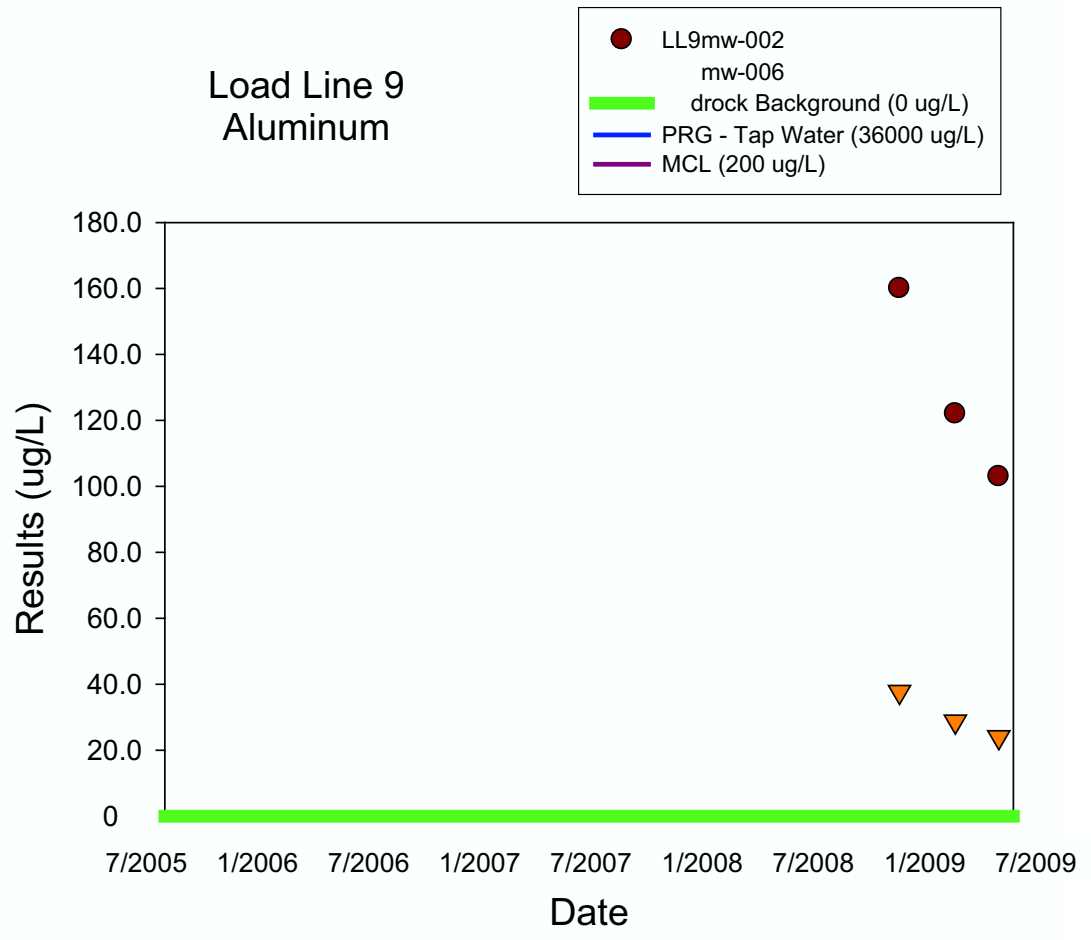

Load Line 8
Iron
LL8mw-002
LL8mw-003
mw-005
consolidated Background (0.279 mg/L)
Bedrock Background (1.43 mg/L)
PRG - Tap Water (11 mg/L)
MCL (0.3 mg/L)
Results (mg/L)
5.0
4.0
3.0
2.0
1.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date
LL8mw-005 - Bedrock Background

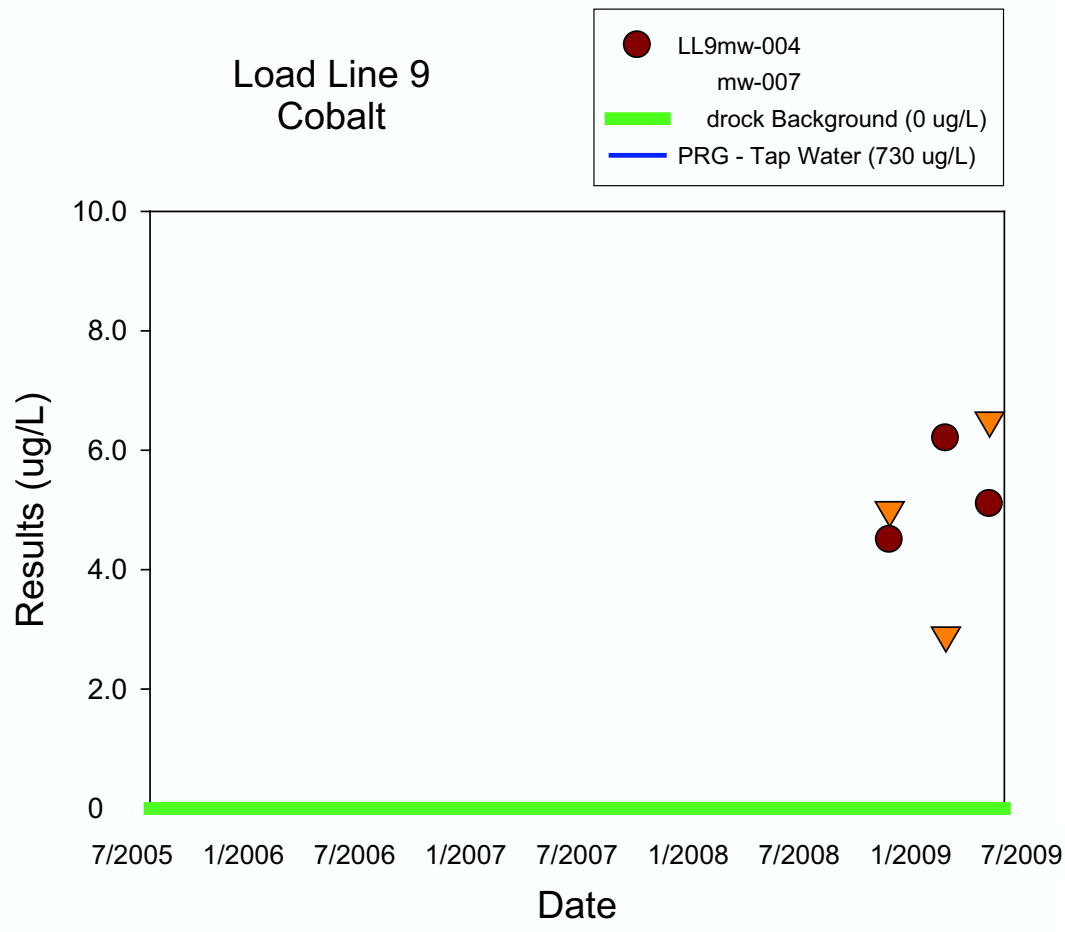

Load Line 8
Magnesium
LL8mw-001
LL8mw-002
LL8mw-003
LL8mw-004
LL8mw-005
mw-006
consolidated Background (43.3 mg/L)
Bedrock Background (15 mg/L)
Results (mg/L)
60.0
50.0
40
30.0
20.0
10.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date
LL8mw-005; LL8mw-006 - Bedrock Background

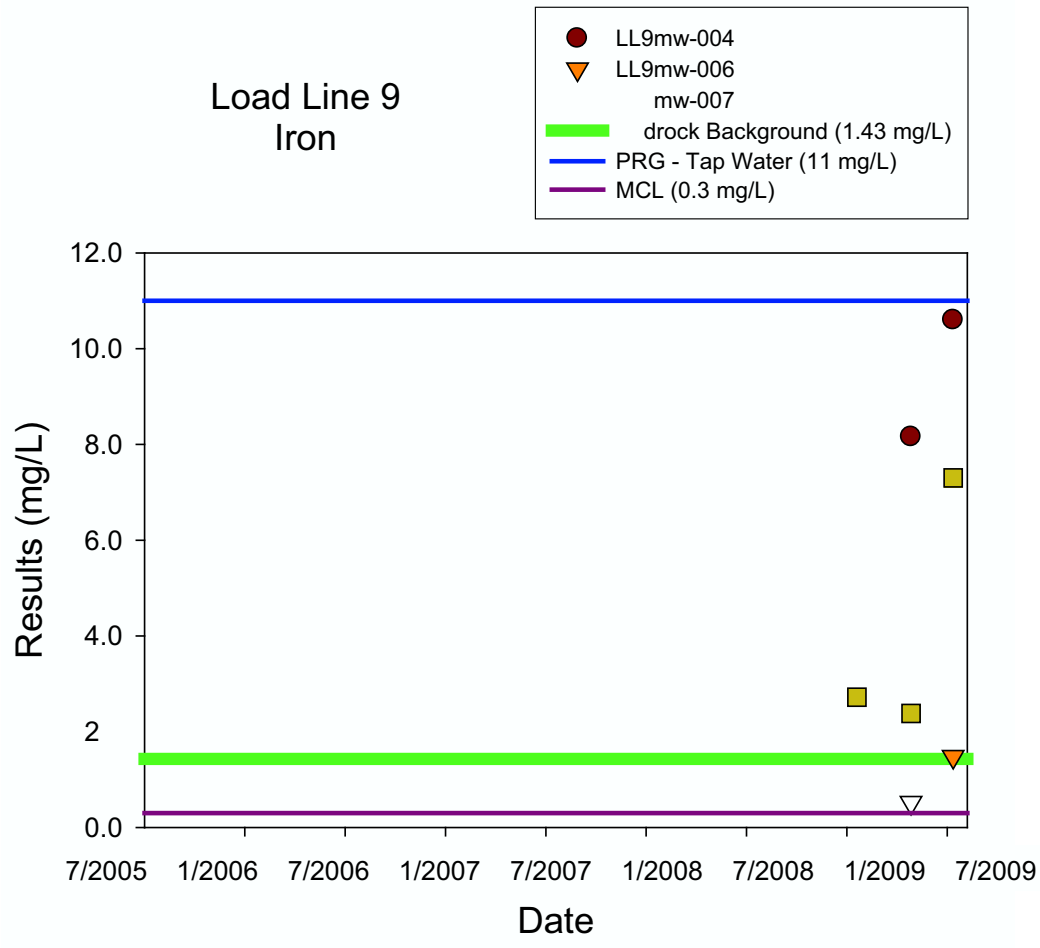

Load Line 8
Manganese
mw-005
drock Background (1.34 mg/L)
PRG - Tap Water (0.88 mg/L)
MCL (0.050 ug/L)
Results (mg/L)
4.0
3.0
2.0
1.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

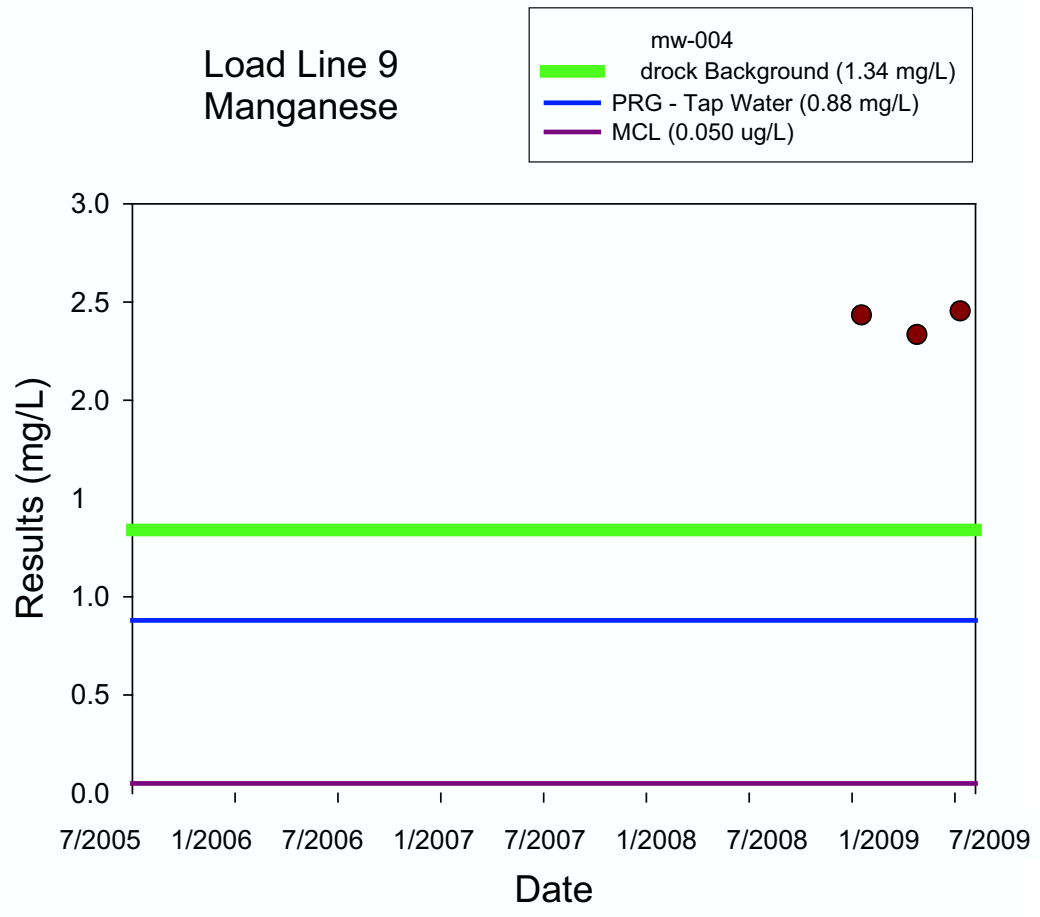

Load Line 8
Bis(2-ethylhexyl)phthalate
LL8mw-001
LL8mw-003
LL8mw-004
LL8mw-006
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
12.00
10.00
8.00
6.00
4.00
2.00
0.00
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

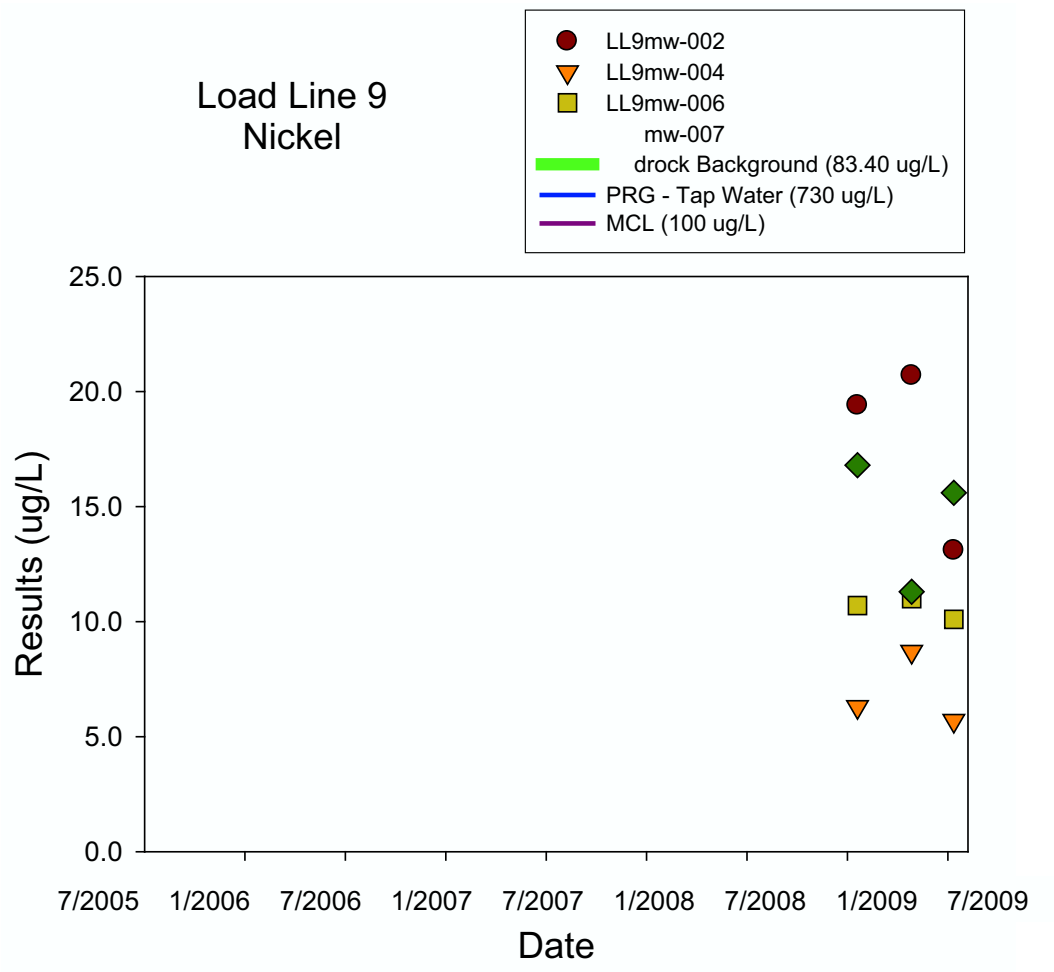

Load Line 8
1,3,5 - Trinitrobenzene
LL8mw-002
PRG - Tap Water (1100 ug/L)
Results (ug/L)
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

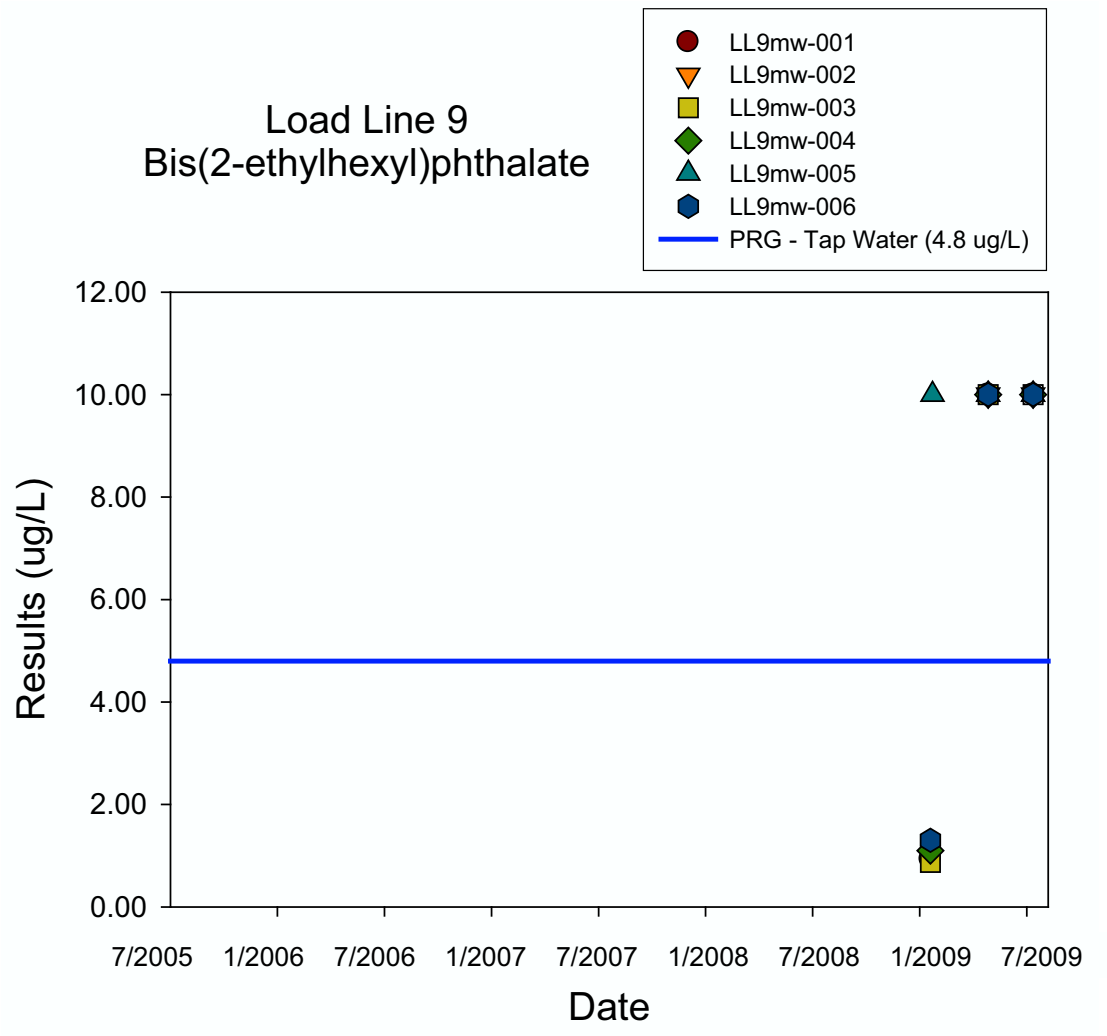

Load Line 9
Aluminum
LL9mw-002
mw-006
drock Background (0 ug/L)
PRG - Tap Water (36000 ug/L)
MCL (200 ug/L)
Results (ug/L)
180.0
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

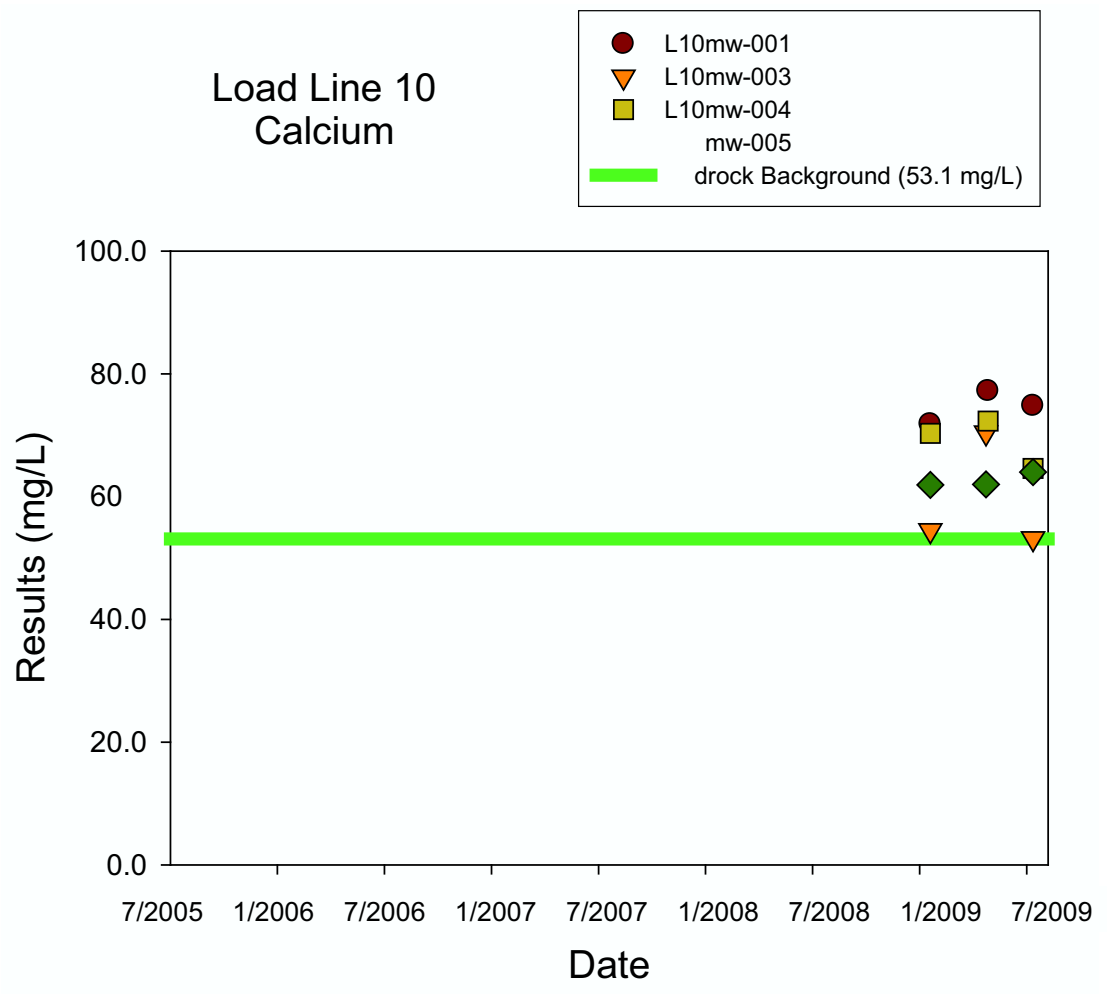

Load Line 9
Cobalt
LL9mw-004
mw-007
drock Background (0 ug/L)
PRG - Tap Water (730 ug/L)
Results (ug/L)
10.0
8.0
6.0
4.0
2.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

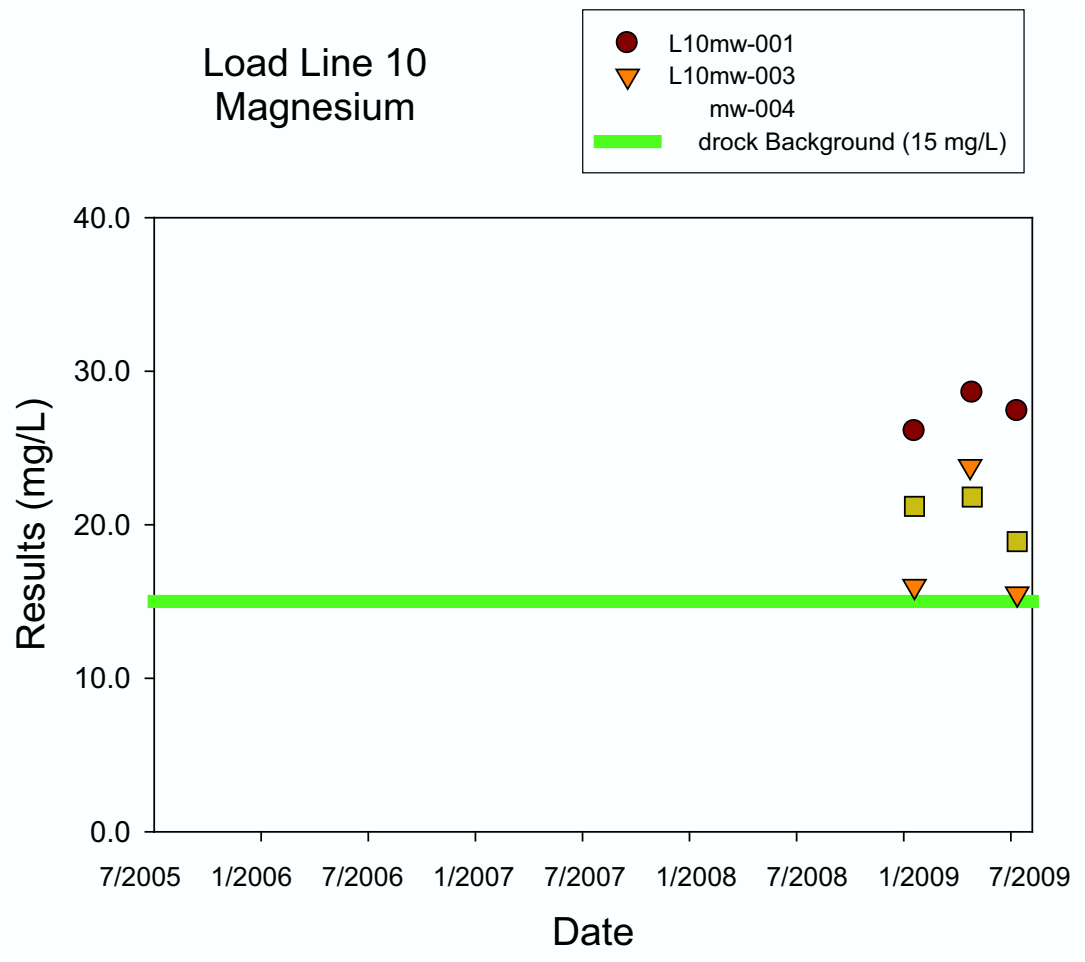

Load Line 9
Iron
LL9mw-004
LL9mw-006
mw-007
drock Background (1.43 mg/L)
PRG - Tap Water (11 mg/L)
MCL (0.3 mg/L)
Results (mg/L)
12.0
10.0
8.0
6.0
4.0
2
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

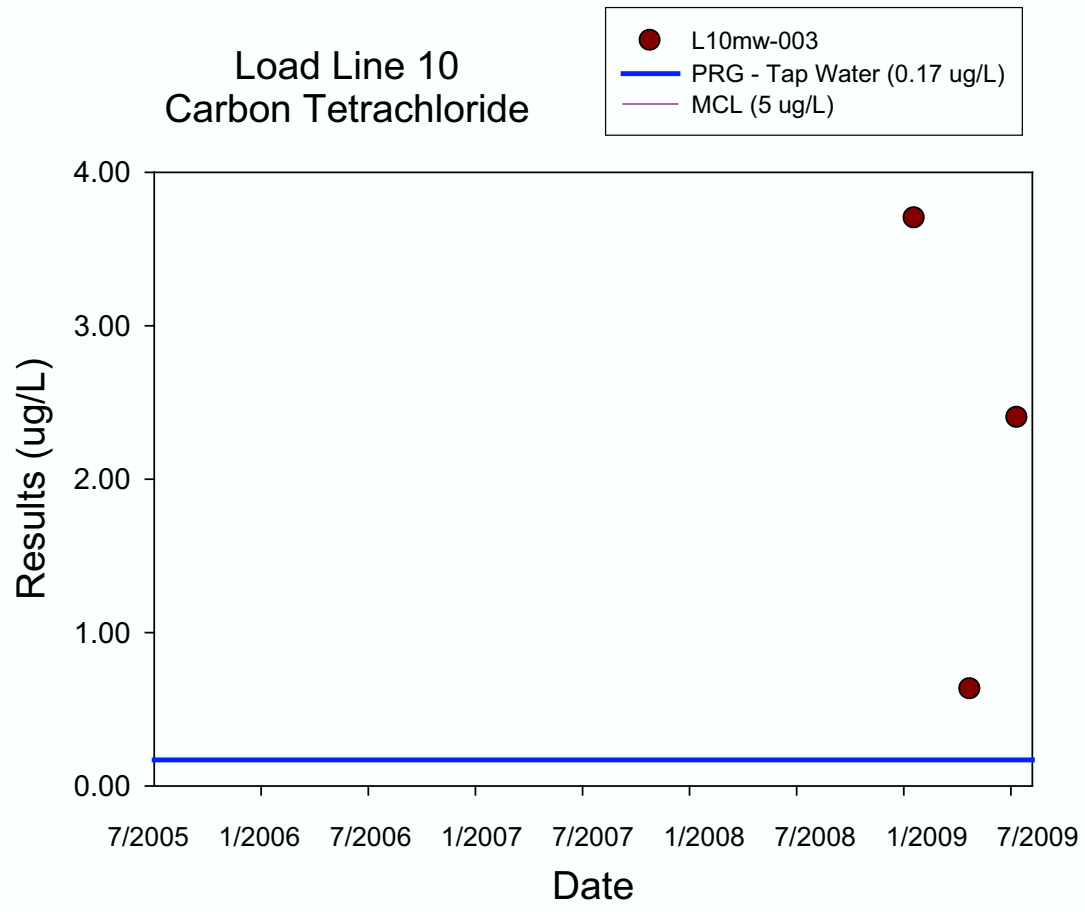

Load Line 9
Manganese
mw-004
drock Background (1.34 mg/L)
PRG - Tap Water (0.88 mg/L)
MCL (0.050 ug/L)
Results (mg/L)
3.0
2.5
2.0
1
1.0
0.5
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

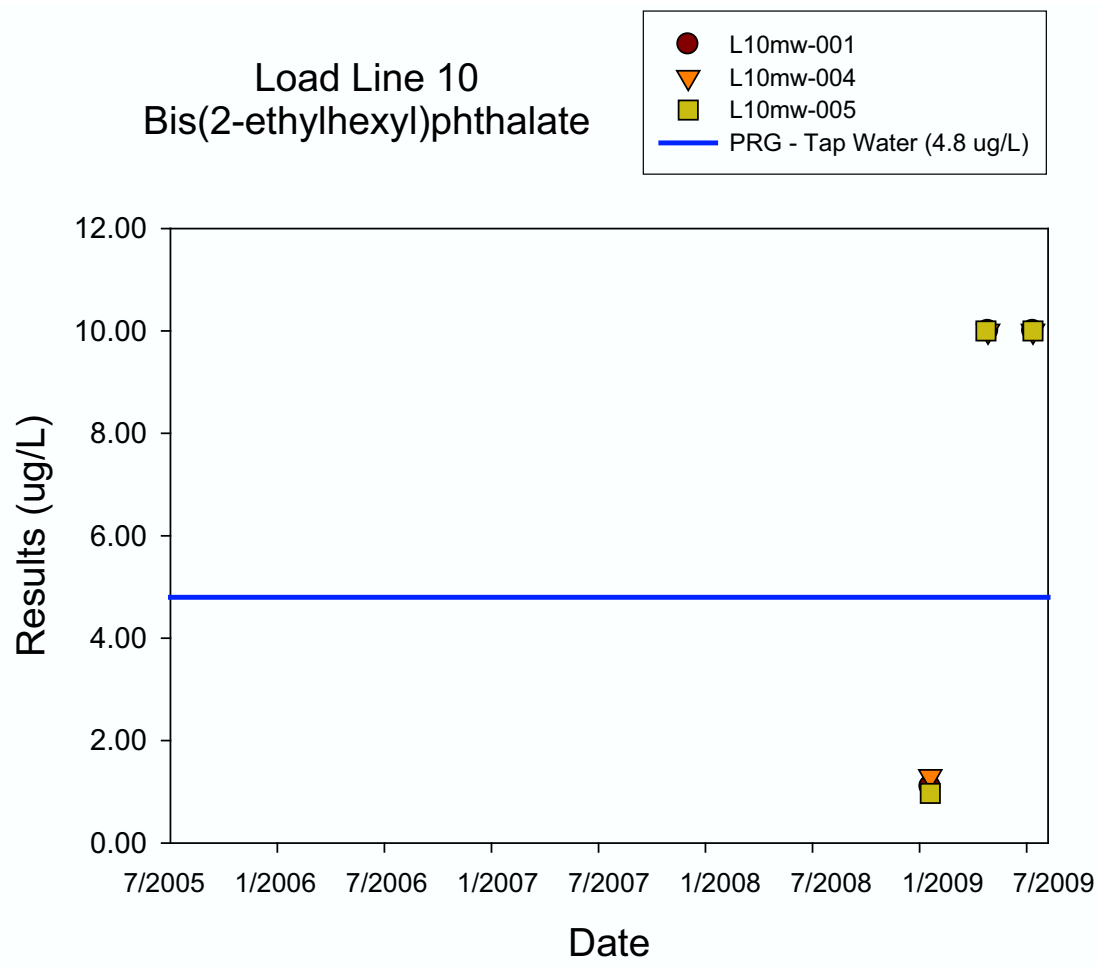

Load Line 9
Nickel
LL9mw-002
LL9mw-004
LL9mw-006
mw-007
drock Background (83.40 ug/L)
PRG - Tap Water (730 ug/L)
MCL (100 ug/L)
Results (ug/L)
25.0
20.0
15.0
10.0
5.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

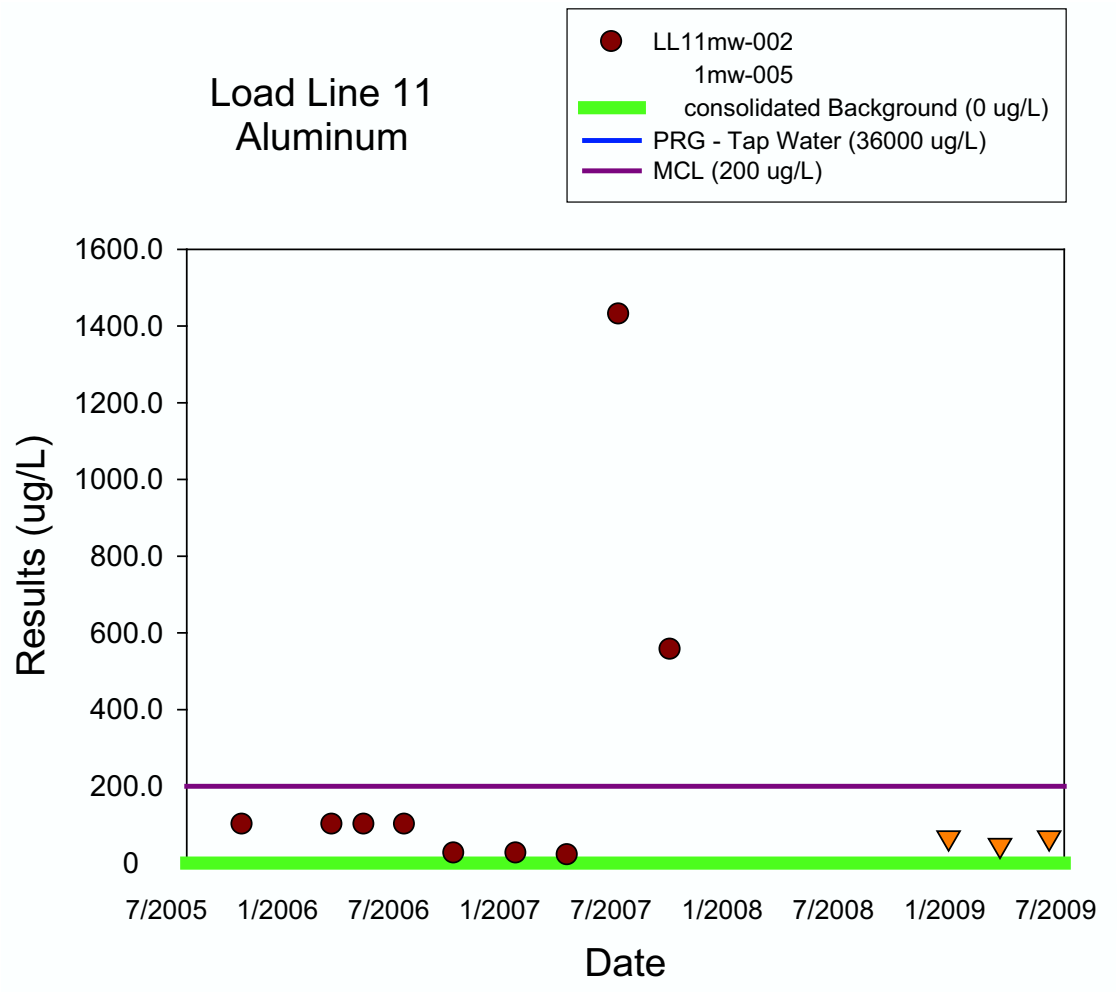

Load Line 9
Bis(2-ethylhexyl)phthalate
LL9mw-001
LL9mw-002
LL9mw-003
LL9mw-004
LL9mw-005
LL9mw-006
PRG - Tap Water (4.8 ug/L)
12.00
10.00
8.00
6.00
4.00
2.00
0.00
Results (ug/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

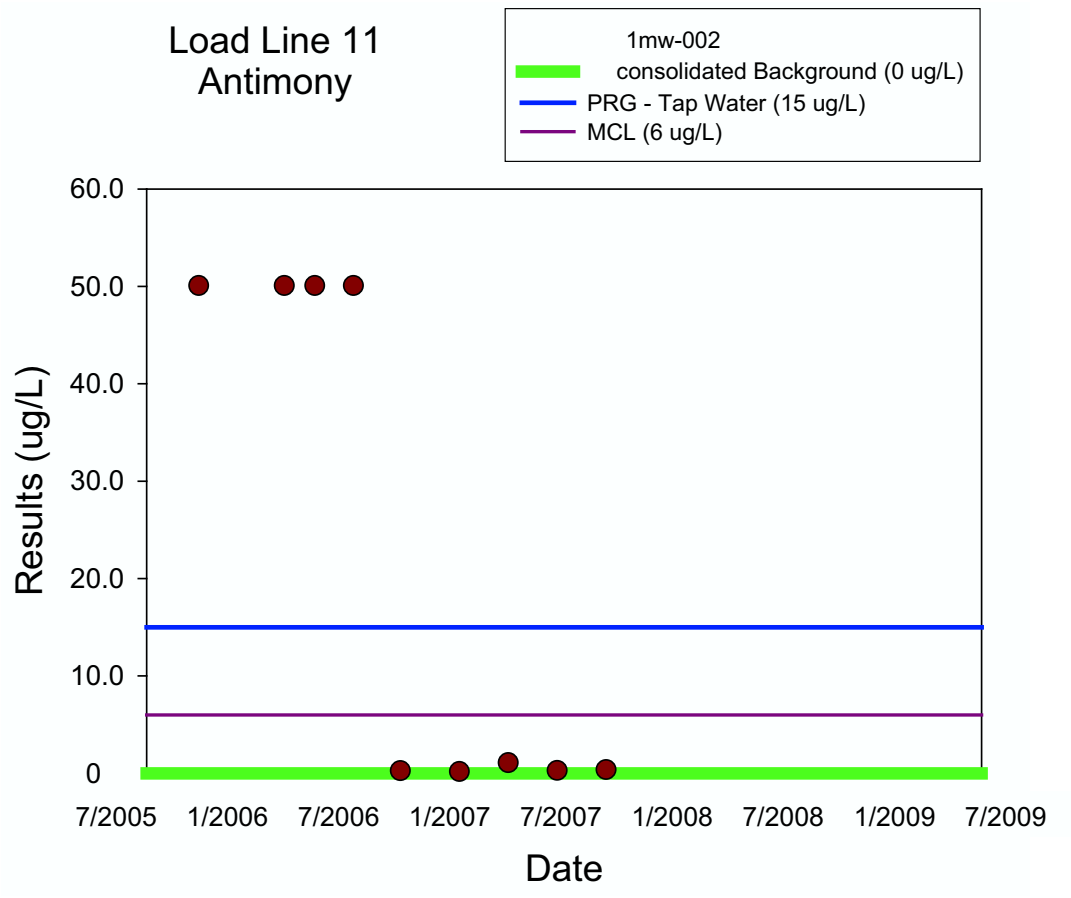

Load Line 10
Calcium
L10mw-001
L10mw-003
L10mw-004
mw-005
drock Background (53.1 mg/L)
100.0
80.0
60
40.0
20.0
0.0
Results (mg/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

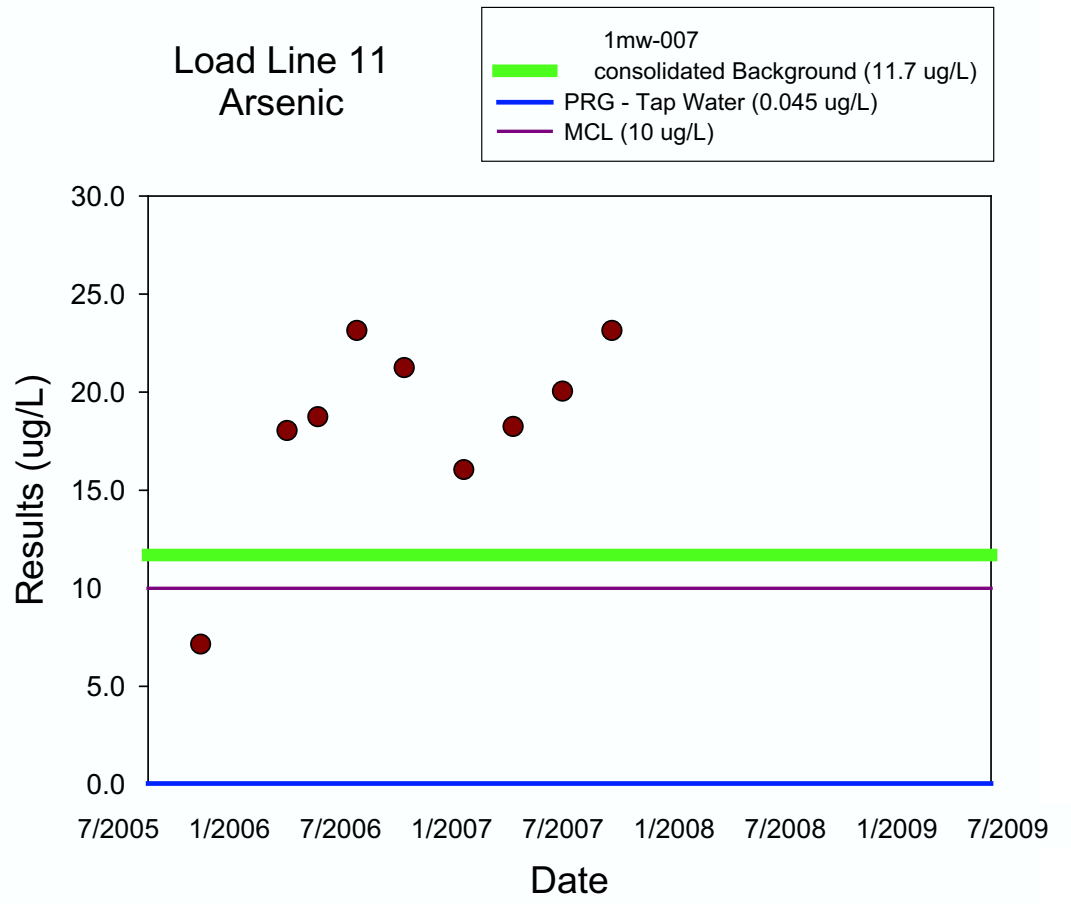

Load Line 10
Magnesium
L10mw-001
L10mw-003
mw-004
drock Background (15 mg/L)
Results (mg/L)
40.0
30.0
20.0
10.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

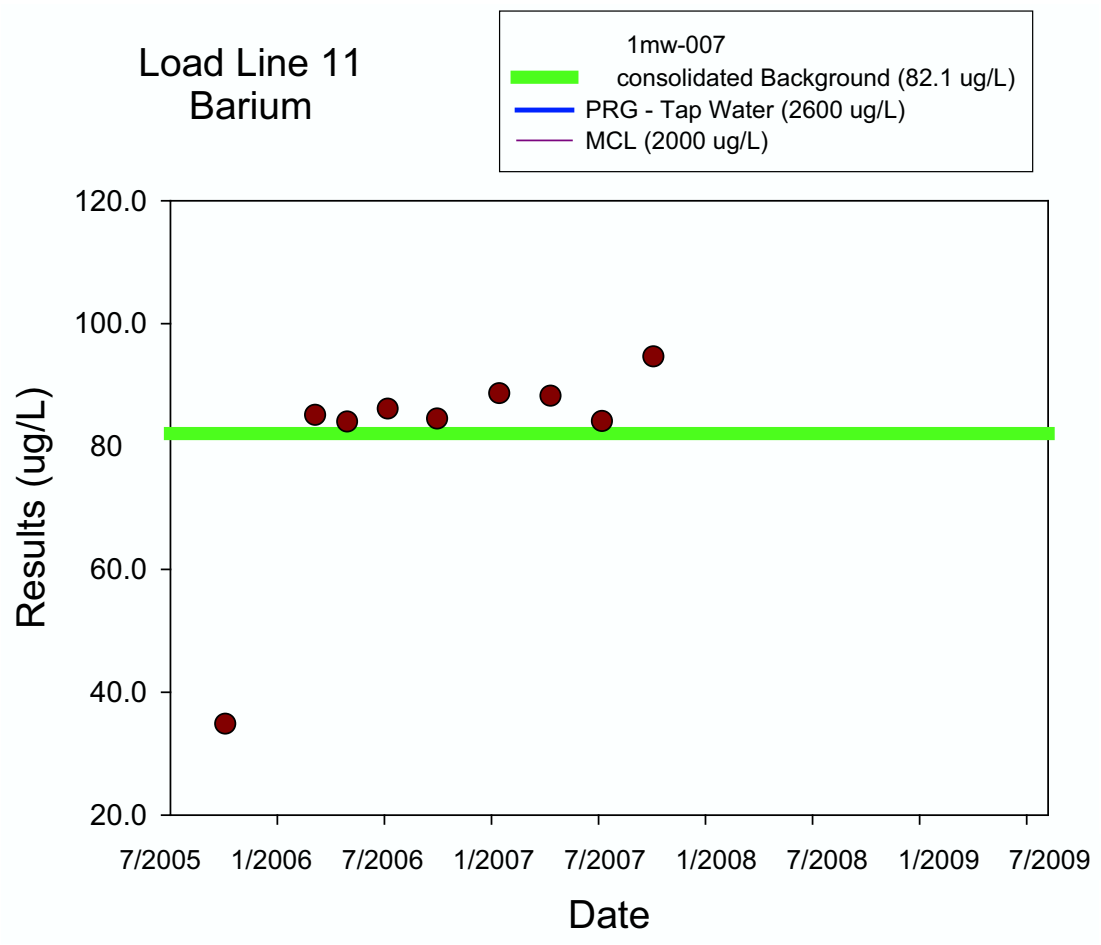

Load Line 10
Carbon Tetrachloride
L10mw-003
PRG - Tap Water (0.17 ug/L)
MCL (5 ug/L)
Results (ug/L)
4.00
3.00
2.00
1.00
0.00
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

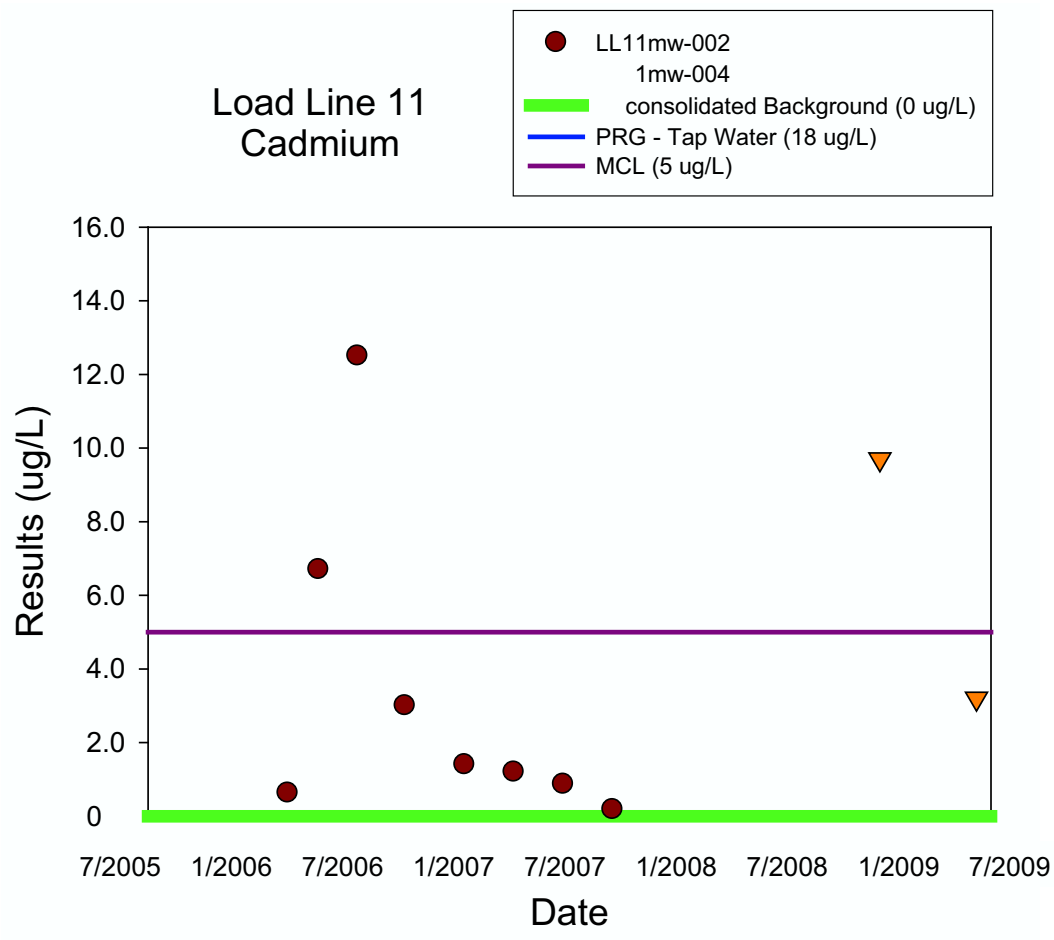

Load Line 10
Bis(2-ethylhexyl)phthalate
L10mw-001
L10mw-004
L10mw-005
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
12.00
10.00
8.00
6.00
4.00
2.00
0.00
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

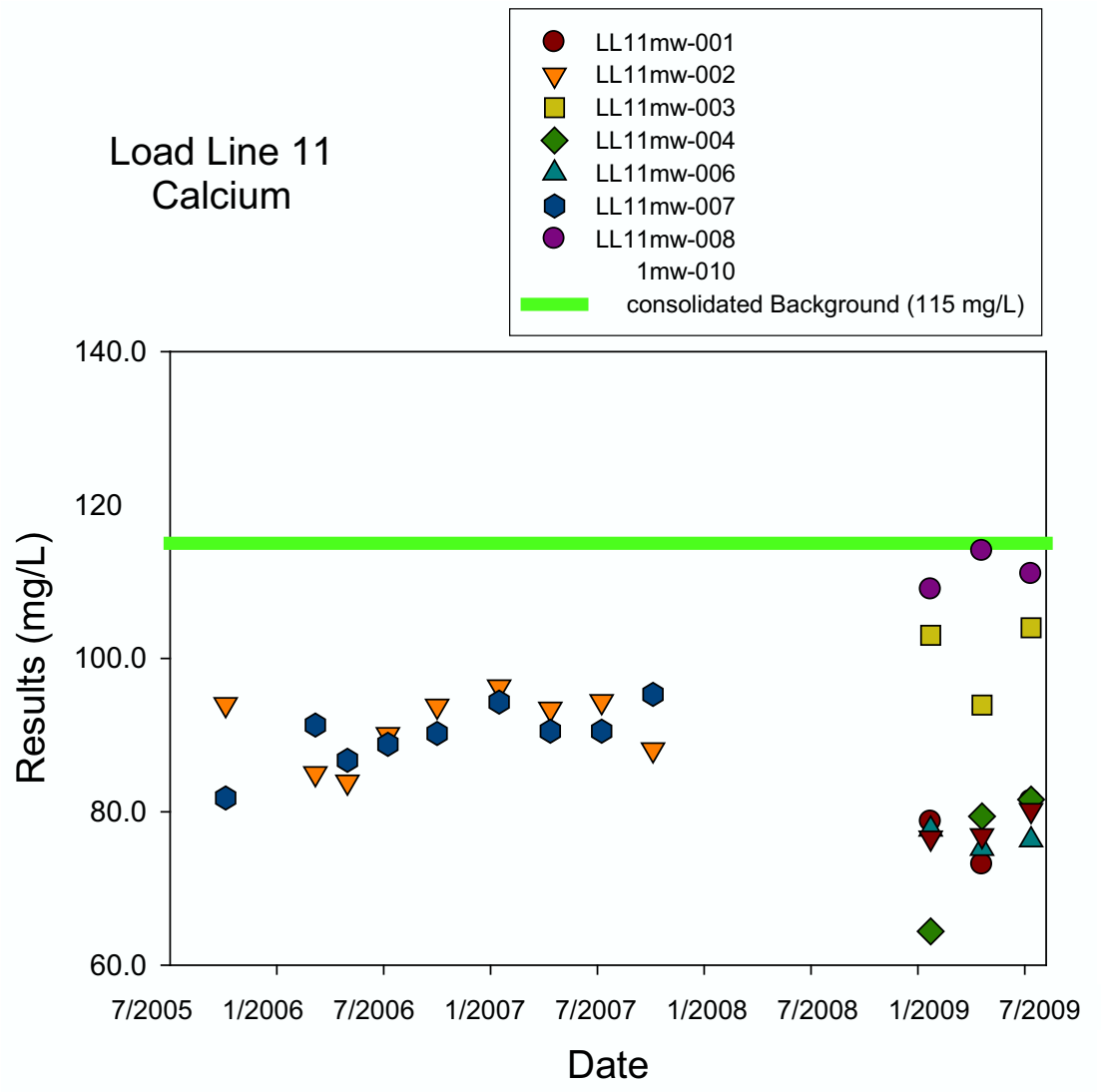

Load Line 11
Aluminum
LL11mw-002
1mw-005
consolidated Background (0 ug/L)
PRG - Tap Water (36000 ug/L)
MCL (200 ug/L)
Results (ug/L)
1600.0
1400.0
1200.0
1000.0
800.0
600.0
400.0
200.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

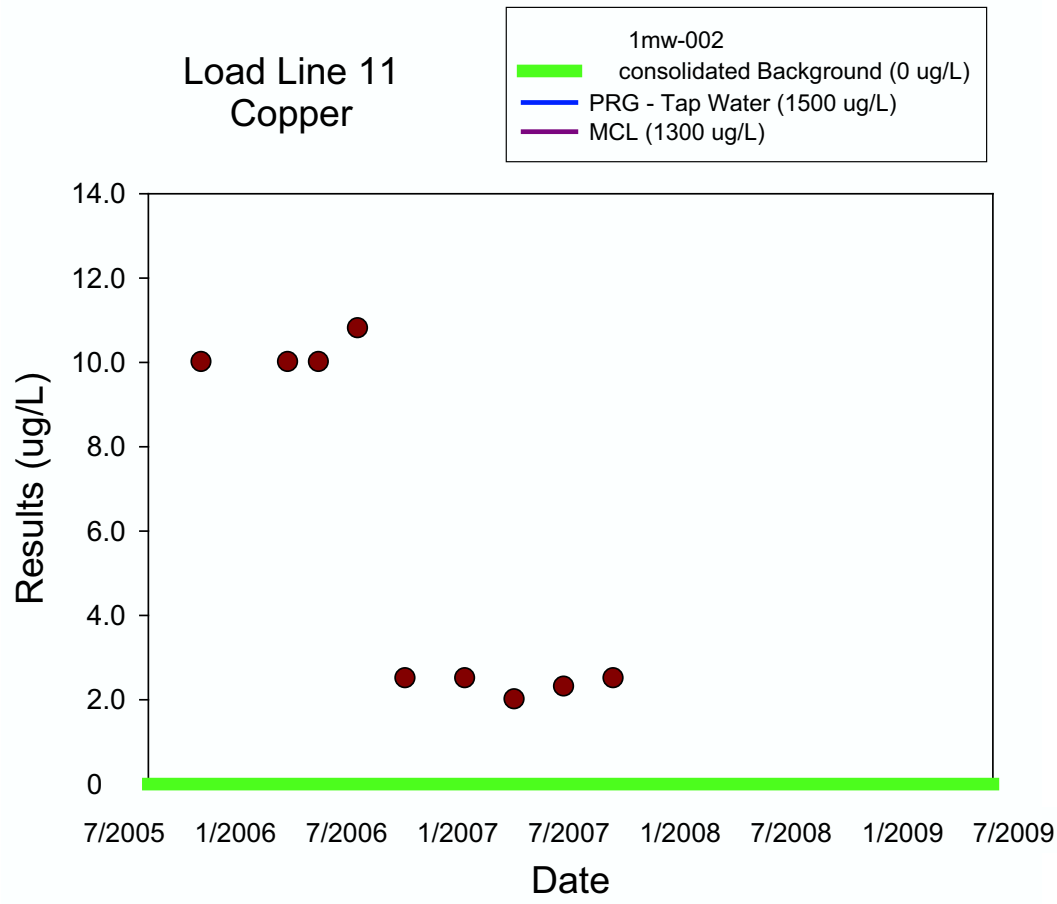

Load Line 11
Antimony
1mw-002
consolidated Background (0 ug/L)
PRG - Tap Water (15 ug/L)
MCL (6 ug/L)
Results (ug/L)
60.0
50.0
40.0
30.0
20.0
10.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

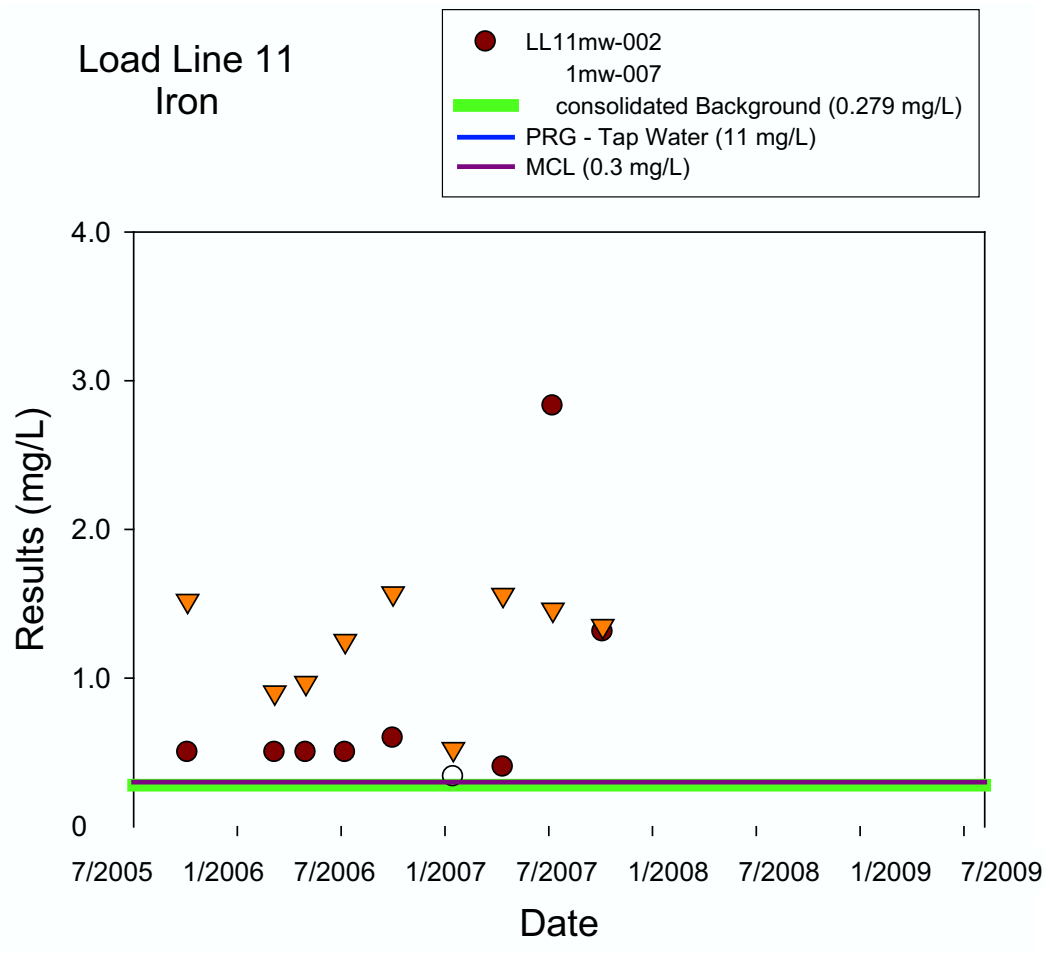

Load Line 11
Arsenic
1mw-007
consolidated Background (11.7 ug/L)
PRG - Tap Water (0.045 ug/L)
MCL (10 ug/L)
Results (ug/L)
30.0
25.0
20.0
15.0
10
5.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

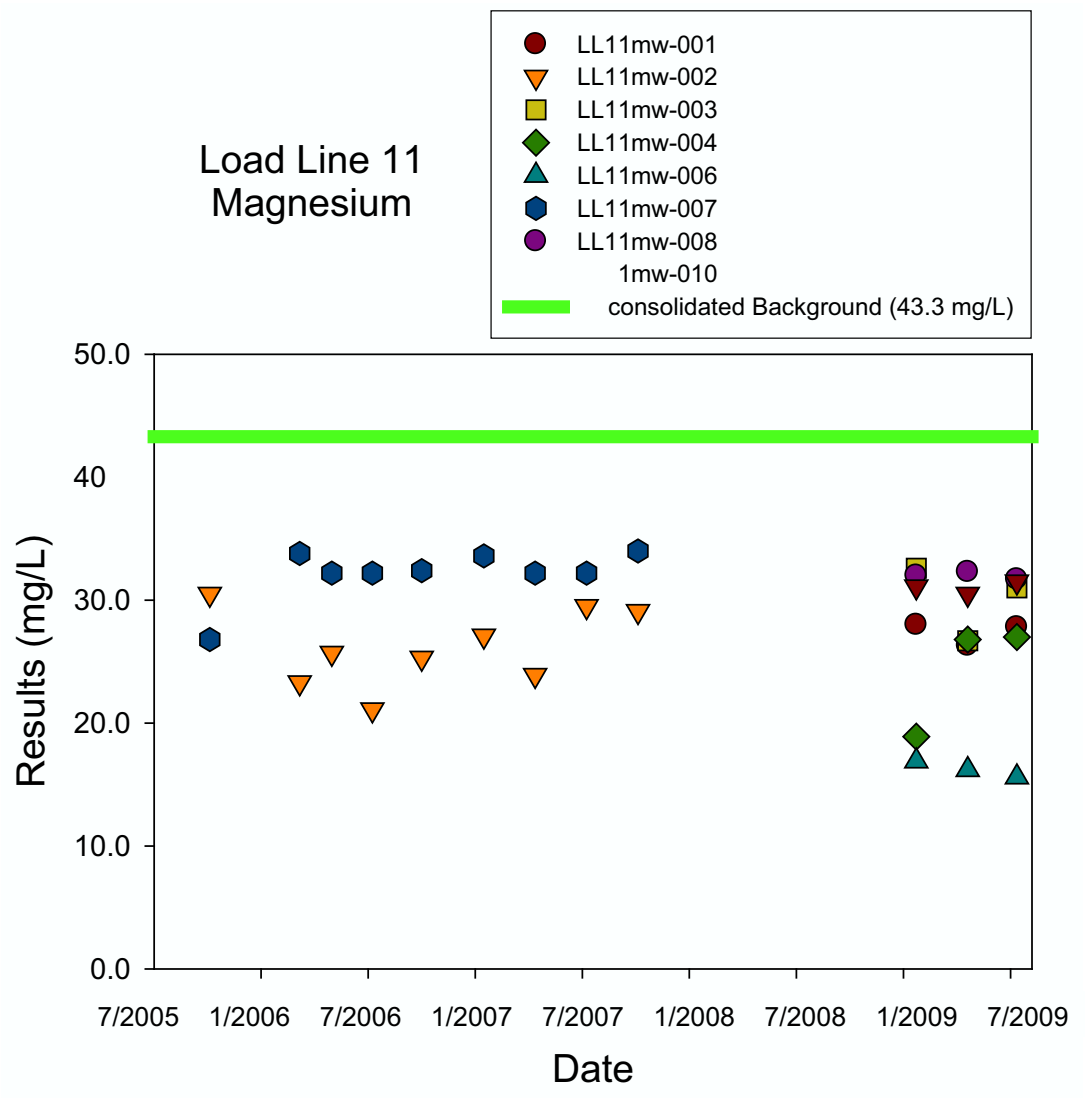

Load Line 11
Barium
1mw-007
consolidated Background (82.1 ug/L)
PRG - Tap Water (2600 ug/L)
MCL (2000 ug/L)
Results (ug/L)
120.0
100.0
80
60.0
40.0
20.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

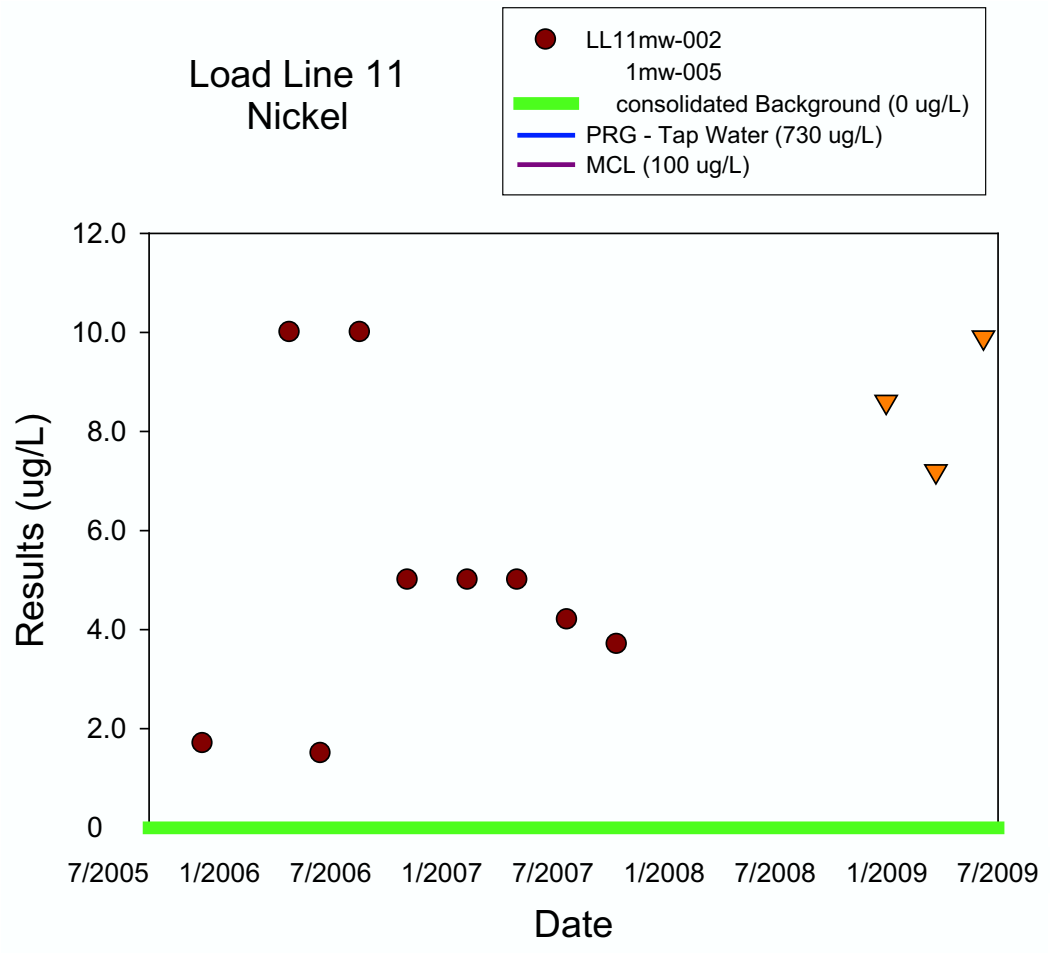

Load Line 11
Cadmium
LL11mw-002
1mw-004
consolidated Background (0 ug/L)
PRG - Tap Water (18 ug/L)
MCL (5 ug/L)
Results (ug/L)
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

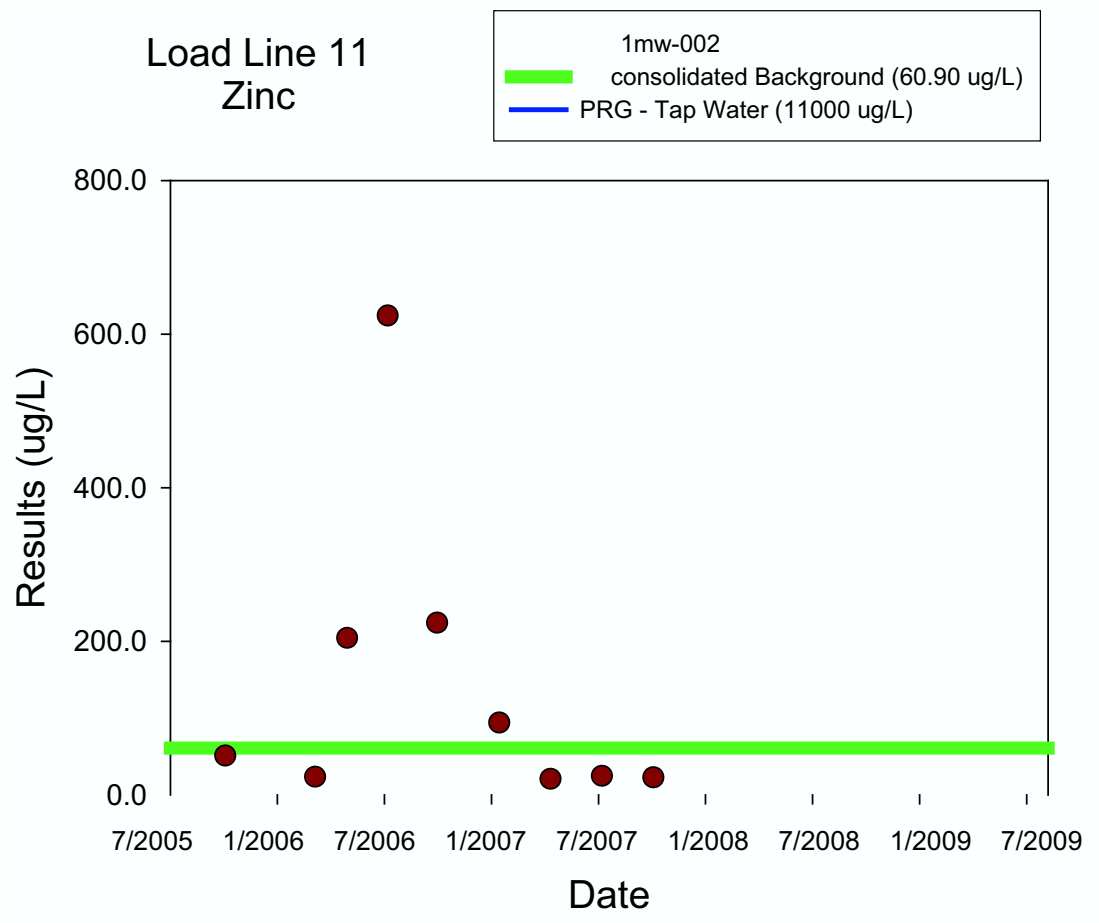

Load Line 11
Calcium
LL11mw-001
LL11mw-002
LL11mw-003
LL11mw-004
LL11mw-006
LL11mw-007
LL11mw-008
1mw-010
consolidated Background (115 mg/L)
140.0
120
100.0
80.0
60.0
Results (mg/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

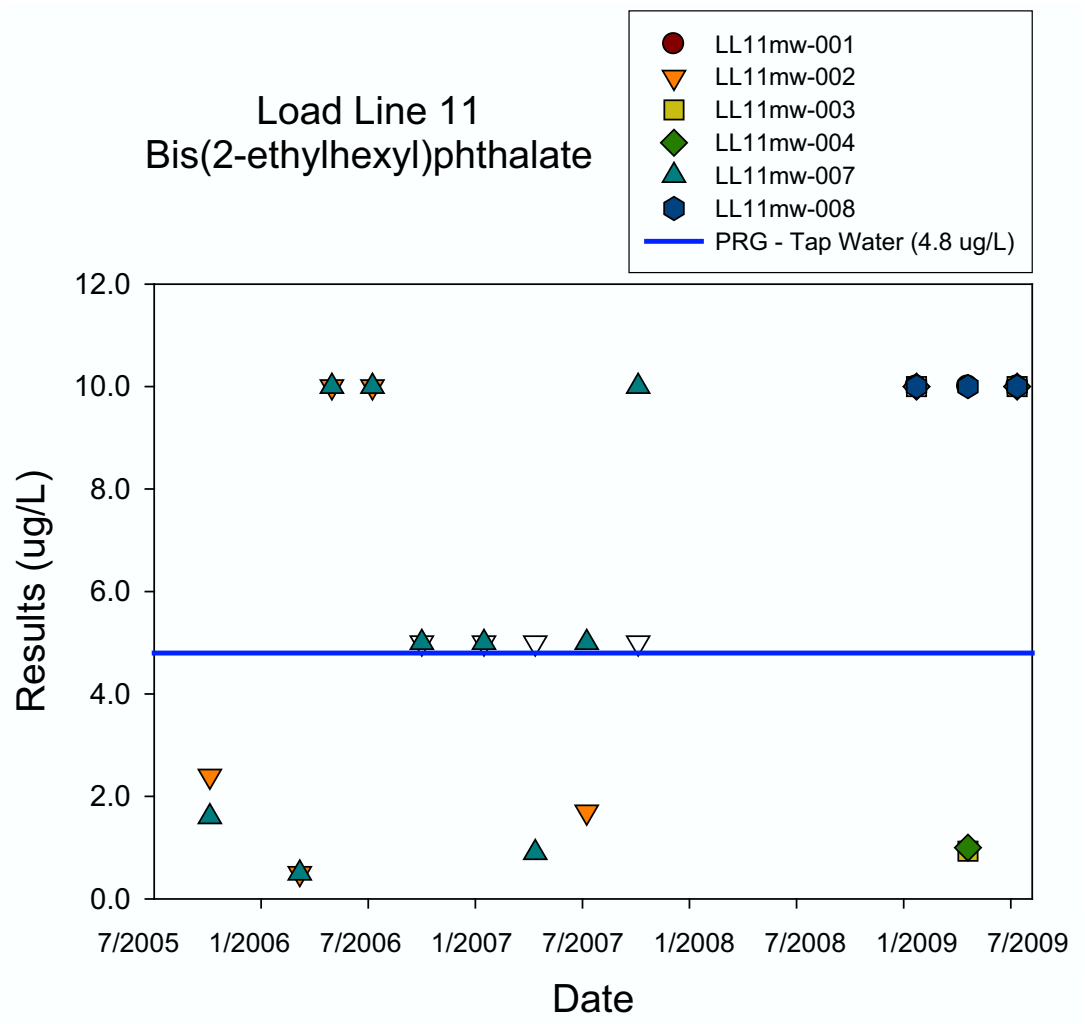

Load Line 11
Copper
1mw-002
consolidated Background (0 ug/L)
PRG - Tap Water (1500 ug/L)
MCL (1300 ug/L)
Results (ug/L)
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

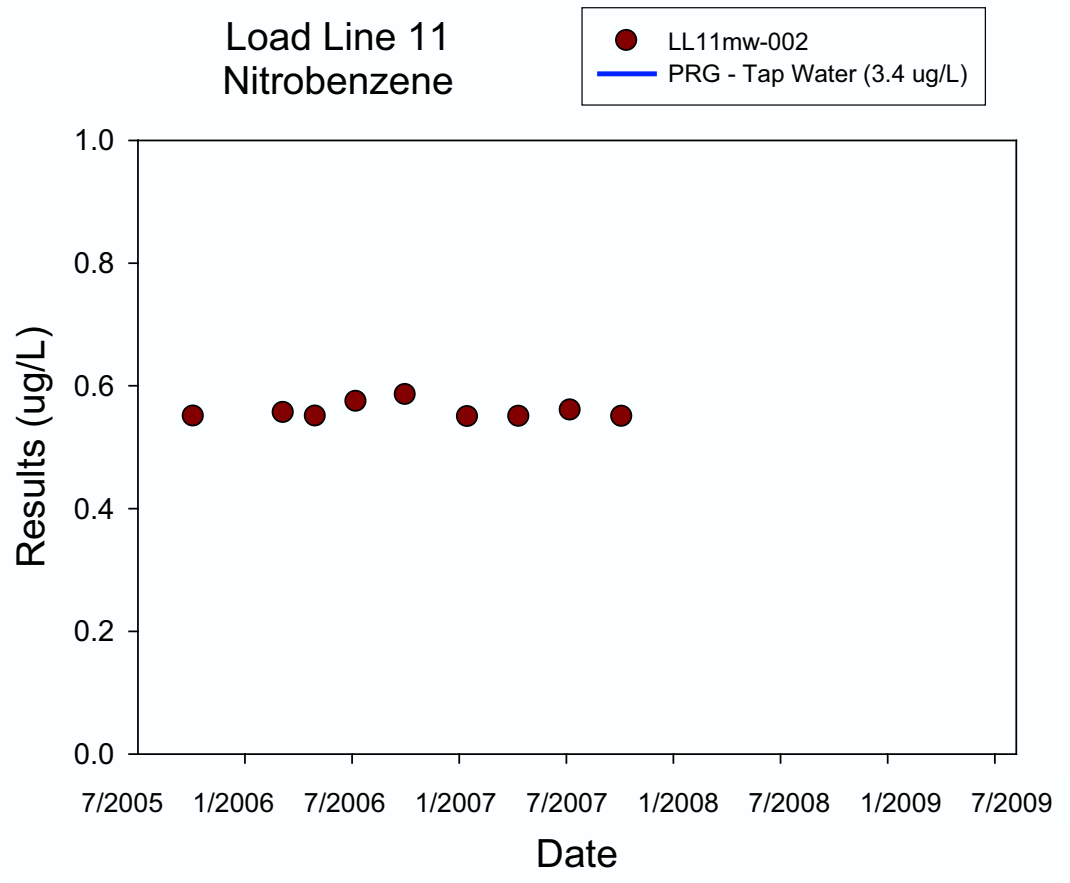

Load Line 11
Iron
LL11mw-002
1mw-007
consolidated Background (0.279 mg/L)
PRG - Tap Water (11 mg/L)
MCL (0.3 mg/L)
Results (mg/L)
4.0
3.0
2.0
1.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

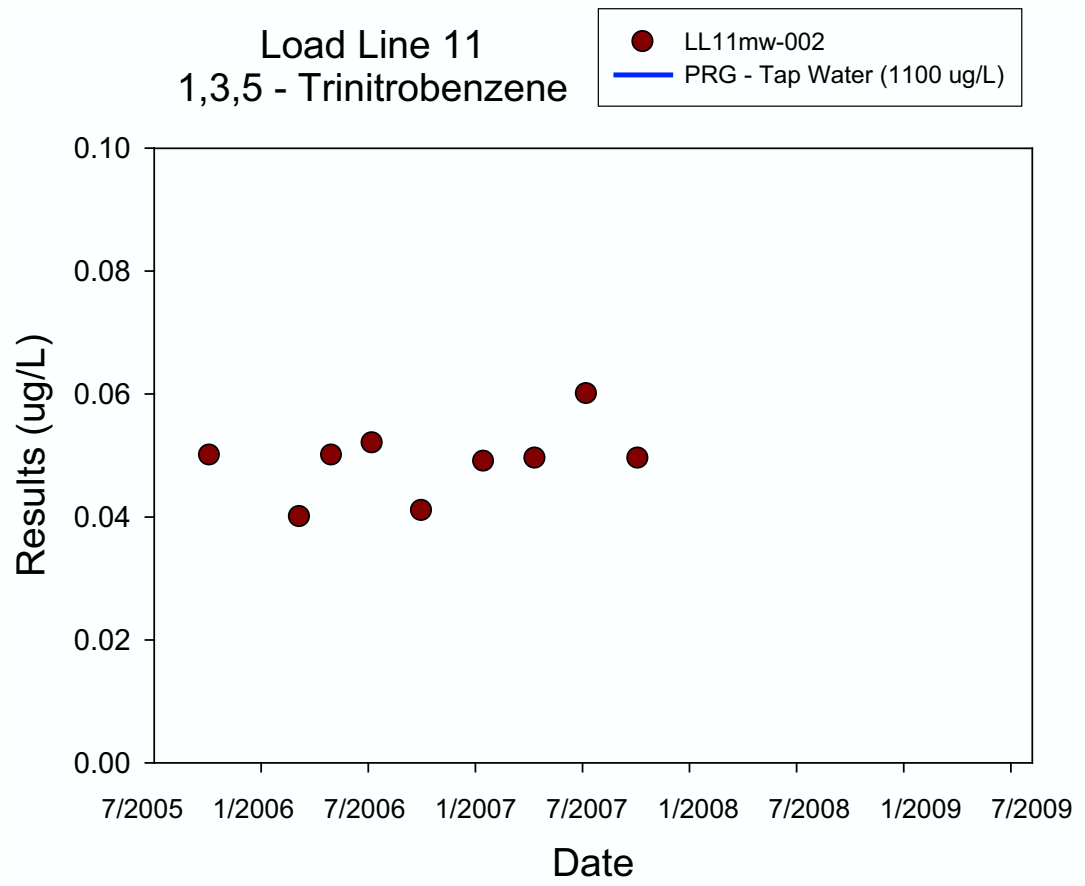

Load Line 11
Magnesium
LL11mw-001
LL11mw-002
LL11mw-003
LL11mw-004
LL11mw-006
LL11mw-007
LL11mw-008
1mw-010
consolidated Background (43.3 mg/L)
Results (mg/L)
50.0
40
30.0
20.0
10.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

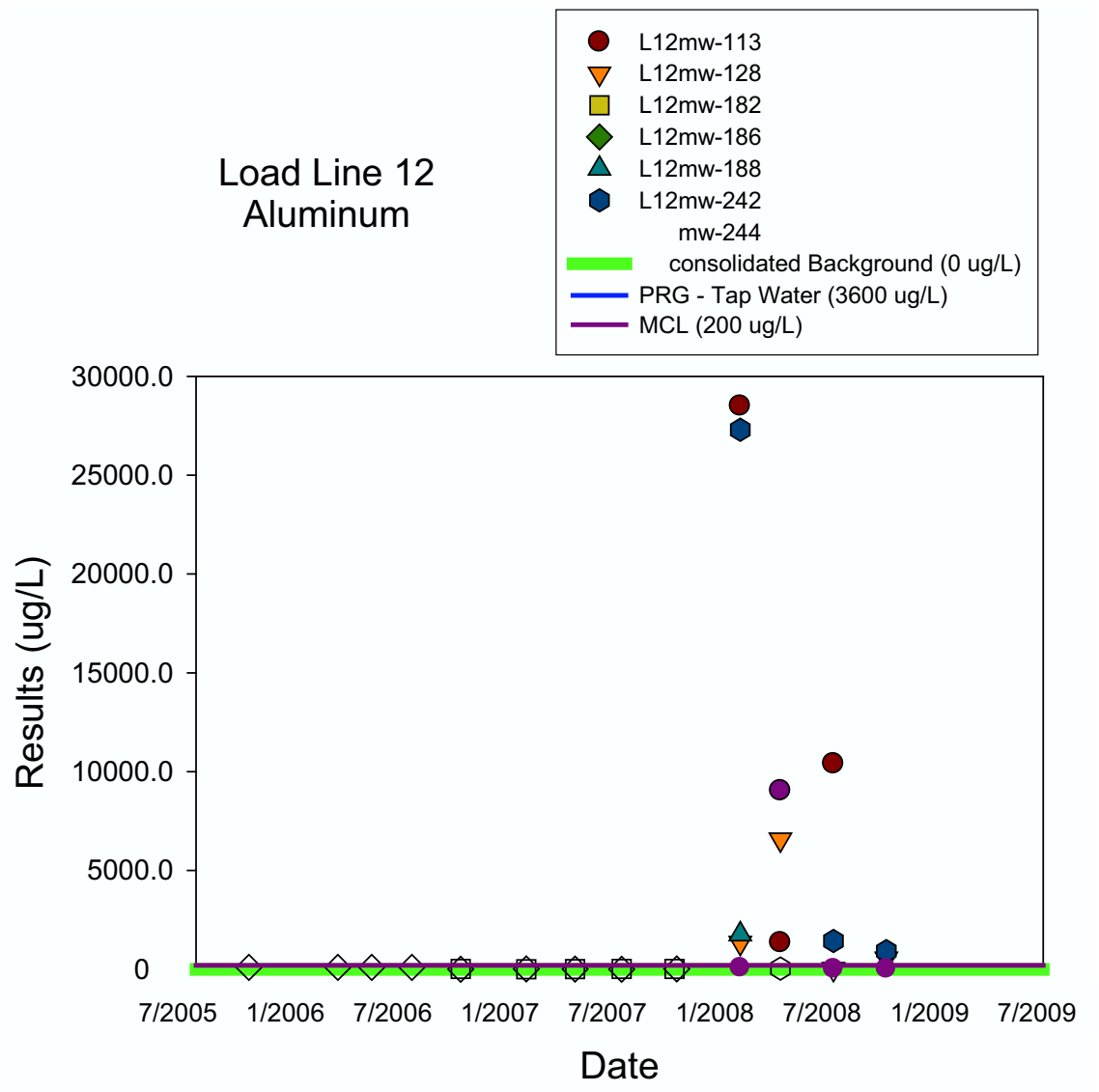

Load Line 11
Nickel
LL11mw-002
1mw-005
consolidated Background (0 ug/L)
PRG - Tap Water (730 ug/L)
MCL (100 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

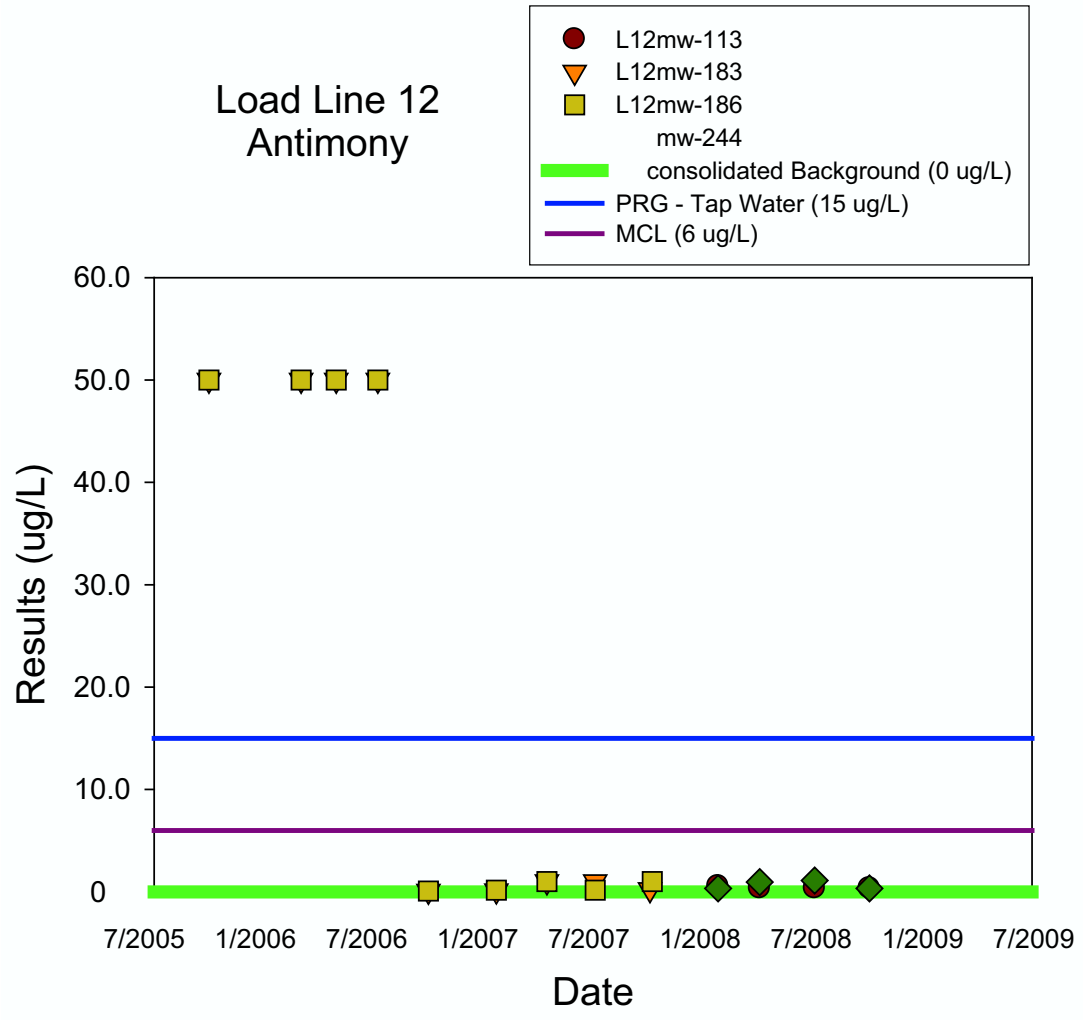

Load Line 11
Zinc
1mw-002
consolidated Background (60.90 ug/L)
PRG - Tap Water (11000 ug/L)
Results (ug/L)
800.0
600.0
400.0
200.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

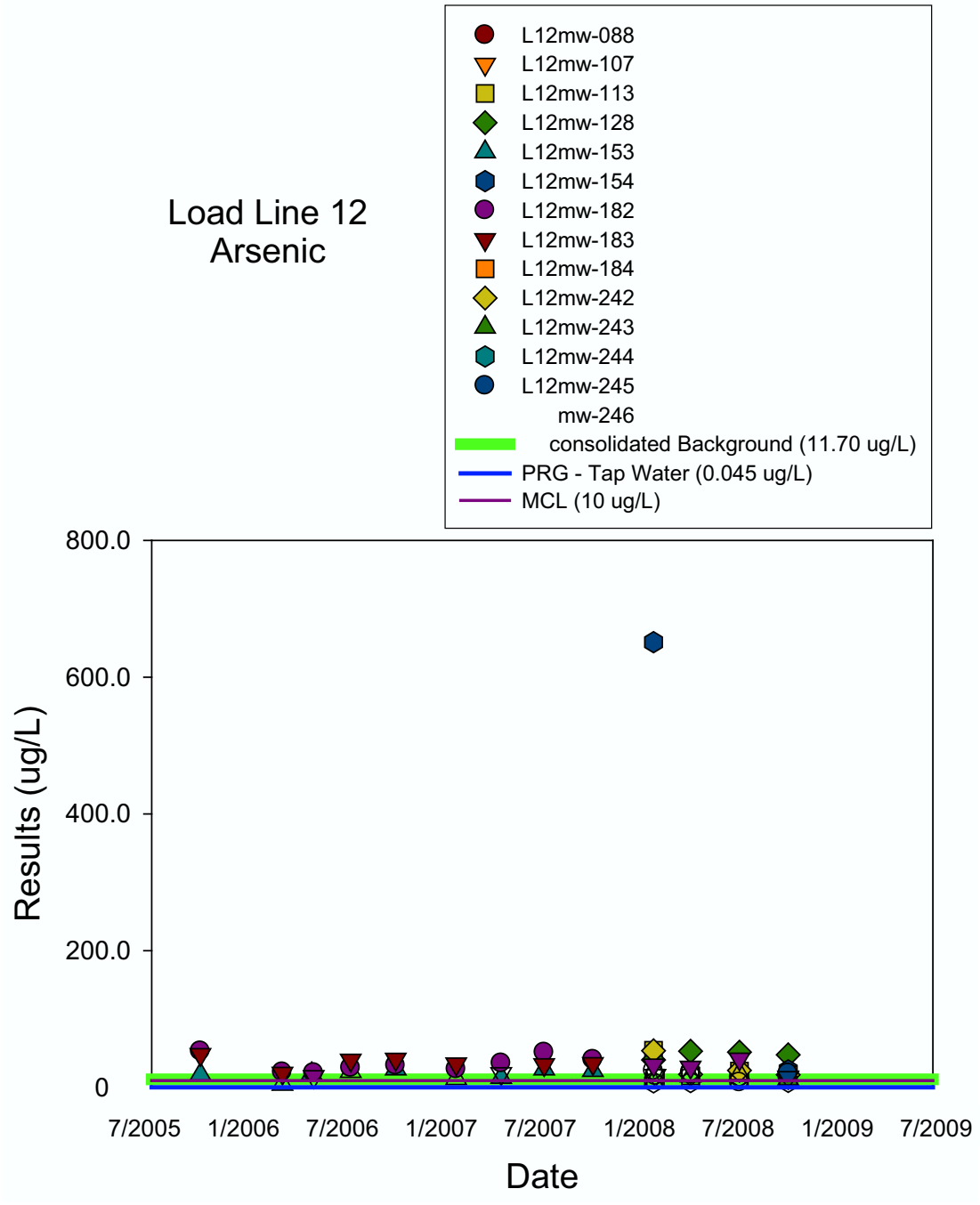

Load Line 11
Bis(2-ethylhexyl)phthalate
LL11mw-001
LL11mw-002
LL11mw-003
LL11mw-004
LL11mw-007
LL11mw-008
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

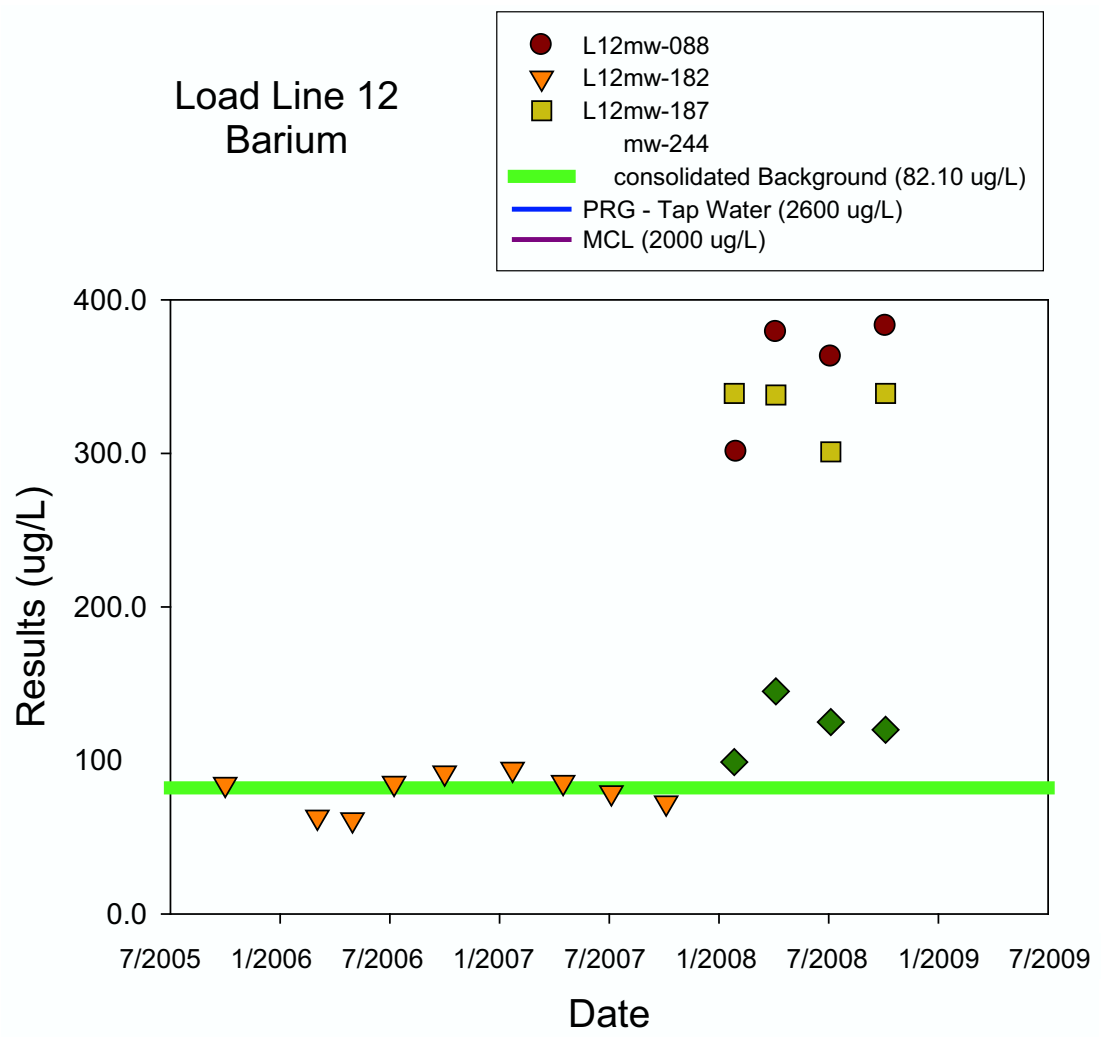

Load Line 11
Nitrobenzene
LL11mw-002
PRG - Tap Water (3.4 ug/L)
Results (ug/L)
1.0
0.8
0.6
0.4
0.2
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

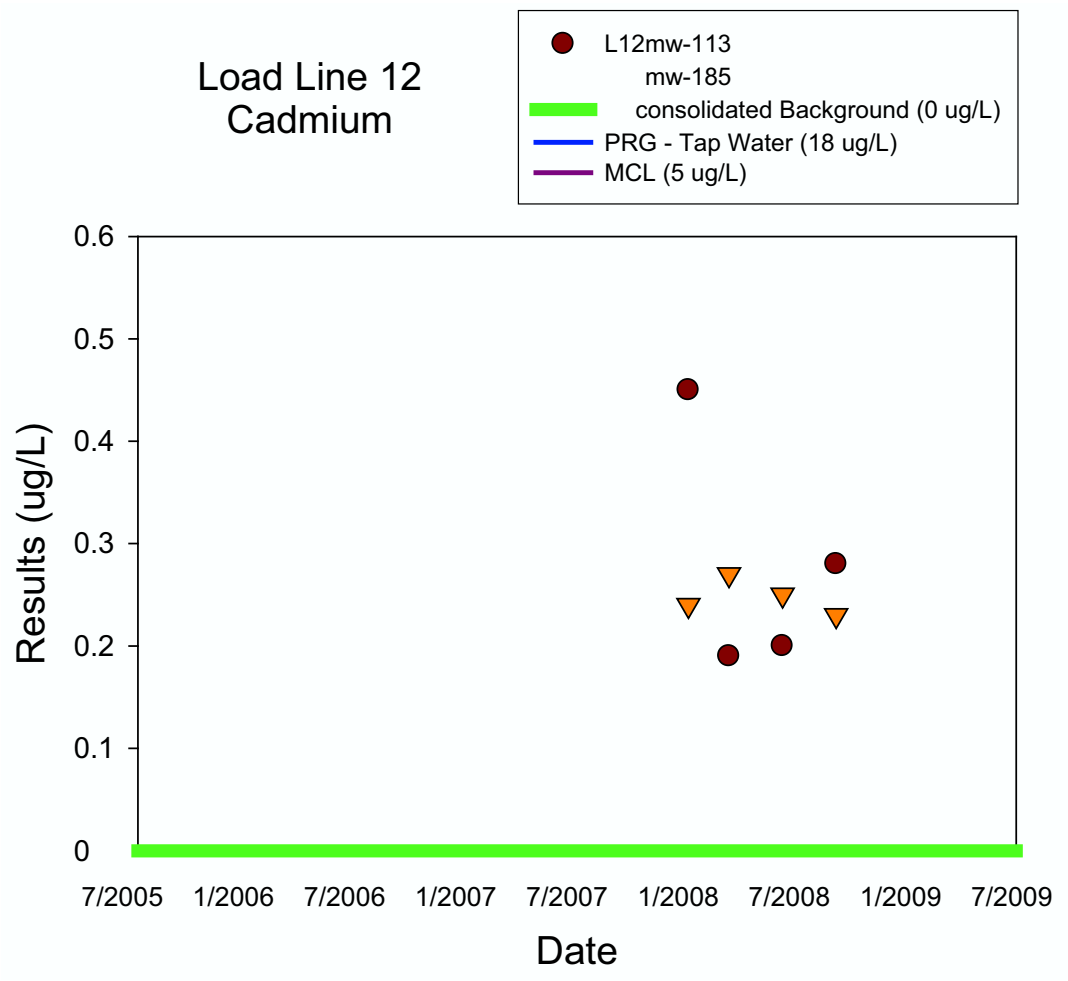

Load Line 11
1,3,5 - Trinitrobenzene
LL11mw-002
PRG - Tap Water (1100 ug/L)
Results (ug/L)
0.10
0.08
0.06
0.04
0.02
0.00
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

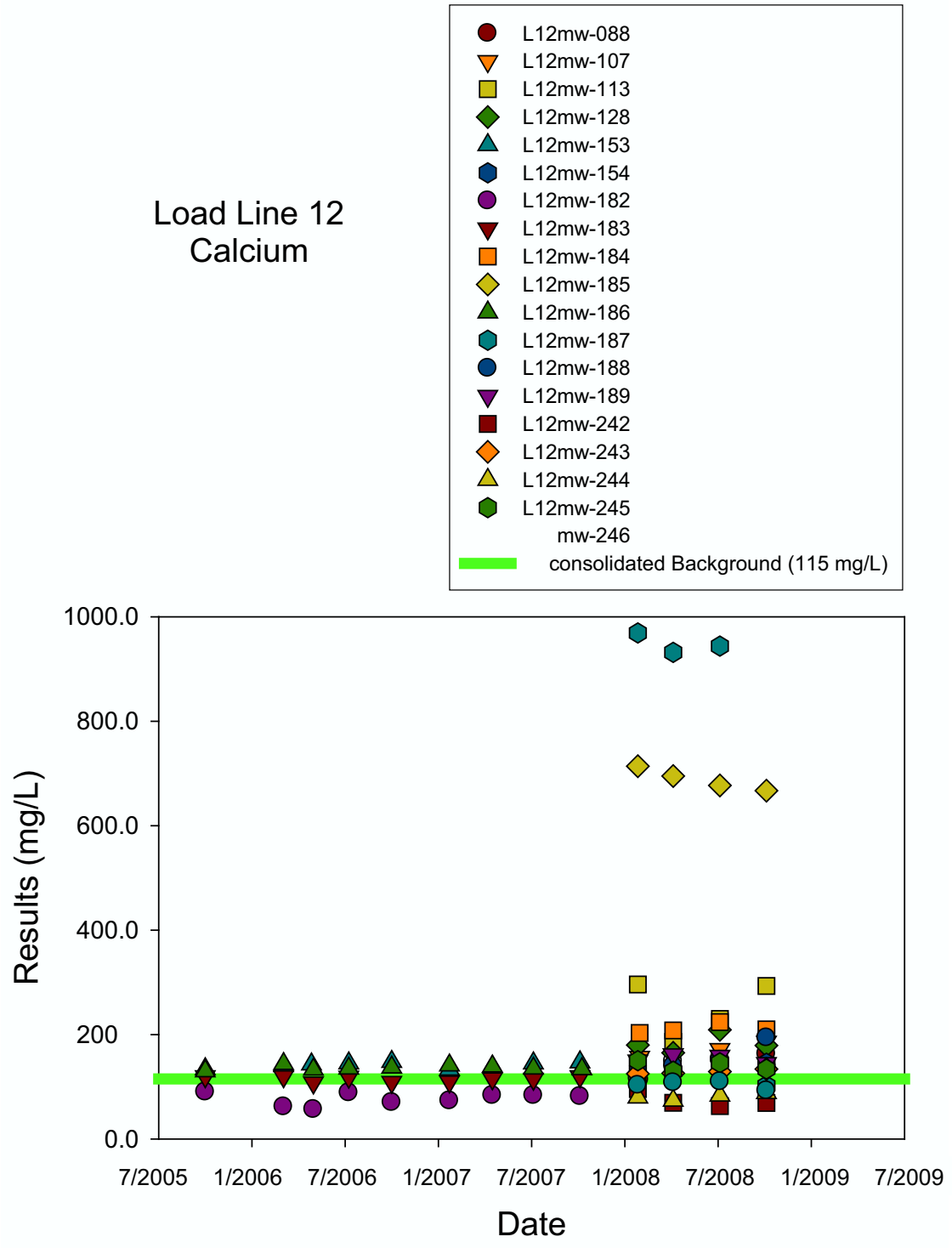

Load Line 12
Aluminum
L12mw-113
L12mw-128
L12mw-182
L12mw-186
L12mw-188
L12mw-242
mw-244
consolidated Background (0 ug/L)
PRG - Tap Water (3600 ug/L)
MCL (200 ug/L)
Results (ug/L)
30000.0
25000.0
20000.0
15000.0
10000.0
5000.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

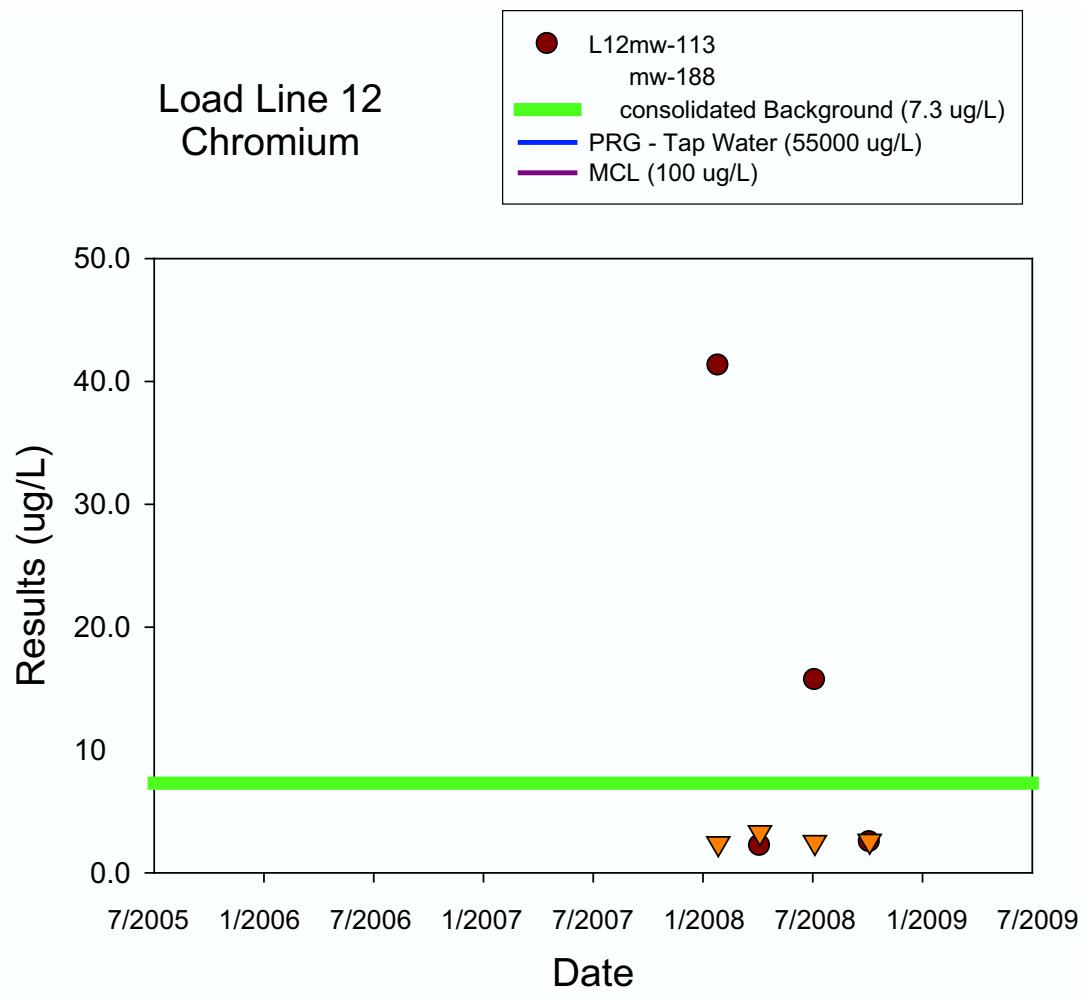

Load Line 12
Antimony
L12mw-113
L12mw-183
L12mw-186
mw-244
consolidated Background (0 ug/L)
PRG - Tap Water (15 ug/L)
MCL (6 ug/L)
Results (ug/L)
60.0
50.0
40.0
30.0
20.0
10.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

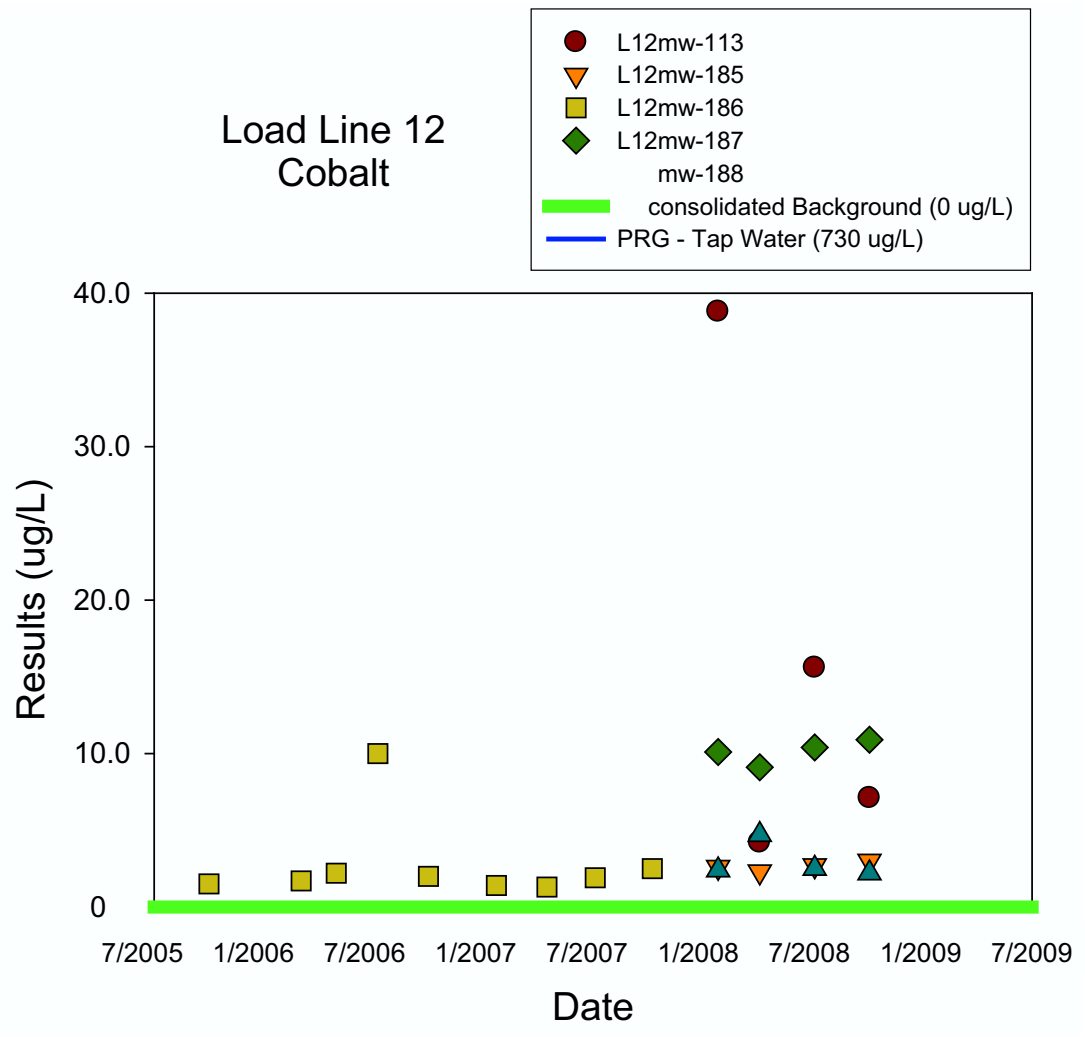

Load Line 12
Arsenic
L12mw-088
L12mw-107
L12mw-113
L12mw-128
L12mw-153
L12mw-154
L12mw-182
L12mw-183
L12mw-184
L12mw-242
L12mw-243
L12mw-244
L12mw-245
mw-246
consolidated Background (11.70 ug/L)
PRG - Tap Water (0.045 ug/L)
MCL (10 ug/L)
Results (ug/L)
800.0
600.0
400.0
200.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

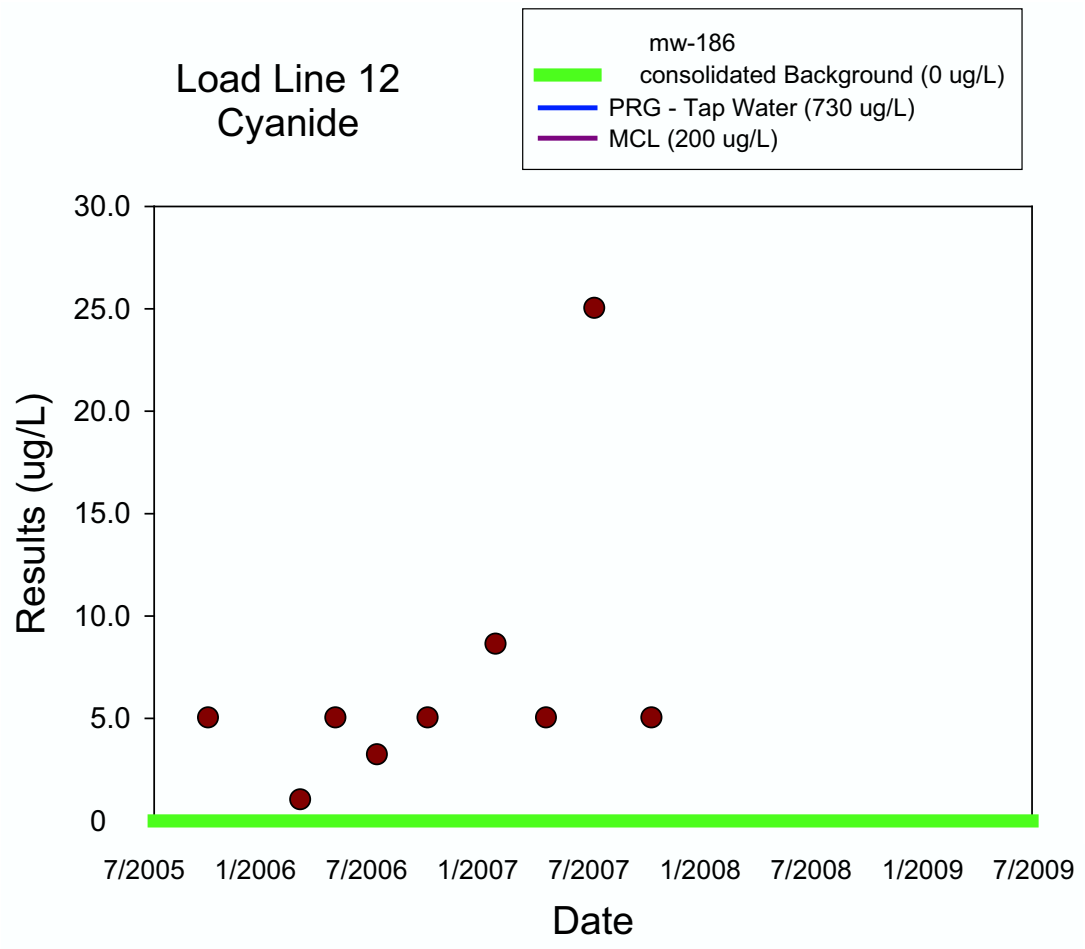

Load Line 12
Barium
L12mw-088
L12mw-182
L12mw-187
mw-244
consolidated Background (82.10 ug/L)
PRG - Tap Water (2600 ug/L)
MCL (2000 ug/L)
Results (ug/L)
400.0
300.0
200.0
100
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

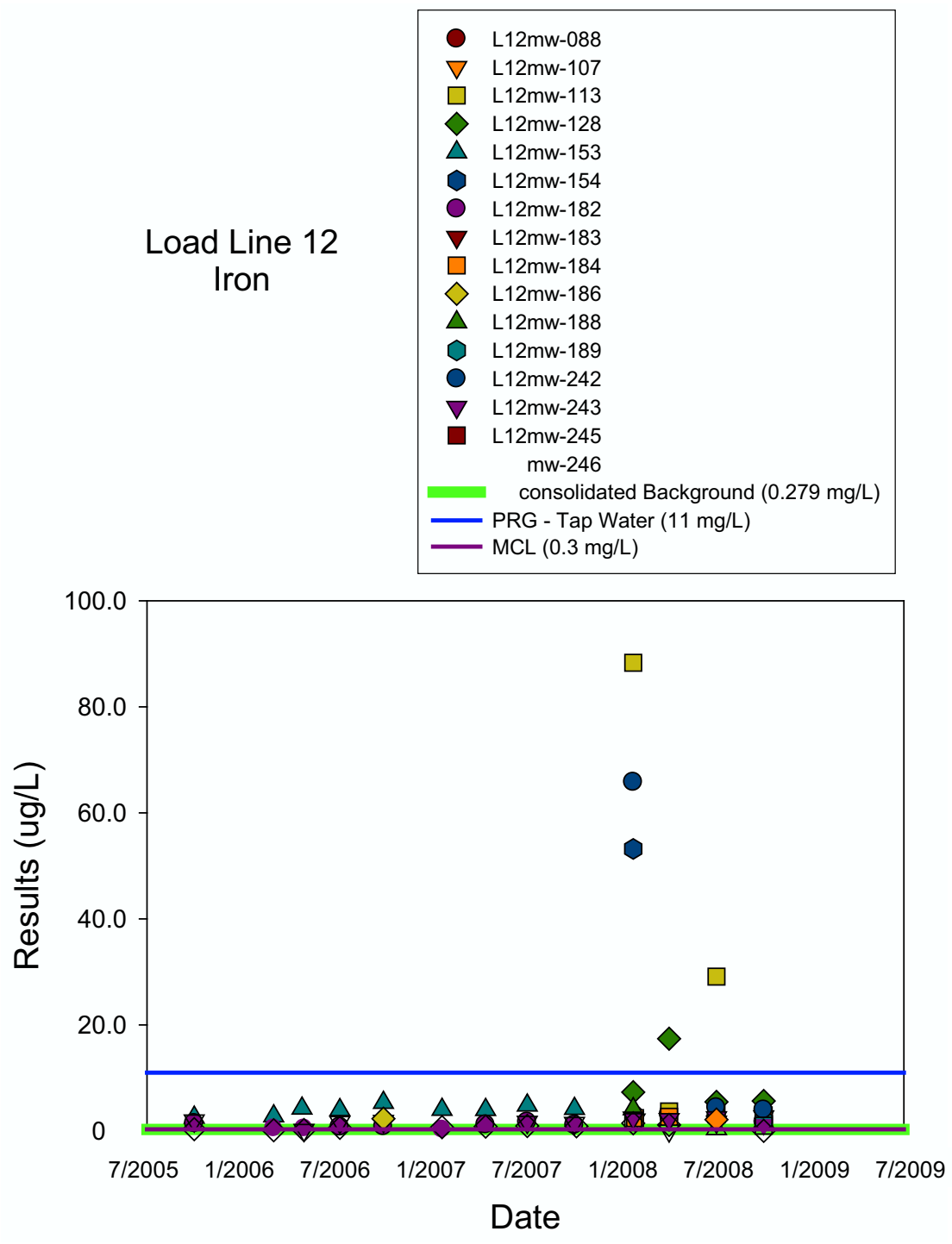

Load Line 12
Cadmium
L12mw-113
mw-185
consolidated Background (0 ug/L)
PRG - Tap Water (18 ug/L)
MCL (5 ug/L)
Results (ug/L)
0.6
0.5
0.4
0.3
0.2
0.1
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

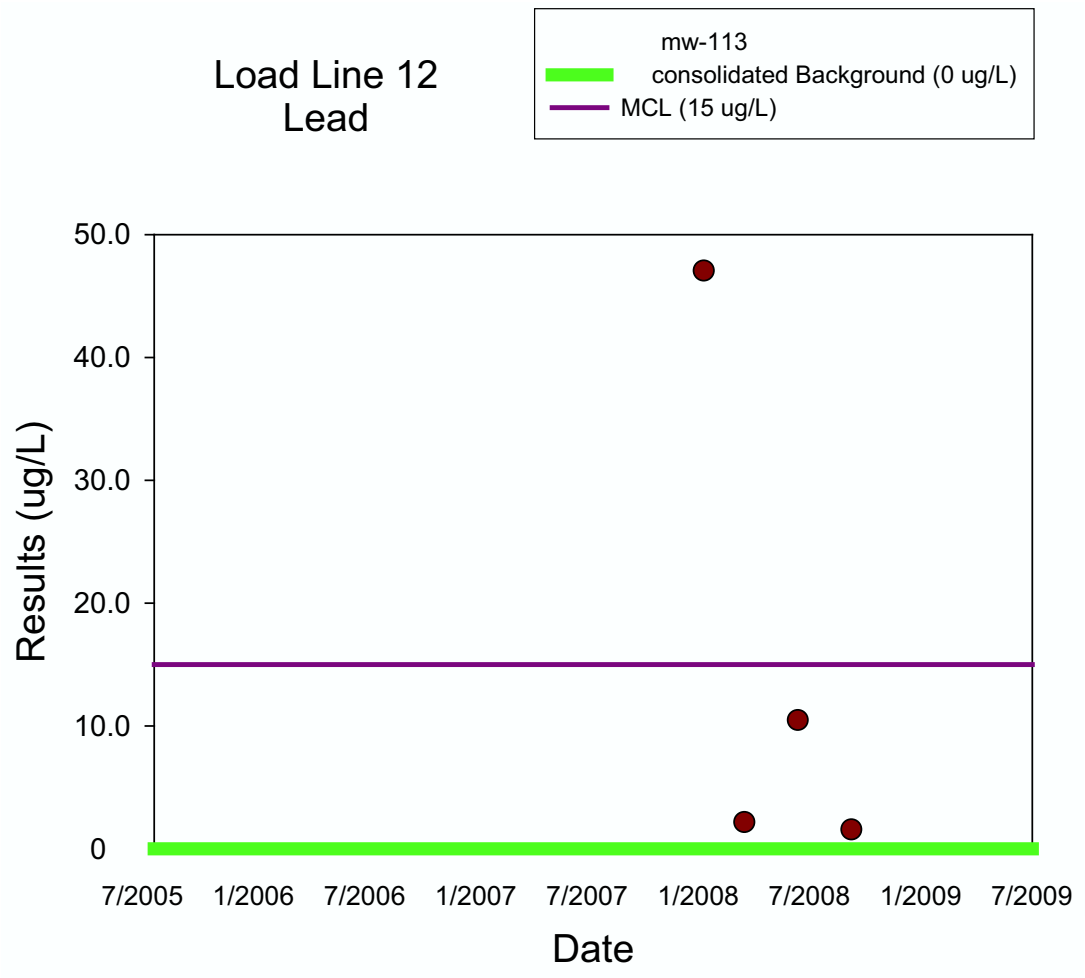

Load Line 12
Calcium
L12mw-088
L12mw-107
L12mw-113
L12mw-128
L12mw-153
L12mw-154
L12mw-182
L12mw-183
L12mw-184
L12mw-185
L12mw-186
L12mw-187
L12mw-188
L12mw-189
L12mw-242
L12mw-243
L12mw-244
L12mw-245
mw-246
consolidated Background (115 mg/L)
Results (mg/L)
1000.0
800.0
600.0
400.0
200
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

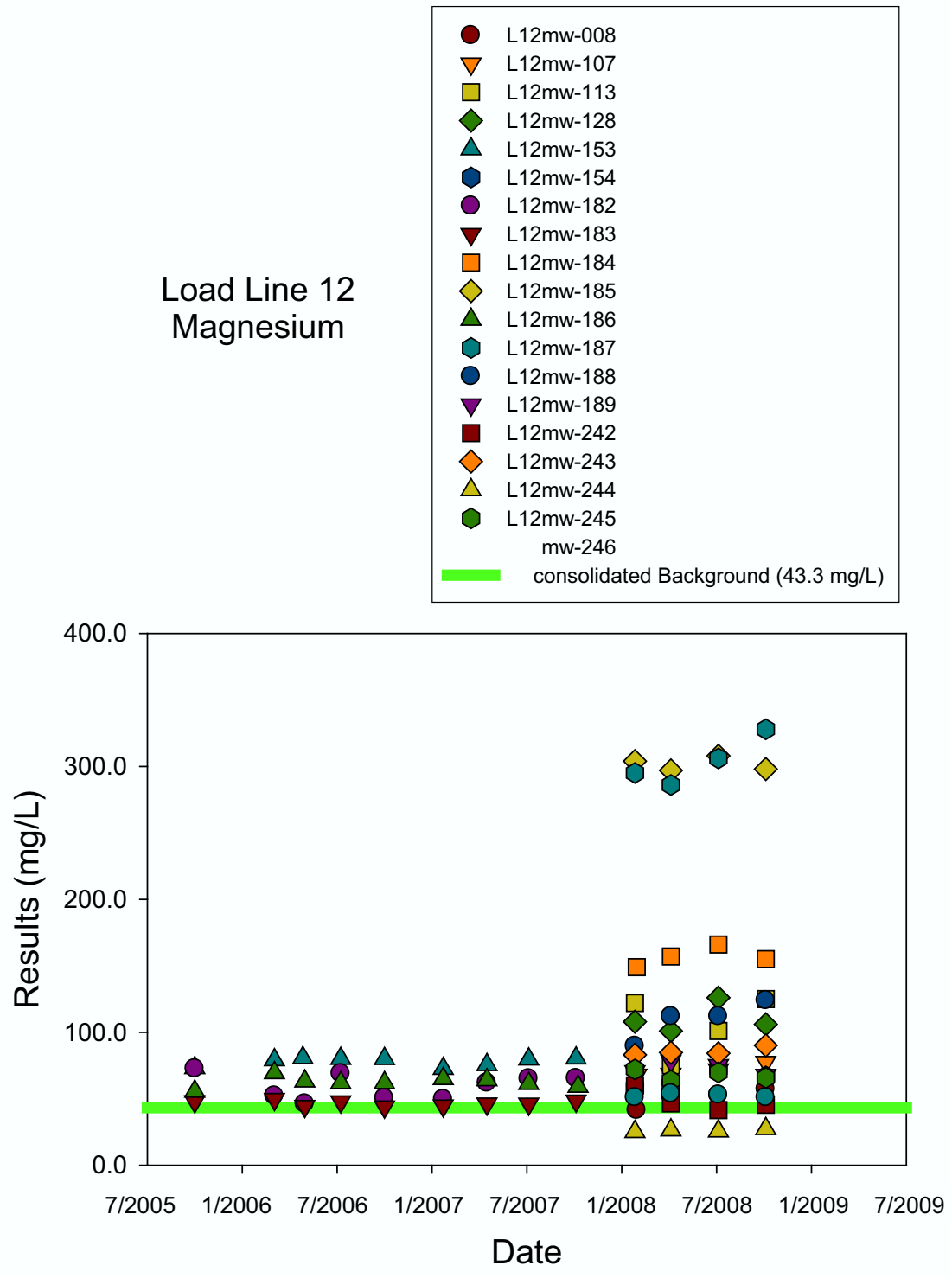

Load Line 12
Chromium
L12mw-113
mw-188
consolidated Background (7.3 ug/L)
PRG - Tap Water (55000 ug/L)
MCL (100 ug/L)
Results (ug/L)
50.0
40.0
30.0
20.0
10
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

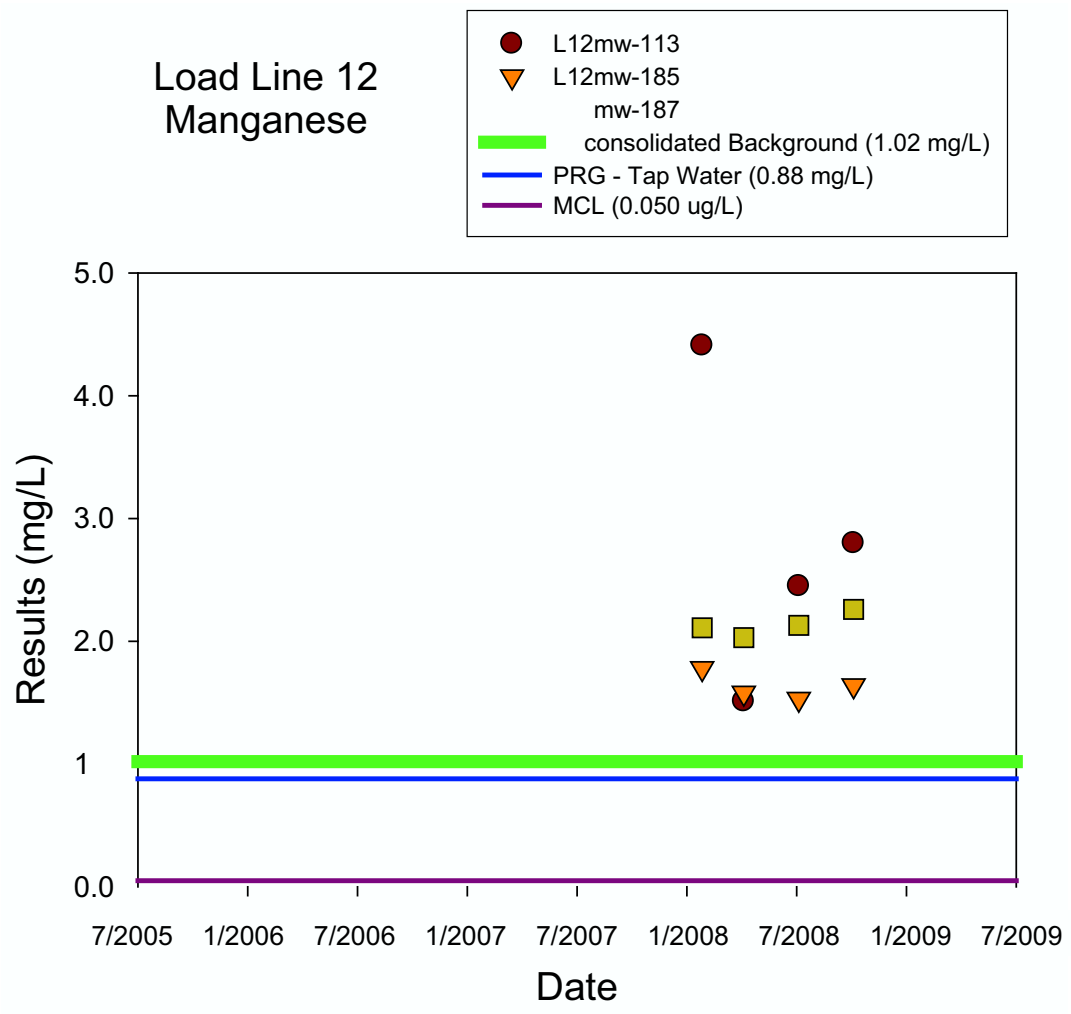

Load Line 12
Cobalt
L12mw-113
L12mw-185
L12mw-186
L12mw-187
mw-188
consolidated Background (0 ug/L)
PRG - Tap Water (730 ug/L)
Results (ug/L)
40.0
30.0
20.0
10.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

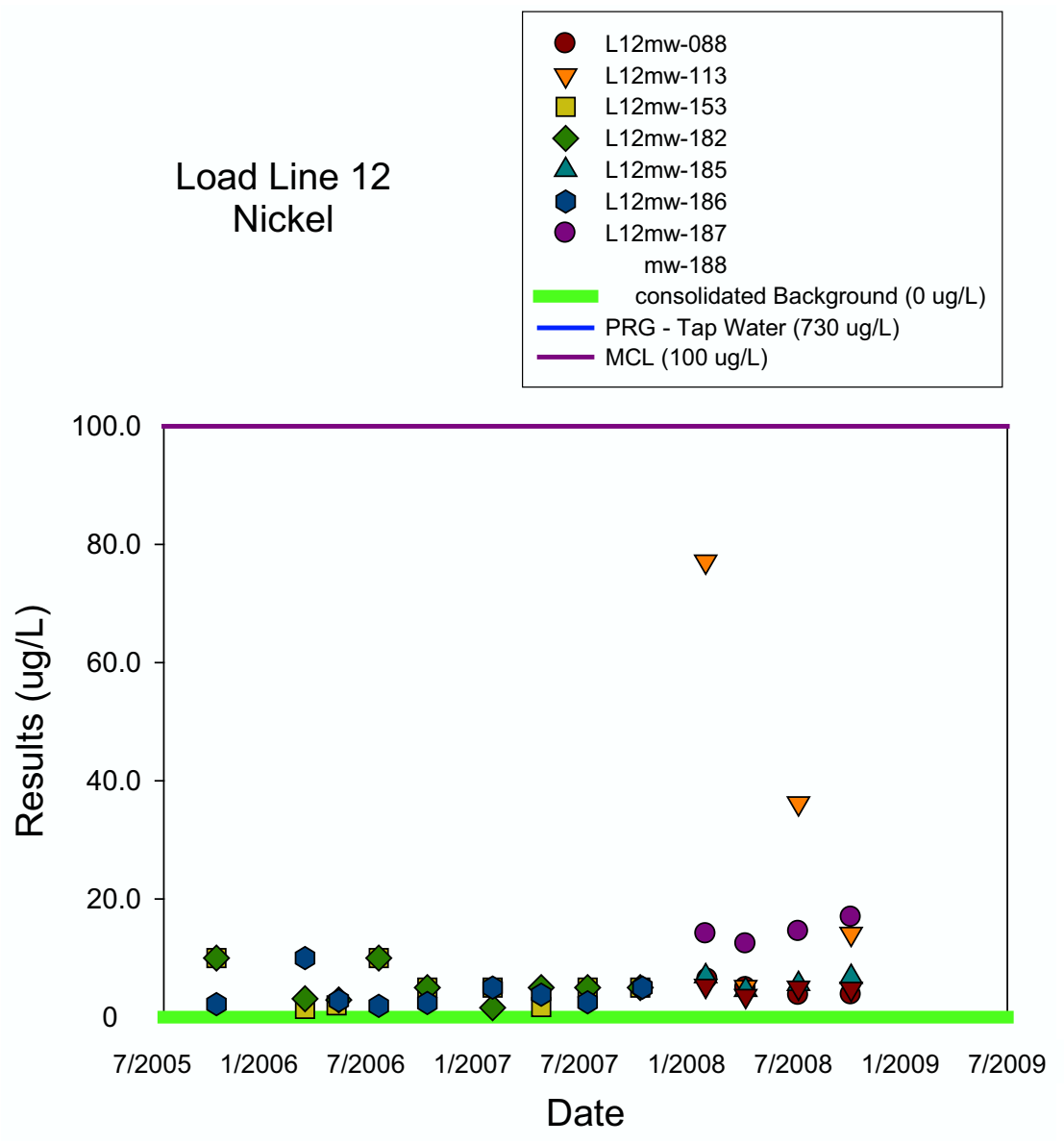

Load Line 12
Cyanide
mw-186
consolidated Background (0 ug/L)
PRG - Tap Water (730 ug/L)
MCL (200 ug/L)
Results (ug/L)
30.0
25.0
20.0
15.0
10.0
5.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

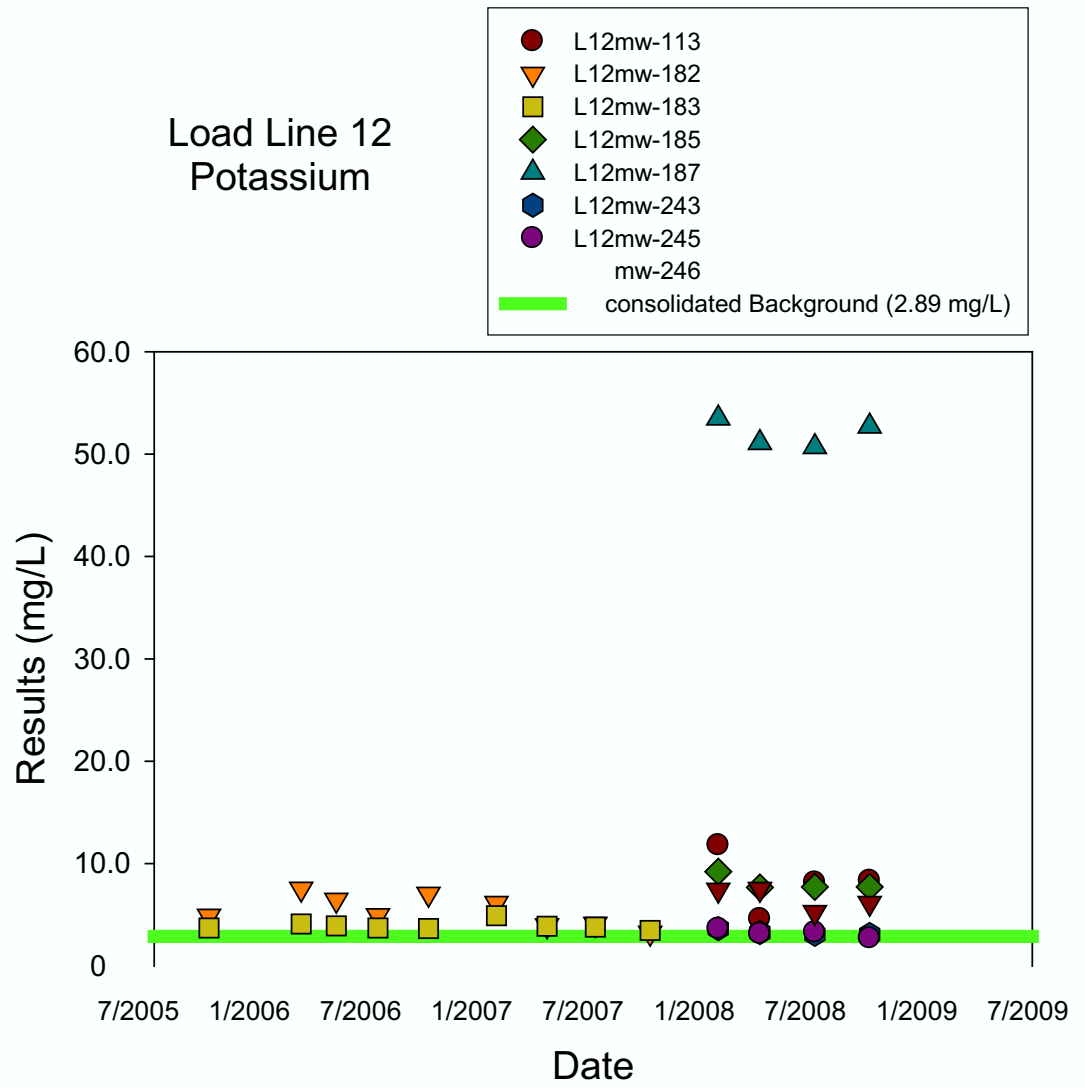

Load Line 12
Iron
L12mw-088
L12mw-107
L12mw-113
L12mw-128
L12mw-153
L12mw-154
L12mw-182
L12mw-183
L12mw-184
L12mw-186
L12mw-188
L12mw-189
L12mw-242
L12mw-243
L12mw-245
mw-246
consolidated Background (0.279 mg/L)
PRG - Tap Water (11 mg/L)
MCL (0.3 mg/L)
Results (ug/L)
100.0
80.0
60.0
40.0
20.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

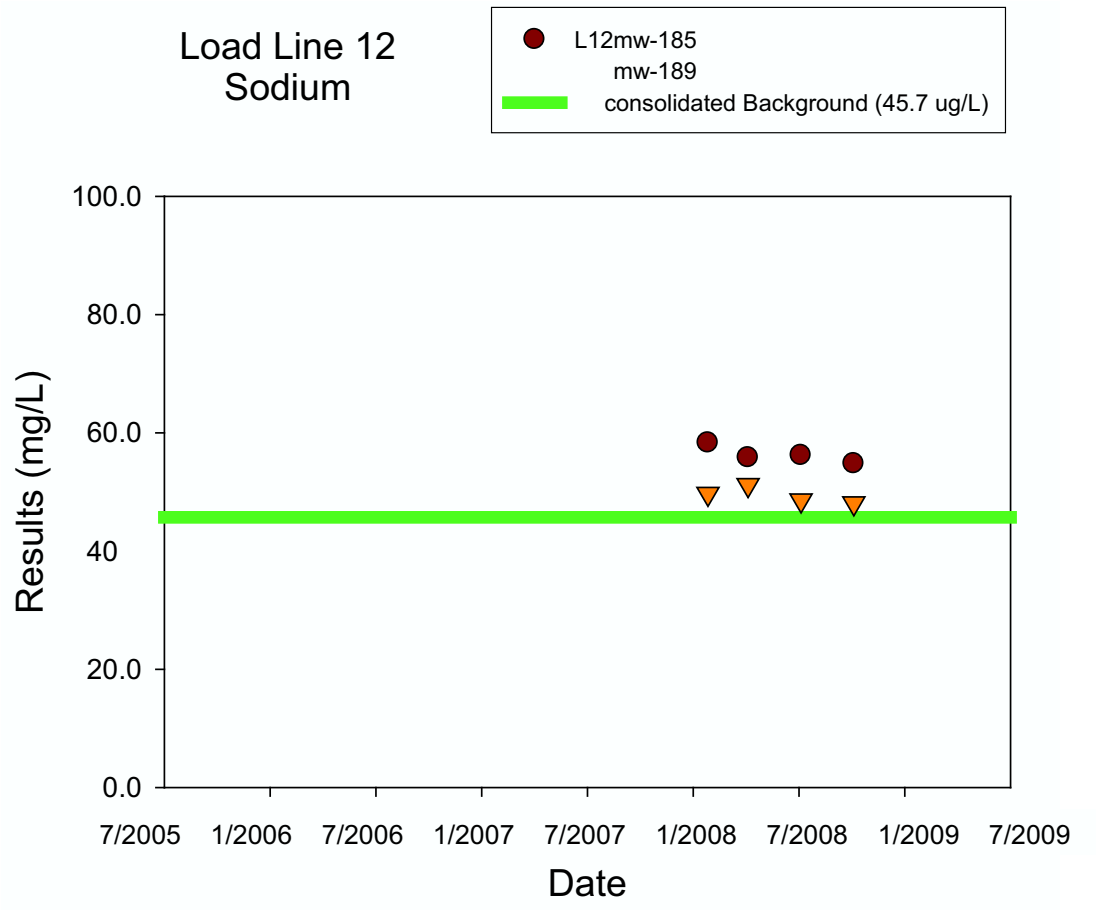

Load Line 12
Lead
mw-113
consolidated Background (0 ug/L)
MCL (15 ug/L)
Results (ug/L)
50.0
40.0
30.0
20.0
10.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

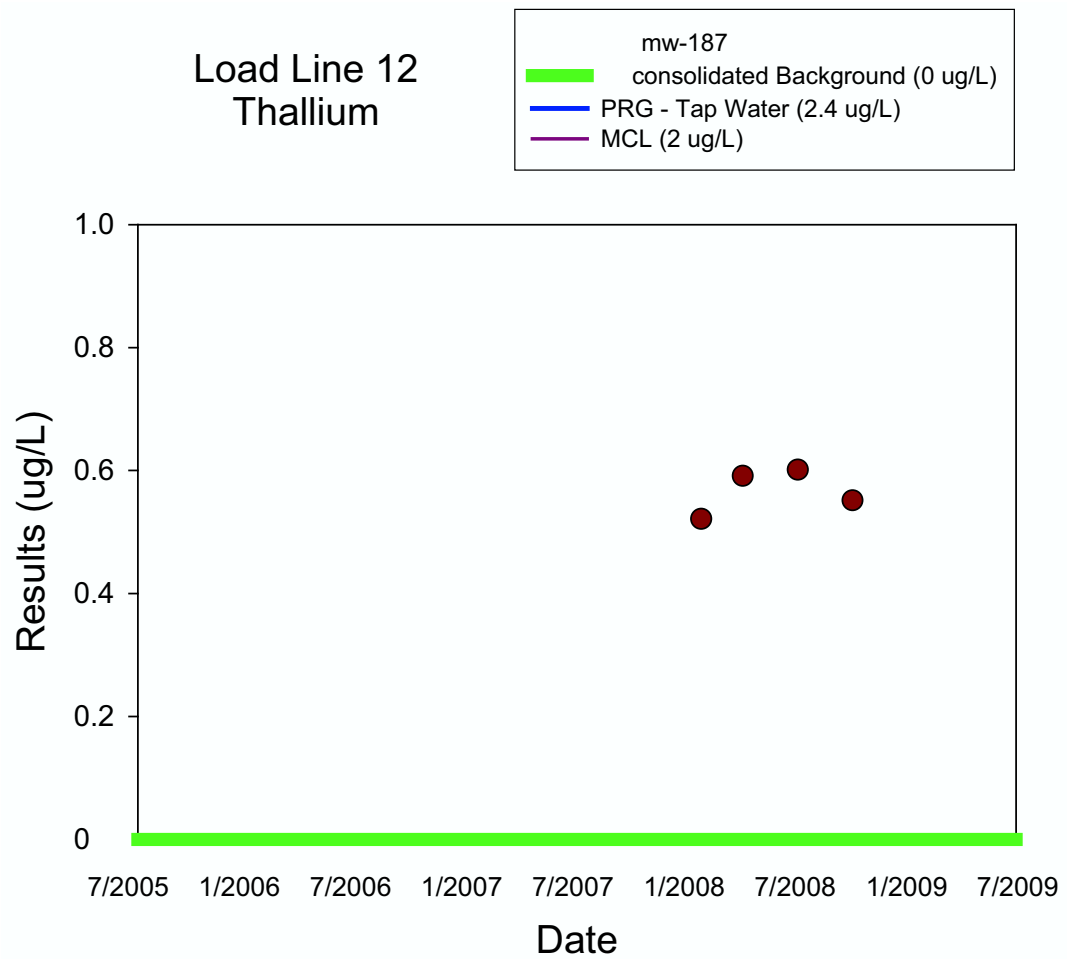

Load Line 12
Magnesium
L12mw-008
L12mw-107
L12mw-113
L12mw-128
L12mw-153
L12mw-154
L12mw-182
L12mw-183
L12mw-184
L12mw-185
L12mw-186
L12mw-187
L12mw-188
L12mw-189
L12mw-242
L12mw-243
L12mw-244
L12mw-245
mw-246
consolidated Background (43.3 mg/L)
Results (mg/L)
400.0
300.0
200.0
100.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

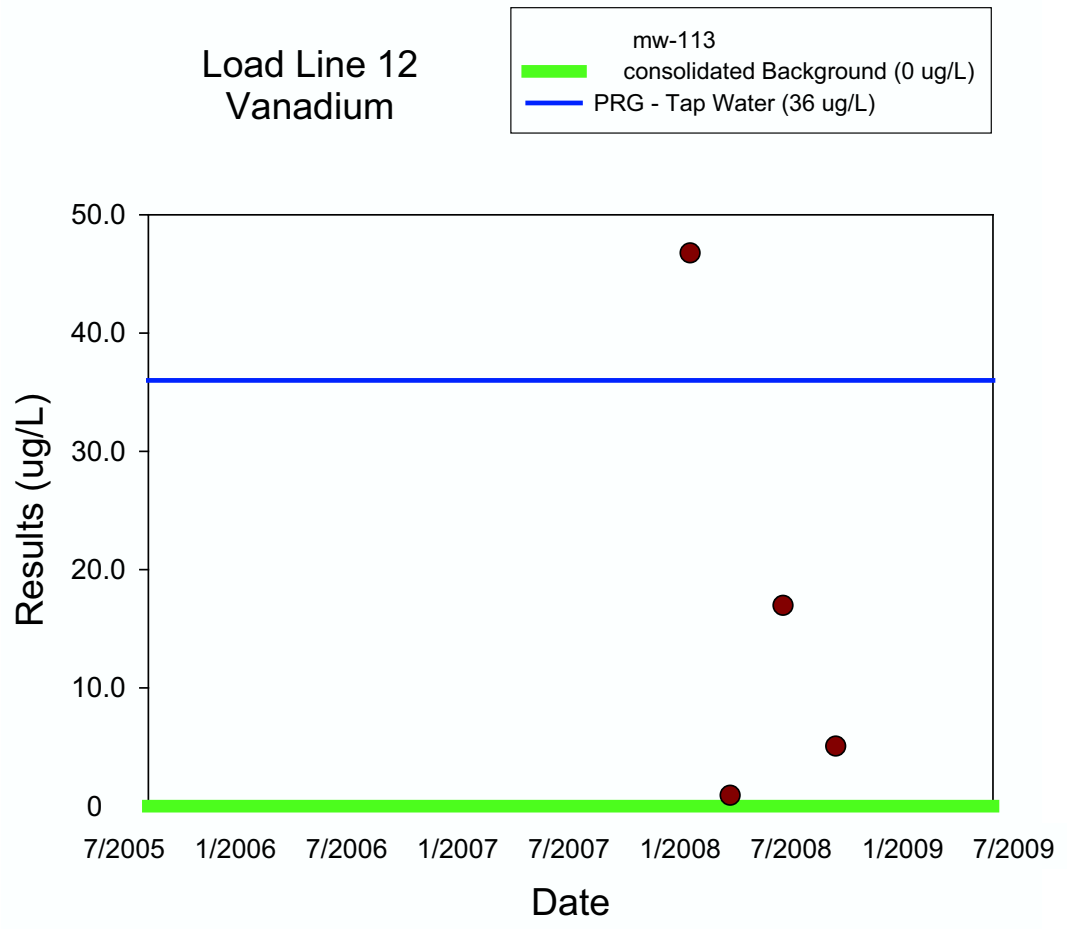

Load Line 12
Manganese
L12mw-113
L12mw-185
mw-187
consolidated Background (1.02 mg/L)
PRG - Tap Water (0.88 mg/L)
MCL (0.050 ug/L)
Results (mg/L)
5.0
4.0
3.0
2.0
1
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

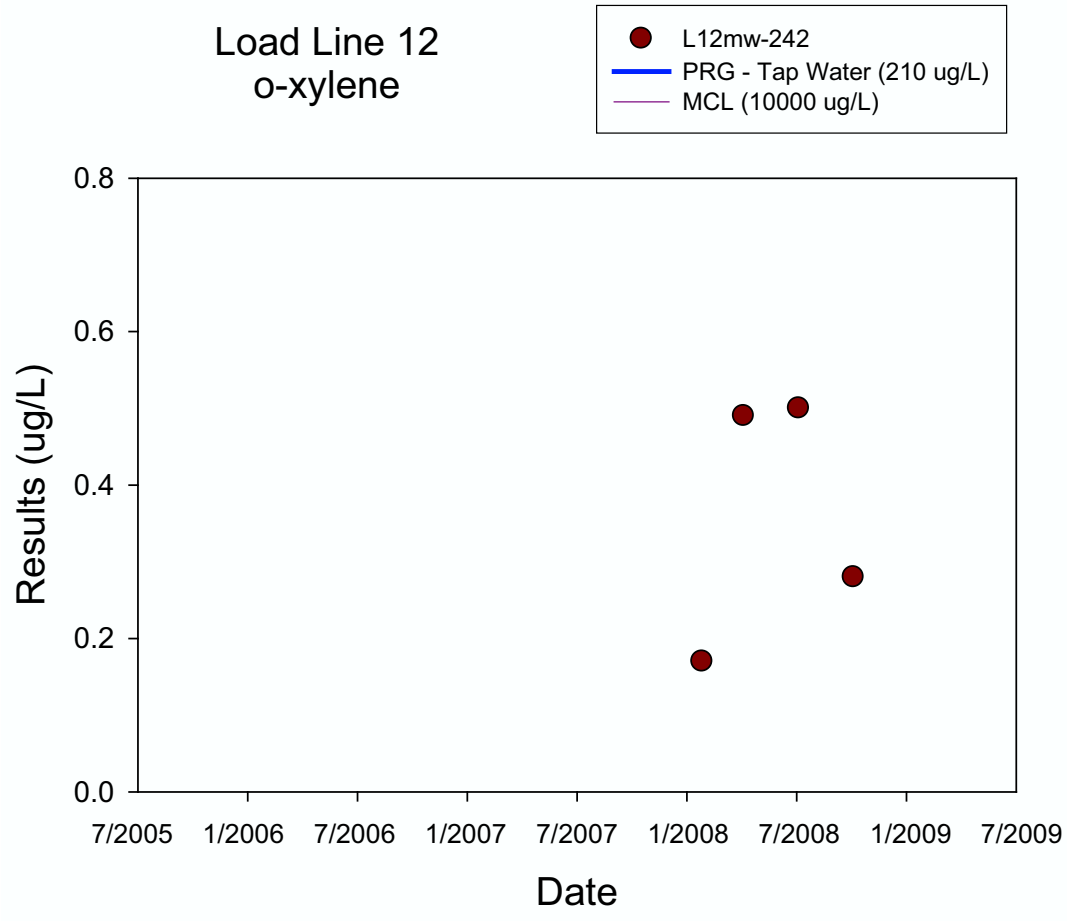

Load Line 12
Nickel
L12mw-088
L12mw-113
L12mw-153
L12mw-182
L12mw-185
L12mw-186
L12mw-187
mw-188
consolidated Background (0 ug/L)
PRG - Tap Water (730 ug/L)
MCL (100 ug/L)
Results (ug/L)
100.0
80.0
60.0
40.0
20.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

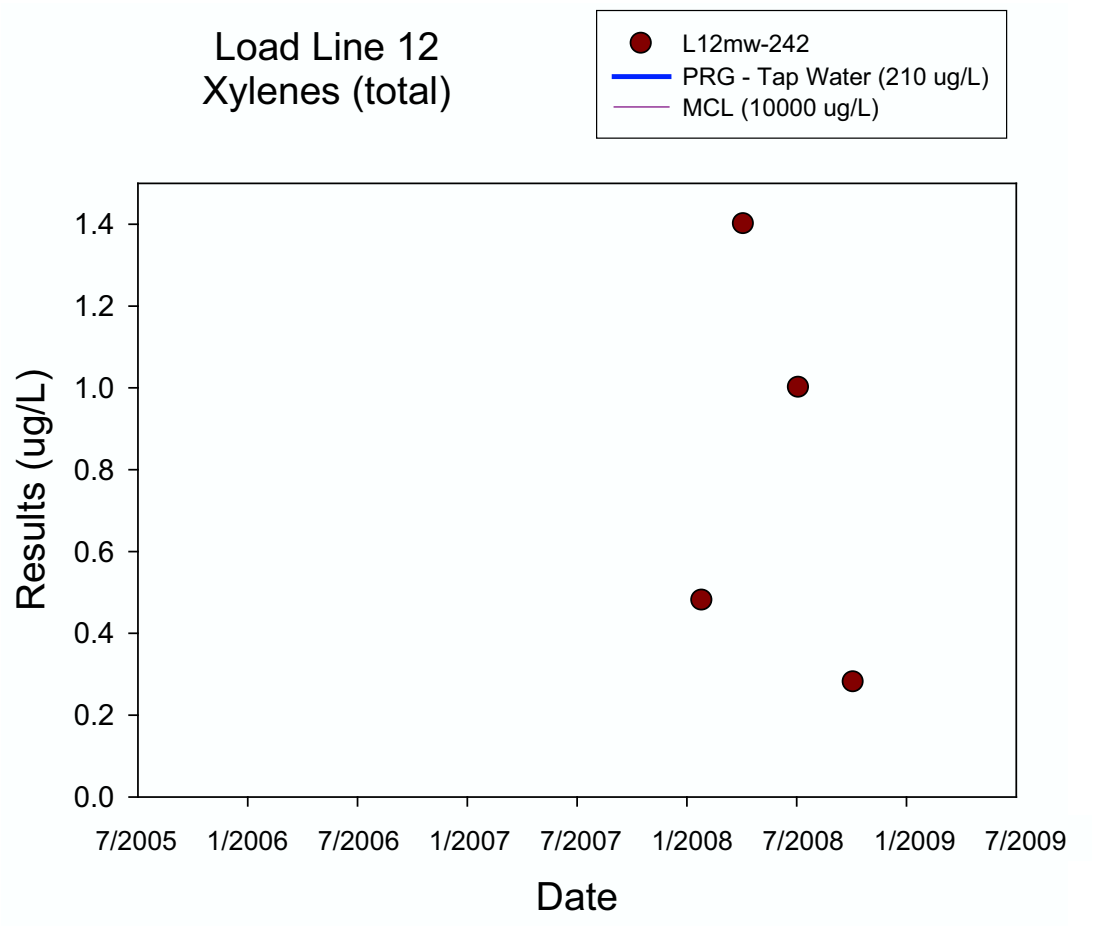

Load Line 12
Potassium
L12mw-113
L12mw-182
L12mw-183
L12mw-185
L12mw-187
L12mw-243
L12mw-245
mw-246
consolidated Background (2.89 mg/L)
Results (mg/L)
60.0
50.0
40.0
30.0
20.0
10.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

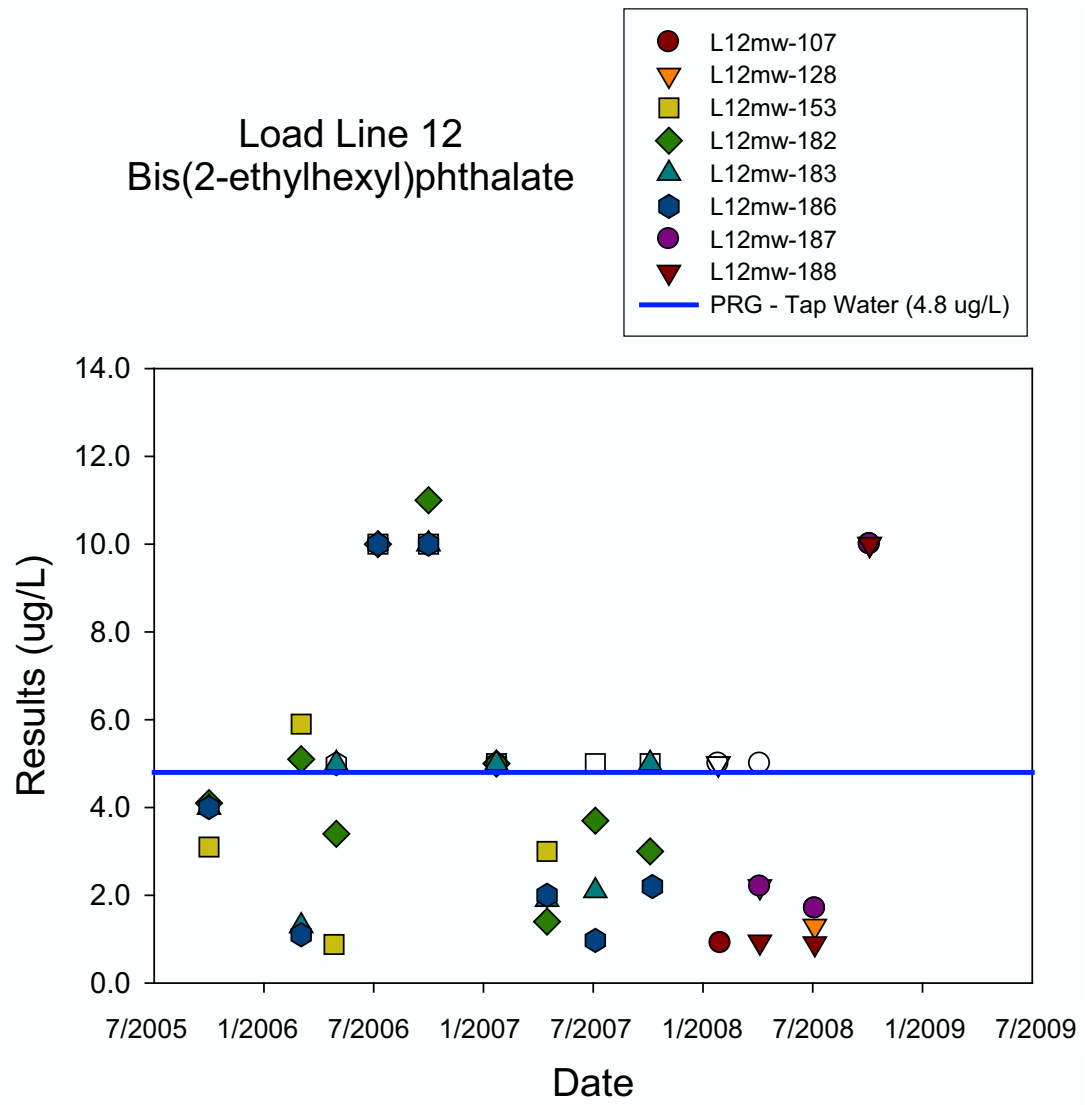

Load Line 12
Sodium
L12mw-185
mw-189
consolidated Background (45.7 ug/L)
Results (mg/L)
100.0
80.0
60.0
40
20.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

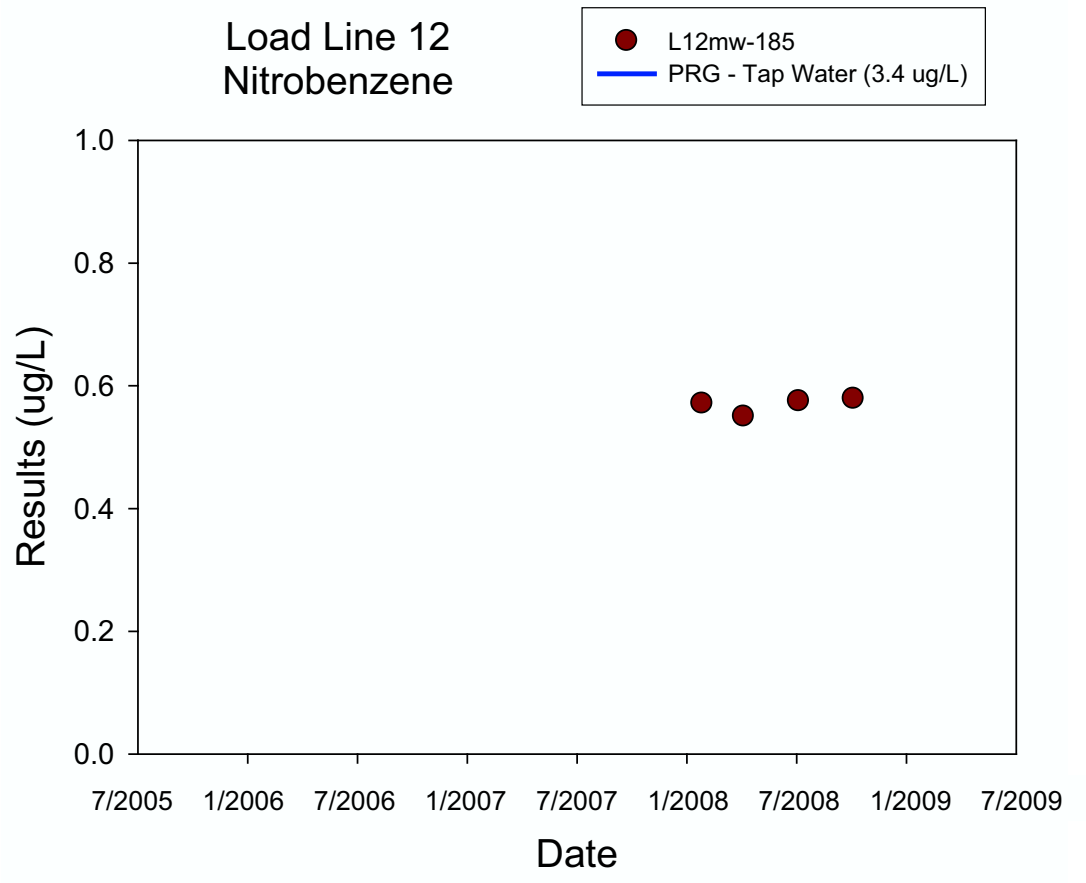

Load Line 12
Thallium
mw-187
consolidated Background (0 ug/L)
PRG - Tap Water (2.4 ug/L)
MCL (2 ug/L)
Results (ug/L)
1.0
0.8
0.6
0.4
0.2
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

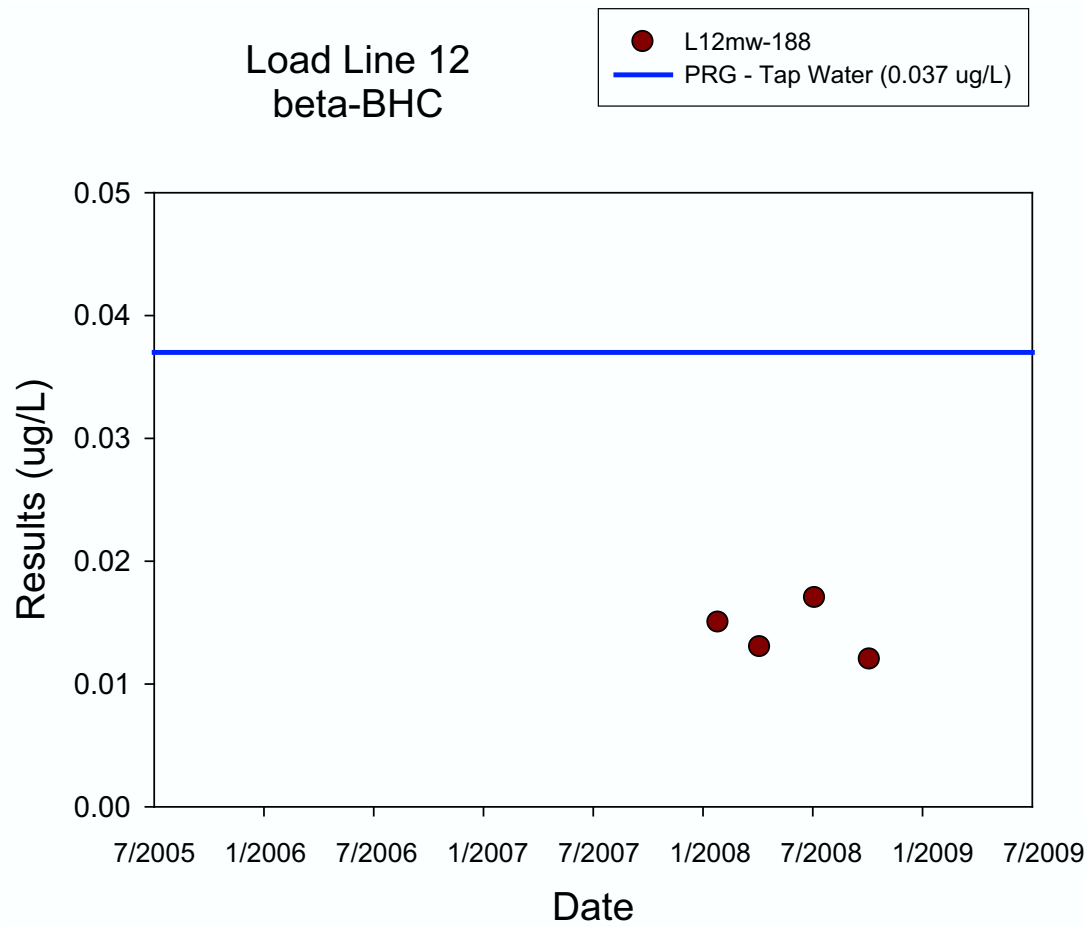

Load Line 12
Vanadium
mw-113
consolidated Background (0 ug/L)
PRG - Tap Water (36 ug/L)
Results (ug/L)
50.0
40.0
30.0
20.0
10.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

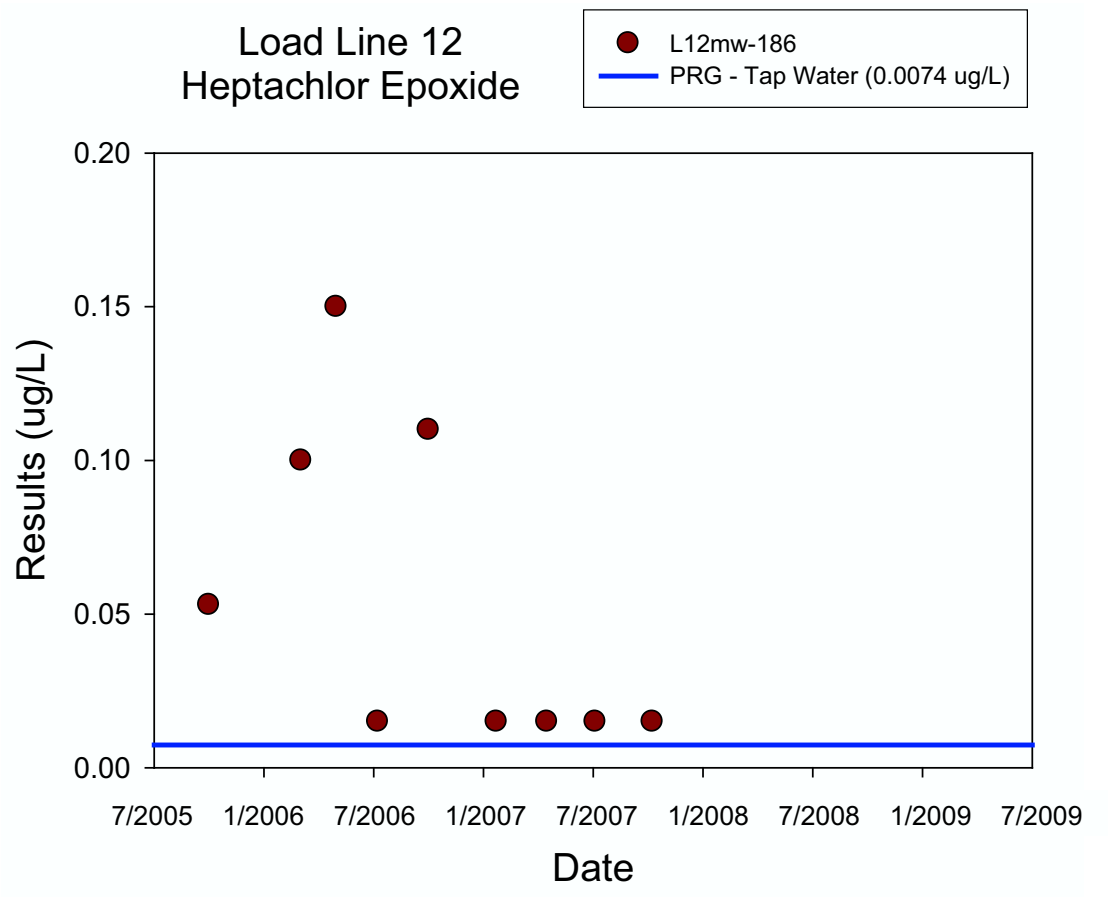

Load Line 12
o-xylene
L12mw-242
PRG - Tap Water (210 ug/L)
MCL (10000 ug/L)
Results (ug/L)
0.8
0.6
0.4
0.2
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

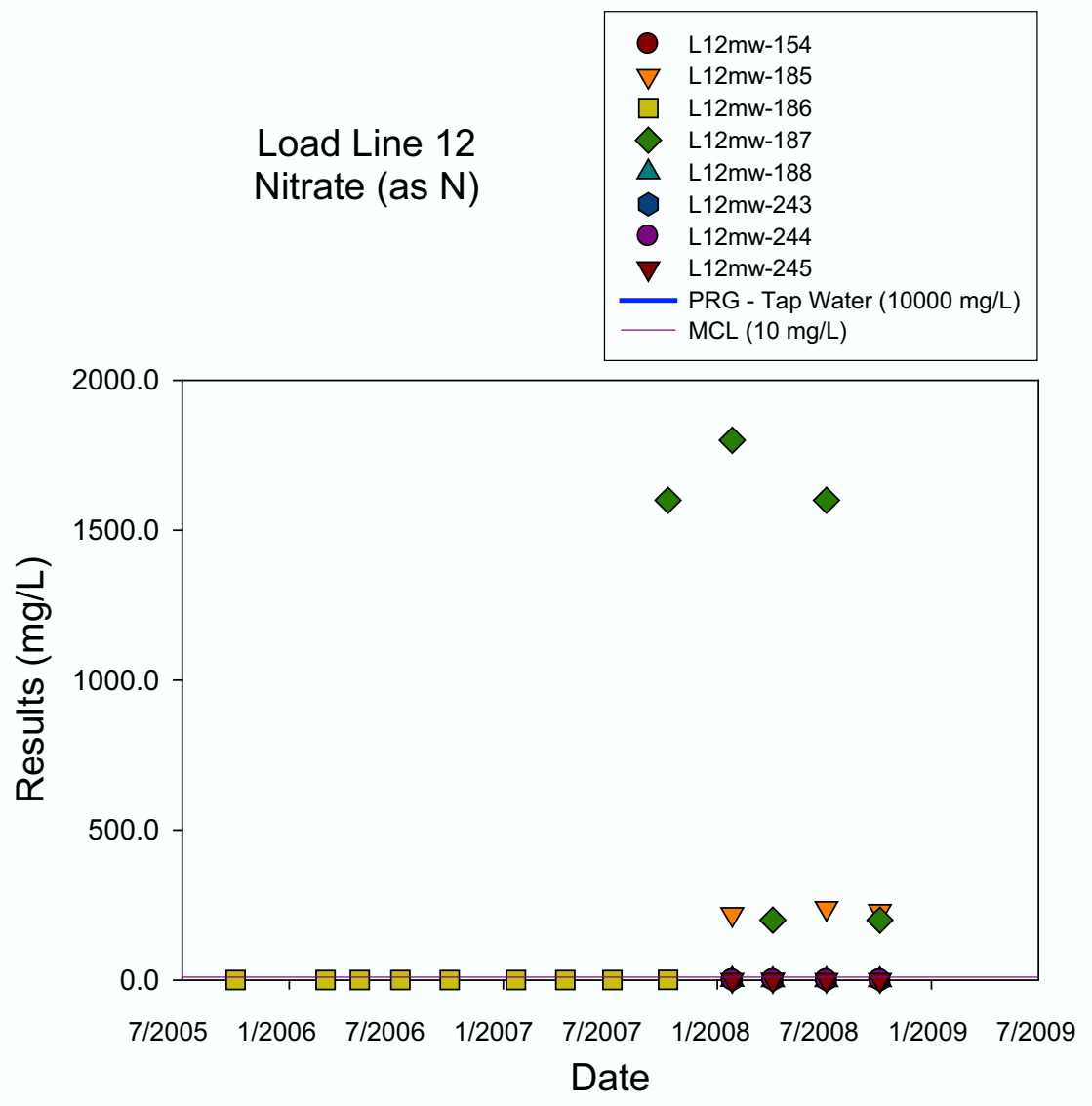

Load Line 12
Xylenes (total)
L12mw-242
PRG - Tap Water (210 ug/L)
MCL (10000 ug/L)
Results (ug/L)
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

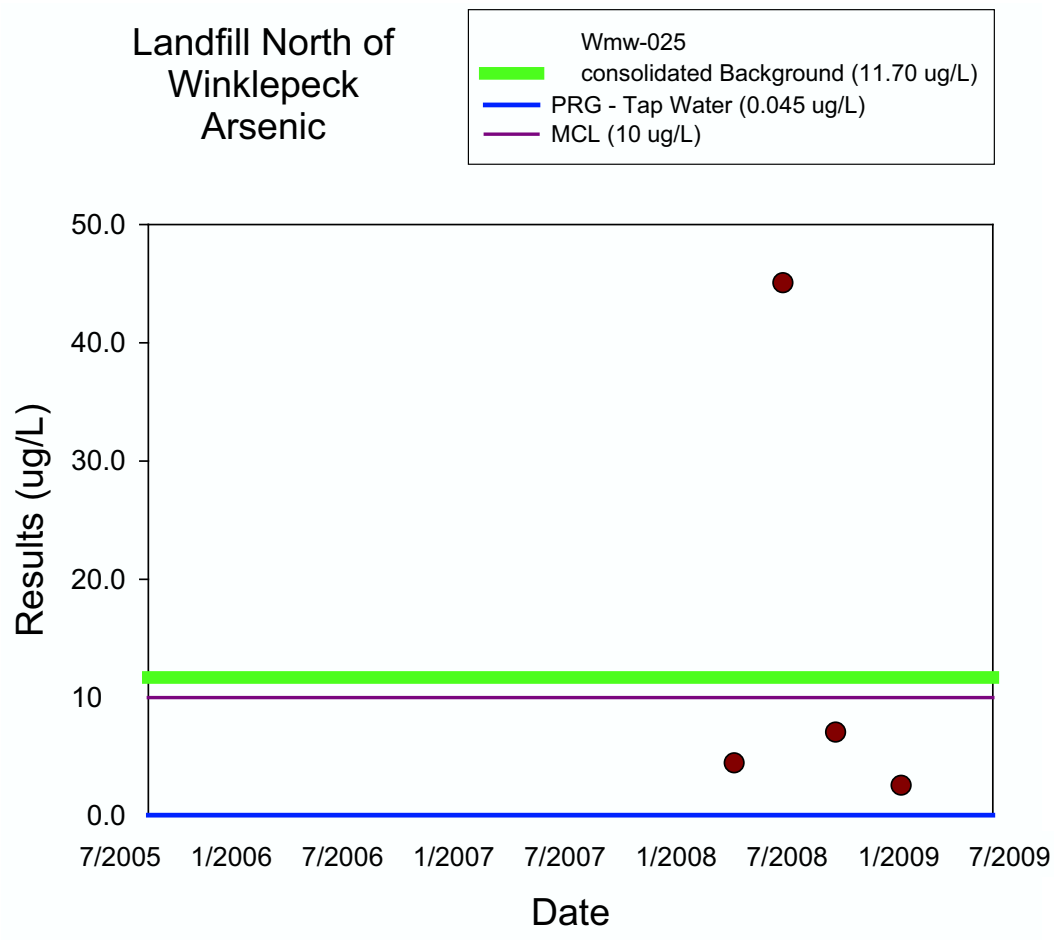

Load Line 12
Bis(2-ethylhexyl)phthalate
L12mw-107
L12mw-128
L12mw-153
L12mw-182
L12mw-183
L12mw-186
L12mw-187
L12mw-188
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

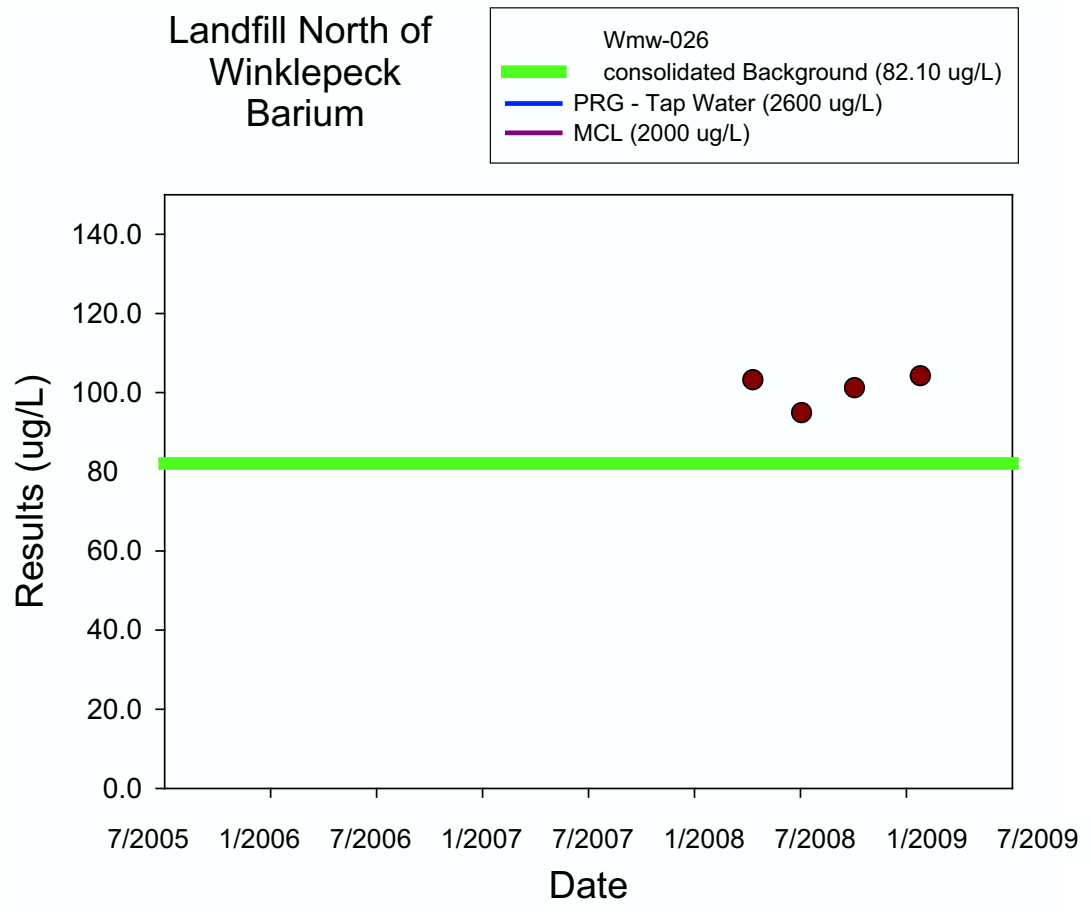

Load Line 12
Nitrobenzene
L12mw-185
PRG - Tap Water (3.4 ug/L)
Results (ug/L)
1.0
0.8
0.6
0.4
0.2
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

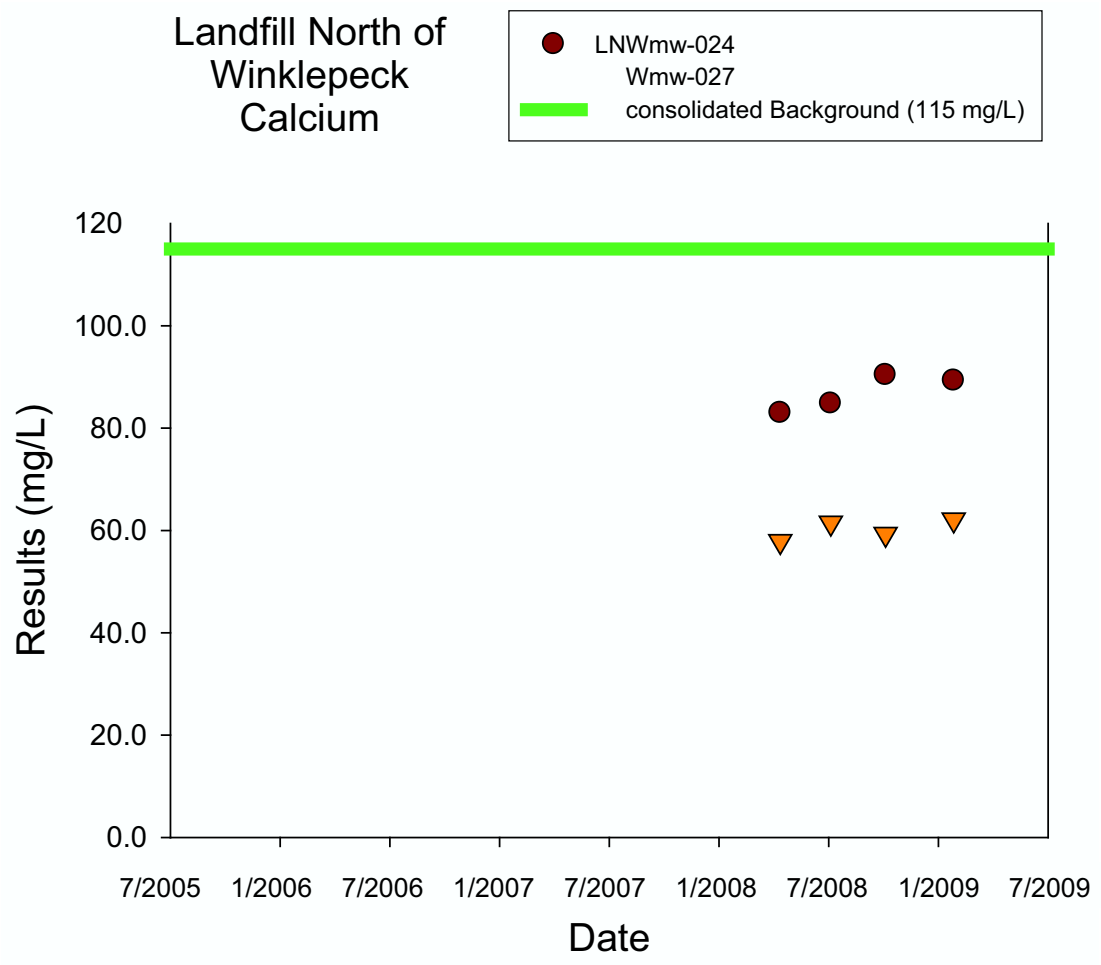

Load Line 12
beta-BHC
L12mw-188
PRG - Tap Water (0.037 ug/L)
Results (ug/L)
0.05
0.04
0.03
0.02
0.01
0.00
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

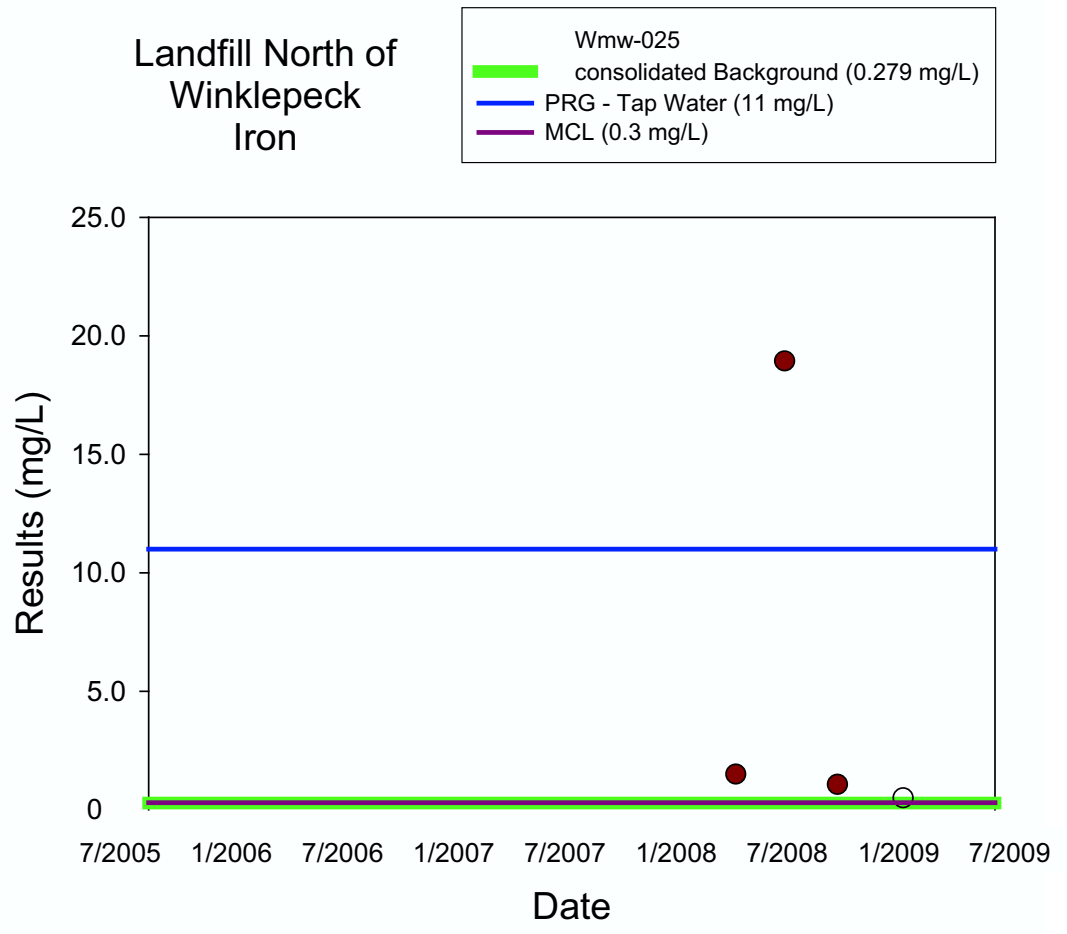

Load Line 12
Heptachlor Epoxide
L12mw-186
PRG - Tap Water (0.0074 ug/L)
Results (ug/L)
0.20
0.15
0.10
0.05
0.00
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

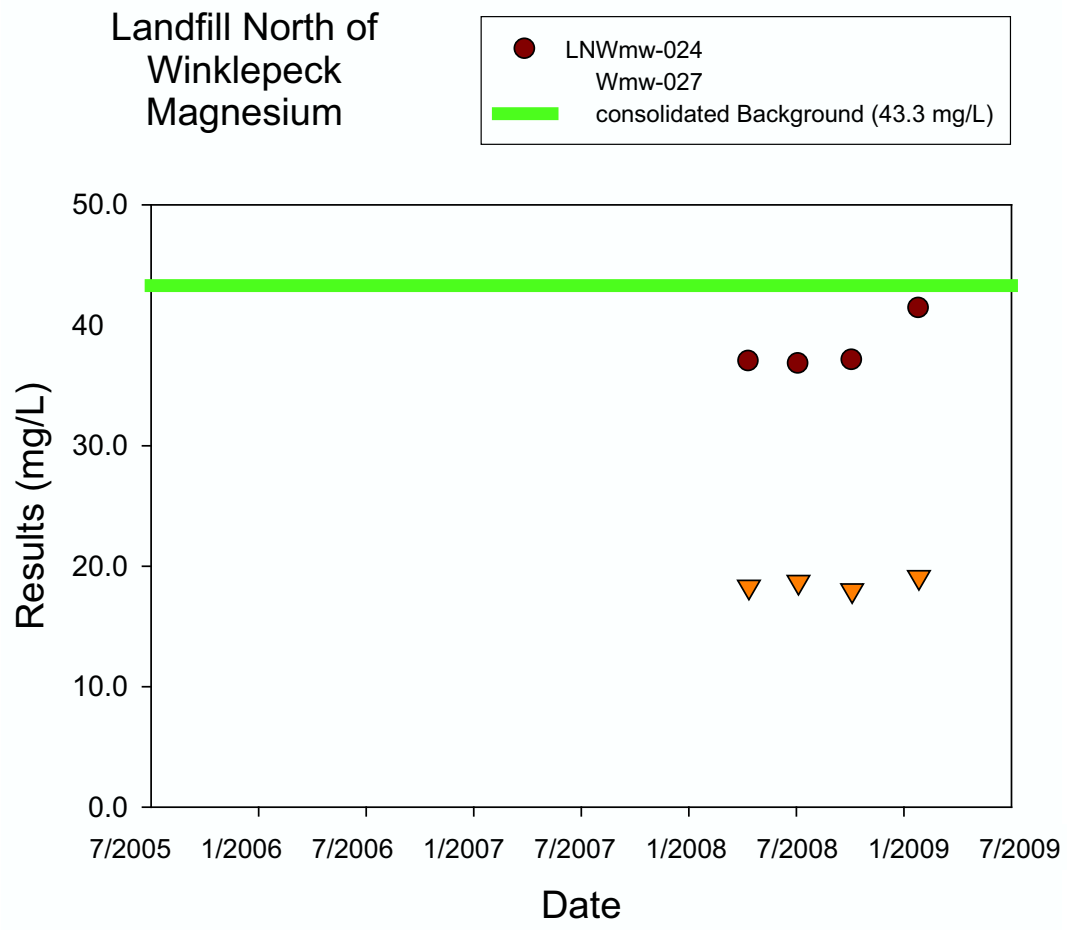

Load Line 12
Nitrate (as N)
L12mw-154
L12mw-185
L12mw-186
L12mw-187
L12mw-188
L12mw-243
L12mw-244
L12mw-245
PRG - Tap Water (10000 mg/L)
MCL (10 mg/L)
Results (mg/L)
2000.0
1500.0
1000.0
500.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

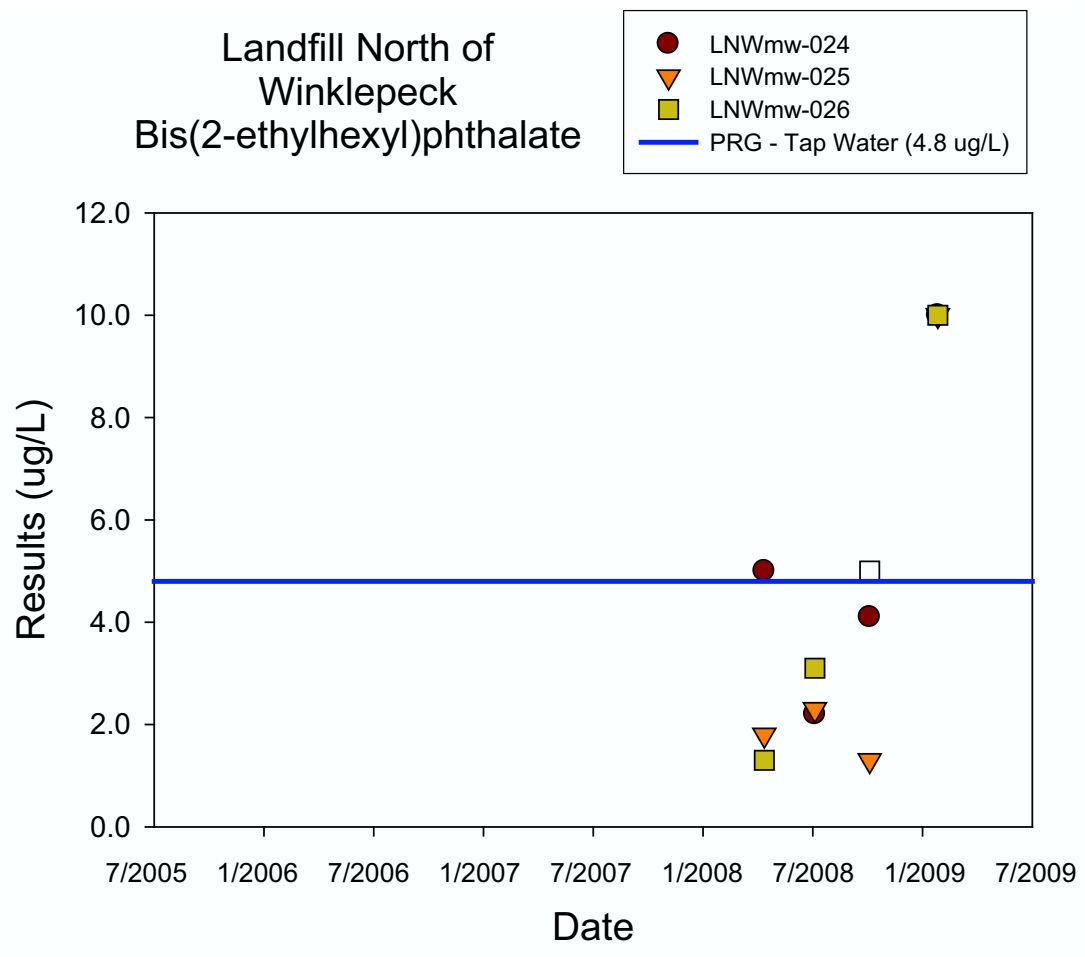

Landfill North of Winklepeck Arsenic
Wmw-025
consolidated Background (11.70 ug/L)
PRG - Tap Water (0.045 ug/L)
MCL (10 ug/L)
Results (ug/L)
50.0
40.0
30.0
20.0
10
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

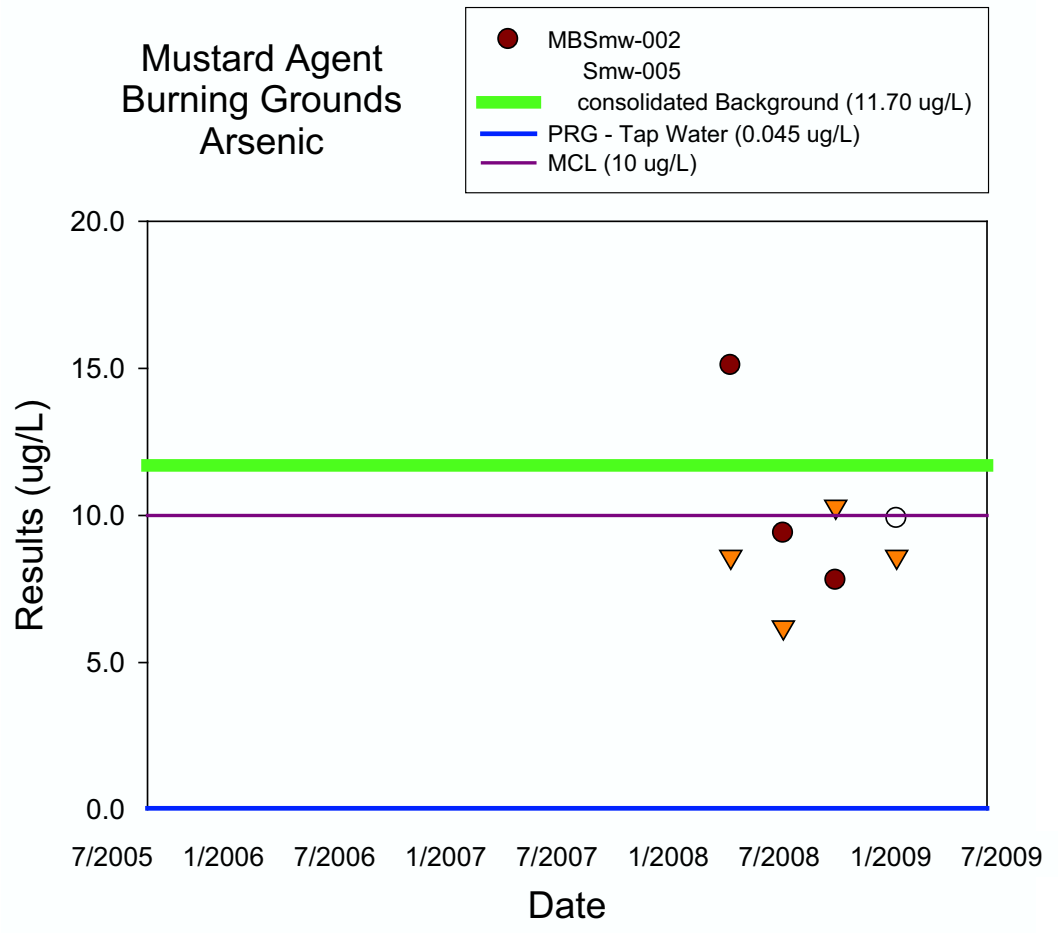

Landfill North of Winklepeck Barium
Wmw-026
consolidated Background (82.10 ug/L)
PRG - Tap Water (2600 ug/L)
MCL (2000 ug/L)
Results (ug/L)
140.0
120.0
100.0
80
60.0
40.0
20.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

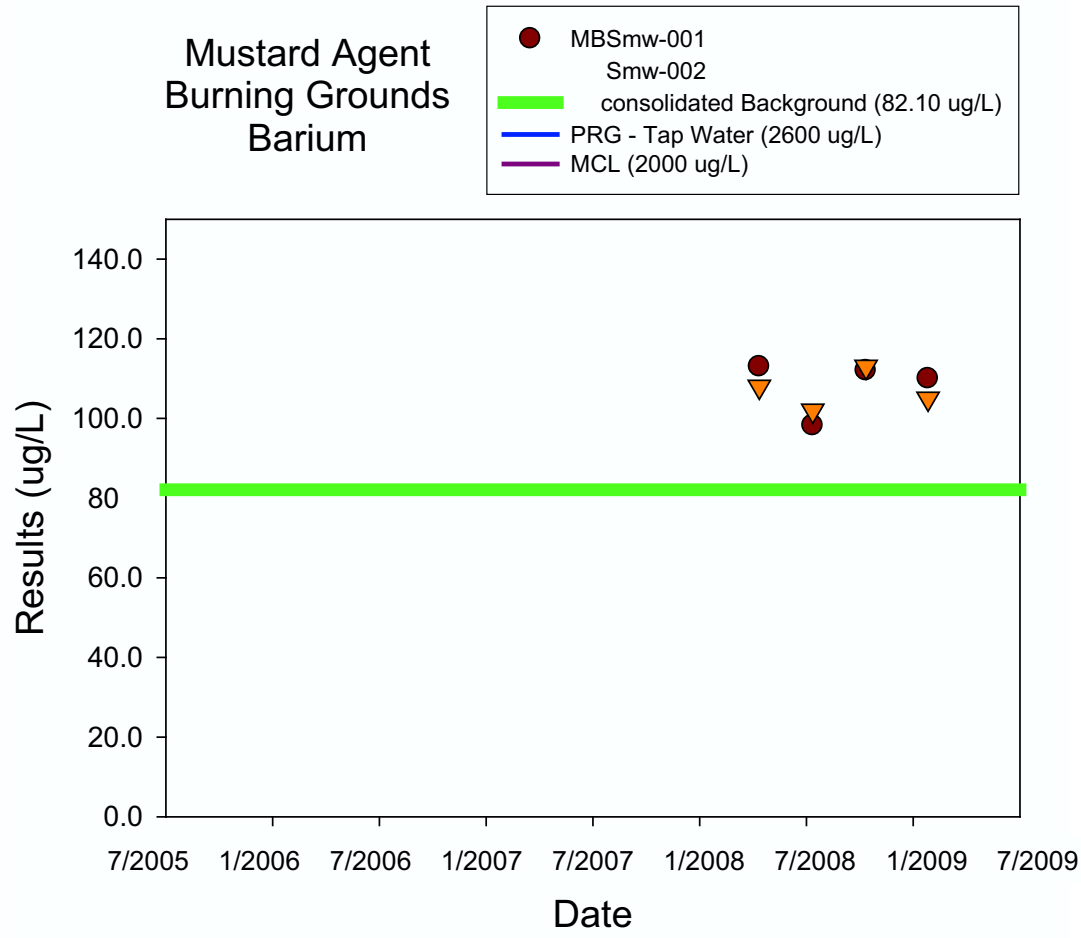

Landfill North of Winklepeck Calcium
LNWmw-024
Wmw-027
consolidated Background (115 mg/L)
Results (mg/L)
120
100.0
80.0
60.0
40.0
20.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

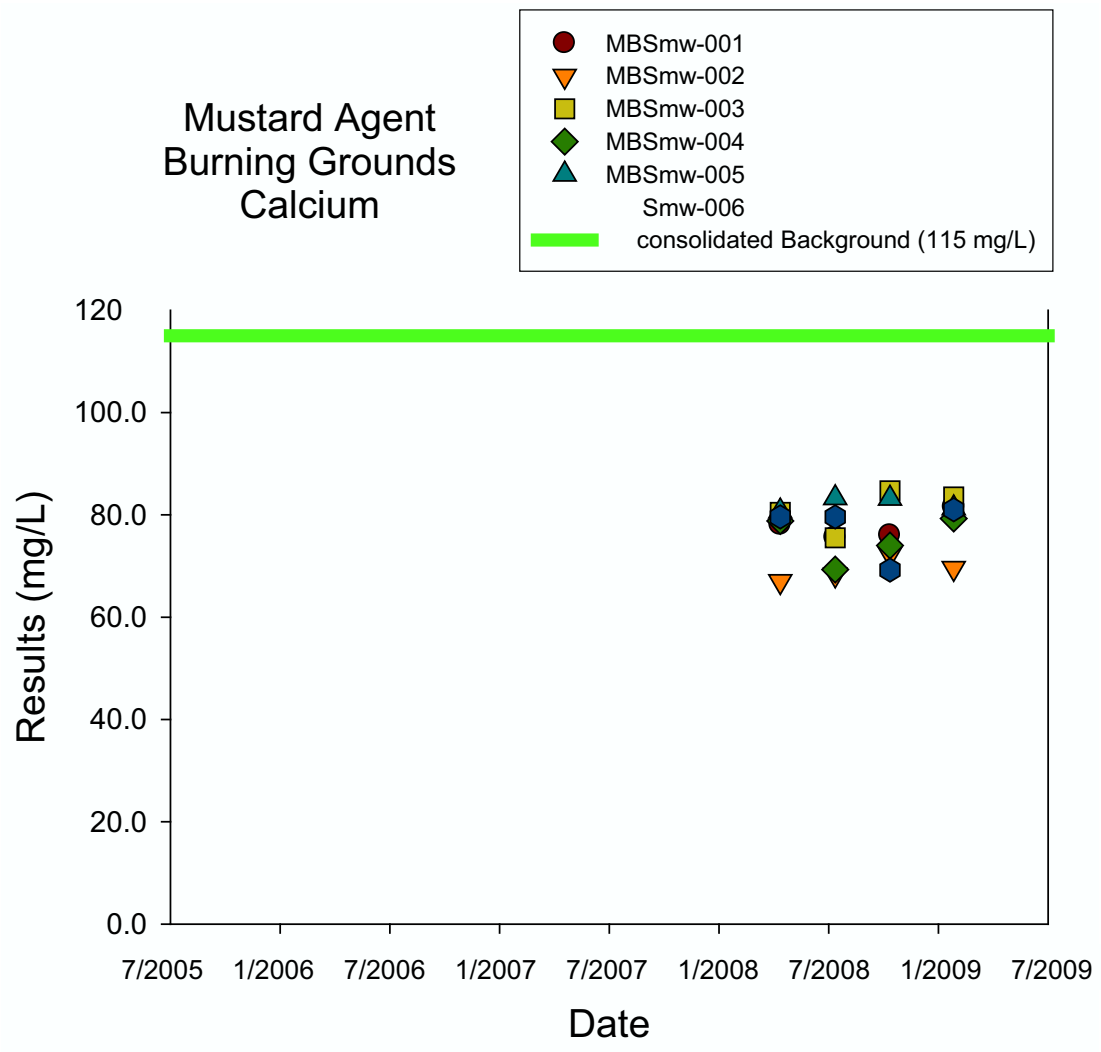

Landfill North of Winklepeck Iron
Wmw-025
consolidated Background (0.279 mg/L)
PRG - Tap Water (11 mg/L)
MCL (0.3 mg/L)
Results (mg/L)
25.0
20.0
15.0
10.0
5.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

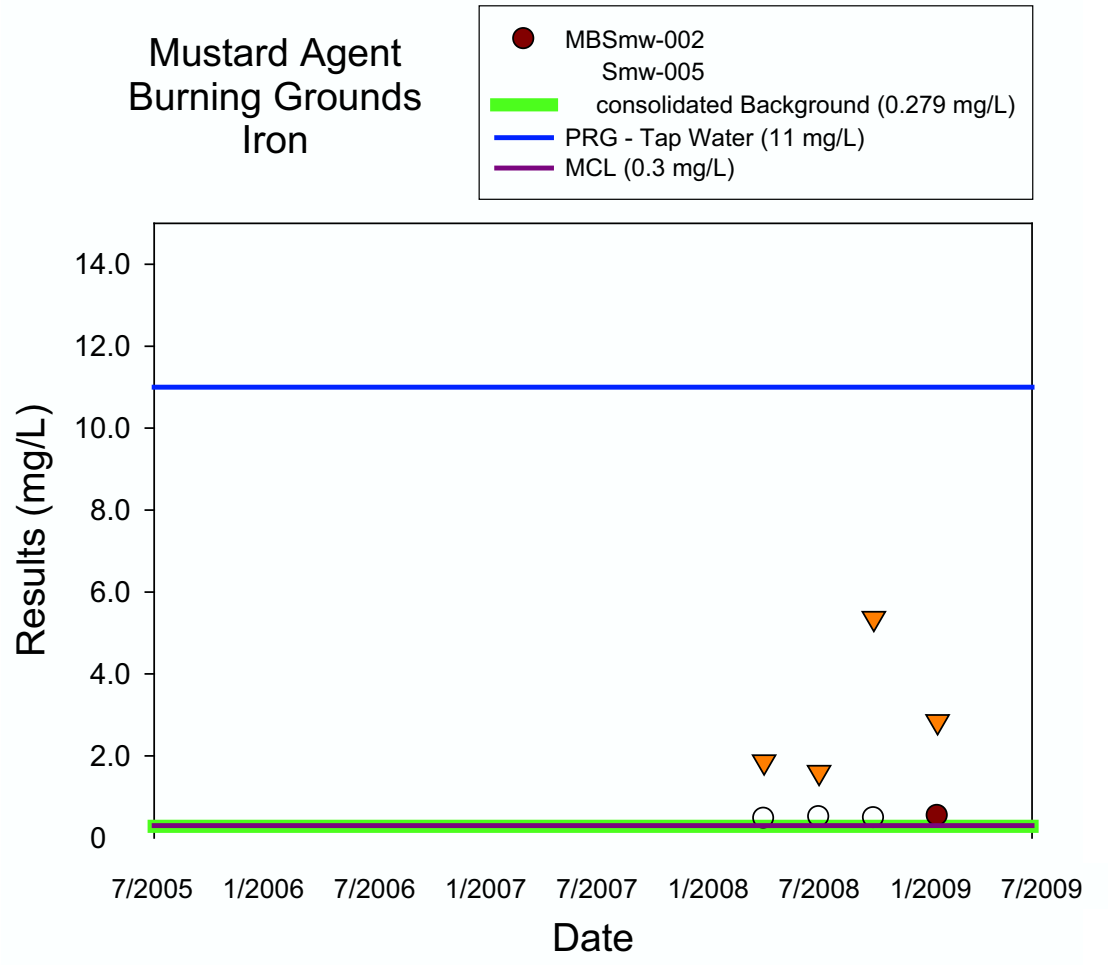

Landfill North of Winklepeck Magnesium
LNWmw-024
Wmw-027
consolidated Background (43.3 mg/L)
Results (mg/L)
50.0
40
30.0
20.0
10.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

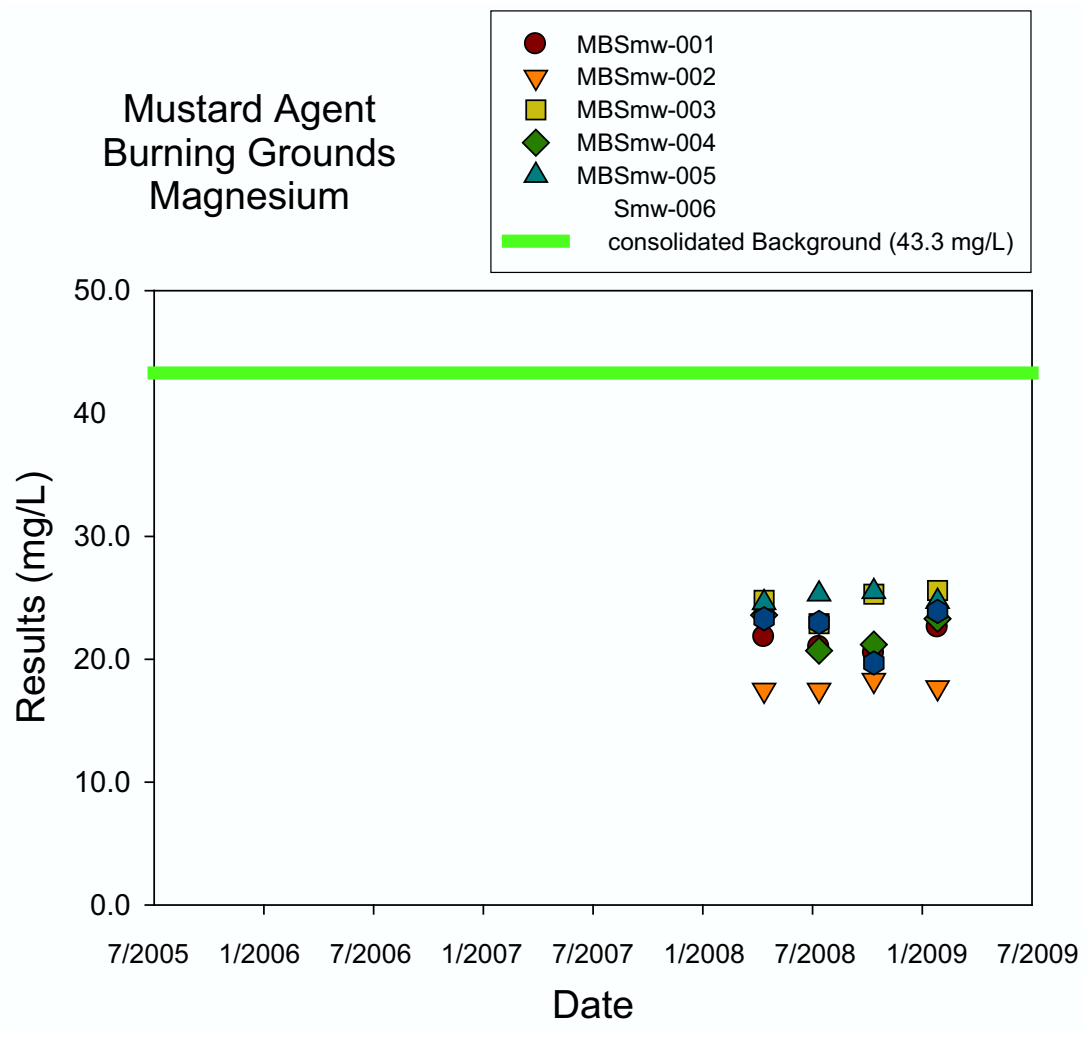

Landfill North of
Winklepeck
Bis(2-ethylhexyl)phthalate
LNWmw-024
LNWmw-025
LNWmw-026
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

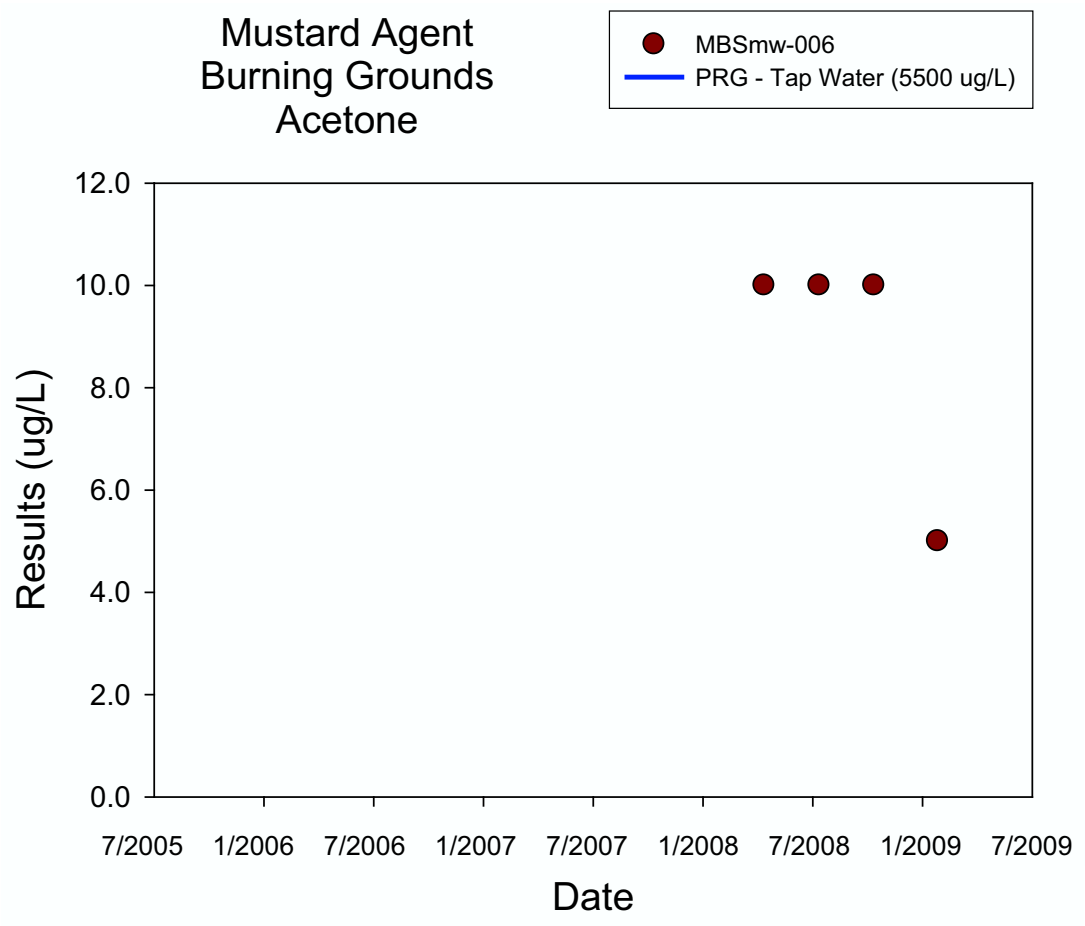

Mustard Agent
Burning Grounds
Arsenic
MBSmw-002
Smw-005
consolidated Background (11.70 ug/L)
PRG - Tap Water (0.045 ug/L)
MCL (10 ug/L)
Results (ug/L)
20.0
15.0
10.0
5.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

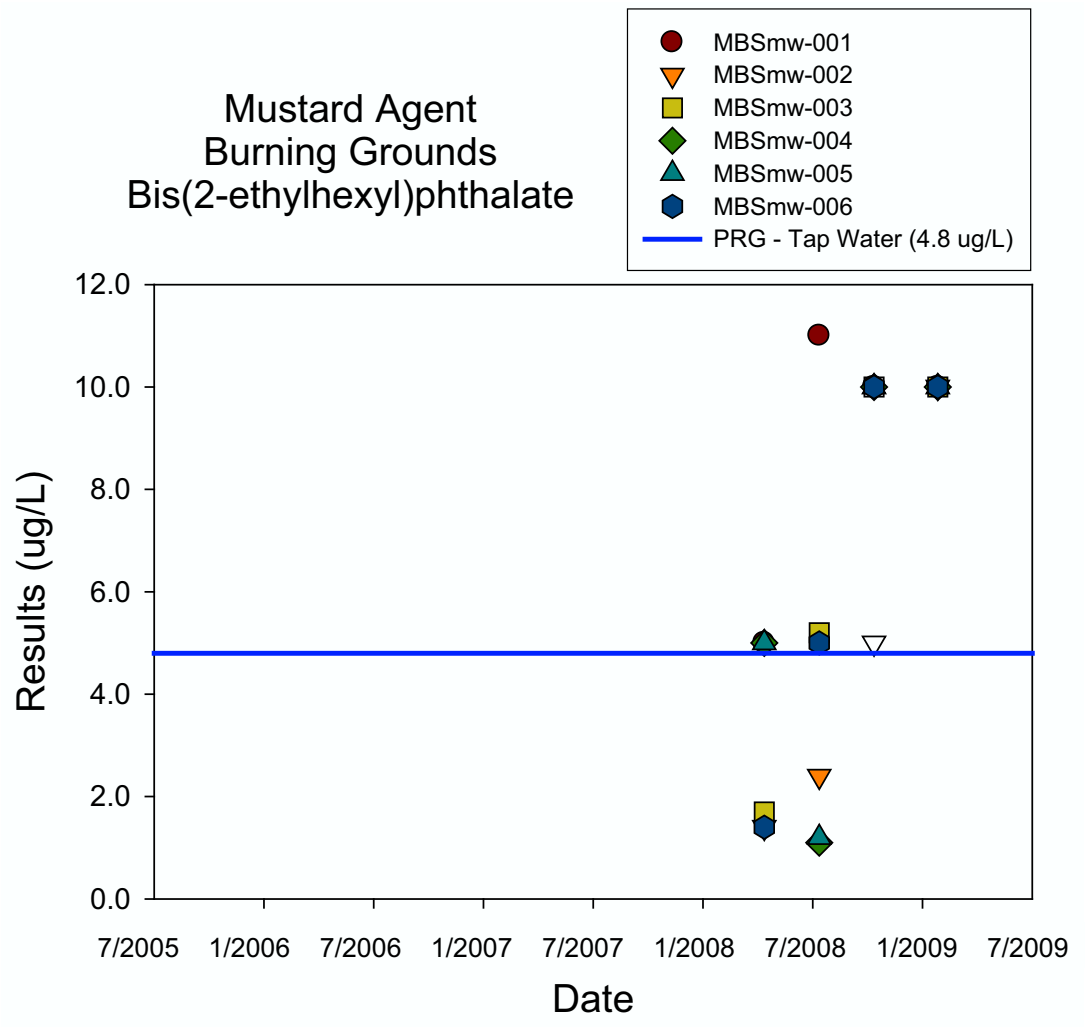

Mustard Agent
Burning Grounds
Barium
MBSmw-001
Smw-002
consolidated Background (82.10 ug/L)
PRG - Tap Water (2600 ug/L)
MCL (2000 ug/L)
Results (ug/L)
140.0
120.0
100.0
80
60.0
40.0
20.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

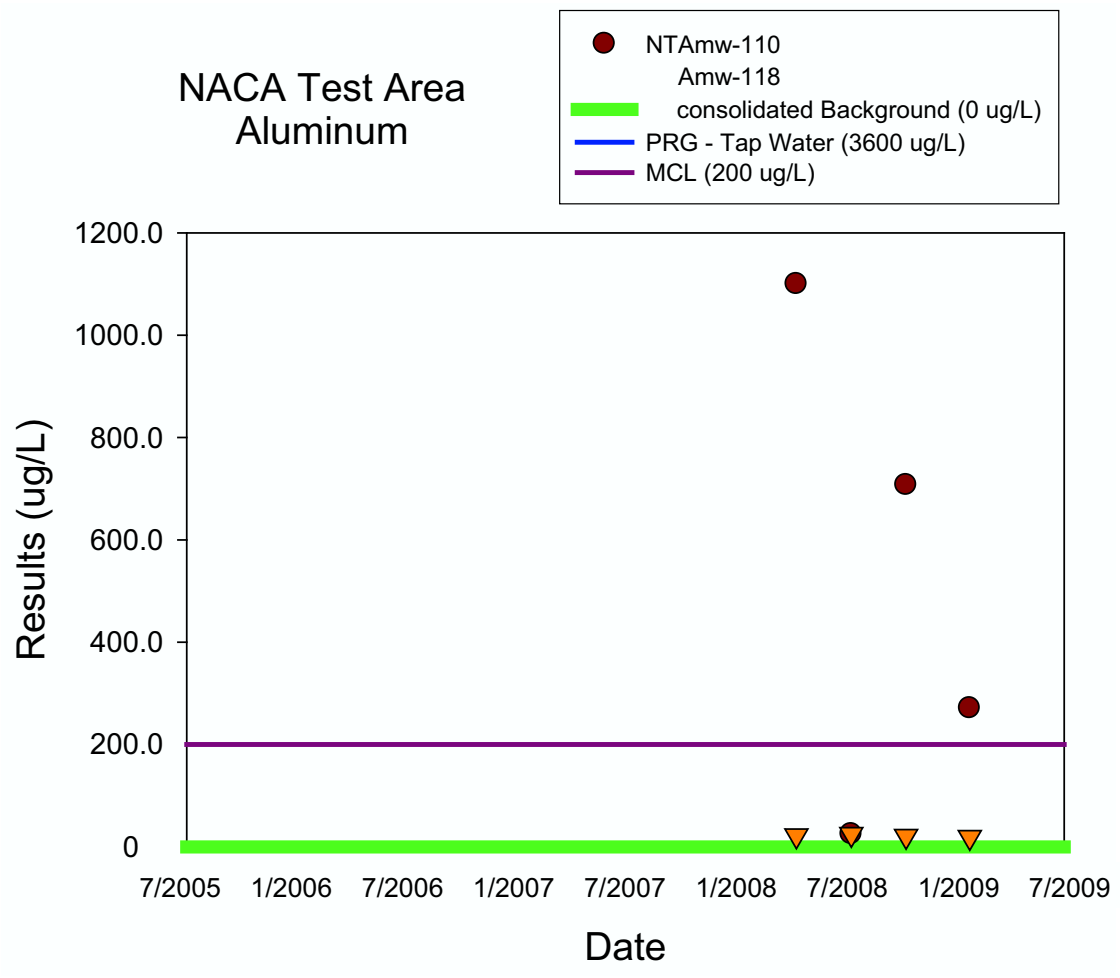

Mustard Agent
Burning Grounds
Calcium
MBSmw-001
MBSmw-002
MBSmw-003
MBSmw-004
MBSmw-005
Smw-006
consolidated Background (115 mg/L)
Results (mg/L)
120
100.0
80.0
60.0
40.0
20.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

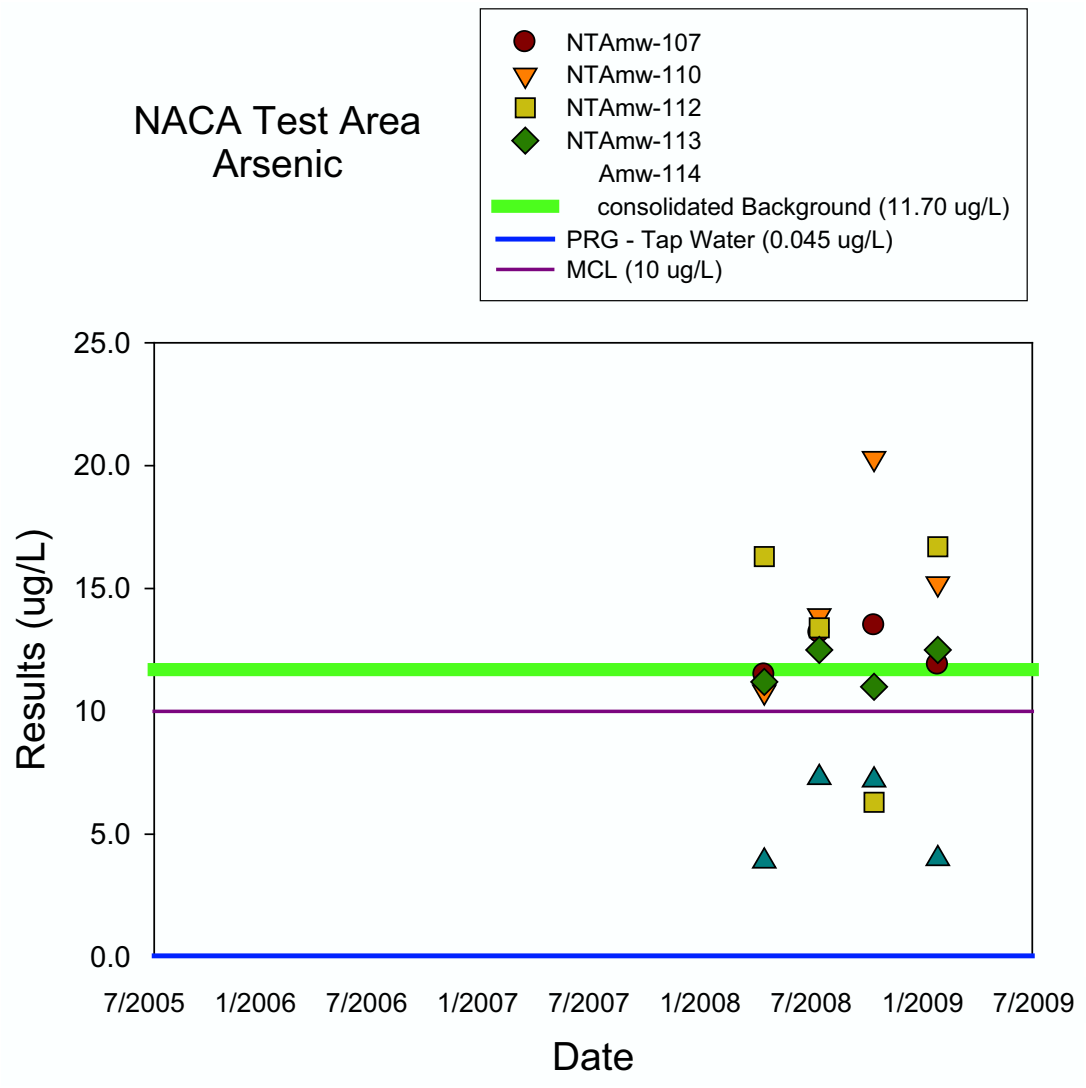

Mustard Agent
Burning Grounds
Iron
MBSmw-002
Smw-005
consolidated Background (0.279 mg/L)
PRG - Tap Water (11 mg/L)
MCL (0.3 mg/L)
Results (mg/L)
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

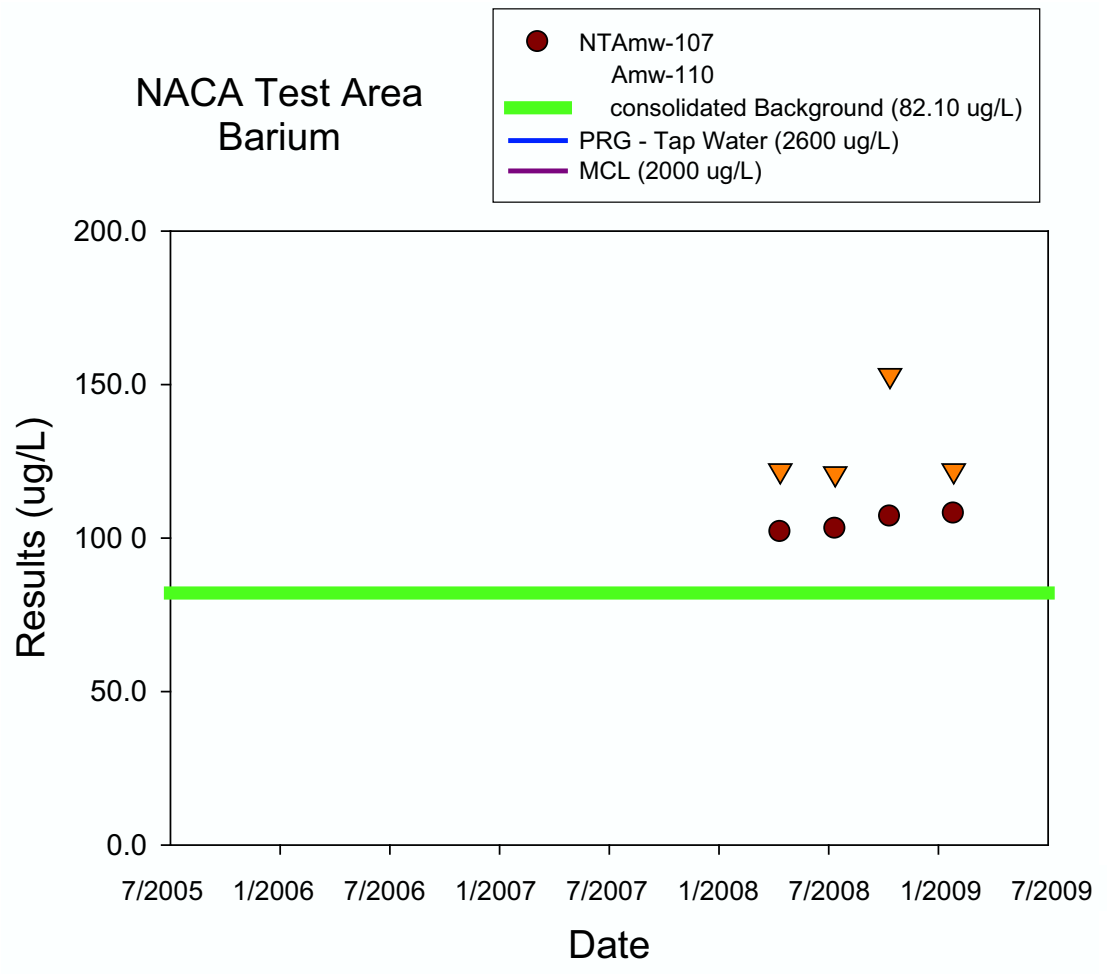

Mustard Agent
Burning Grounds
Magnesium
MBSmw-001
MBSmw-002
MBSmw-003
MBSmw-004
MBSmw-005
Smw-006
consolidated Background (43.3 mg/L)
Results (mg/L)
50.0
40
30.0
20.0
10.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

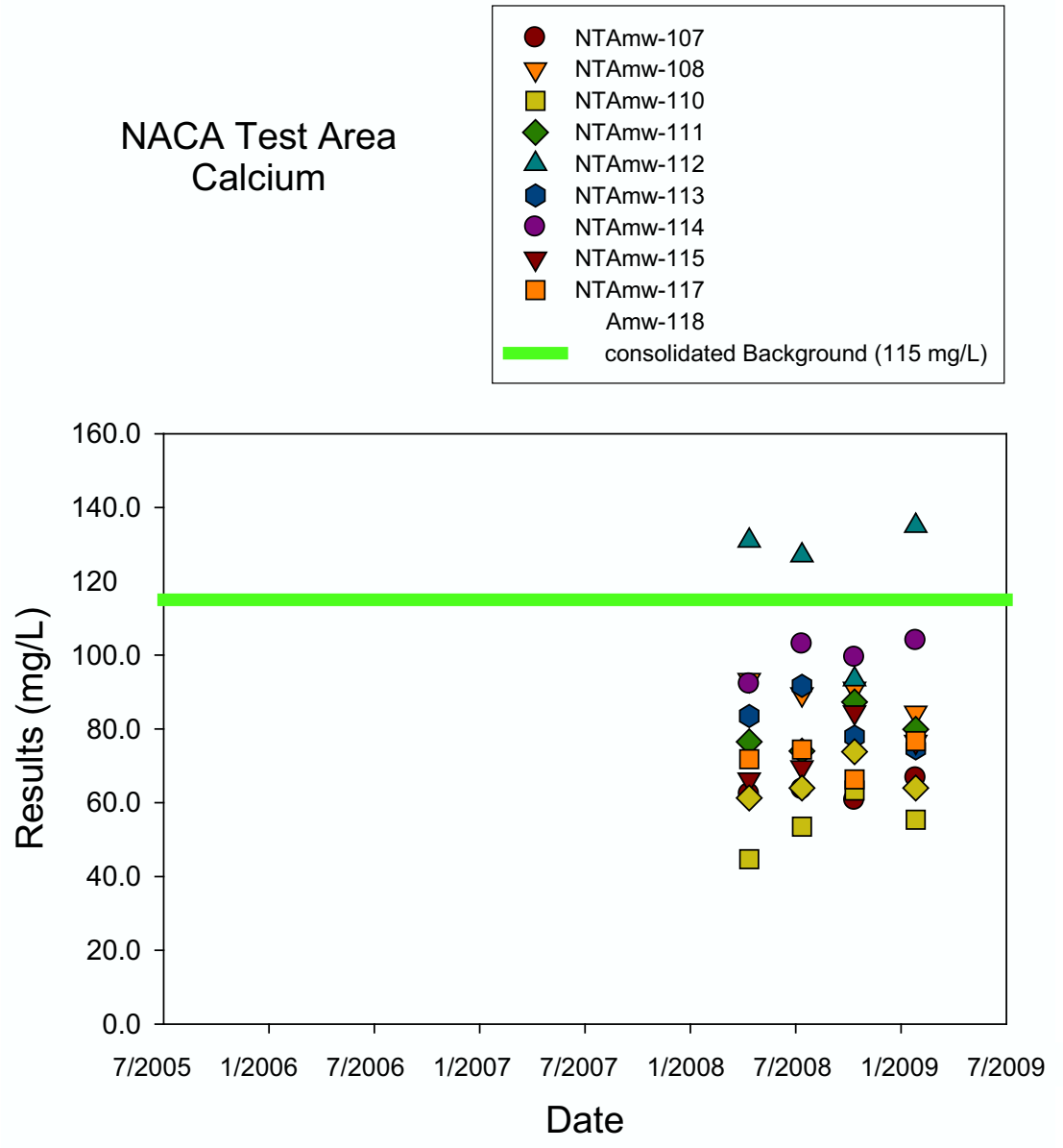

Mustard Agent
Burning Grounds
Acetone
MBSmw-006
PRG - Tap Water (5500 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

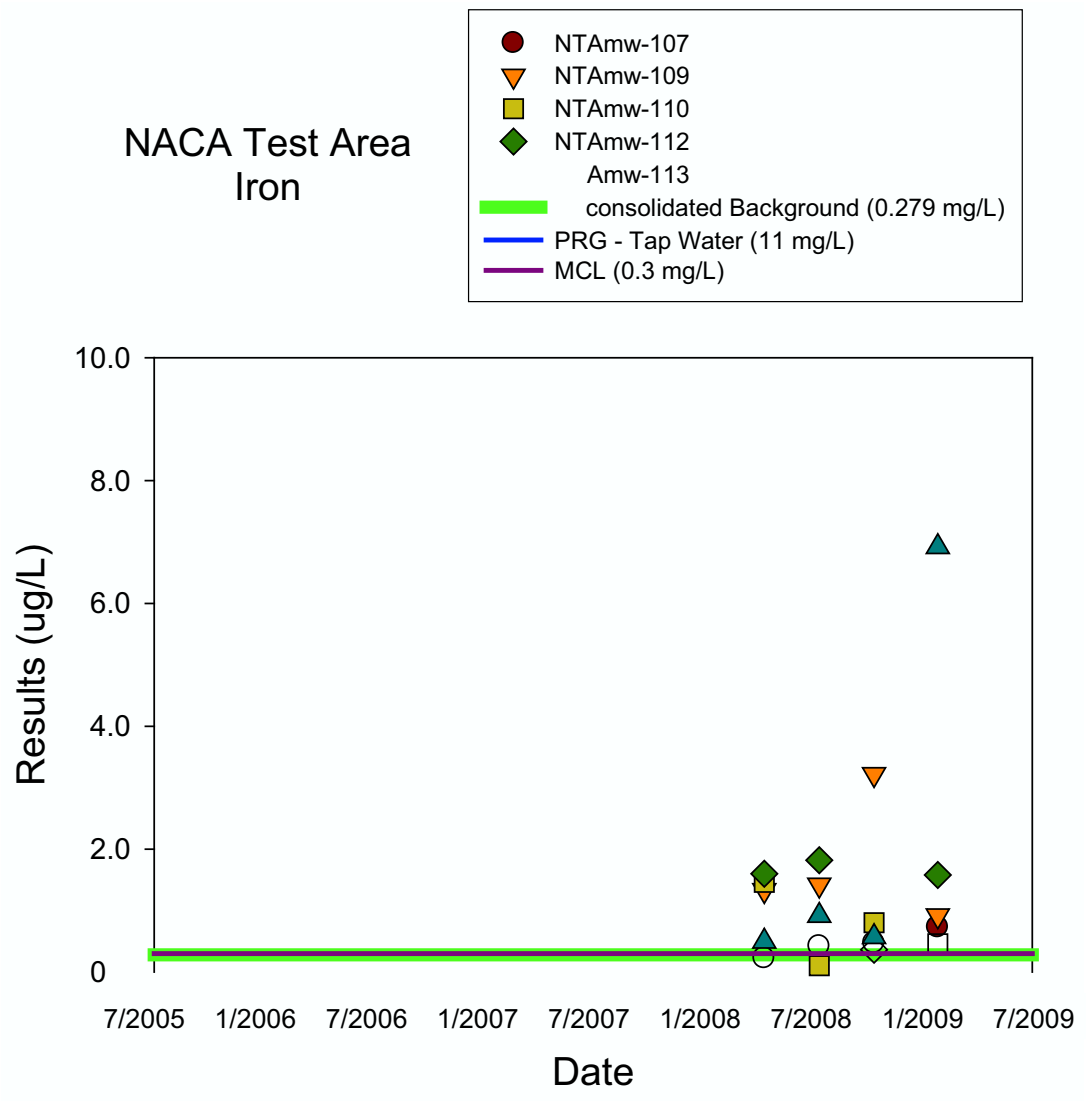

Mustard Agent
Burning Grounds
Bis(2-ethylhexyl)phthalate
MBSmw-001
MBSmw-002
MBSmw-003
MBSmw-004
MBSmw-005
MBSmw-006
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

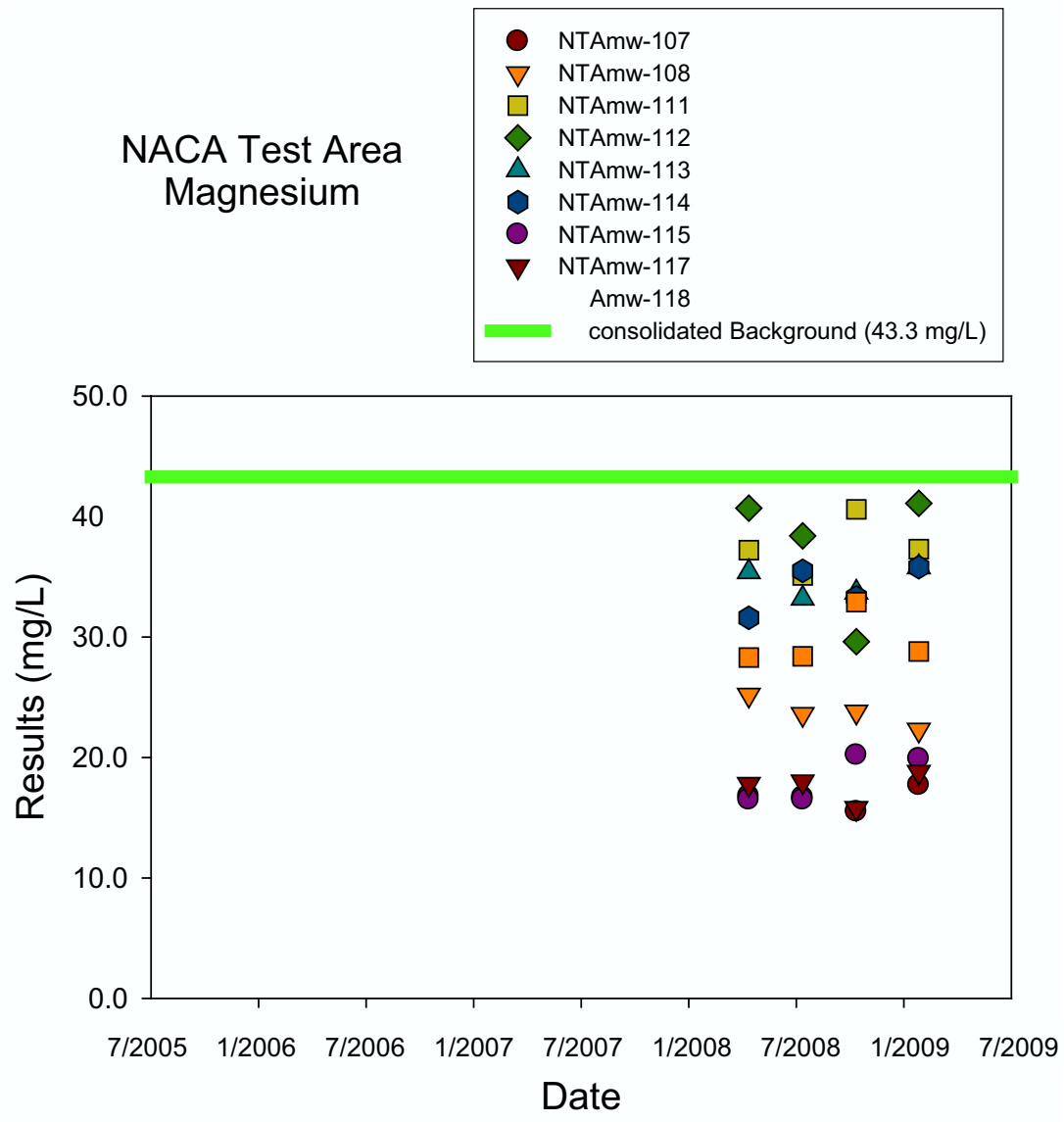

NACA Test Area
Aluminum
NTAmw-110
Amw-118
consolidated Background (0 ug/L)
PRG - Tap Water (3600 ug/L)
MCL (200 ug/L)
Results (ug/L)
1200.0
1000.0
800.0
600.0
400.0
200.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

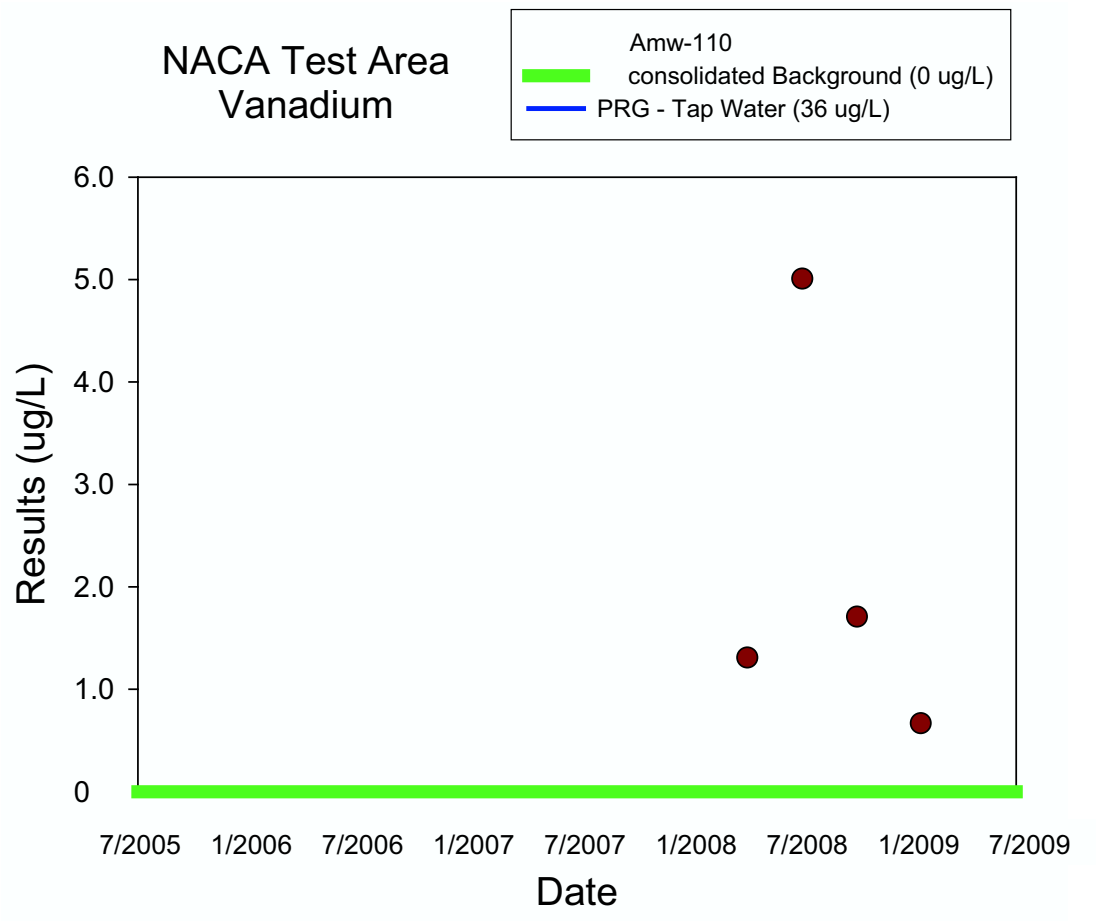

NACA Test Area
Arsenic
NTAmw-107
NTAmw-110
NTAmw-112
NTAmw-113
Amw-114
consolidated Background (11.70 ug/L)
PRG - Tap Water (0.045 ug/L)
MCL (10 ug/L)
Results (ug/L)
25.0
20.0
15.0
10
5.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

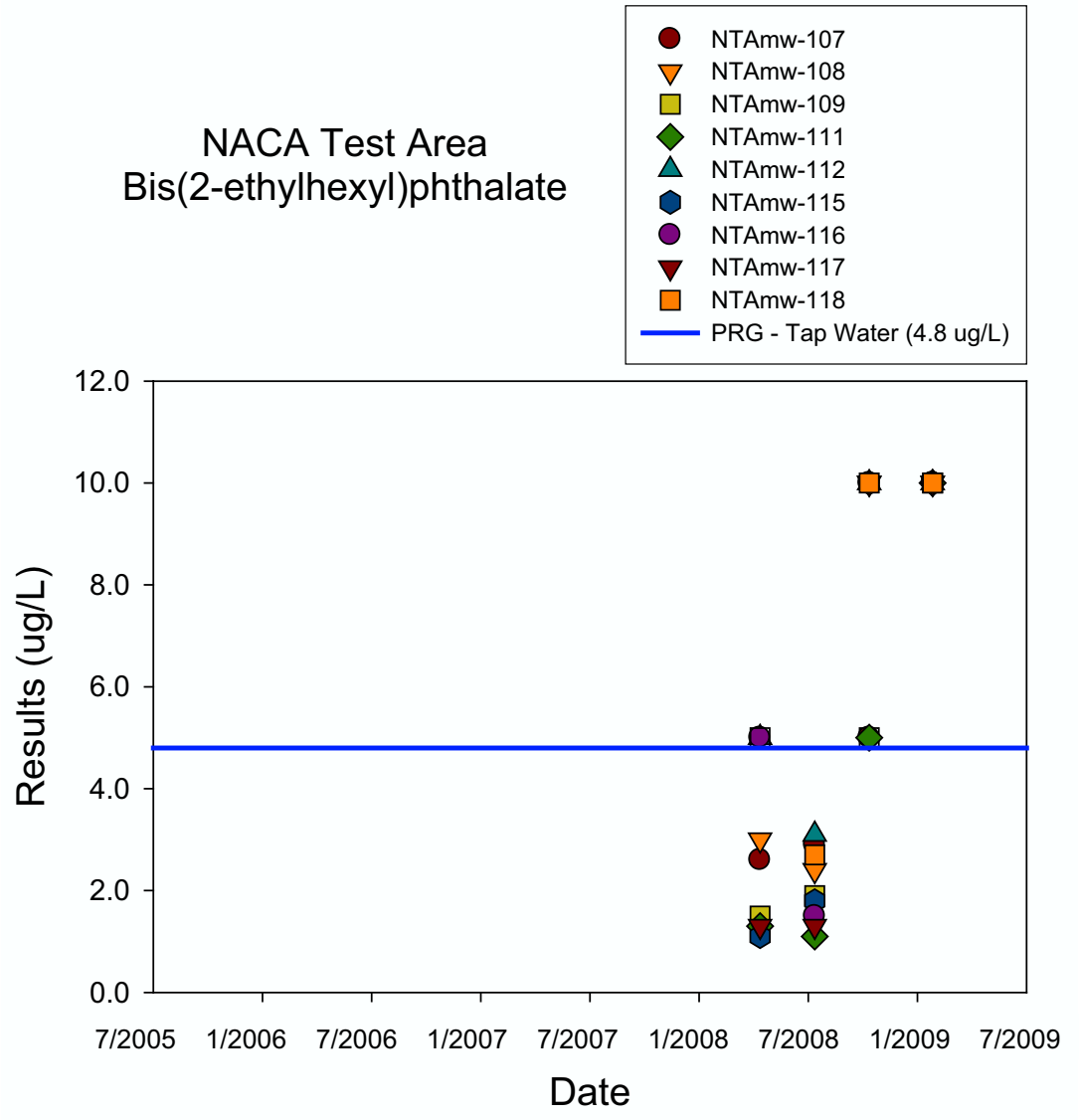

NACA Test Area
Barium
NTAmw-107
Amw-110
consolidated Background (82.10 ug/L)
PRG - Tap Water (2600 ug/L)
MCL (2000 ug/L)
200.0
150.0
100 0
50.0
0.0
Results (ug/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

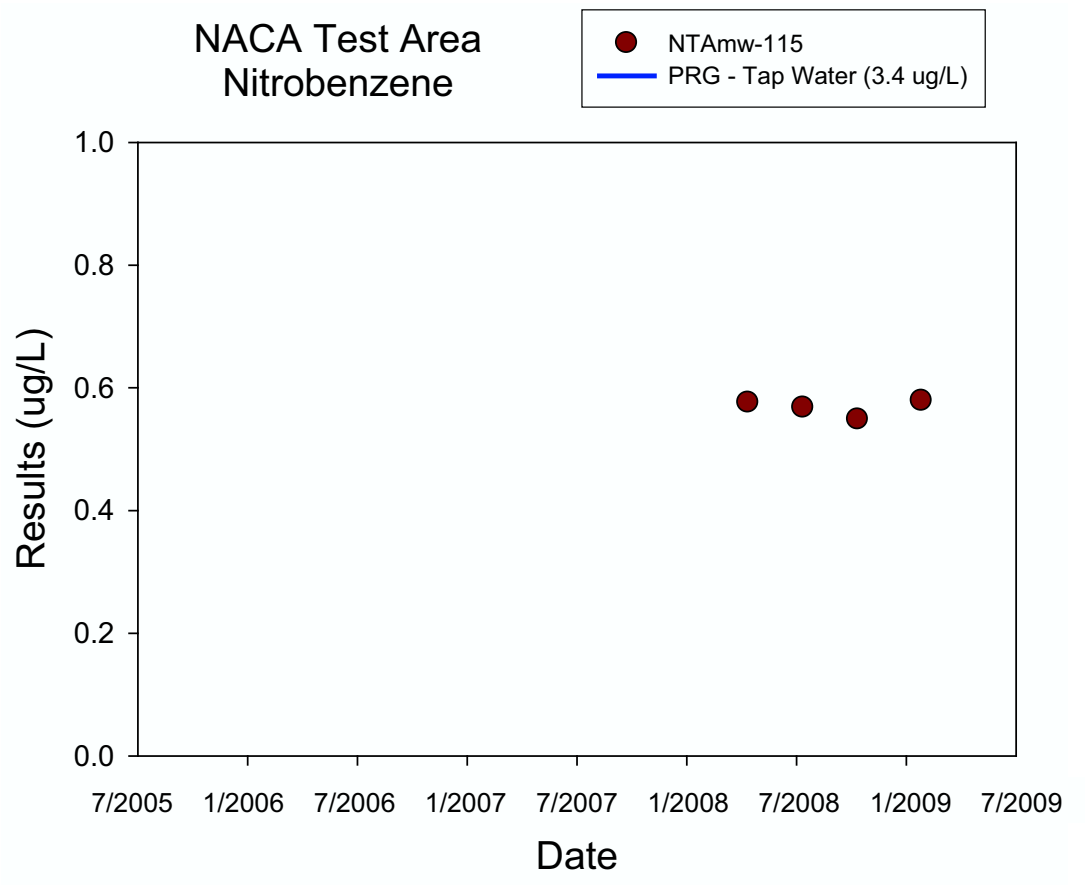

NACA Test Area
Calcium
NTAmw-107
NTAmw-108
NTAmw-110
NTAmw-111
NTAmw-112
NTAmw-113
NTAmw-114
NTAmw-115
NTAmw-117
Amw-118
consolidated Background (115 mg/L)
160.0
140.0
120
100.0
80.0
60.0
40.0
20.0
0.0
Results (mg/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

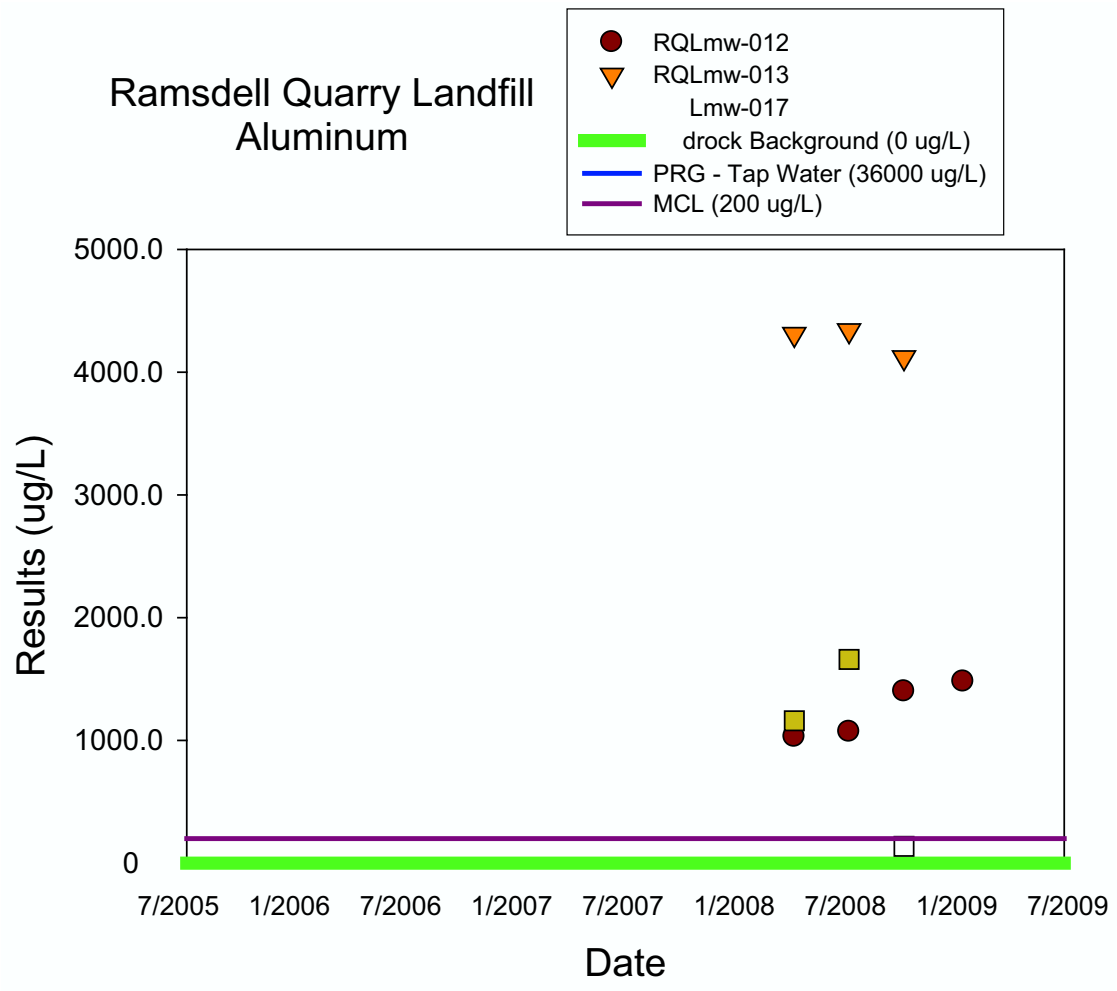

NACA Test Area
Iron
NTAmw-107
NTAmw-109
NTAmw-110
NTAmw-112
Amw-113
consolidated Background (0.279 mg/L)
PRG - Tap Water (11 mg/L)
MCL (0.3 mg/L)
Results (ug/L)
10.0
8.0
6.0
4.0
2.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

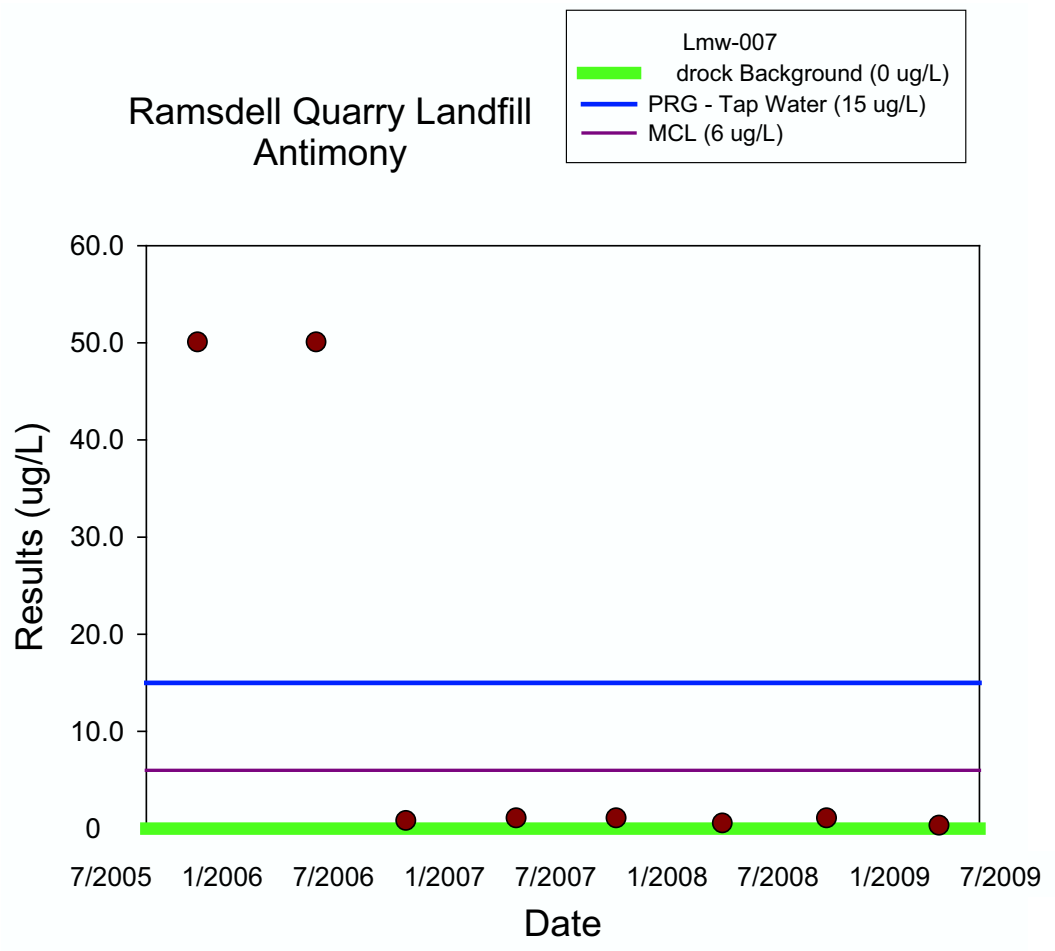

NACA Test Area
Magnesium
NTAmw-107
NTAmw-108
NTAmw-111
NTAmw-112
NTAmw-113
NTAmw-114
NTAmw-115
NTAmw-117
Amw-118
consolidated Background (43.3 mg/L)
Results (mg/L)
50.0
40
30.0
20.0
10.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

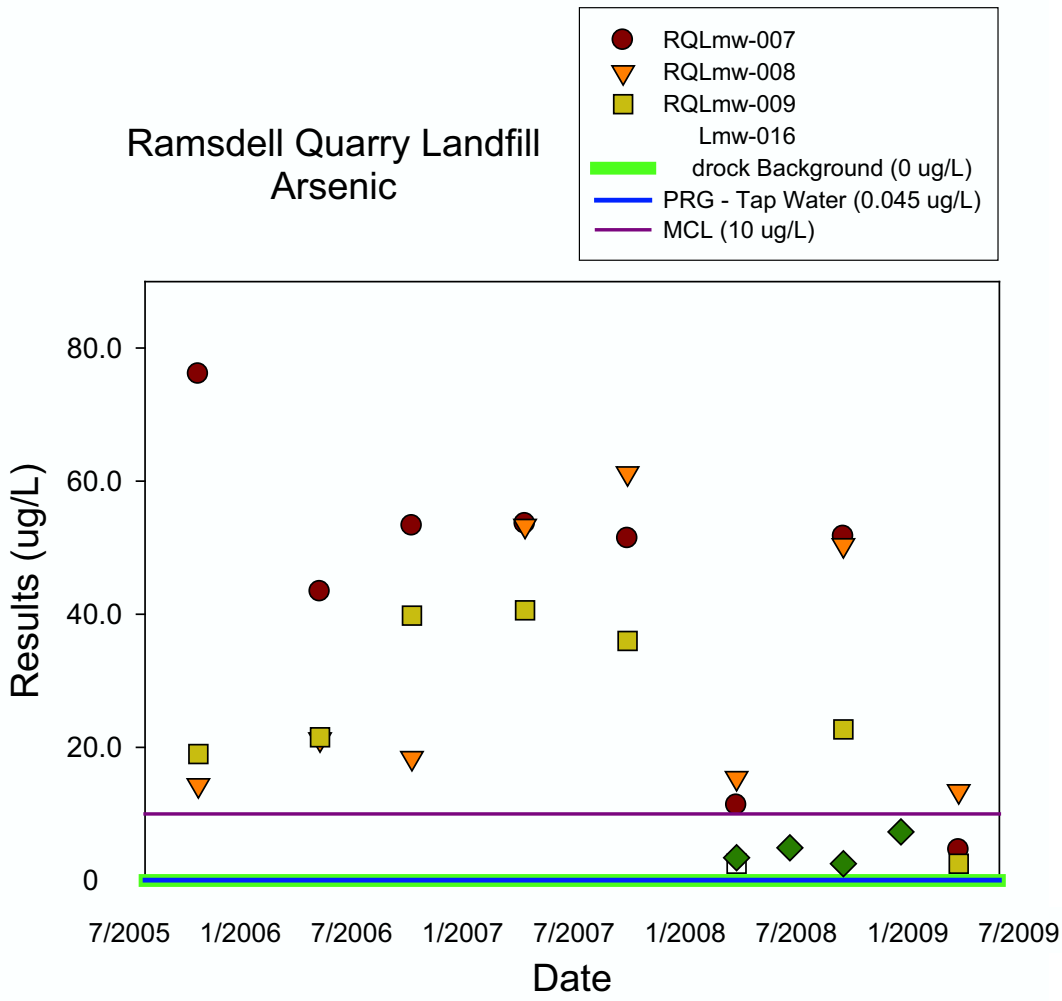

NACA Test Area
Vanadium
Amw-110
consolidated Background (0 ug/L)
PRG - Tap Water (36 ug/L)
Results (ug/L)
6.0
5.0
4.0
3.0
2.0
1.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

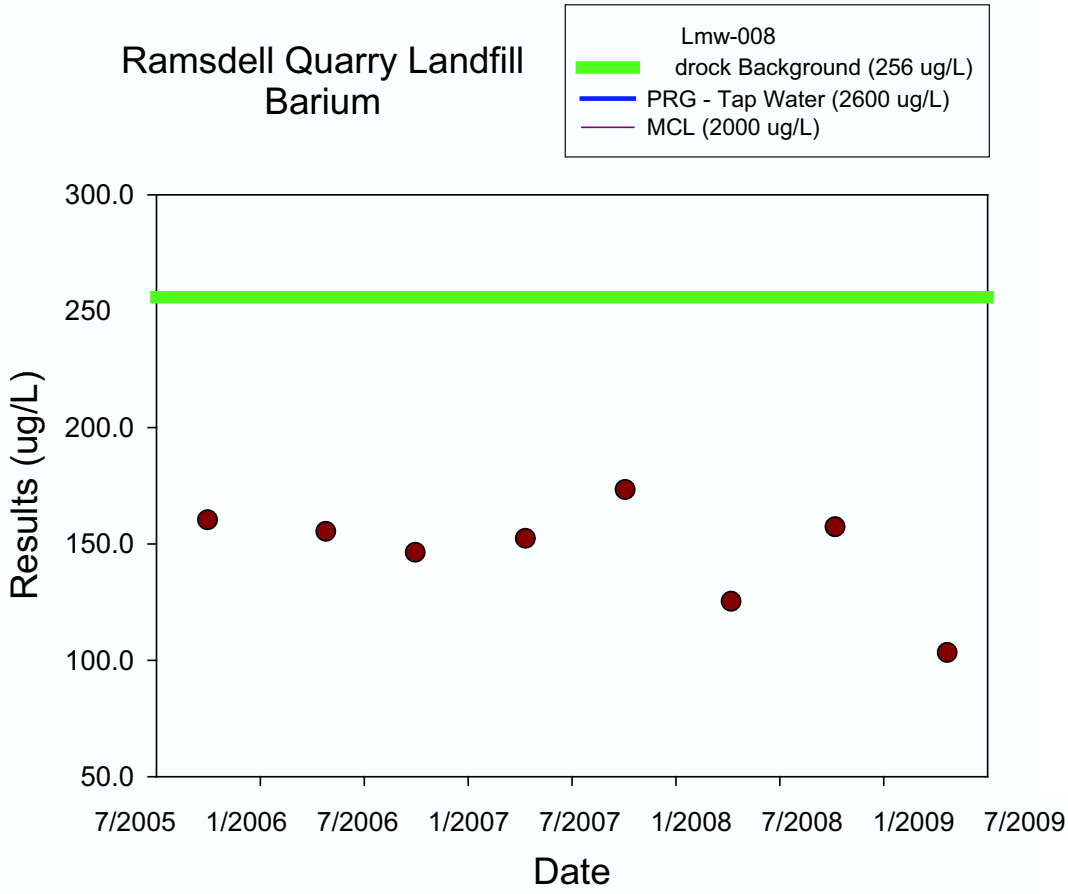

NACA Test Area
Bis(2-ethylhexyl)phthalate
NTAmw-107
NTAmw-108
NTAmw-109
NTAmw-111
NTAmw-112
NTAmw-115
NTAmw-116
NTAmw-117
NTAmw-118
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

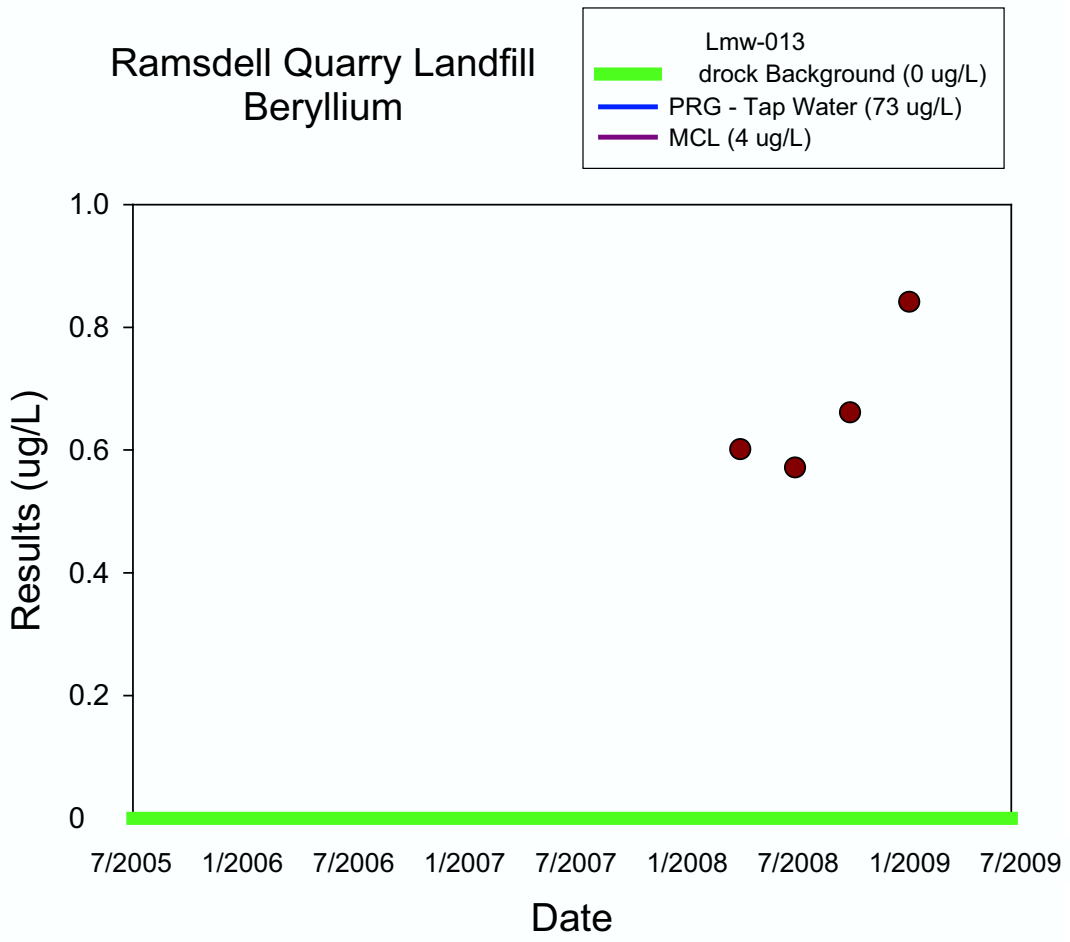

NACA Test Area
Nitrobenzene
NTAmw-115
PRG - Tap Water (3.4 ug/L)
Results (ug/L)
1.0
0.8
0.6
0.4
0.2
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

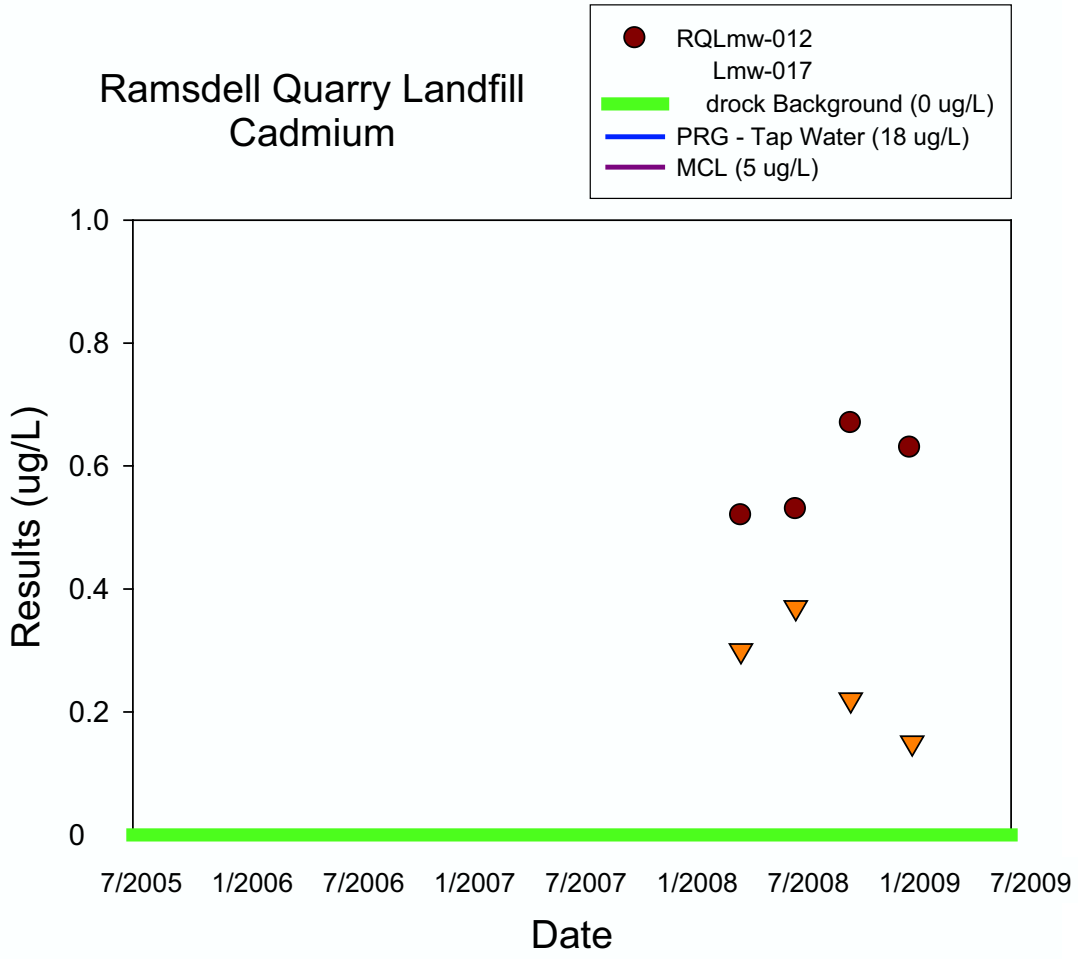

Ramsdell Quarry Landfill
Aluminum
RQLmw-012
RQLmw-013
Lmw-017
drock Background (0 ug/L)
PRG - Tap Water (36000 ug/L)
MCL (200 ug/L)
Results (ug/L)
5000.0
4000.0
3000.0
2000.0
1000.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

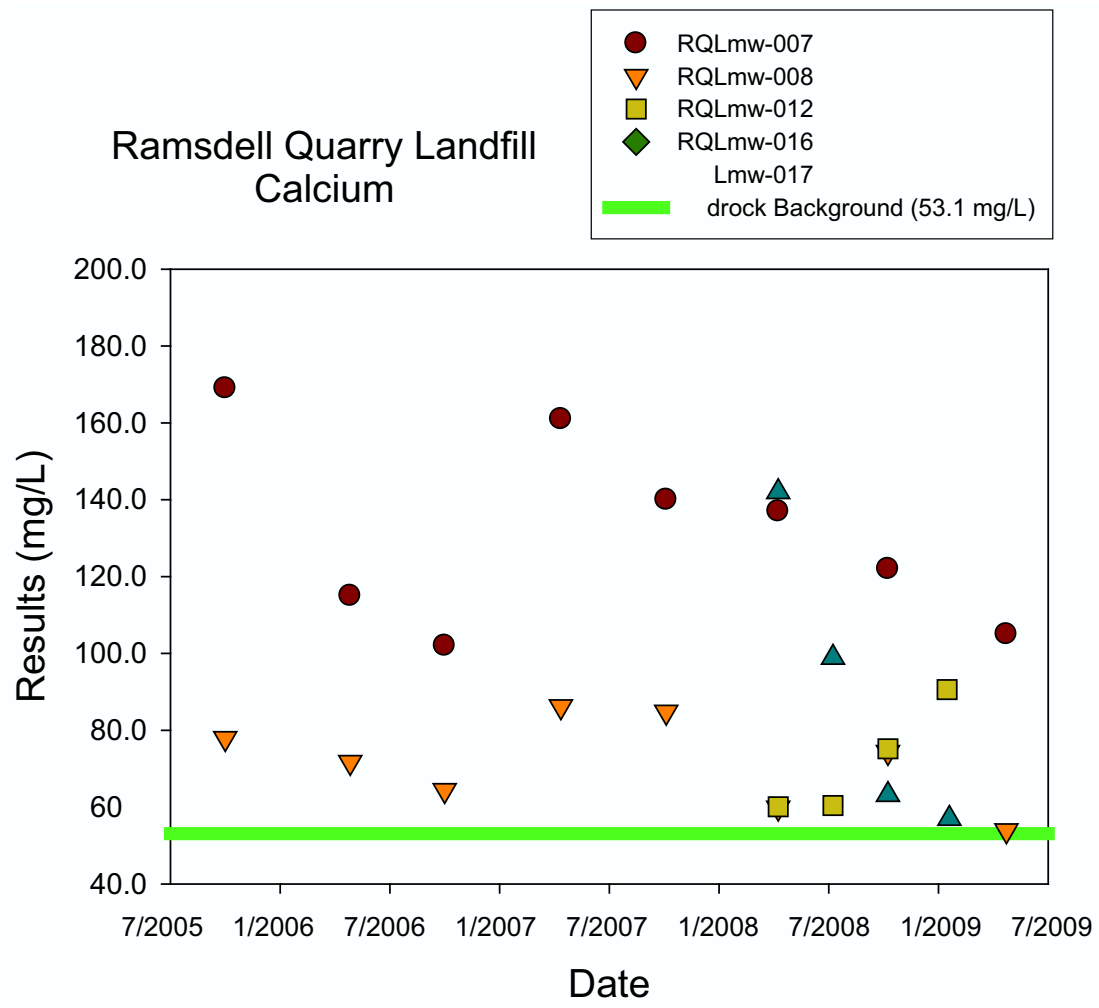

Ramsdell Quarry Landfill
Antimony
Lmw-007
drock Background (0 ug/L)
PRG - Tap Water (15 ug/L)
MCL (6 ug/L)
Results (ug/L)
60.0
50.0
40.0
30.0
20.0
10.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

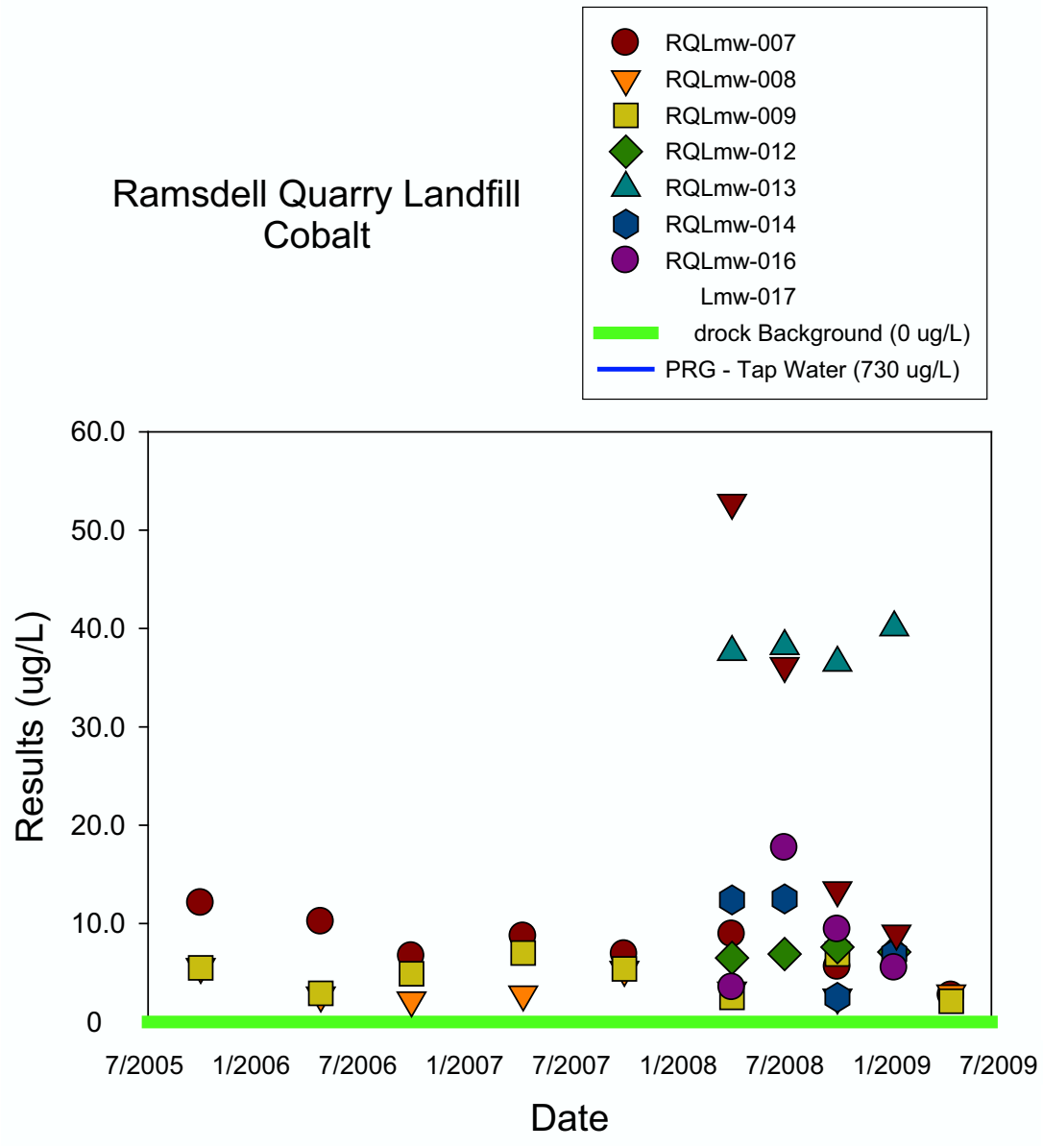

Ramsdell Quarry Landfill
Arsenic
RQLmw-007
RQLmw-008
RQLmw-009
Lmw-016
drock Background (0 ug/L)
PRG - Tap Water (0.045 ug/L)
MCL (10 ug/L)
Results (ug/L)
80.0
60.0
40.0
20.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

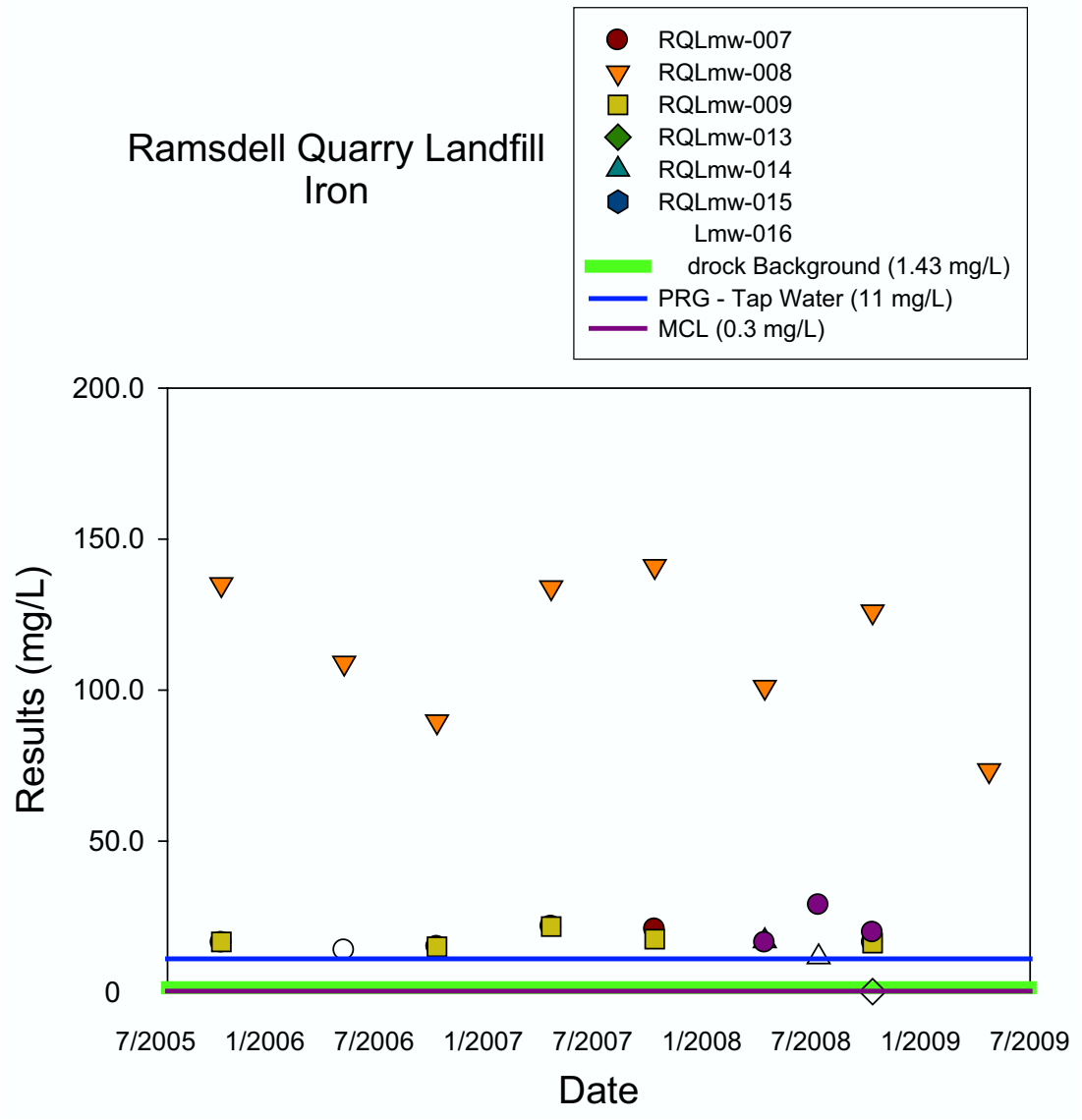

Ramsdell Quarry Landfill
Barium
Lmw-008
drock Background (256 ug/L)
PRG - Tap Water (2600 ug/L)
MCL (2000 ug/L)
Results (ug/L)
300.0
250
200.0
150.0
100.0
50.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

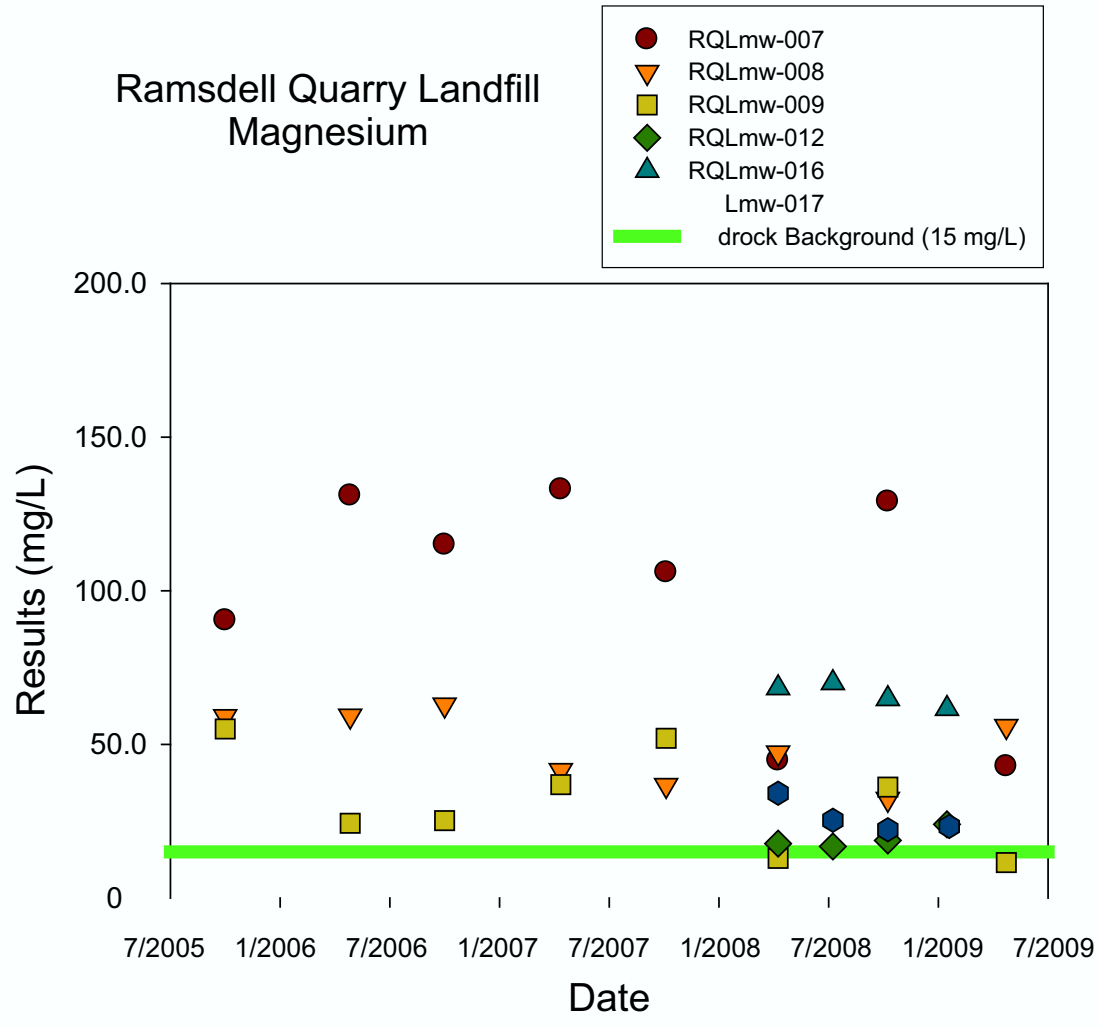

Ramsdell Quarry Landfill
Beryllium
Lmw-013
drock Background (0 ug/L)
PRG - Tap Water (73 ug/L)
MCL (4 ug/L)
Results (ug/L)
1.0
0.8
0.6
0.4
0.2
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

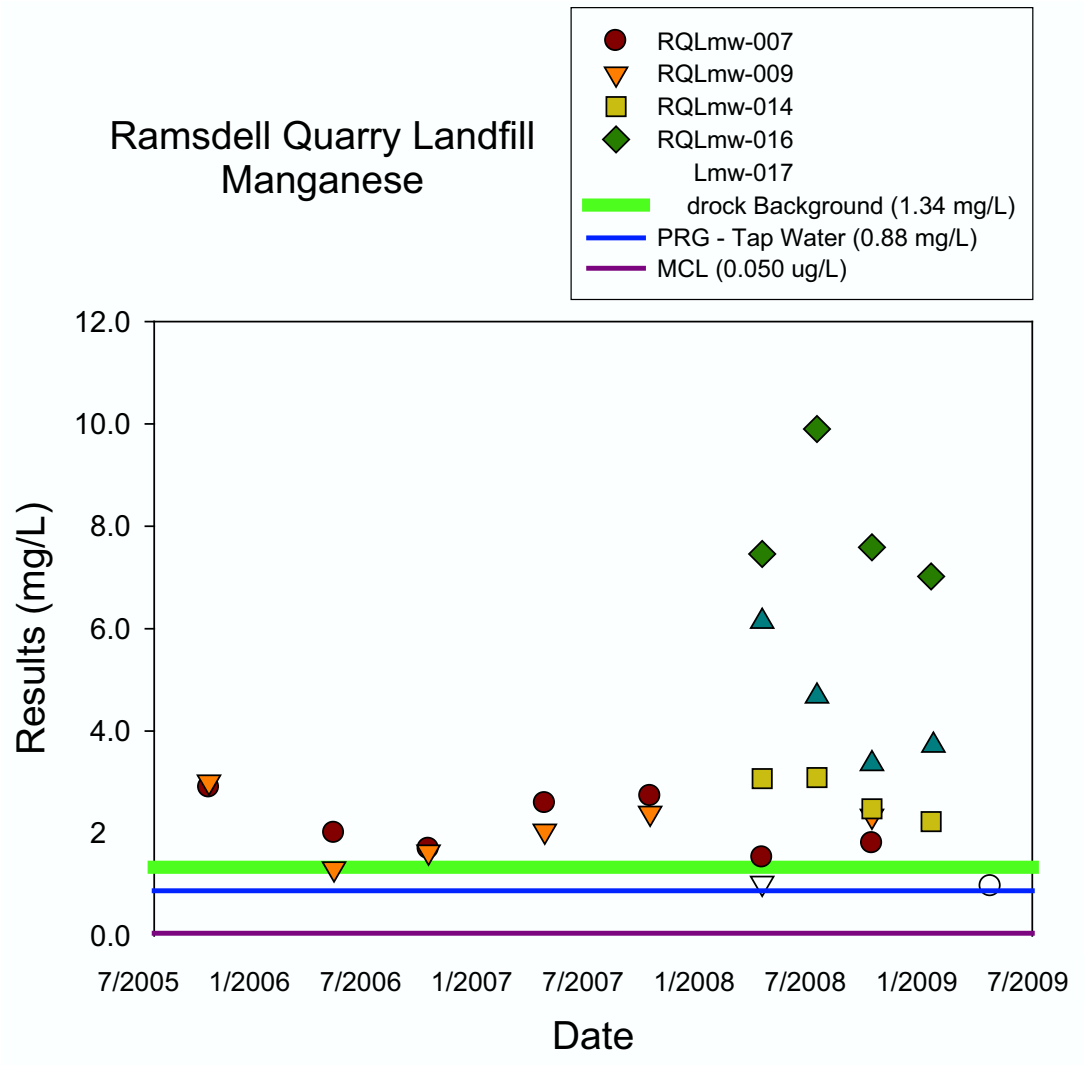

Ramsdell Quarry Landfill
Cadmium
RQLmw-012
Lmw-017
drock Background (0 ug/L)
PRG - Tap Water (18 ug/L)
MCL (5 ug/L)
Results (ug/L)
1.0
0.8
0.6
0.4
0.2
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

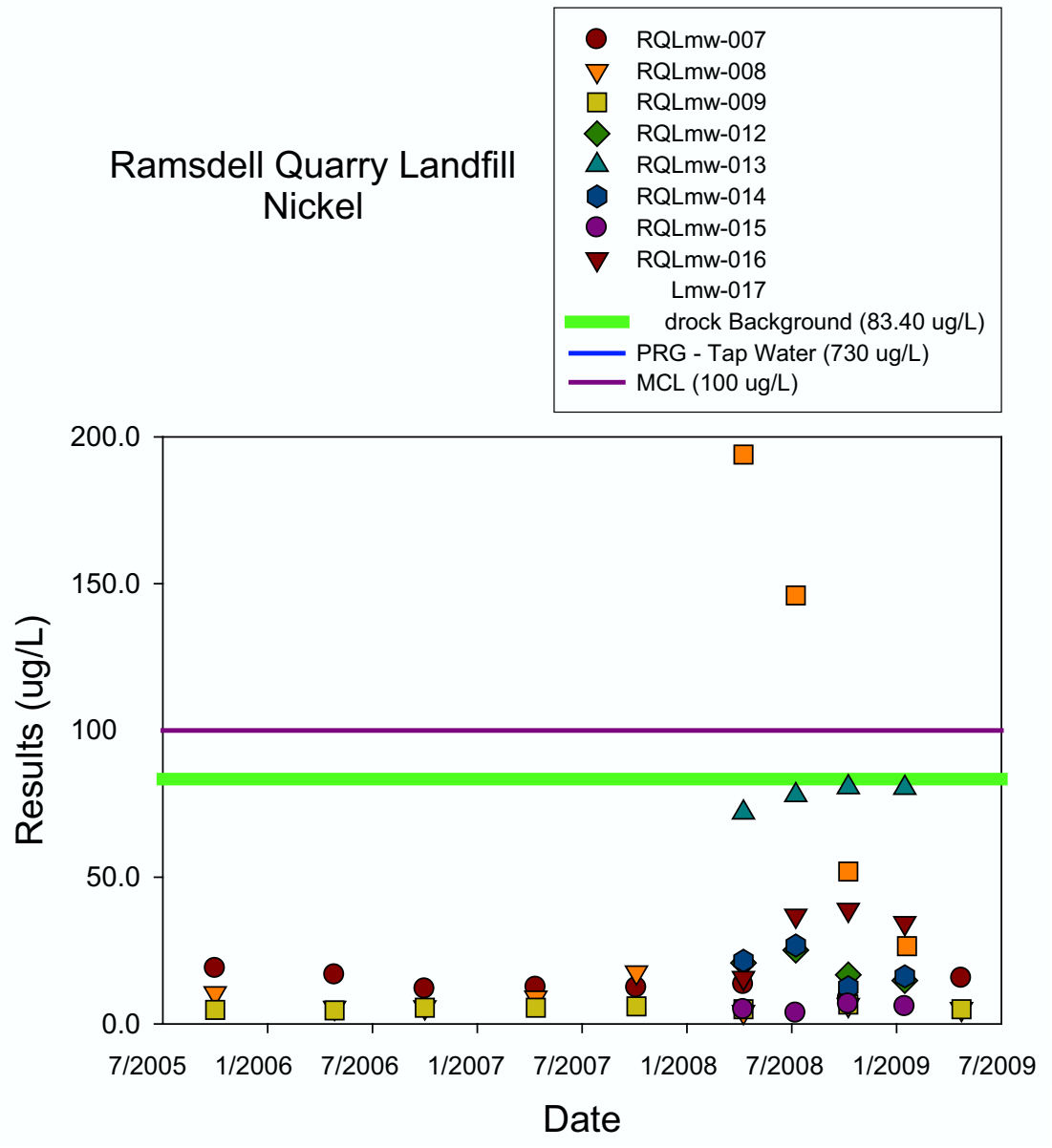

Ramsdell Quarry Landfill
Calcium
RQLmw-007
RQLmw-008
RQLmw-012
RQLmw-016
Lmw-017
drock Background (53.1 mg/L)
Results (mg/L)
200.0
180.0
160.0
140.0
120.0
100.0
80.0
60
40.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

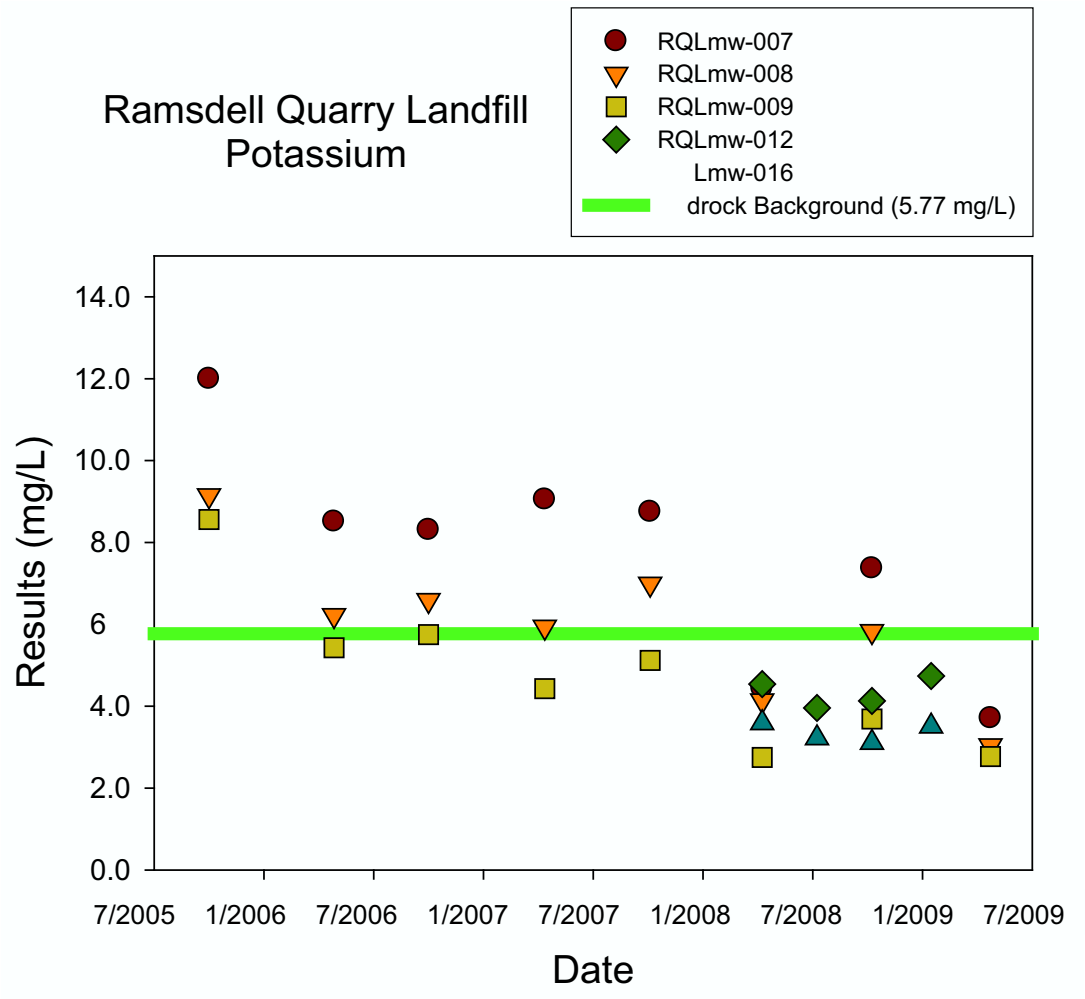

Ramsdell Quarry Landfill
Cobalt
RQLmw-007
RQLmw-008
RQLmw-009
RQLmw-012
RQLmw-013
RQLmw-014
RQLmw-016
Lmw-017
drock Background (0 ug/L)
PRG - Tap Water (730 ug/L)
Results (ug/L)
60.0
50.0
40.0
30.0
20.0
10.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

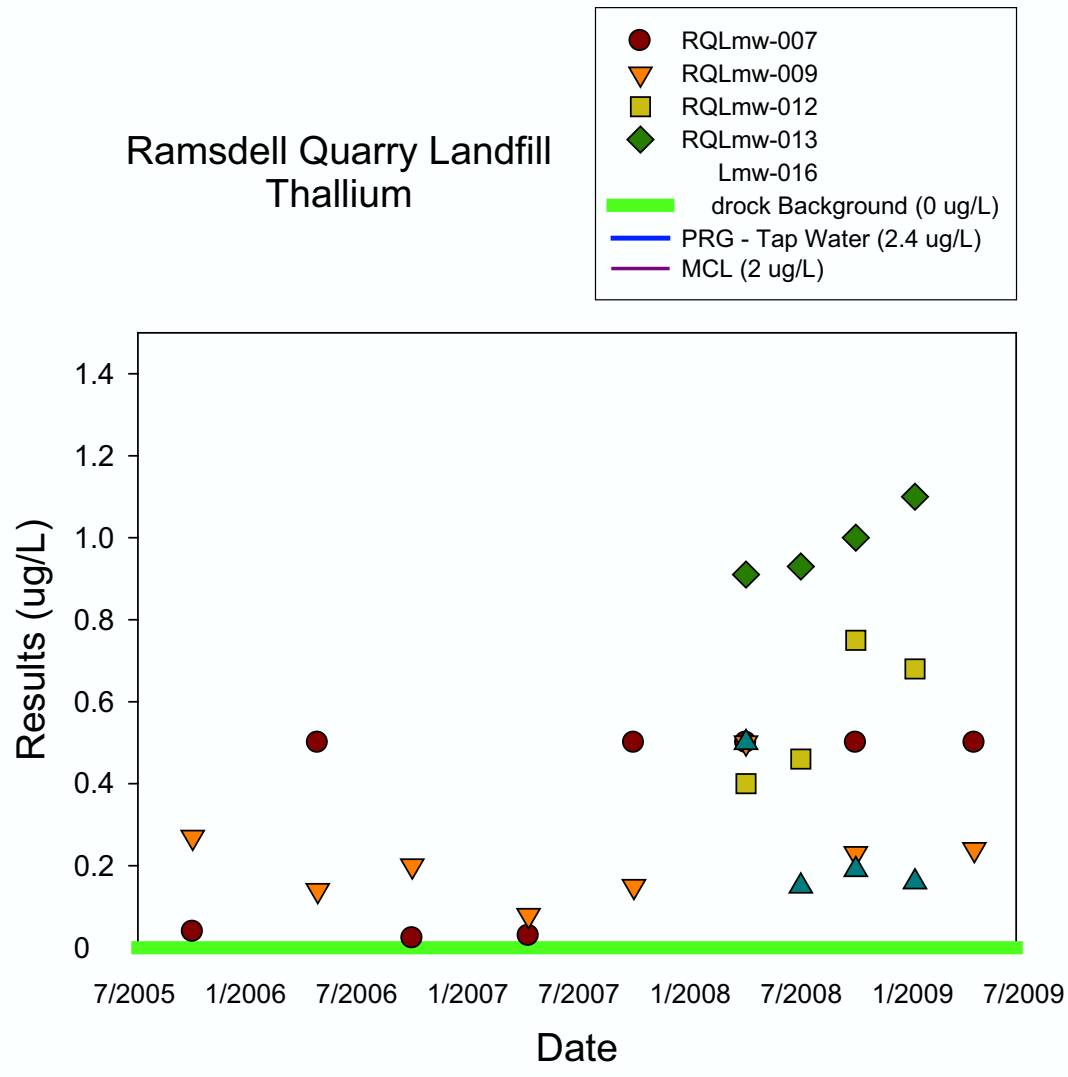

Ramsdell Quarry Landfill
Iron
RQLmw-007
RQLmw-008
RQLmw-009
RQLmw-013
RQLmw-014
RQLmw-015
Lmw-016
drock Background (1.43 mg/L)
PRG - Tap Water (11 mg/L)
MCL (0.3 mg/L)
Results (mg/L)
200.0
150.0
100.0
50.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

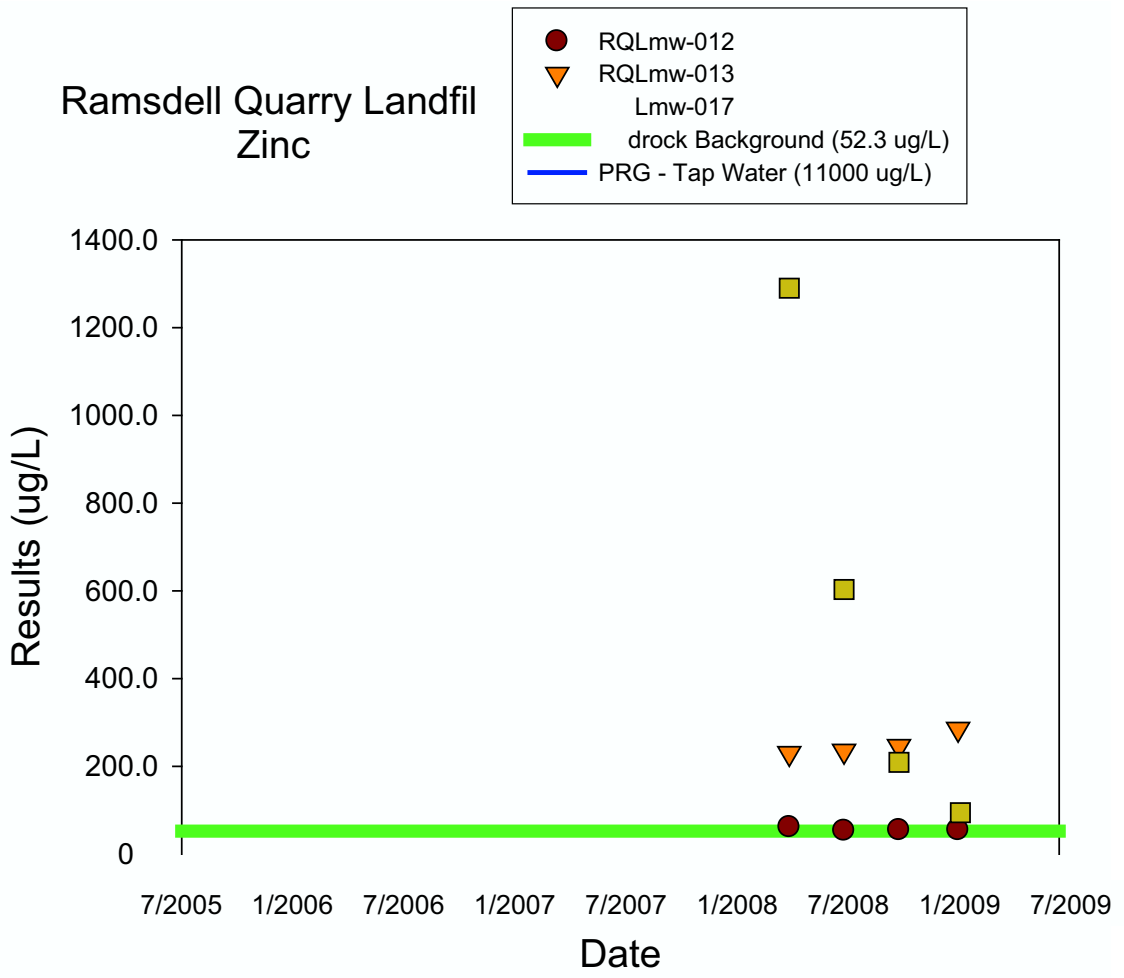

Ramsdell Quarry Landfill
Magnesium
RQLmw-007
RQLmw-008
RQLmw-009
RQLmw-012
RQLmw-016
Lmw-017
drock Background (15 mg/L)
200.0
150.0
100.0
50.0
0
Results (mg/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

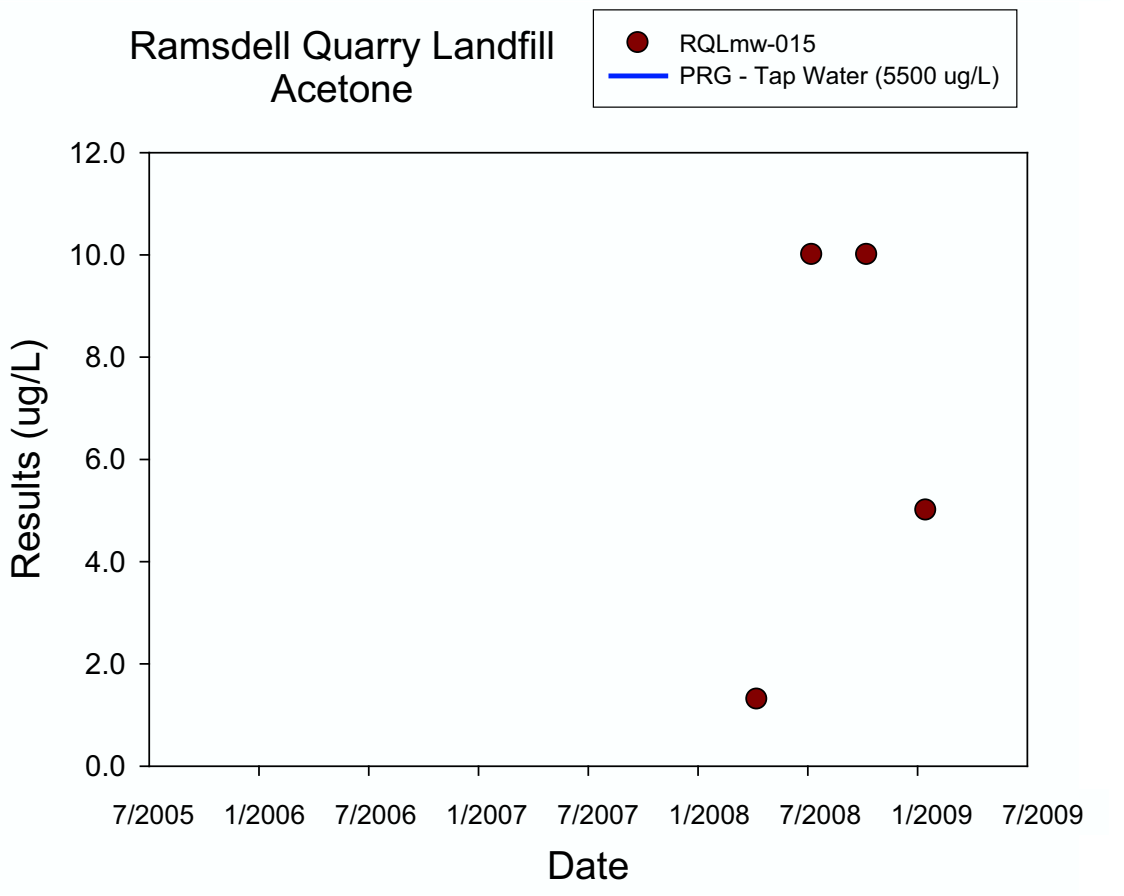

Ramsdell Quarry Landfill
Manganese
RQLmw-007
RQLmw-009
RQLmw-014
RQLmw-016
Lmw-017
drock Background (1.34 mg/L)
PRG - Tap Water (0.88 mg/L)
MCL (0.050 ug/L)
Results (mg/L)
12.0
10.0
8.0
6.0
4.0
2
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

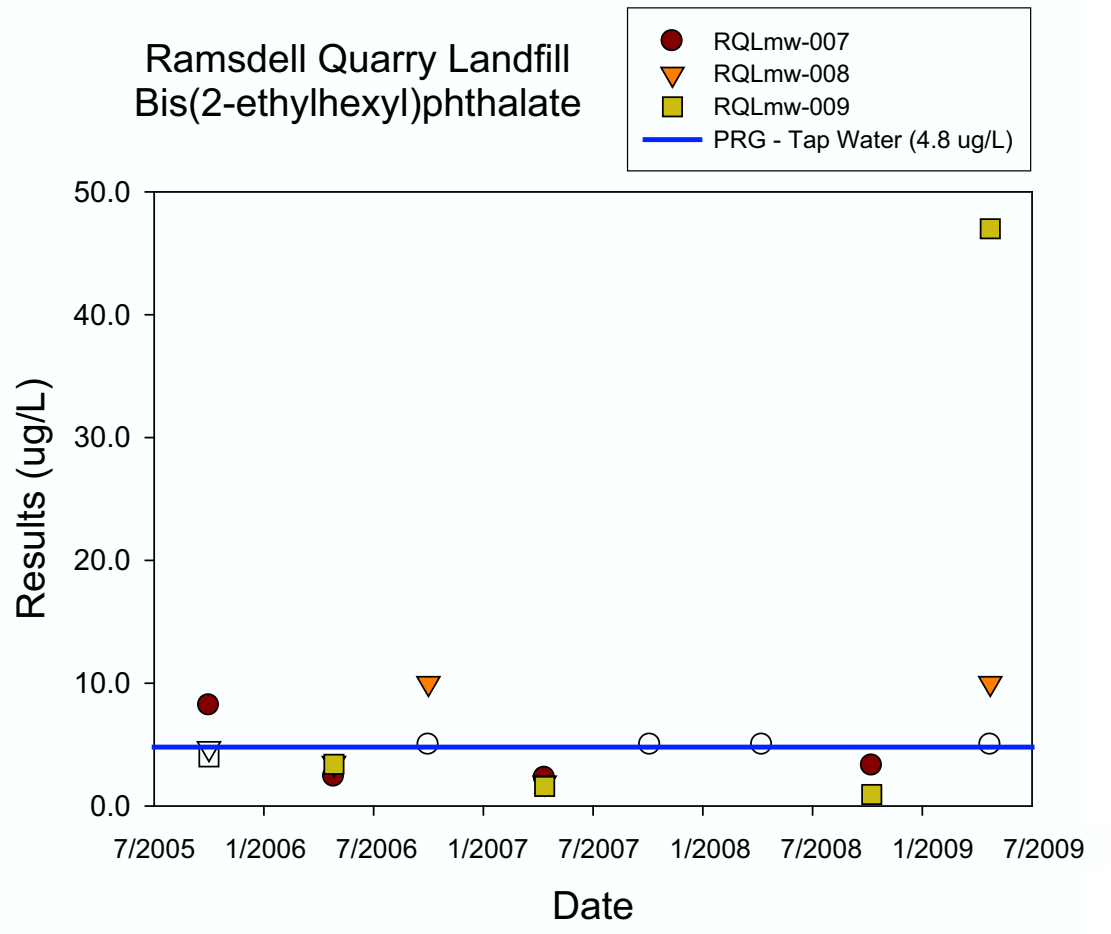

Ramsdell Quarry Landfill
Nickel
RQLmw-007
RQLmw-008
RQLmw-009
RQLmw-012
RQLmw-013
RQLmw-014
RQLmw-015
RQLmw-016
Lmw-017
drock Background (83.40 ug/L)
PRG - Tap Water (730 ug/L)
MCL (100 ug/L)
Results (ug/L)
200.0
150.0
100
50.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

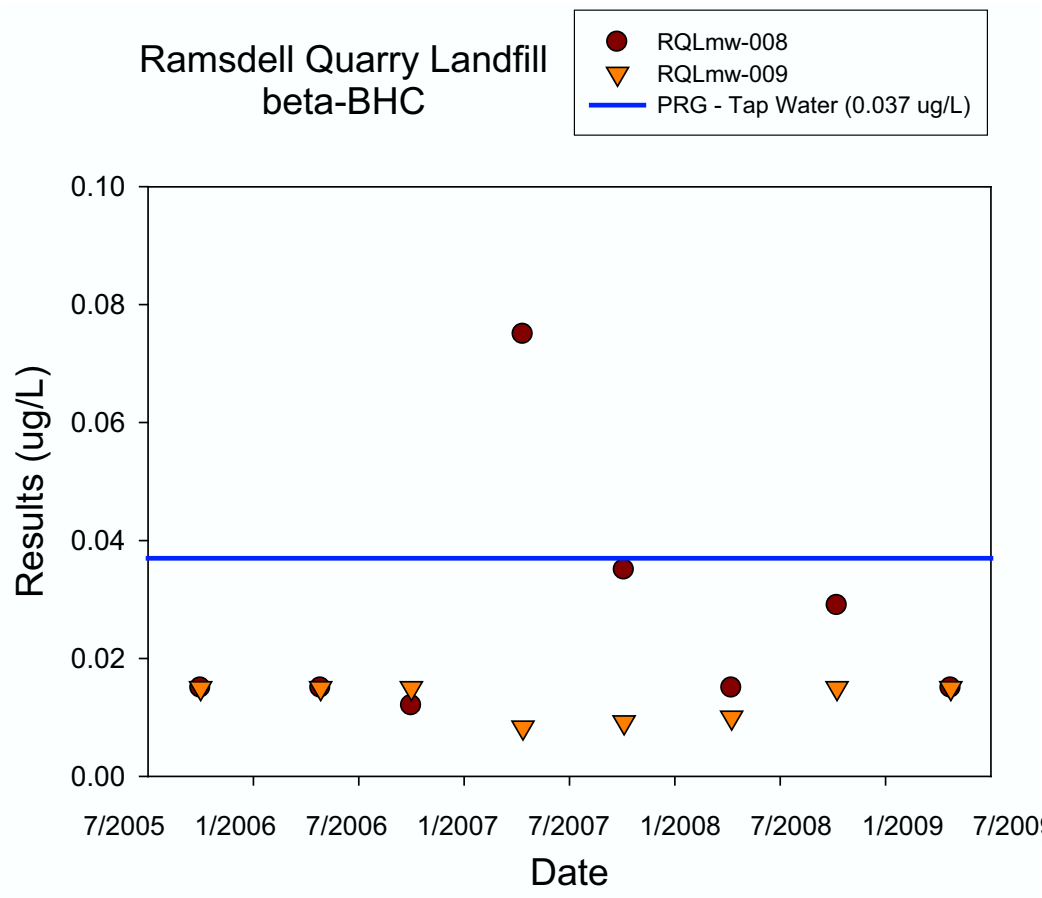

Ramsdell Quarry Landfill
Potassium
RQLmw-007
RQLmw-008
RQLmw-009
RQLmw-012
Lmw-016
drock Background (5.77 mg/L)
Results (mg/L)
14.0
12.0
10.0
8.0
6
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

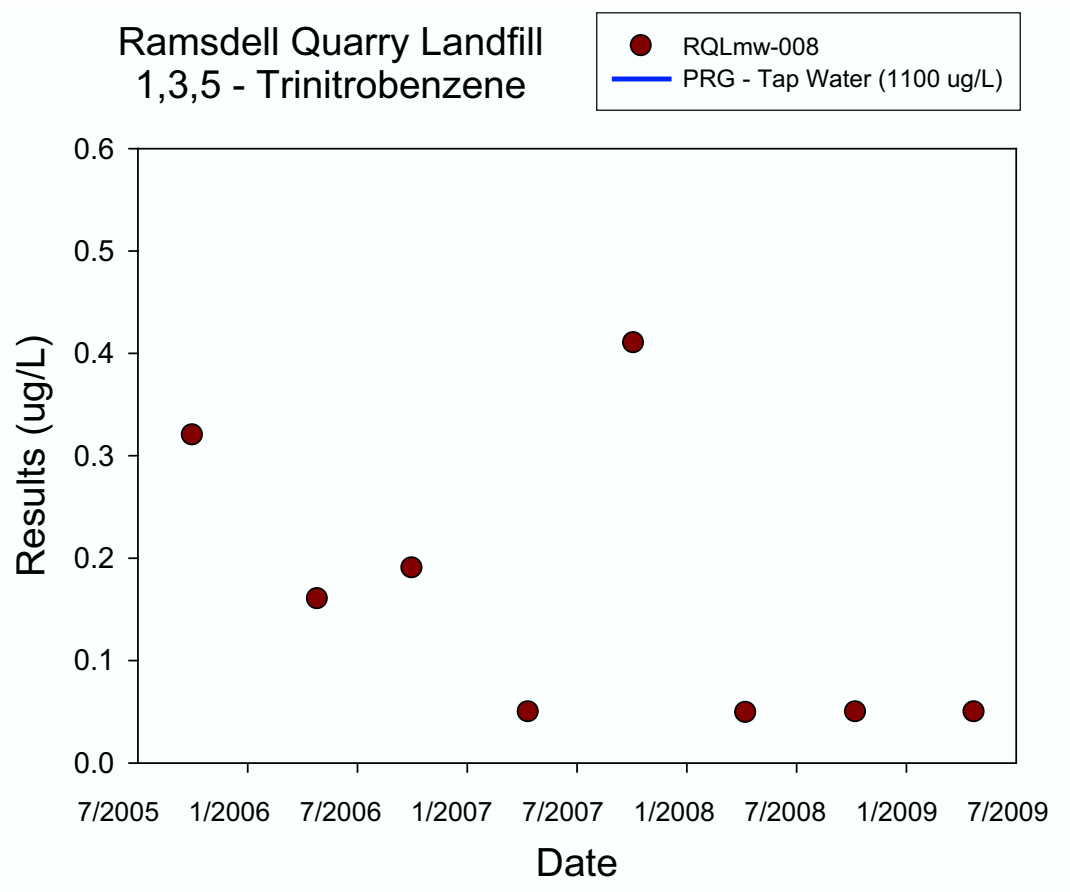

Ramsdell Quarry Landfill
Thallium
RQLmw-007
RQLmw-009
RQLmw-012
RQLmw-013
Lmw-016
drock Background (0 ug/L)
PRG - Tap Water (2.4 ug/L)
MCL (2 ug/L)
Results (ug/L)
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

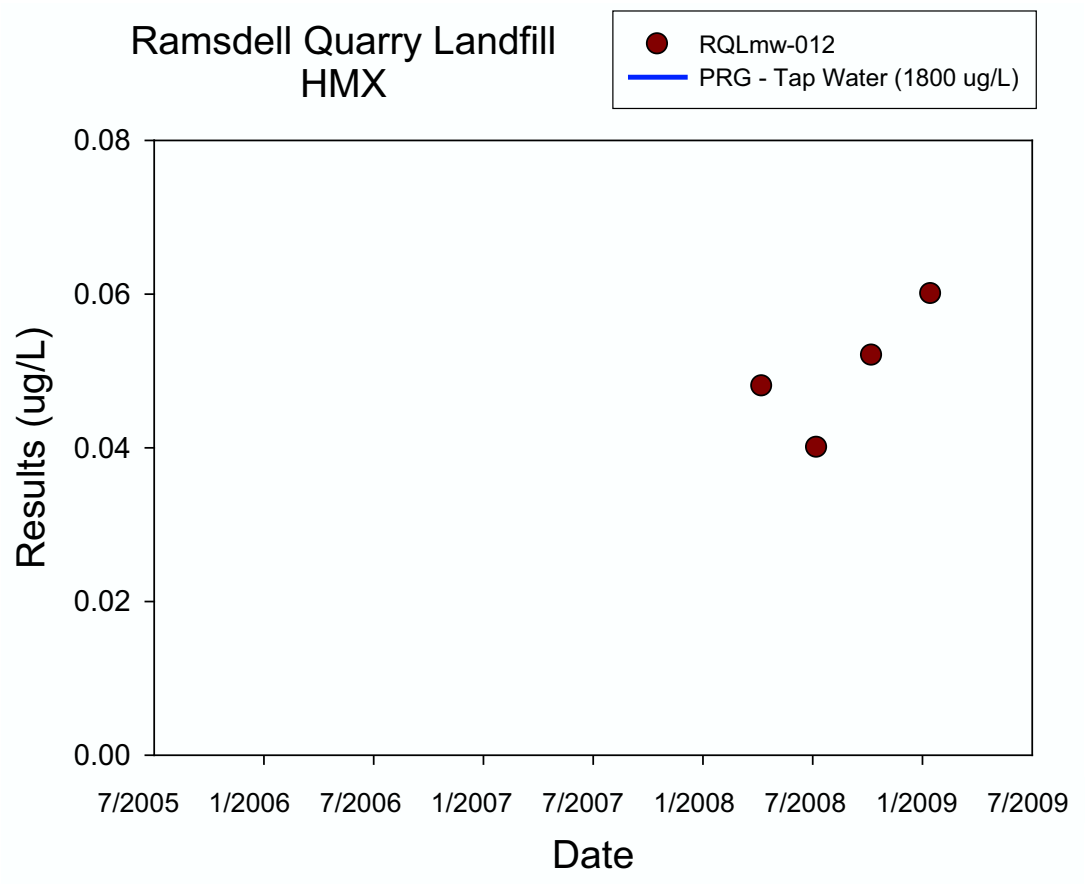

Ramsdell Quarry Landfil
Zinc
RQLmw-012
RQLmw-013
Lmw-017
drock Background (52.3 ug/L)
PRG - Tap Water (11000 ug/L)
Results (ug/L)
1400.0
1200.0
1000.0
800.0
600.0
400.0
200.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

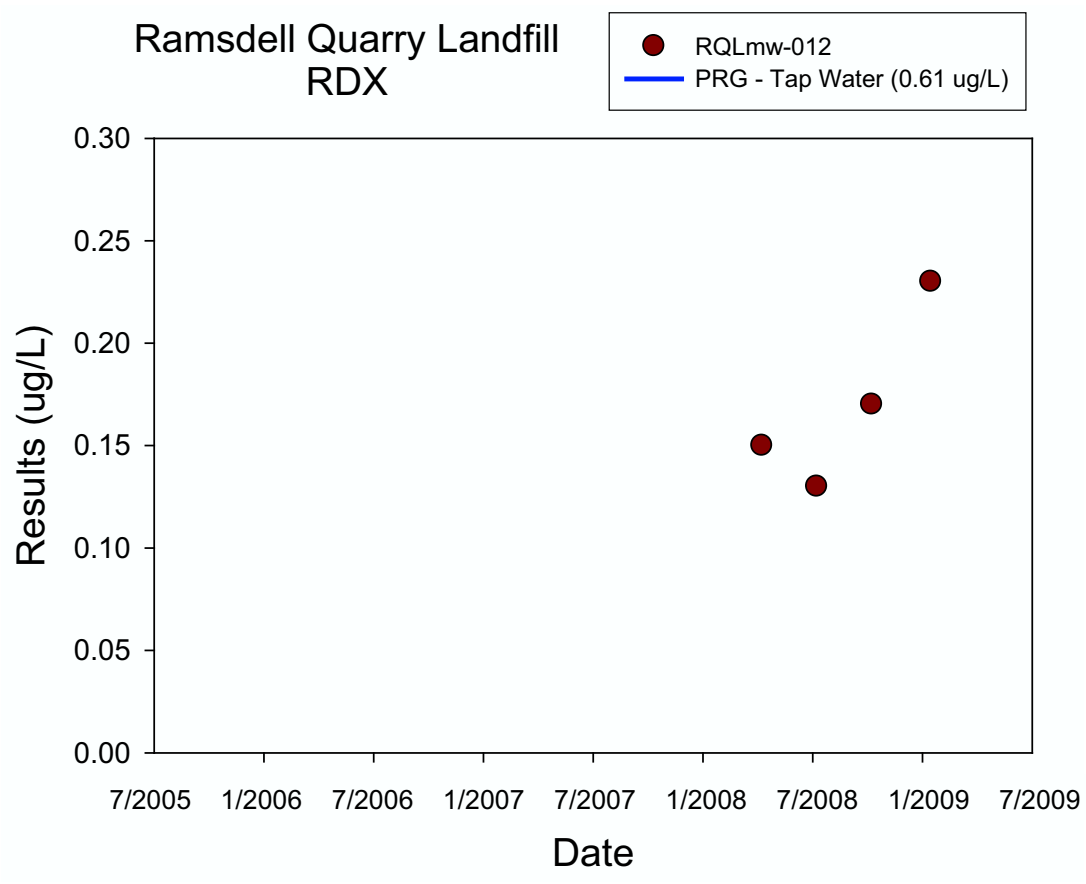

Ramsdell Quarry Landfill
Acetone
RQLmw-015
PRG - Tap Water (5500 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

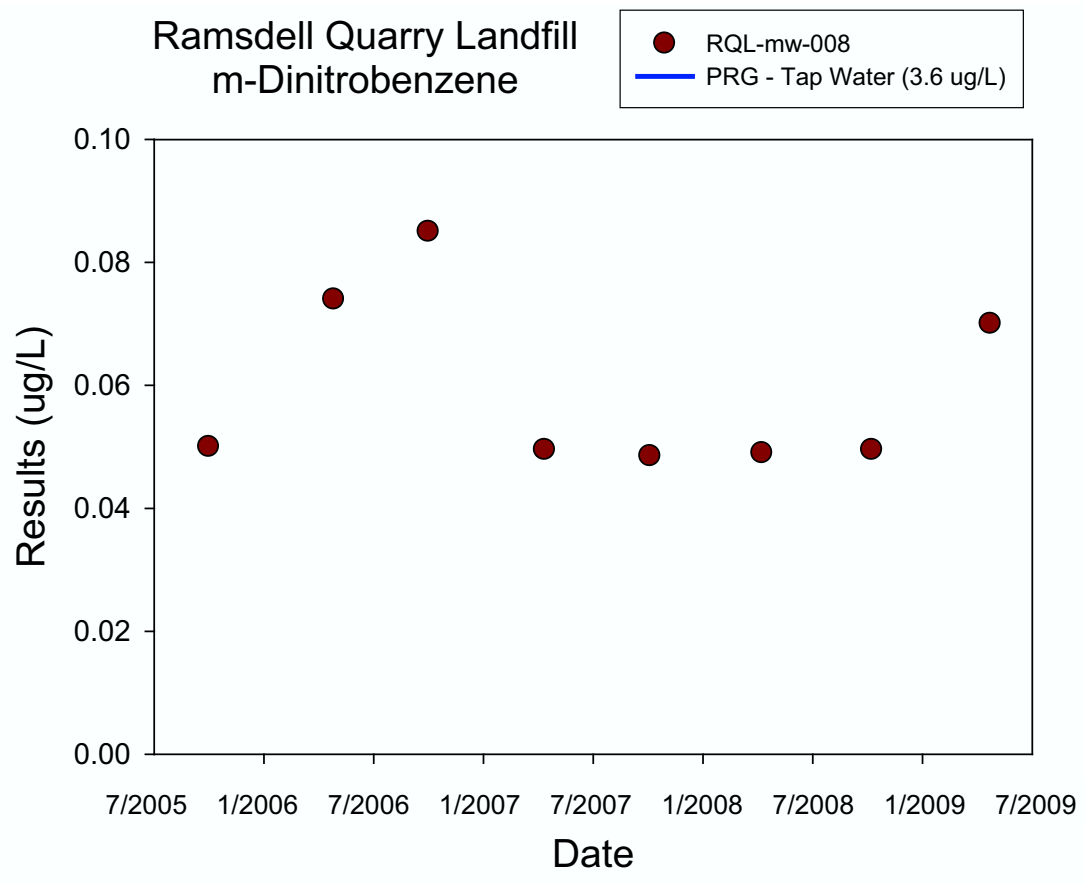

Ramsdell Quarry Landfill
Bis(2-ethylhexyl)phthalate
RQLmw-007
RQLmw-008
RQLmw-009
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
50.0
40.0
30.0
20.0
10.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

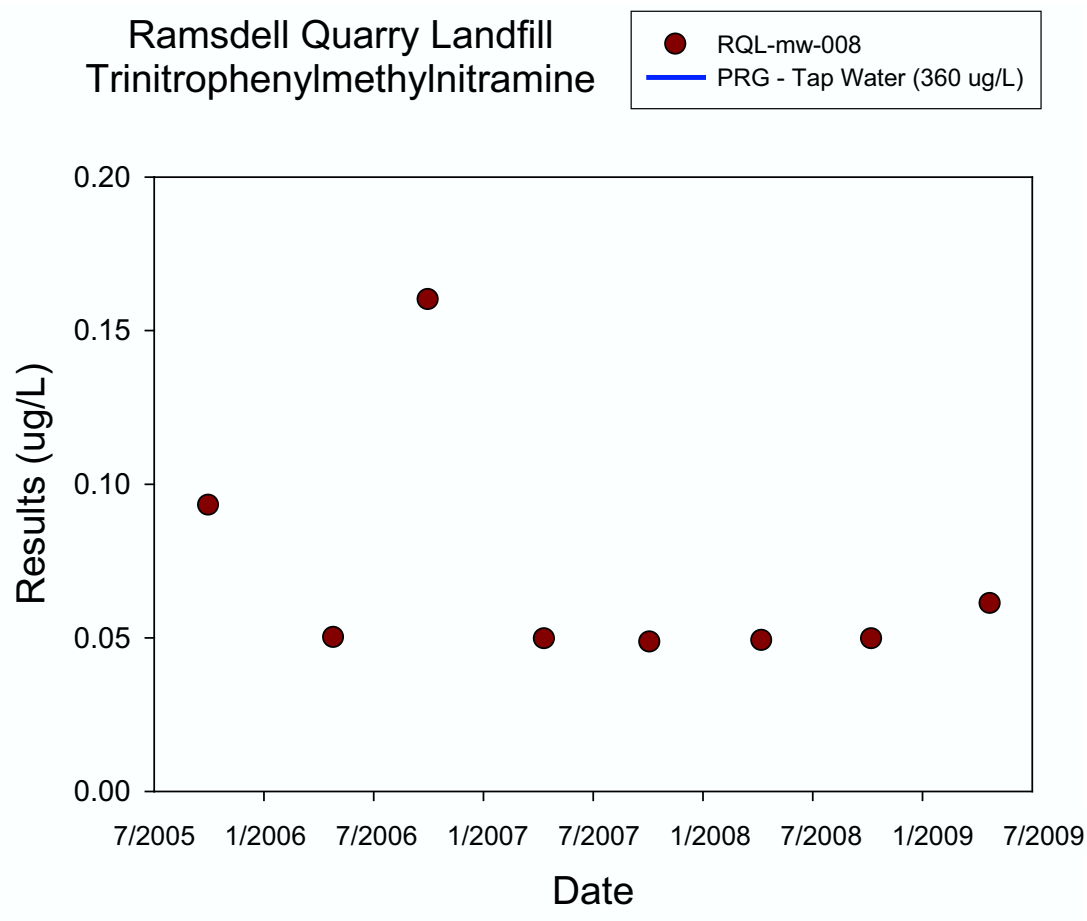

Ramsdell Quarry Landfill
beta-BHC
RQLmw-008
RQLmw-009
PRG - Tap Water (0.037 ug/L)
Results (ug/L)
0.10
0.08
0.06
0.04
0.02
0.00
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

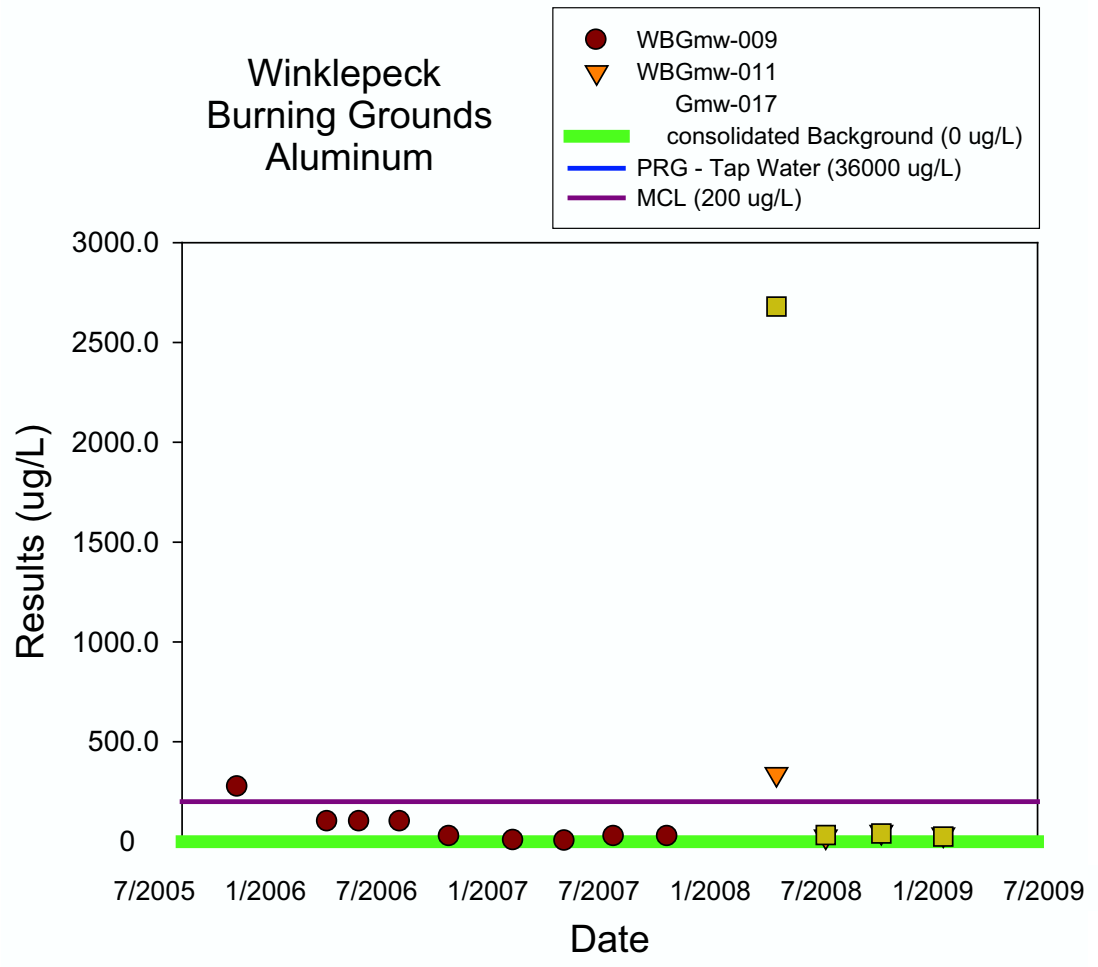

Ramsdell Quarry Landfill
1,3,5 - Trinitrobenzene
RQLmw-008
PRG - Tap Water (1100 ug/L)
Results (ug/L)
0.6
0.5
0.4
0.3
0.2
0.1
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

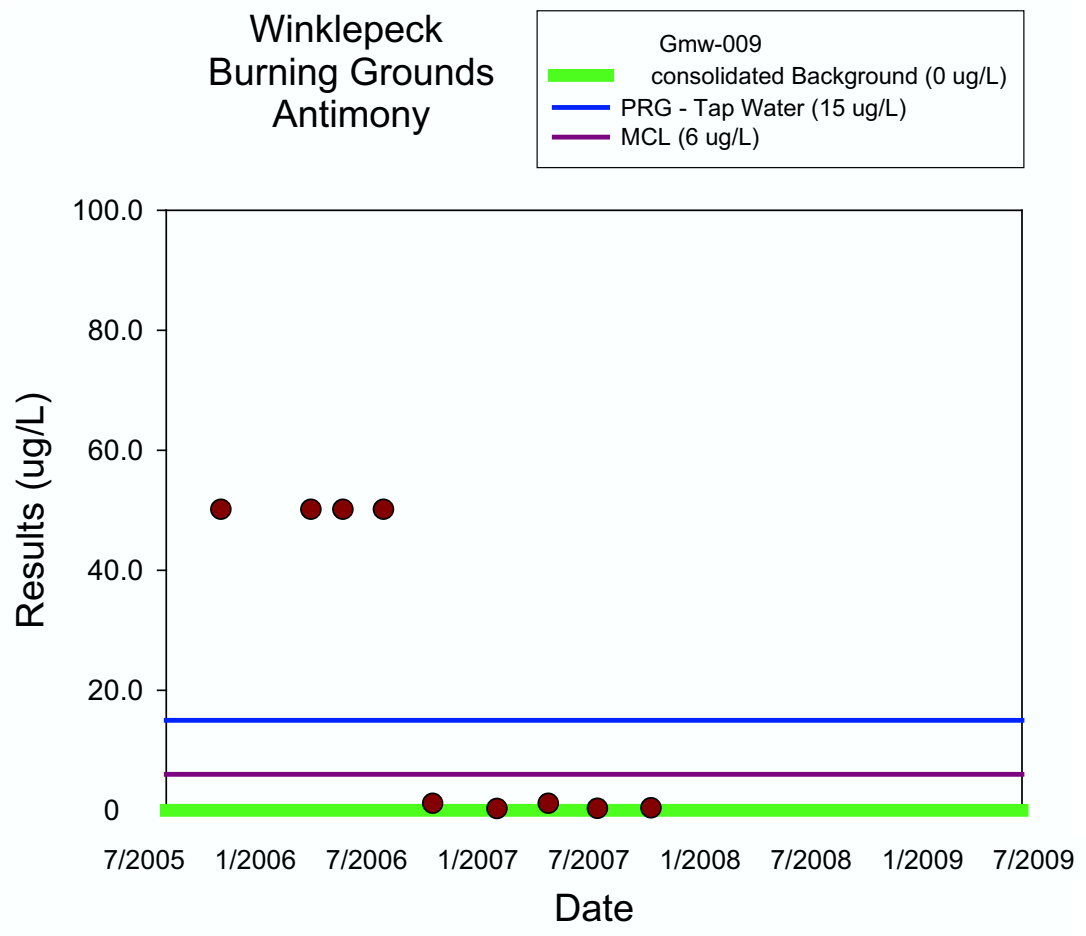

Ramsdell Quarry Landfill
HMX
RQLmw-012
PRG - Tap Water (1800 ug/L)
Results (ug/L)
0.08
0.06
0.04
0.02
0.00
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

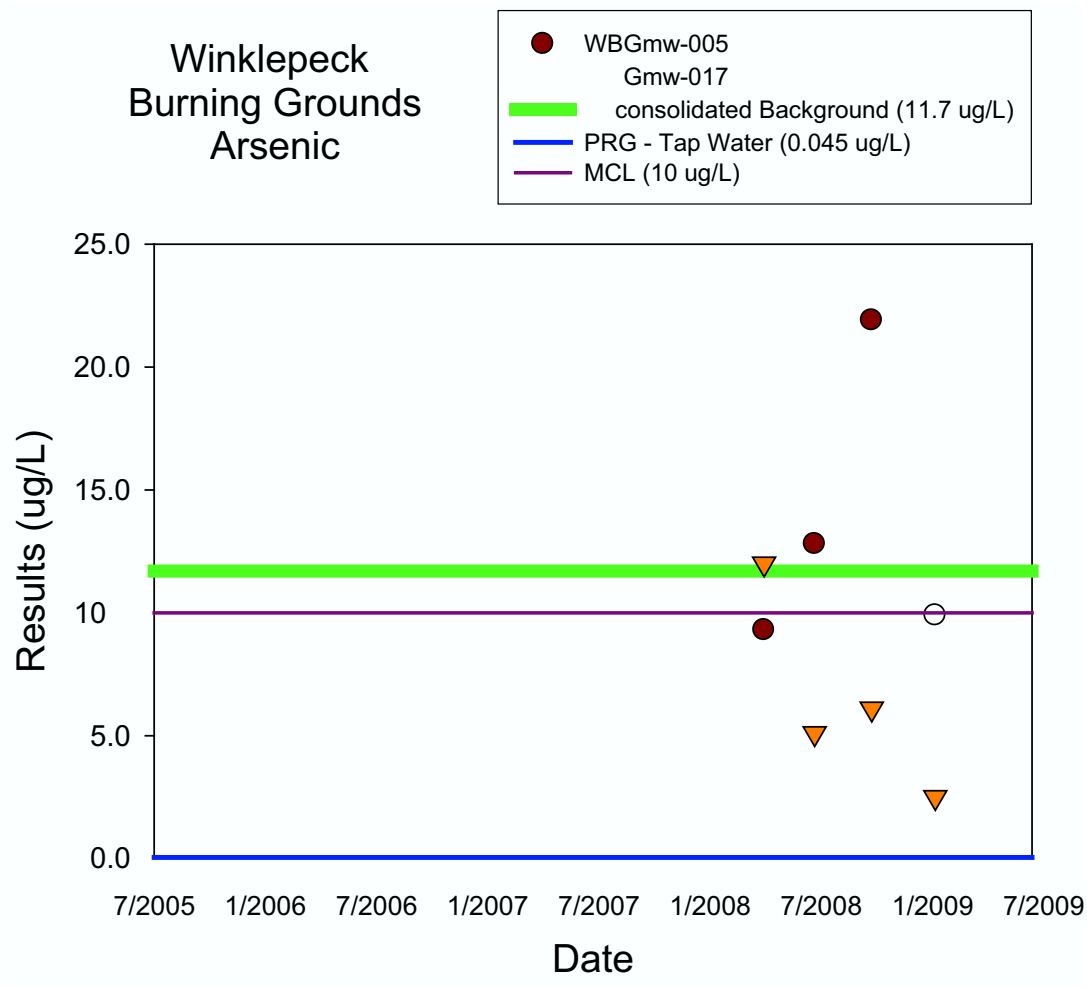

Ramsdell Quarry Landfill
RDX
RQLmw-012
PRG - Tap Water (0.61 ug/L)
Results (ug/L)
0.30
0.25
0.20
0.15
0.10
0.05
0.00
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

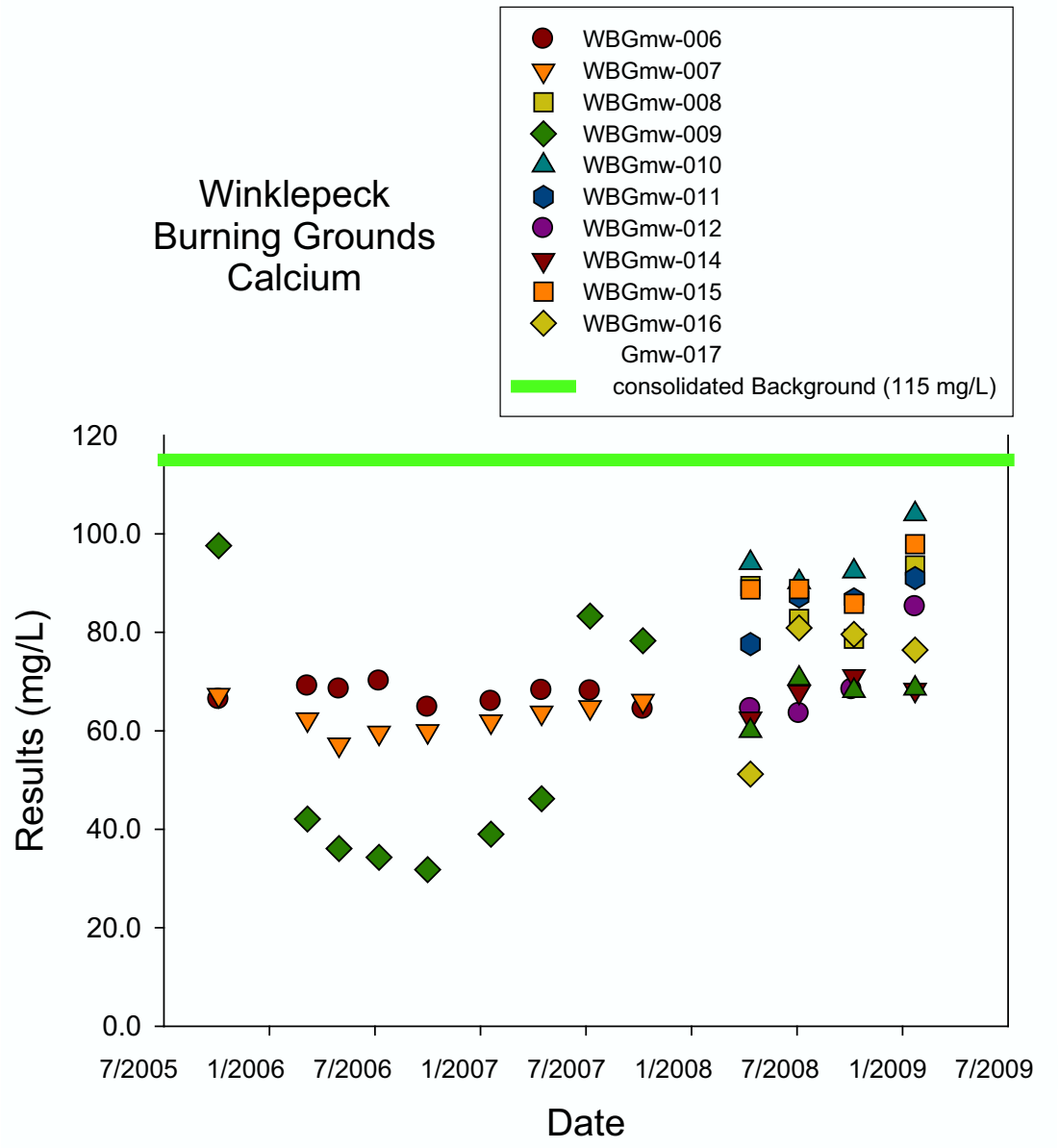

Ramsdell Quarry Landfill
m-Dinitrobenzene
RQL-mw-008
PRG - Tap Water (3.6 ug/L)
Results (ug/L)
0.10
0.08
0.06
0.04
0.02
0.00
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

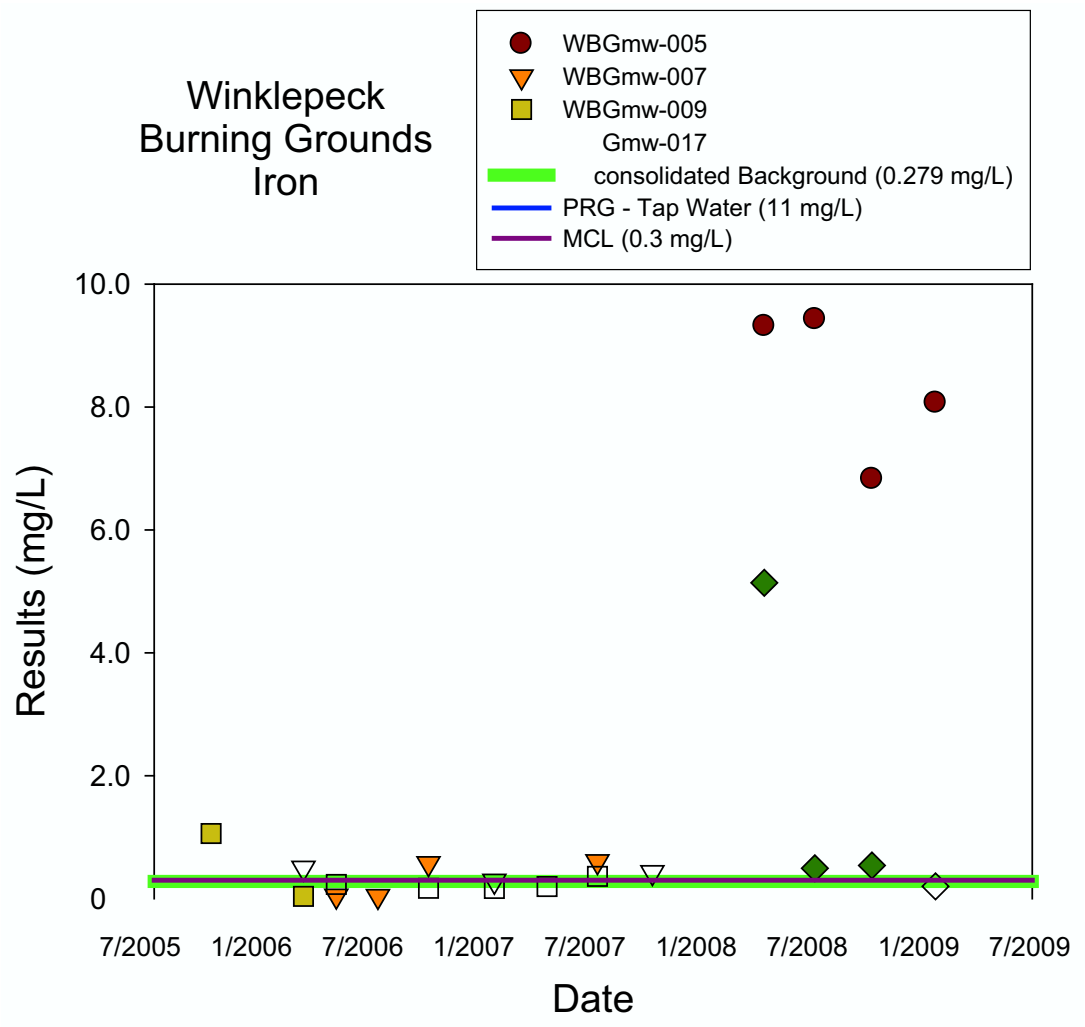

Ramsdell Quarry Landfill
Trinitrophenylmethylnitramine
RQL-mw-008
PRG - Tap Water (360 ug/L)
0.20
0.15
0.10
0.05
0.00
Results (ug/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

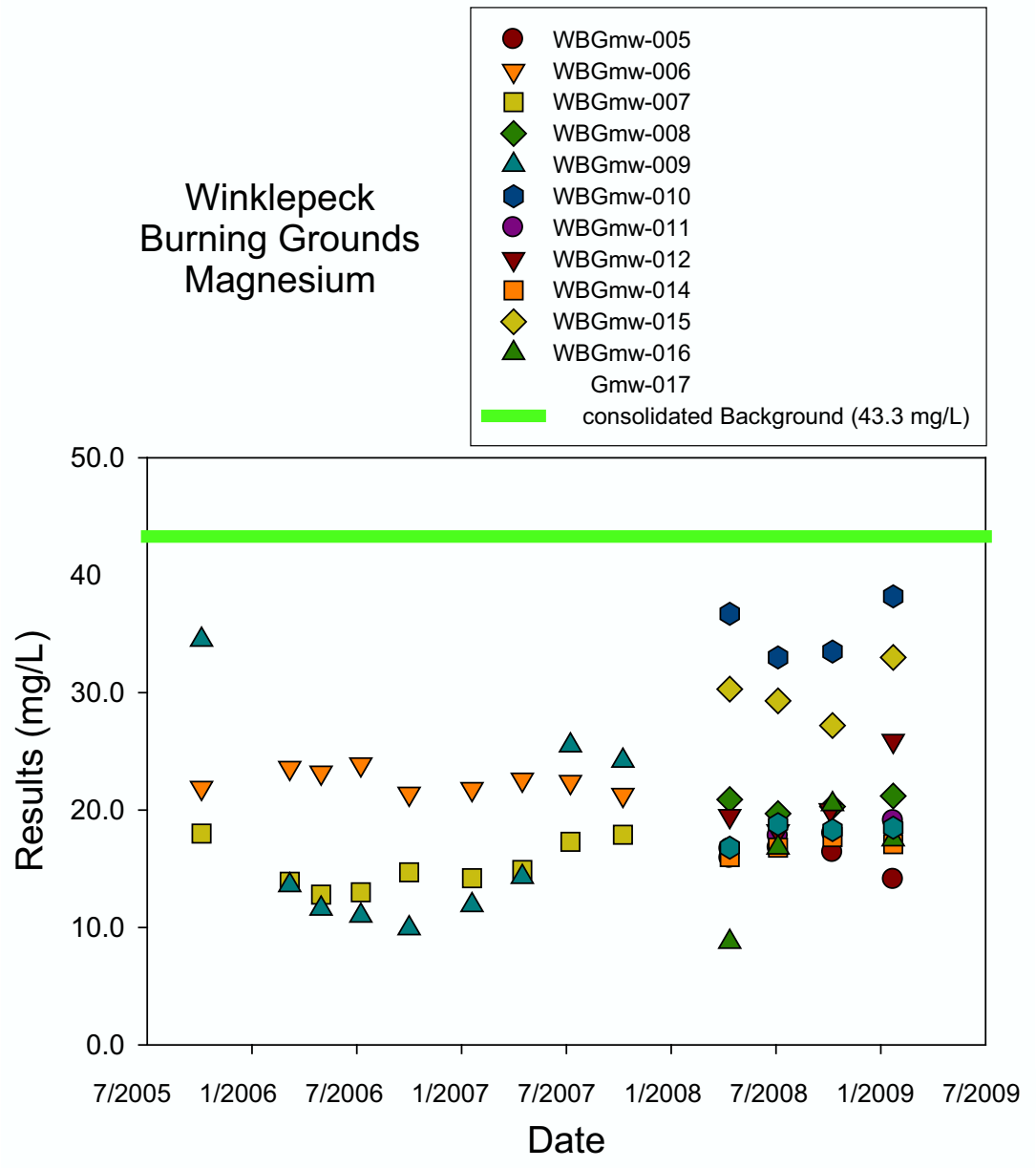

Winklepeck
Burning Grounds
Aluminum
WBGmw-009
WBGmw-011
Gmw-017
consolidated Background (0 ug/L)
PRG - Tap Water (36000 ug/L)
MCL (200 ug/L)
Results (ug/L)
3000.0
2500.0
2000.0
1500.0
1000.0
500.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

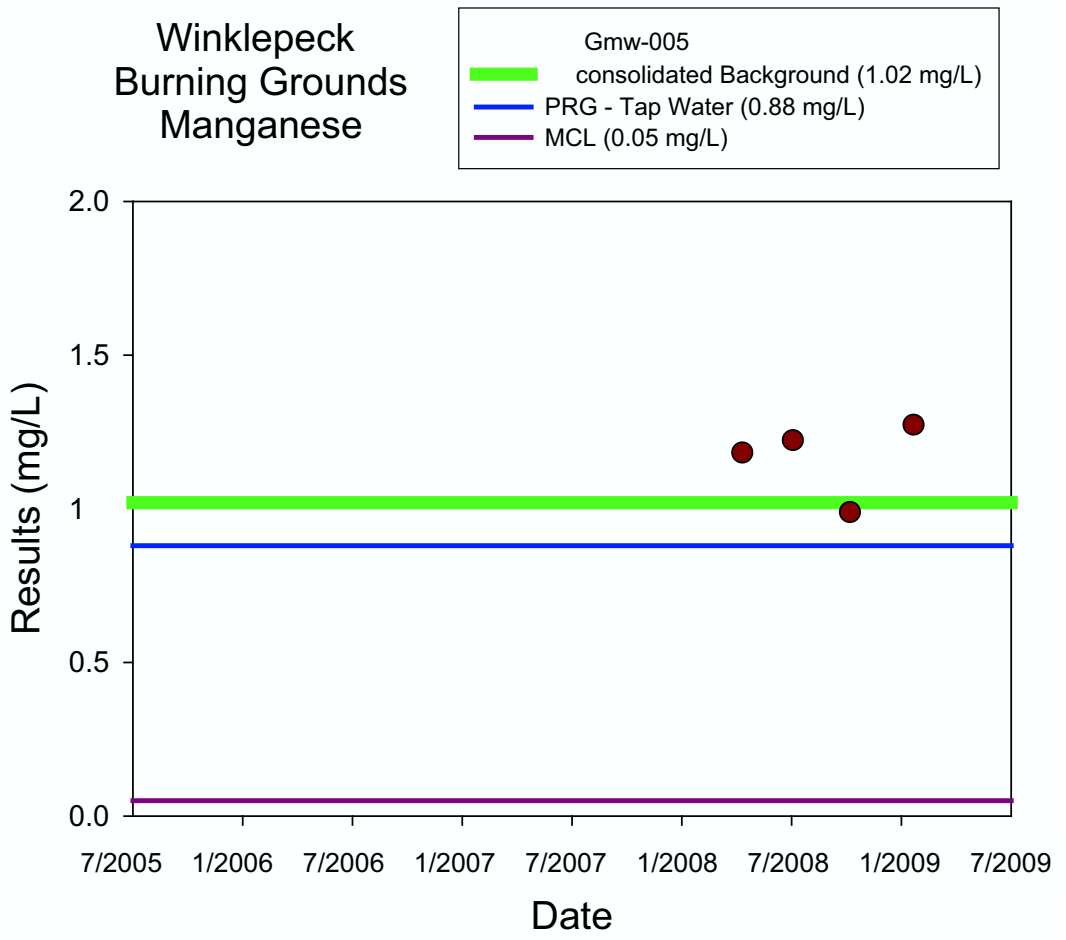

Winklepeck
Burning Grounds
Antimony
Gmw-009
consolidated Background (0 ug/L)
PRG - Tap Water (15 ug/L)
MCL (6 ug/L)
Results (ug/L)
100.0
80.0
60.0
40.0
20.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

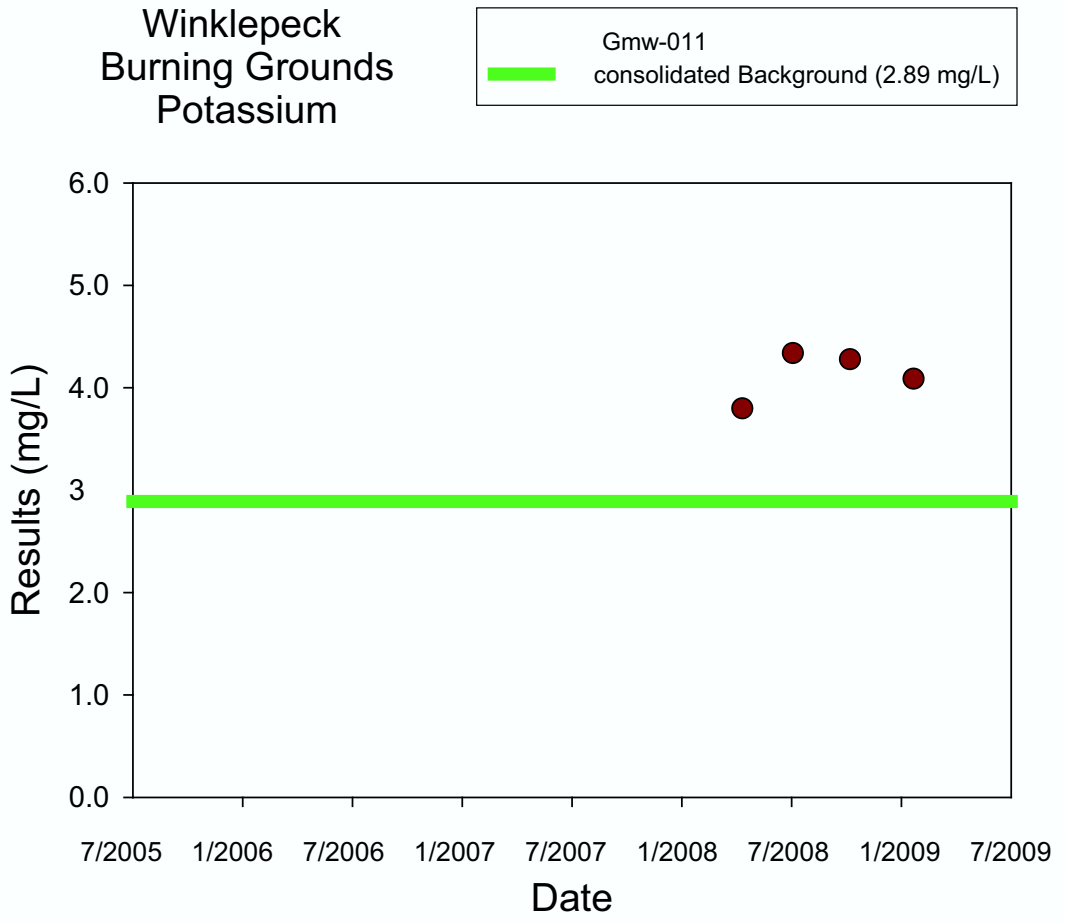

Winklepeck
Burning Grounds
Arsenic
WBGmw-005
Gmw-017
consolidated Background (11.7 ug/L)
PRG - Tap Water (0.045 ug/L)
MCL (10 ug/L)
Results (ug/L)
25.0
20.0
15.0
10
5.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

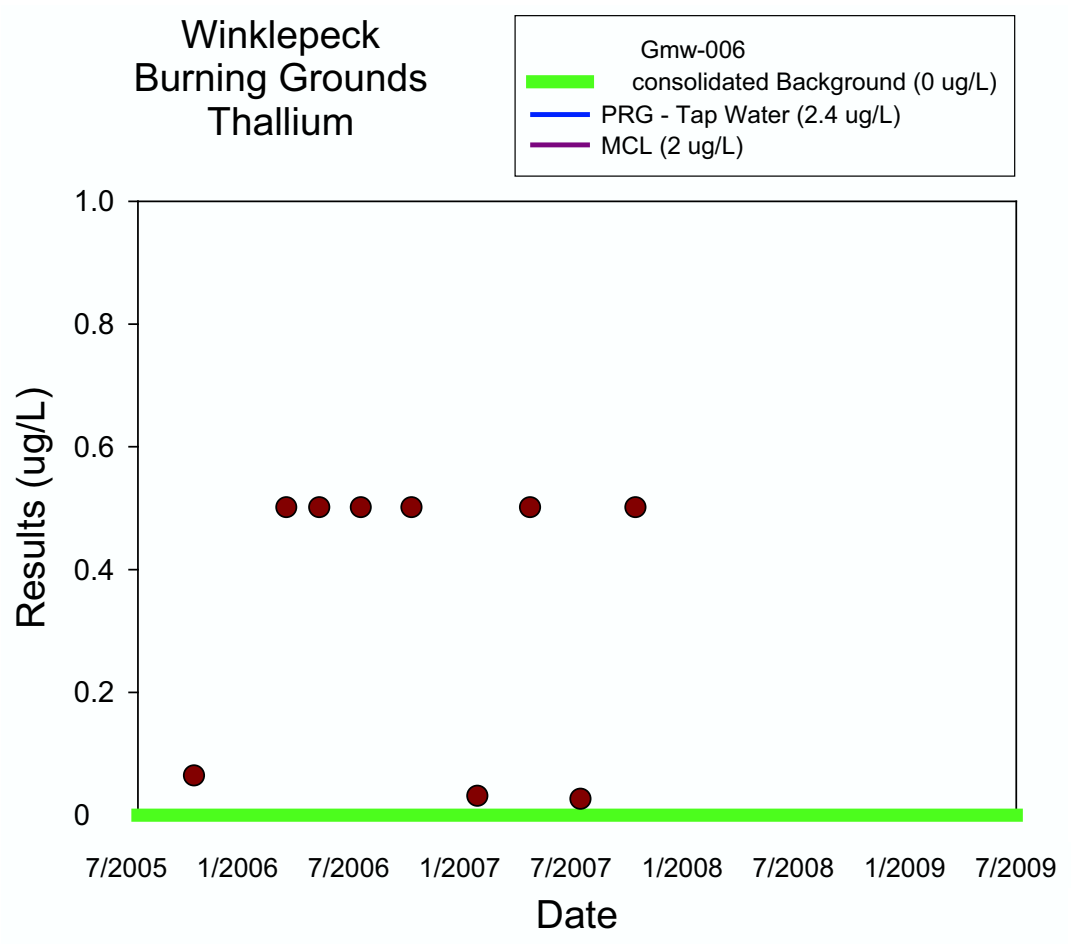

Winklepeck
Burning Grounds
Calcium
WBGmw-006
WBGmw-007
WBGmw-008
WBGmw-009
WBGmw-010
WBGmw-011
WBGmw-012
WBGmw-014
WBGmw-015
WBGmw-016
Gmw-017
consolidated Background (115 mg/L)
120
100.0
80.0
60.0
40.0
20.0
0.0
Results (mg/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

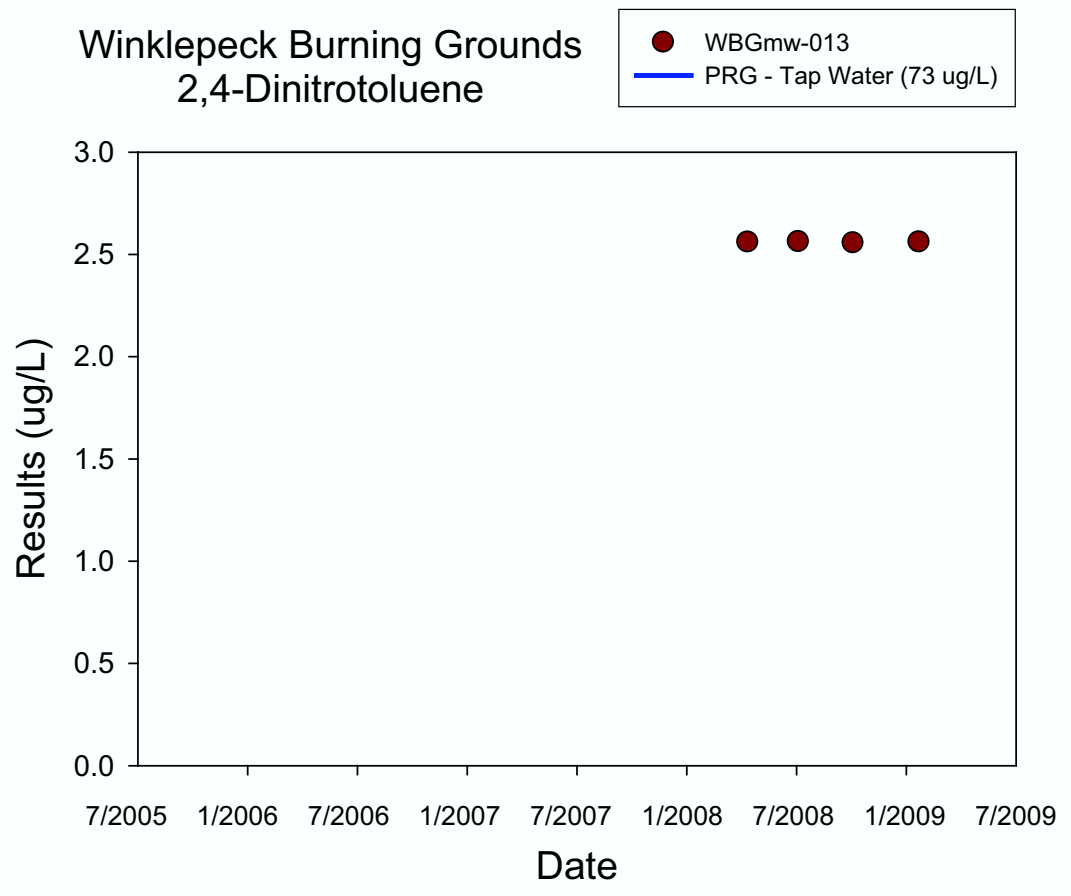

Winklepeck
Burning Grounds
Iron
WBGmw-005
WBGmw-007
WBGmw-009
Gmw-017
consolidated Background (0.279 mg/L)
PRG - Tap Water (11 mg/L)
MCL (0.3 mg/L)
Results (mg/L)
10.0
8.0
6.0
4.0
2.0
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

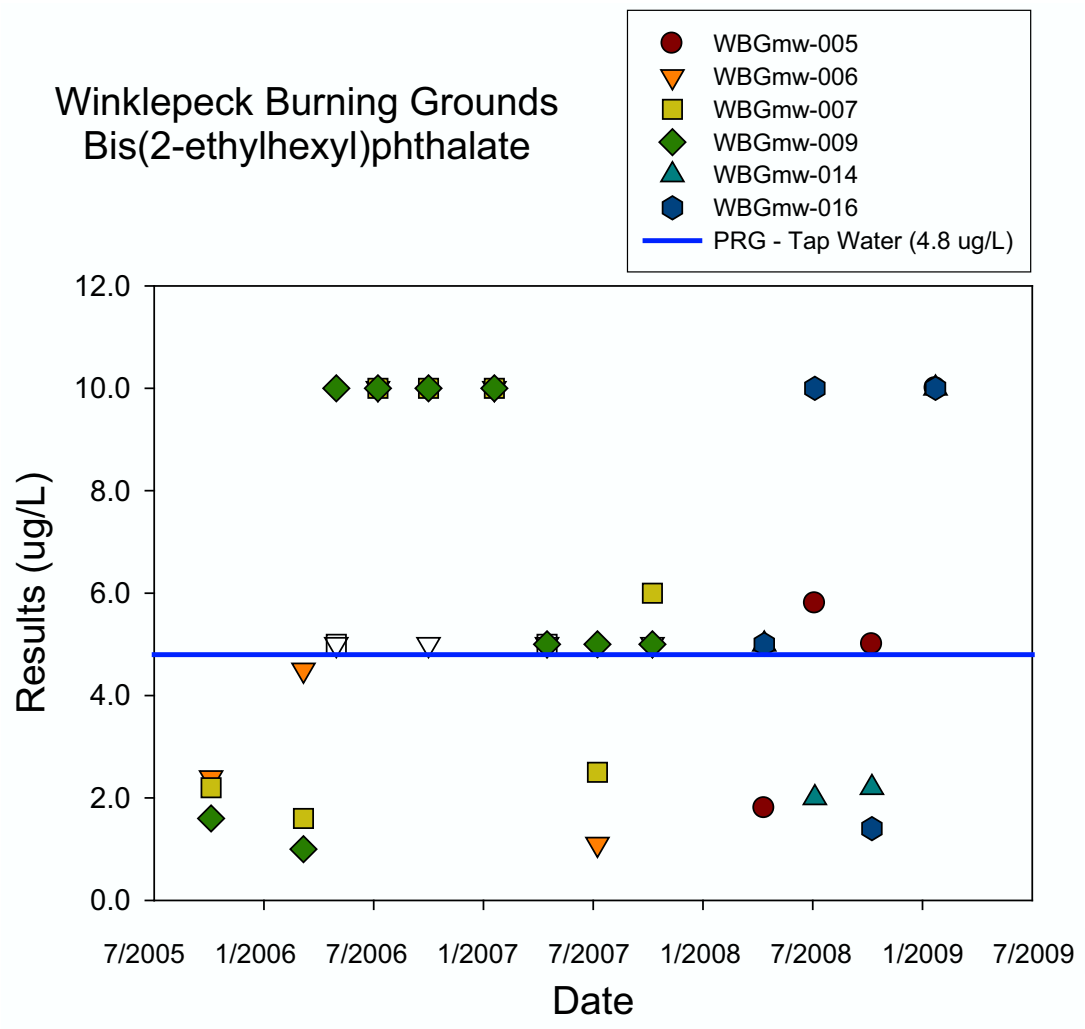

Winklepeck
Burning Grounds
Magnesium
WBGmw-005
WBGmw-006
WBGmw-007
WBGmw-008
WBGmw-009
WBGmw-010
WBGmw-011
WBGmw-012
WBGmw-014
WBGmw-015
WBGmw-016
Gmw-017
consolidated Background (43.3 mg/L)
Results (mg/L)
50.0
40
30.0
20.0
10.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

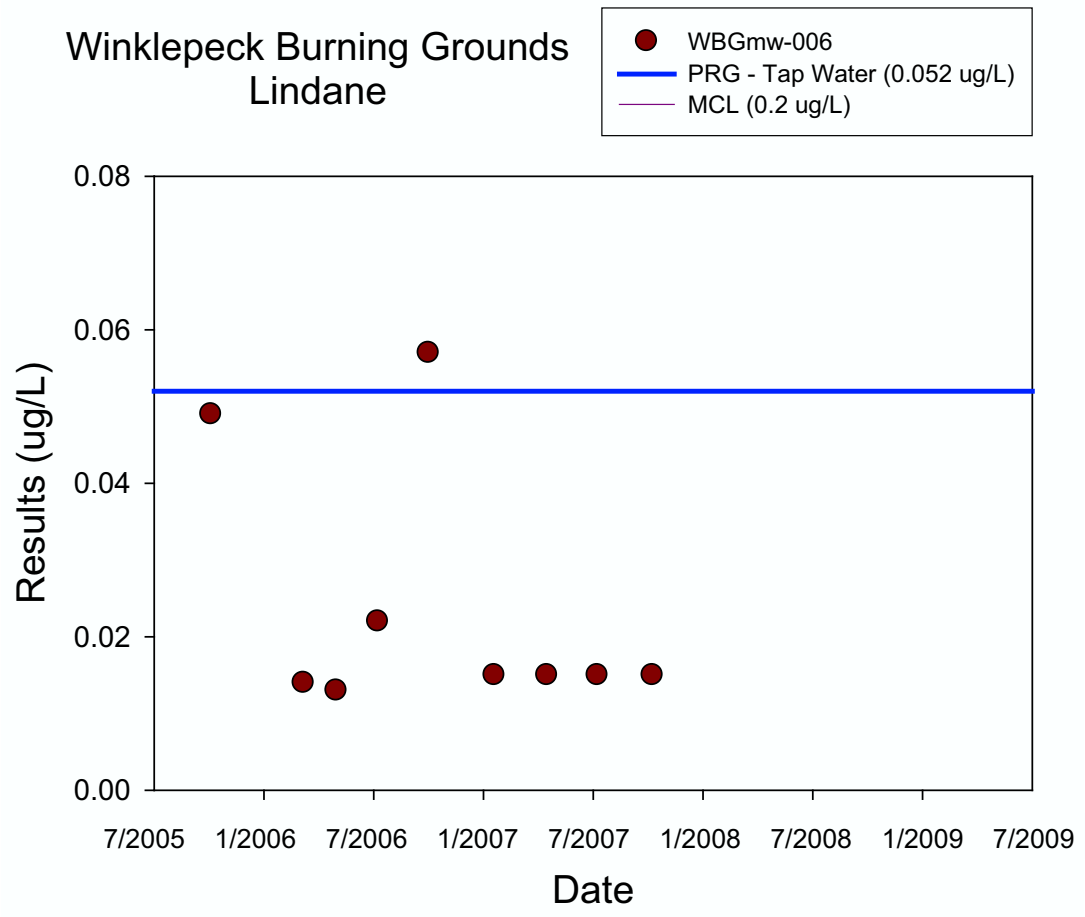

Winklepeck
Burning Grounds
Manganese
Gmw-005
consolidated Background (1.02 mg/L)
PRG - Tap Water (0.88 mg/L)
MCL (0.05 mg/L)
Results (mg/L)
2.0
1.5
1
0.5
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

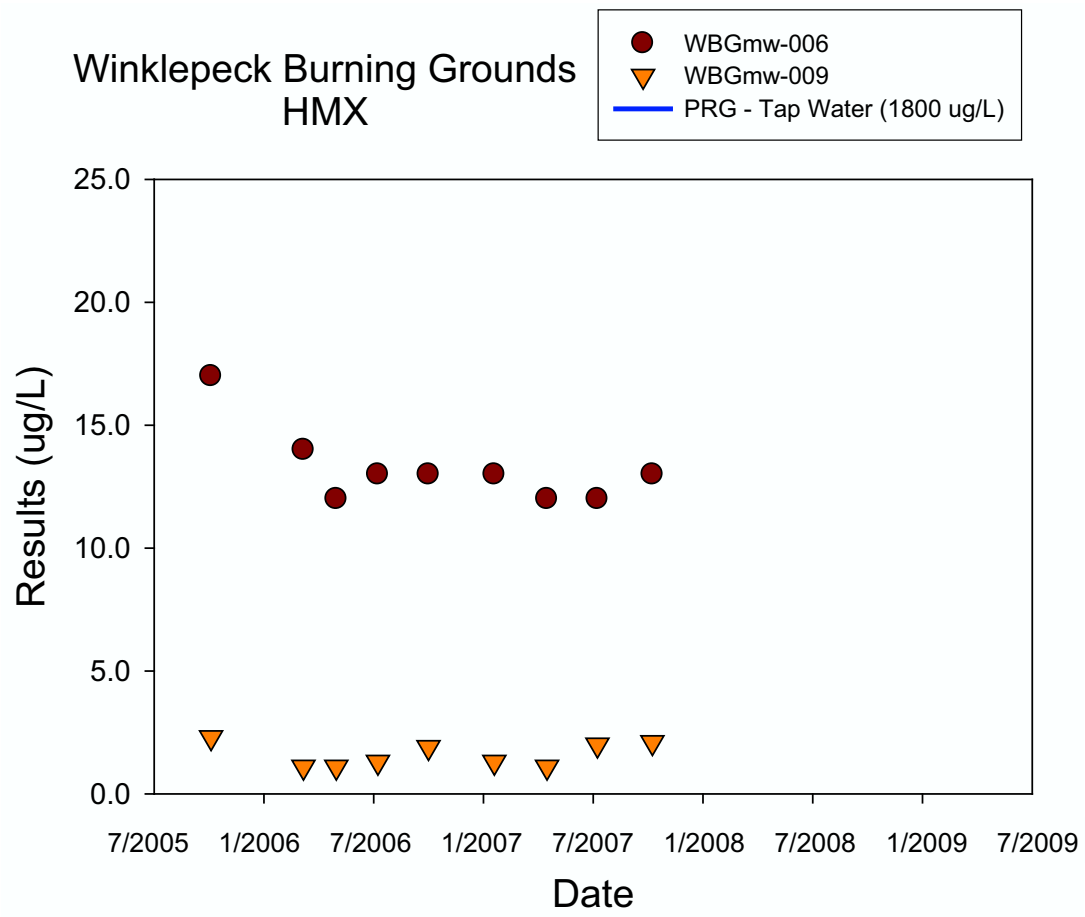

Winklepeck
Burning Grounds
Potassium
Gmw-011
consolidated Background (2.89 mg/L)
Results (mg/L)
6.0
5.0
4.0
3
2.0
1.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

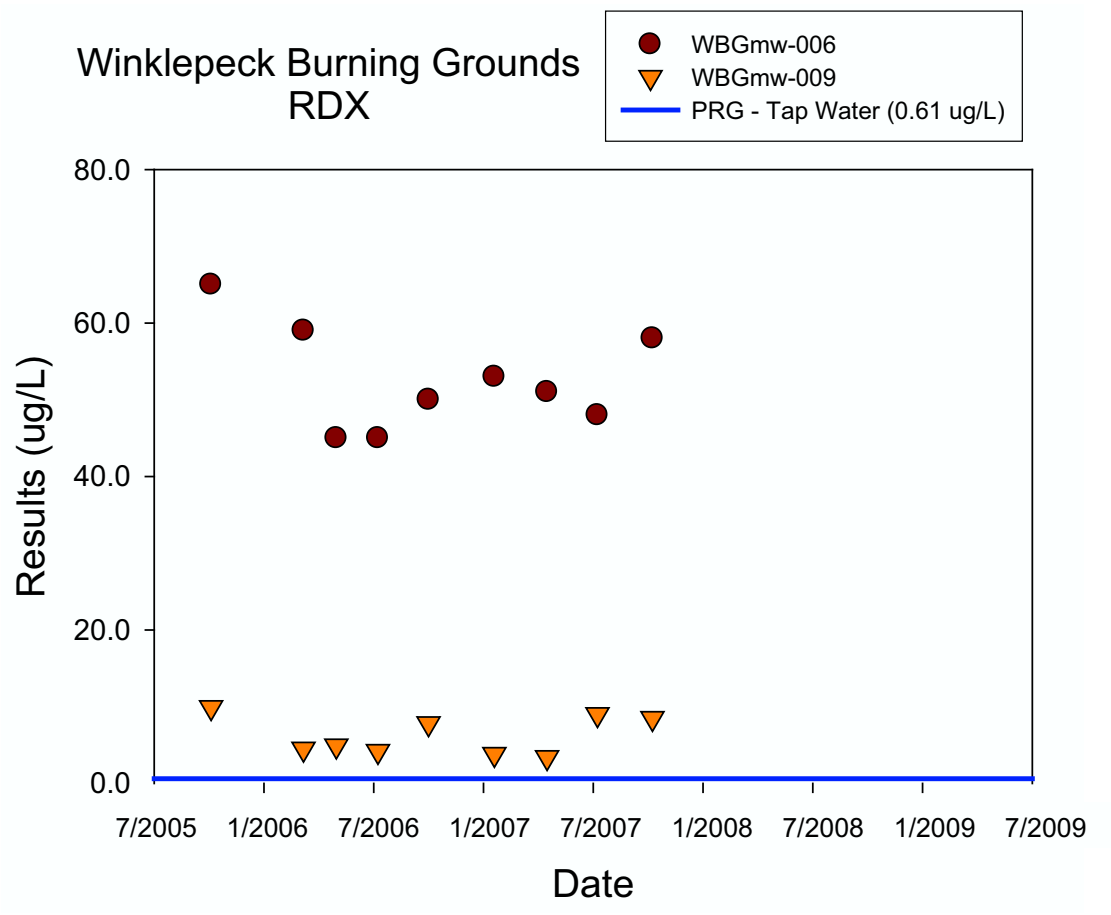

Winklepeck
Burning Grounds
Thallium
Gmw-006
consolidated Background (0 ug/L)
PRG - Tap Water (2.4 ug/L)
MCL (2 ug/L)
Results (ug/L)
1.0
0.8
0.6
0.4
0.2
0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date


Winklepeck Burning Grounds
2,4-Dinitrotoluene
WBGmw-013
PRG - Tap Water (73 ug/L)
Results (ug/L)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date


Winklepeck Burning Grounds
Bis(2-ethylhexyl)phthalate
WBGmw-005
WBGmw-006
WBGmw-007
WBGmw-009
WBGmw-014
WBGmw-016
PRG - Tap Water (4.8 ug/L)
Results (ug/L)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date


Winklepeck Burning Grounds
Lindane
WBGmw-006
PRG - Tap Water (0.052 ug/L)
MCL (0.2 ug/L)
Results (ug/L)
0.08
0.06
0.04
0.02
0.00
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date


Winklepeck Burning Grounds
HMX
WBGmw-006
WBGmw-009
PRG - Tap Water (1800 ug/L)
Results (ug/L)
25.0
20.0
15.0
10.0
5.0
0.0
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date


Winklepeck Burning Grounds
RDX
WBGmw-006
WBGmw-009
PRG - Tap Water (0.61 ug/L)
80.0
60.0
40.0
20.0
0.0
Results (ug/L)
7/2005
1/2006
7/2006
1/2007
7/2007
1/2008
7/2008
1/2009
7/2009
Date

APPENDIX G

MAPS OF FWGWMP STUDY AREAS

Note: The following maps have been reproduced from various separate reports. Each map has not been altered in any way from the original format from which it was copied.

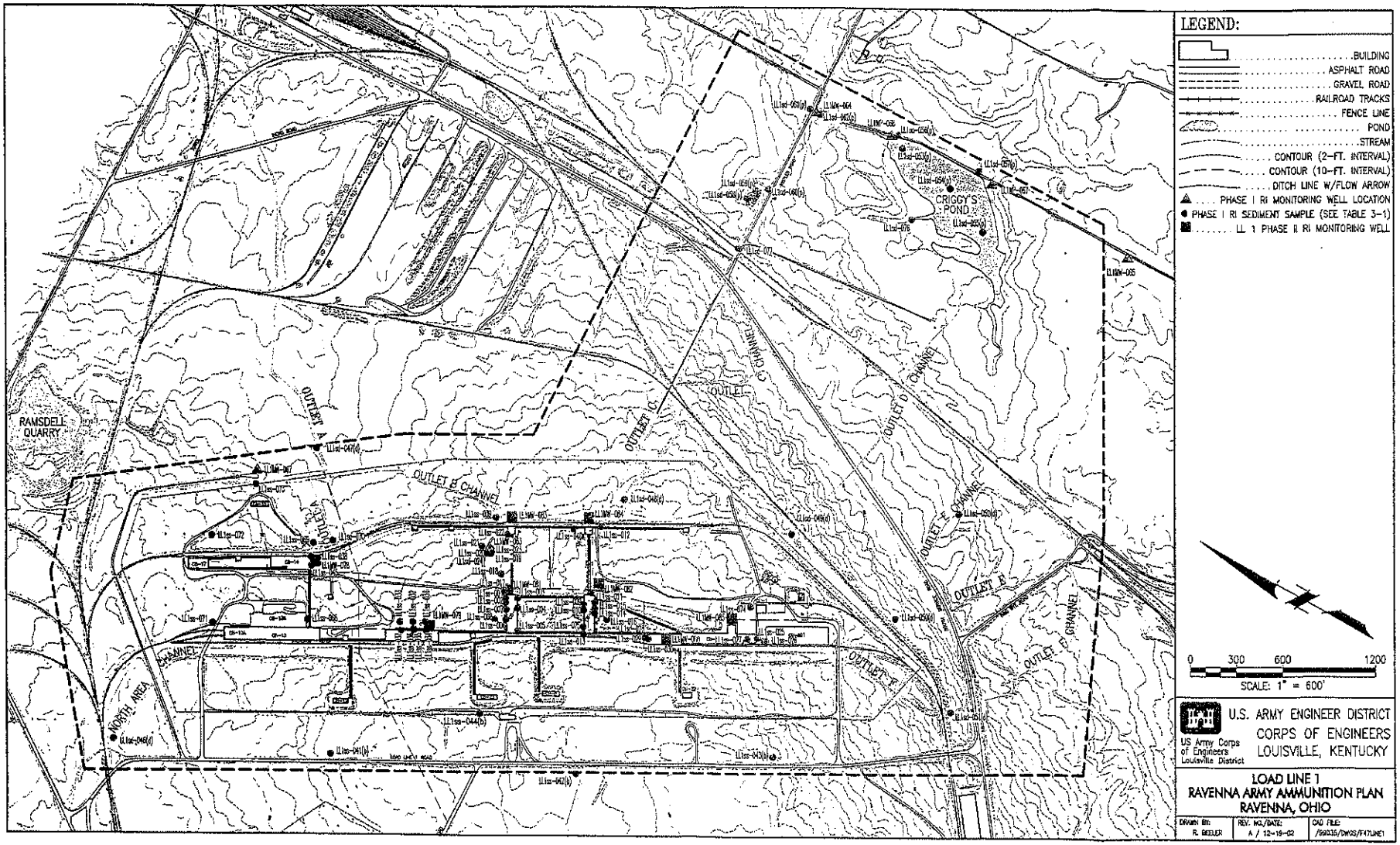


Figure 1-6. Existing Phase I RI Sampling Locations and Phase II RI Monitoring Wells at Load Line 1

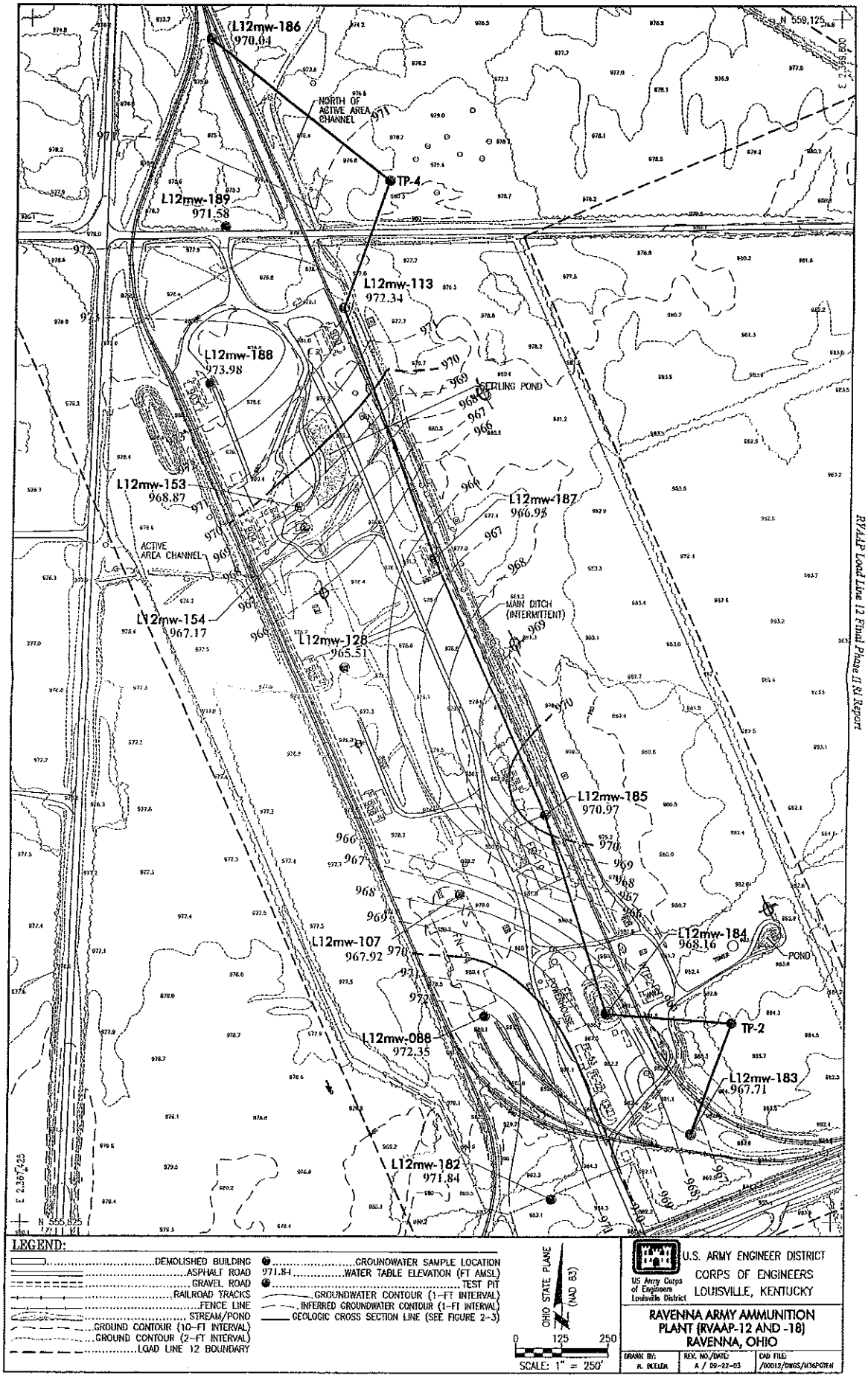


Figure 2-5. Potentiometric Groundwater Surface at Load Line 12, November 9, 2000

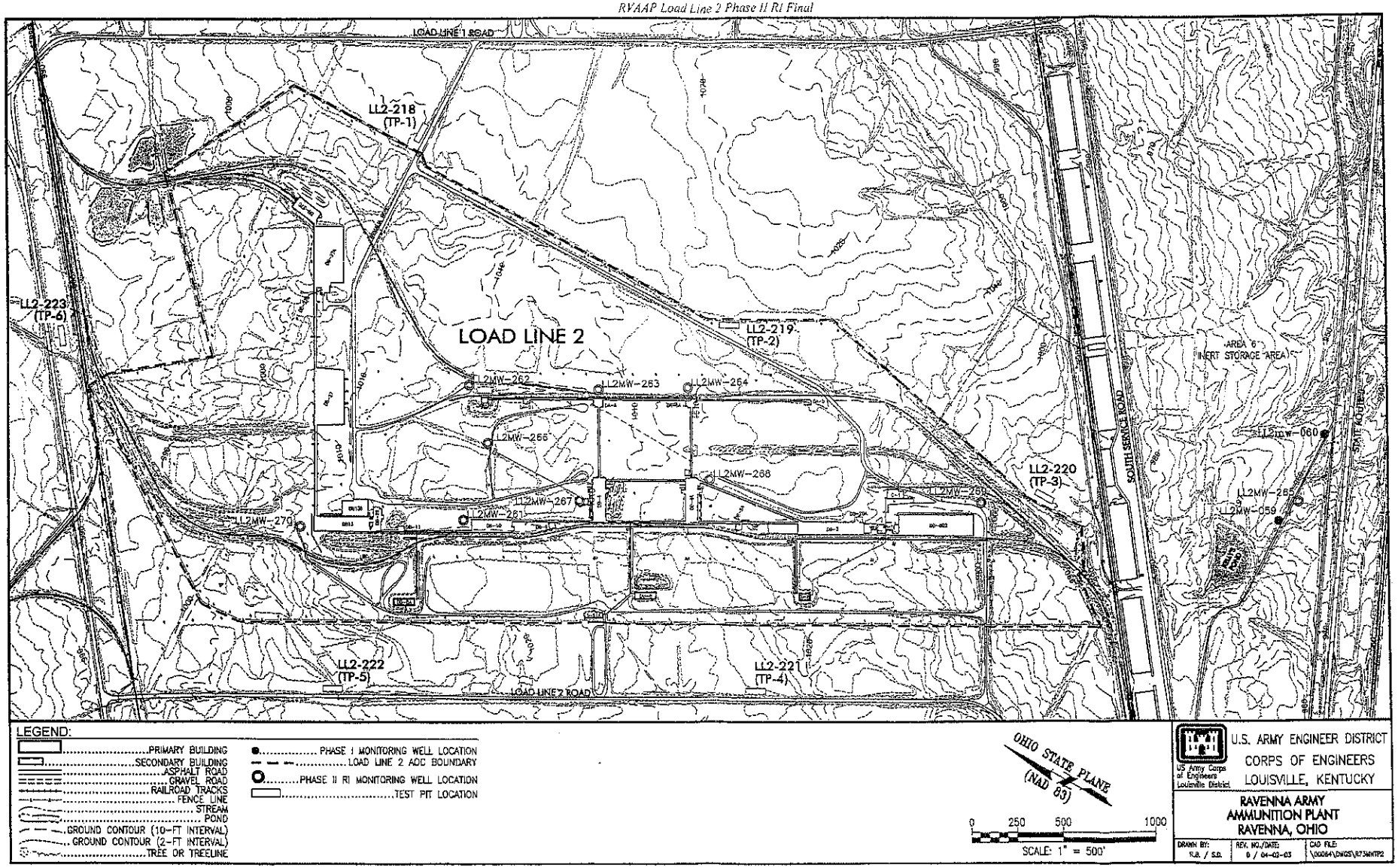


Figure 3-6. Phase II RI Monitoring Well and Test Pit Locations at Load Line 2

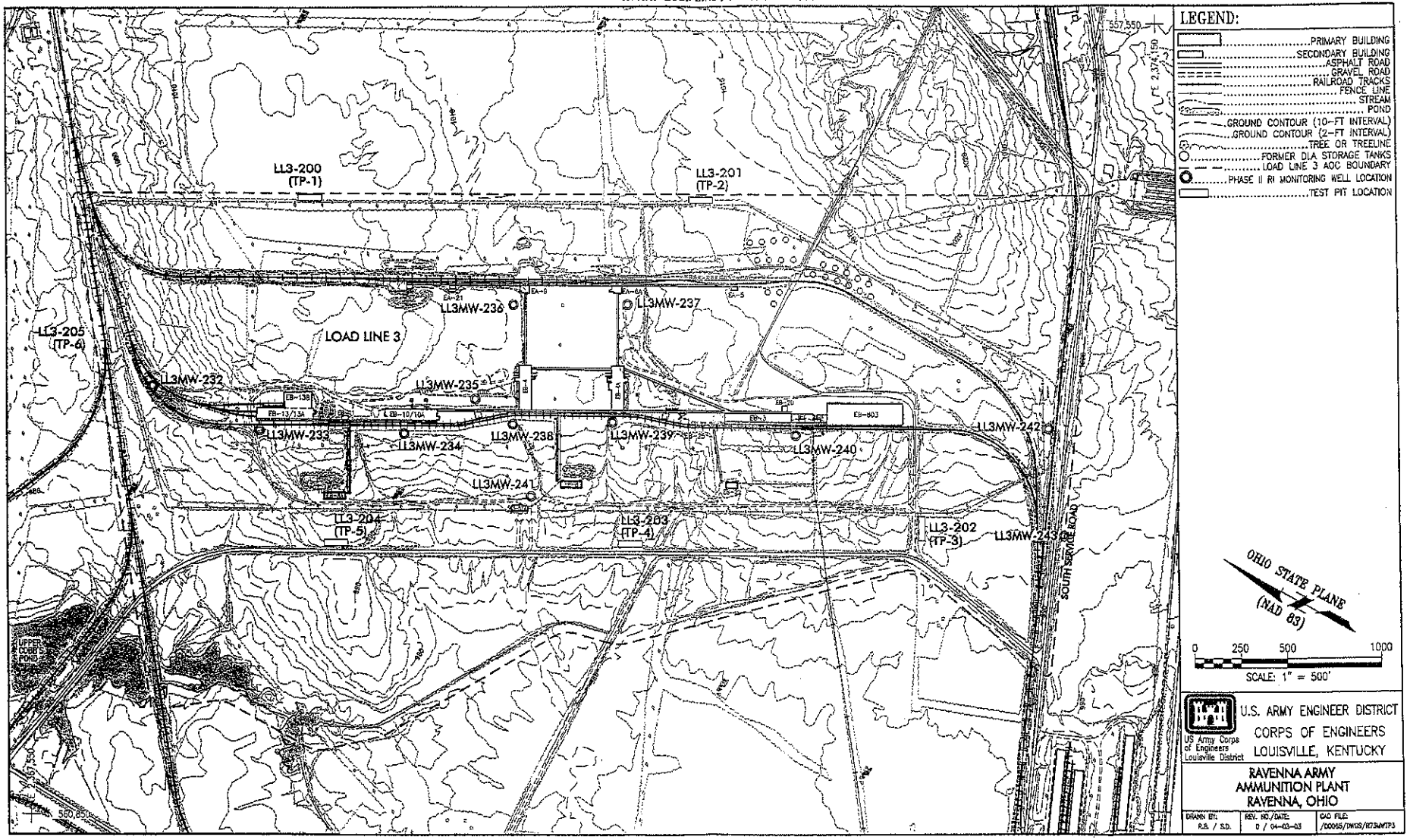


Figure 3-6. Phase II RI Monitoring Well and Test Pit Locations at Load Line 3

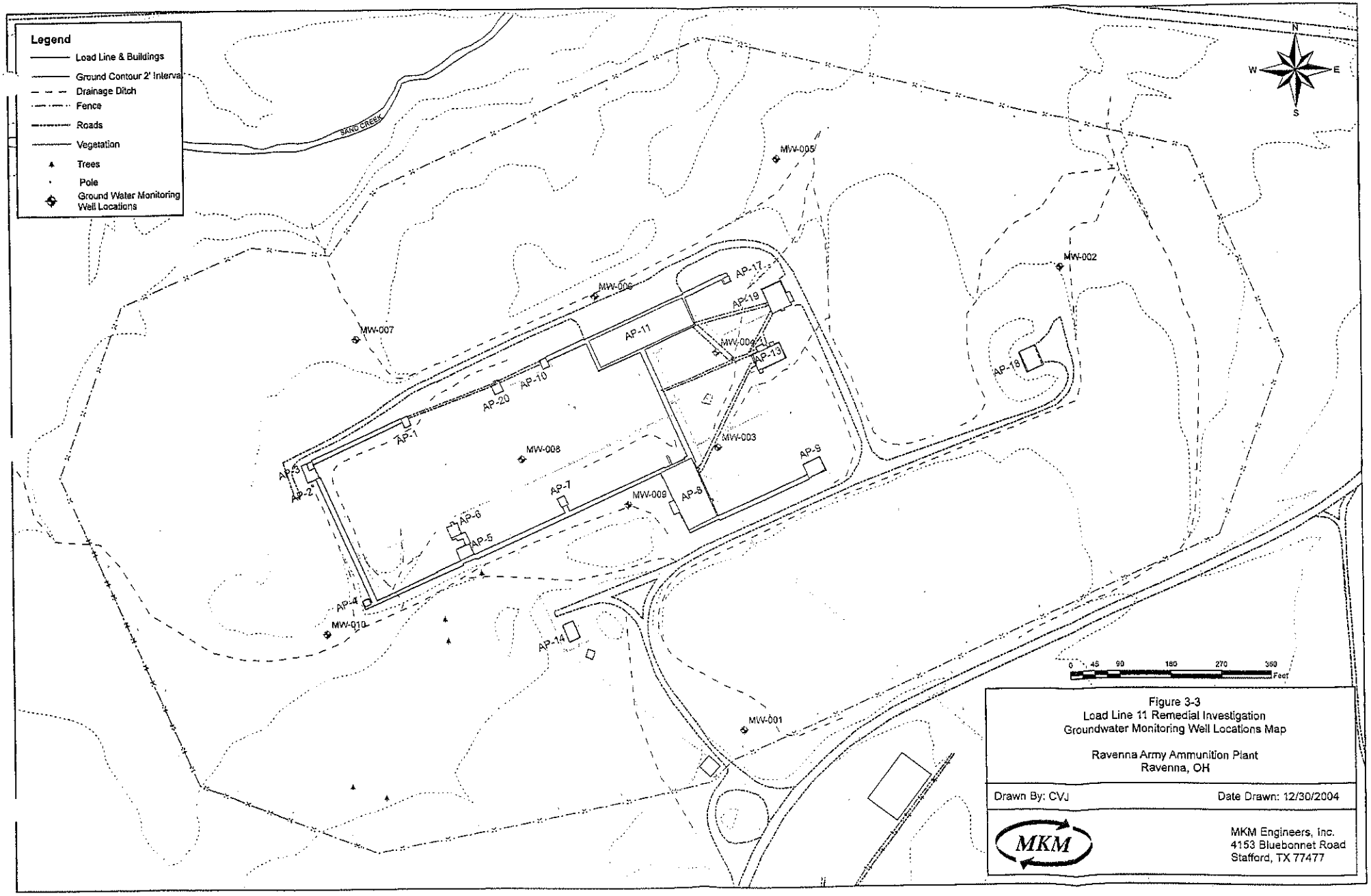


Figure 3-3
Load Line 11 Remedial Investigation
Groundwater Monitoring Well Locations Map

Ravenna Army Ammunition Plant
Ravenna, OH

Drawn By: CVJ

Date Drawn: 12/30/2004

MKM

MKM Engineers, Inc.
4153 Bluebonnet Road
Stafford, TX 77477

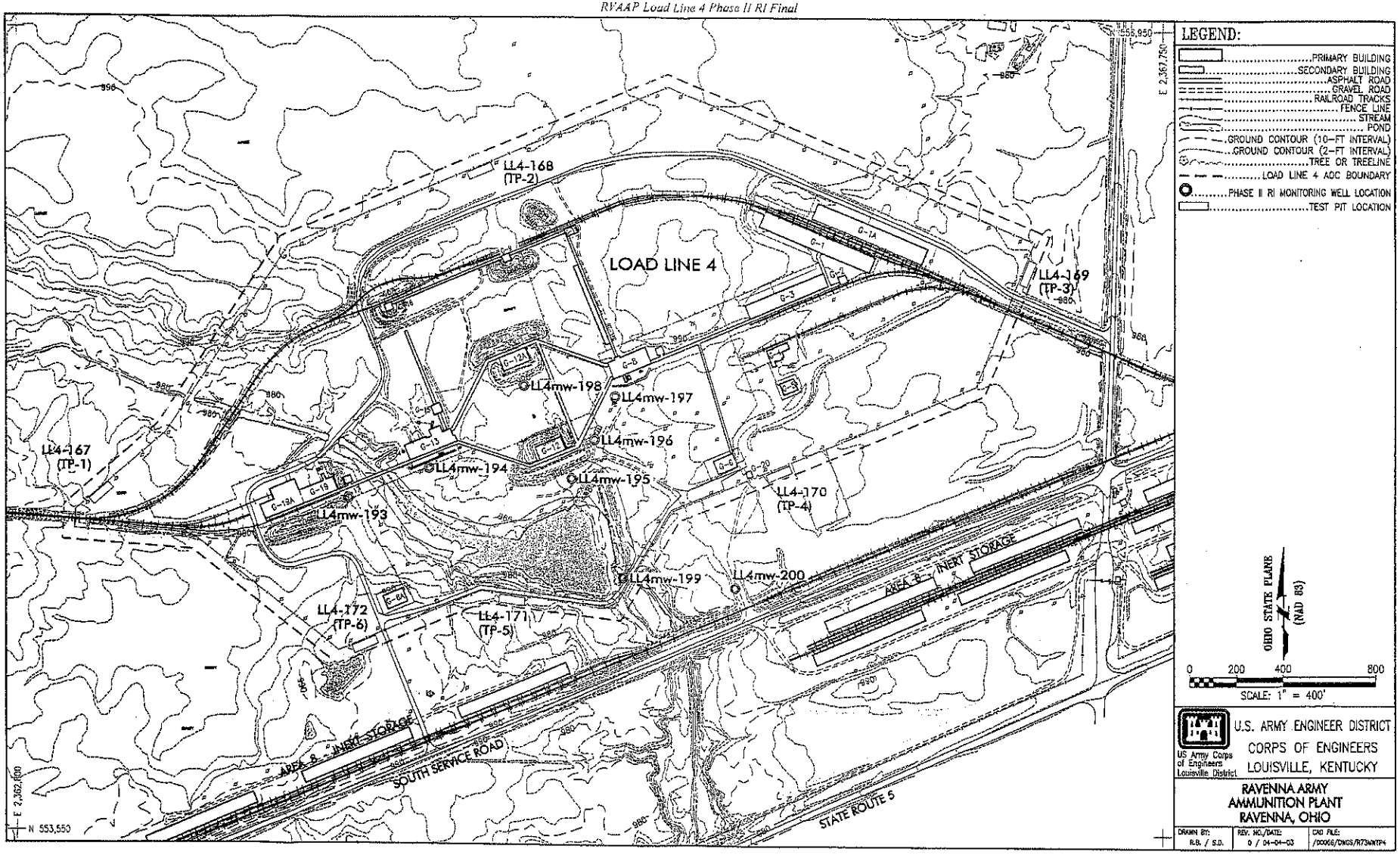
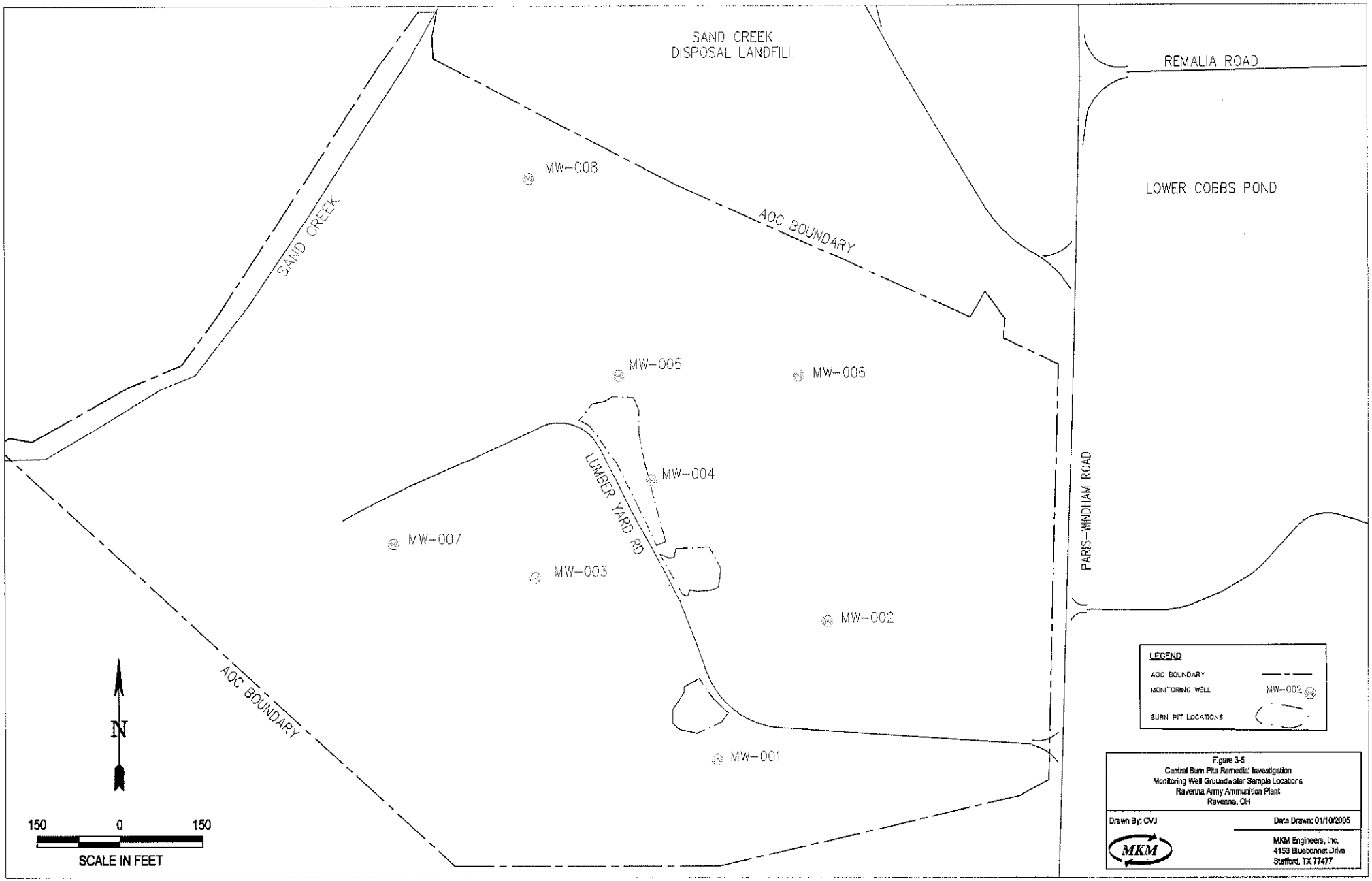
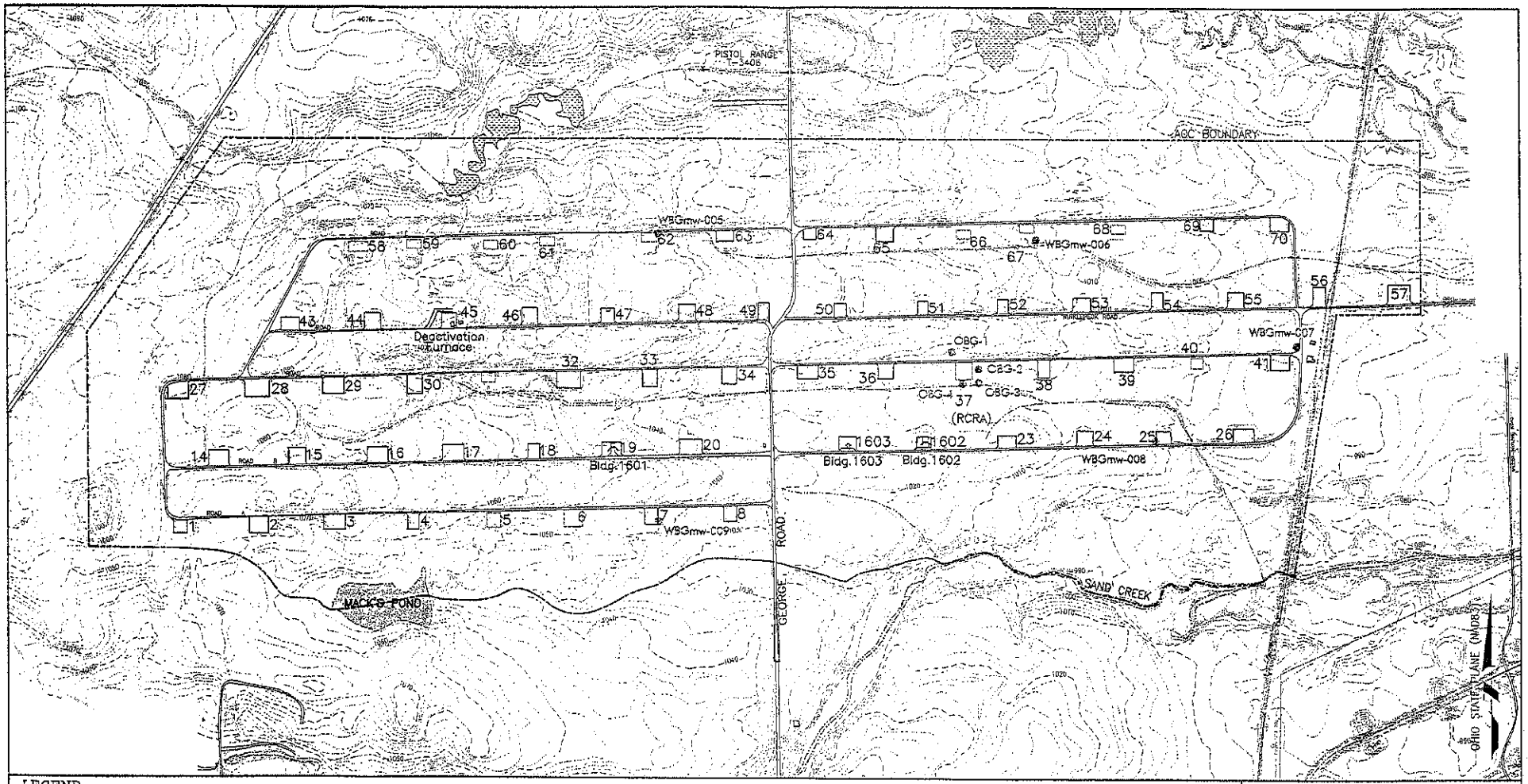


Figure 3-5. Phase II RI Monitoring Well and Test Pit Locations for Load Line 4


SAND CREEK
DISPOSAL LANDFILL
REMALIA ROAD
LOWER COBBS POND
MW-008
AOC BOUNDARY
SAND CREEK
MW-005
MW-006
MW-004
LUMBER YARD RD
PARIS-WINDHAM ROAD
MW-007
MW-003
MW-002
AOC BOUNDARY
MW-001
N
150 0 150
SCALE IN FEET
LEGEND
AOC BOUNDARY
MONITORING WELL
MW-002
BURN PIT LOCATIONS
Figure 3-5
Central Burn Pits Remedial Investigation
Monitoring Well Groundwater Sample Locations
Ravenna Army Ammunition Plant
Ravenna, OH
Drawn By: CVJ
Date Drawn: 01/10/2005
MKM
MKM Engineers, Inc.
4153 Bluebonnet Drive
Stafford, TX 77477



LEGEND:

- PAD LOCATION WITH ID
- APPROXIMATE LOCATION OF PAD
- ASPHALT ROAD
- RAILROAD TRACKS
- POND
- BEAVER DAM POND
- 10 FT. CONTOUR INTERVAL (AMSL)
- 2 FT. CONTOUR INTERVAL (AMSL)
- STREAM
- WBGmw-006 MONITORING WELL

0 250 500 1000
SCALE: 1" = 500'

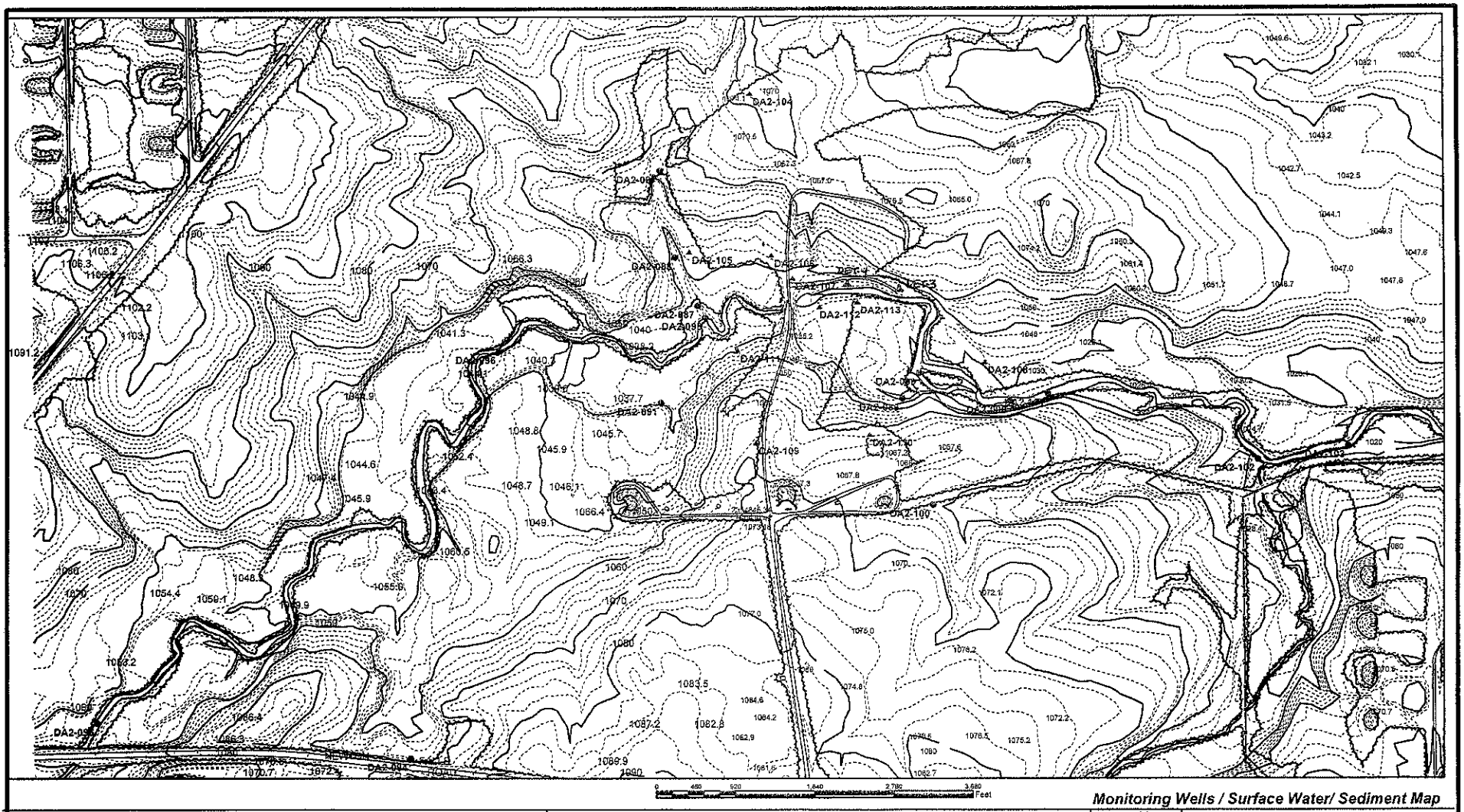
US Army Corps of Engineers Louisville District

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
LOUISVILLE, KENTUCKY

RAVENNA ARMY AMMUNITION PLANT
RAVENNA, OHIO
WINKLEPECK BURNING GROUNDS

DRAWN BY:	REV. NO./DATE:	CAD FILE:
P. HOLM	REV. 1/07-27-99	98026/DWGS/C85-MW

Figure 2-5 WBG Monitoring Well Locations



Monitoring Wells / Surface Water/ Sediment Map

DEMOLITION AREA 2

Figure 3-2 : Sediment, Surface Water, and Groundwater Sample Location Map

Legend

Sample Type
- Sediment/Surface Water
- Monitor Well

Features
- Roads
- Rail Road
- Vegetation
- Water
- Fence
- 2' Contour
- 10' Contour

N

Sheet No. FLLNE5/R1415/R1516

Drawn By: Chantelle Carroll

ArcView File: Ravenna_Sediment_SWGW

Date: 5-10-03

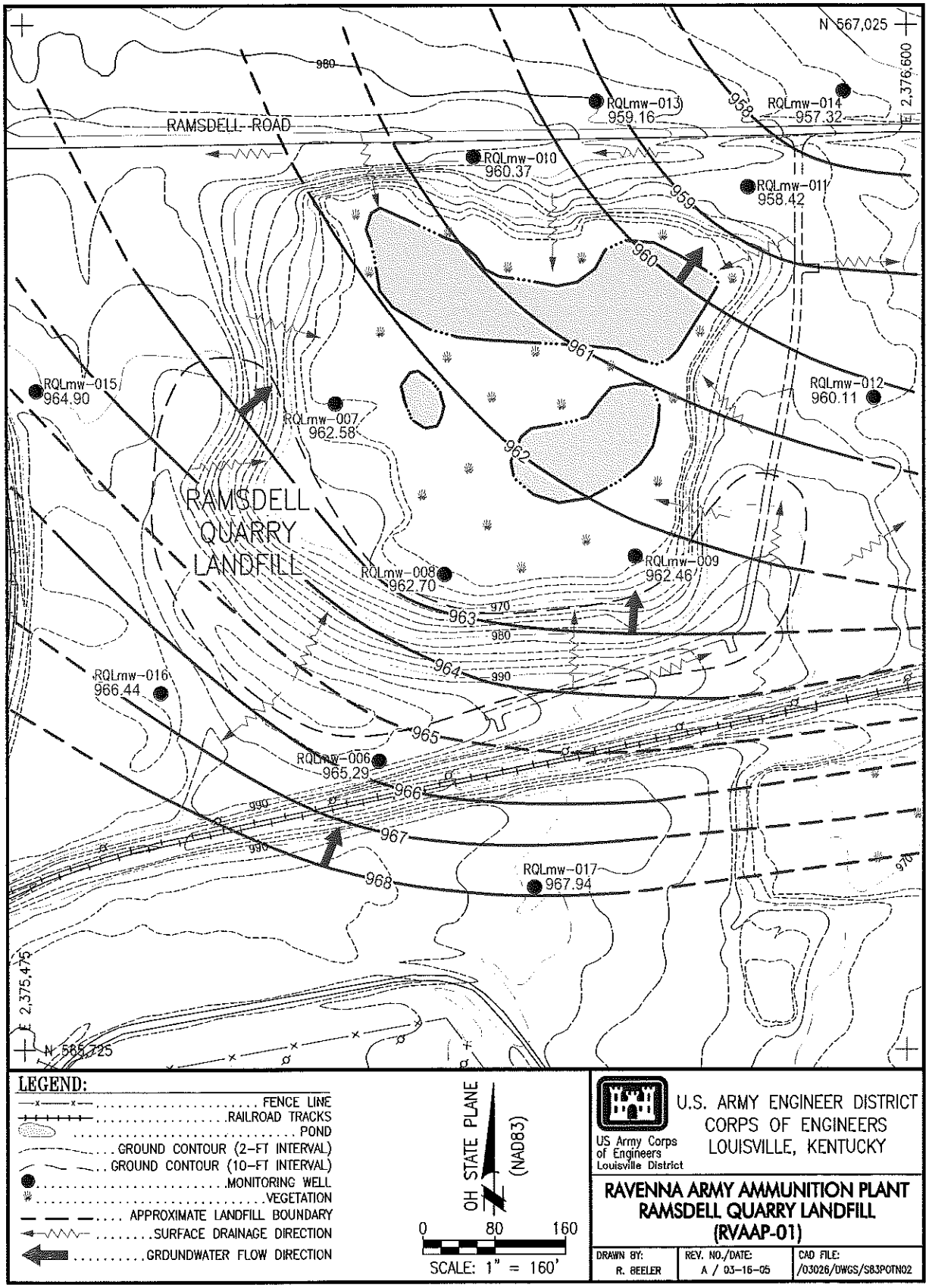


Figure 2-4. Ramsdell Quarry Potentiometric Surface, May 2004

APPENDIX H

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

VOCs

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

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

SVOCs

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

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

Pesticides

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

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

Explosives

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

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

PCBs

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

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

Inorganics

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

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

APPENDIX I

NITRATE/NITRITE CORRESPONDENCE AND CASE NARRATIVES

Subject: RVAAP Nitrate/Nitrate
From: John Miller <jmiller@eqm.com>
Date: Wed, 13 Jan 2010 14:04:22 -0500
To: Vicki Deppisch <vicki.deppisch@epa.state.oh.us>

Vicki please see the text below as well as the attached narratives. let me know if you need additional detail.
Thanks, John

Attached are the requested laboratory narratives for the Oct 08 RVAAP sampling event. Also attached are the nitrate-nitrite results for the two LL12 wells in question. The sample results for both wells were 0.3mg/L. The result for LL12mw-243 was given a "J" flag during the validation process, while the result for LL12mw-244 was reported without qualification. These samples were prepared in separate batches due to method batching requirements. Sample LL12mw-243 was prepared in batch 8289412 while sample LL12mw-244 prepared in batch 8283294. The LCS associated with batch 8289412 recovered at 111%, which is above method control limits of ±10%. The LCS recovery above limits requires detected sample results associated with the outlier to be qualified as estimated, "J". The laboratory did qualify sample LL12mw-244 "J", but this was due to reported blank contamination at 0.05mg/L. As the sample result for LL12mw-244 was > 5x blank contamination and there were no other associated QC outliers, no qualification was required at validation.

Angye Dragotta
Environmental Quality Management, Inc.
1800 Carillon Boulevard
Cincinnati, Ohio 45240
513-825-7500 (voice)
513-825-7495 (fax)
adragotta@eqm.com

The information contained in this electronic message is intended only for the use of the individual or entity to which it is address and may contain information that is privileged, confidential and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, you are informed that any dissemination, copying or disclosure of the material contained herein, to include any attachments, in whole or in part, is strictly prohibited. If you have received this transmission in error, please notify the sender and purge this message.

--
John Miller
Environmental Quality Management, Inc.
1800 Carillon Boulevard
Cincinnati, Ohio 45240
513-825-7500 voice
513-825-7495 fax

Environmental Quality Management, Inc.

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

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

CASE NARRATIVE

A8J080105

The following report contains the analytical results for forty-six water samples and five quality control samples submitted to TestAmerica North Canton by Environmental Quality Mgt. Inc. from the RVAAP (OH) Site, project number 3240.0006. The samples were received October 08, 2008, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Angye Dragotta, Erik Corbin, and Heather Medley on October 23, 2008. A summary of QC data for these analyses is included at the back of the report.

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

Any reference within this document to Severn Trent Laboratories, Inc. or STL, should be understood to refer to TestAmerica Laboratories, Inc. (formerly known as Severn Trent Laboratories, Inc.)

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

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

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

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

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The coolers were received at temperatures ranging from 0.2 to 4.8°C.

See TestAmerica's Cooler Receipt Form for additional information.

GC/MS VOLATILES

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

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

The matrix spike/matrix spike duplicate(s) for FWGLL12mw-128C-0980-GW had recoveries outside acceptance limits. Chloromethane recovery was low in the matrix spike/matrix spike duplicate, outside of control limits. Acetone and Bromomethane recoveries were also low in the matrix spike duplicate, outside of control limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

The matrix spike/matrix spike duplicate(s) for batch(es) 8288222 had RPD's and recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

For QC Batch 8288222, the Methylene Chloride recovery is 160% for the opening QCMRL and 162% for the closing QCMRL and outside of the 70-130% limits. The Ethylbenzene recovery of 69% in the closing QCMRL was outside the 70-130% limits. A QCMDL check was run at the end of tune and passed criteria.

For batch 8288222, the Acetone recovery was for the matrix spike duplicate was low and outside the control limit. The calculated RPD for Acetone in the matrix spike/matrix spike duplicate was outside of control limits. No corrective action is required.

CASE NARRATIVE (continued)

GC/MS VOLATILES (continued)

The QCMRL opener for QC Batch 8289244 had Acetone outside the 70-130% control limits at 52%. The QCMRL closer had Methylene Chloride at 133% and m+p-Xylenes at 67%, all of which were outside the 70-130% control limits. A QCMDL check was run at the end and passed criteria.

For batch(es) 8290350, 2-Butanone recovery was 144% in the opening QCMRL, outside of the 70-130% limits. The Acetone recovery was 61% in the closing QCMRL, outside the 70-130% limits. An MDL check was run at the end and passed criteria.

GC/MS SEMIVOLATILES

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

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

The matrix spike/matrix spike duplicate(s) for FWGLL12mw-128C-0980-GW and FWGLL12mw-154C-0981-GW had RPD's and recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

Batch(es) 8283026 had recoveries out low for 3,3'-Dichlorobenzidine and Hexachlorocyclopentadiene for the matrix spike/matrix spike duplicate. Recoveries for Hexachlorobutadiene were out low for the matrix spike duplicate only.

Batch(es) 8283027 had recoveries and RPDs out for 3,3'-Dichlorobenzidine for the matrix spike and matrix spike duplicate.

The QCMRL closer had a recovery of 62% for 2,4-Dinitrophenol. The samples associated with this closer are: FWGLL12mw-088C-0977-GW, FWGLL12mw-107C-0978-GW, FWGLL12mw-184C-0982-GW, FWGLL12mw-113C-0979-GW, FWGLL12mw-128C-0980-GW, FWGLL12mw-243C-0988-GW, FWGLL12mw-185C-0983-GW, and FWGLL3mw-237C-0969-GW. No corrective action was needed per client.

CASE NARRATIVE (continued)

PESTICIDES-8081

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

The matrix spike/matrix spike duplicate(s) for FWGLL12mw-128C-0980-GW had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

The matrix spike/matrix spike duplicate(s) for batch(es) 8284027 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

For sample(s) FWGLL12mw-184C-0982-GW, FWGLL12mw-128C-0980-GW, FWGLL12mw-243C-0988-GW, FWGLL12mw-185C-0983-GW, FWGLL12mw-187C-0984-GW, FWGLL4mw-193C-0973-GW, FWGLL12mw-188C-0985-GW, FWGLL12mw-242C-0987-GW, FWGLL12mw-246C-0991-GW, FWGLL4mw-194C-0974-GW, FWGLL12mw-244C-0989-GW, and FWGLL12mw-154C-0981-GW, the recovery for one surrogate compound is outside acceptance criteria. Since LCG criterion is that both surrogates be above 10%, no corrective action is required.

The CCV had DDD outside acceptance criteria high for sample(s) FWGLL12mw-242C-0987-GW, FWGLL12mw-242C-0987-GF, FWGLL12mw-246C-0991-GW, FWGLL12mw-0991-GF, FWGTEAMS-TRIP, FWGLL4mw-194C-0974-GW, FWGLL4mw-194C-GF, FWGLL12mw-244C-0989-GW, FWGLL12mw-244C-0989-GF, and FWGLL12mw-154C-0981-GW.

CASE NARRATIVE (continued)

PESTICIDES-8081 (continued)

The MRL had DDD outside acceptance criteria high for sample(s) FWGLL3mw-243C-0972-GW, FWGLL3mw-243C-0972-GF, FWGTEAM1-TRIP, FWGLL12mw-088C-0977-GW, FWGLL12mw-088C-0977-GF, FWGLL12mw-107C-0978-GW, FWGLL12mw-107C-0978-GF, FWGLL12mw-DUP3-1095-GW, FWGLL12mw-DUP3-1095-GF, FWGLL12mw-184C-0982-GW, FWGLL12mw-184C-0982-GF, FWGLL12mw-113C-0979-GW, FWGLL12mw-113C-0979-GF, FWGTEAM2-TRIP, FWGLL3mw-241C-0971-GW, FWGLL3mw-241C-0971-GF, FWGLL12mw-128C-0980-GW, FWGLL12mw-128C-0980-GF, FWGLL12mw-243C-0988-GW, FWGLL12mw-243C-0988-GF, FWGLL12mw-185C-0983-GW, FWGLL12mw-185C-0983-GF, FWGTEAM3-TRIP, FWGLL3mw-237C-0969-GW, FWGLL3mw-237C-0969-GF, FWGLL3mw-240C-0970-GW, FWGLL3mw-240C-0970-GF, FWGLL12mw-245C-0990-GW, FWGLL12mw-245C-0990-GF, FWGLL12mw-DUP4-1096-GW, FWGLL12mw-DUP4-1096-GF, FWGLL12mw-187C-0984-GW, FWGLL12mw-187C-0984-GF, FWGTEAM4-TRIP, FWGLL4mw-193C-0973-GW, FWGLL4mw-193C-0973-GF, FWGEQUIPRINSE2-1122-GW, FWGLL12mw-188C-0985-GW, FWGLL12mw-188C-0985-GF, FWGLL12mw-242C-0987-GW, FWGLL12mw-242C-0987-GF, FWGLL12mw-246C-0991-GW, FWGLL12mw-246C-0991-GF, FWGTEAM5-TRIP, FWGLL4mw-194C-0974-GW, FWGLL4mw-194C-0974-GF, FWGLL12mw-244C-0989-GW, FWGLL12mw-244C-0989-GF, and FWGLL12mw-154C-0981-GW. Also, DDE was outside acceptance criteria for sample(s) FWGLL12mw-154C-0981-GW (MS/MSD).

Sample(s) FWGLL12mw-154C-0981-GW was reextracted due to a label switch with PCB matrix spike. The matrix spike was acid cleaned and lost compounds. This sample was reextracted within hold time. Only the reextraction data has been reported.

For sample(s) FWGLL12mw-242C-0987-GW, FWGLL12mw-242C-0987-GF, FWGLL12mw-246C-0991-GW, FWGLL12mw-0991-GF, FWGTEAMS-TRIP, FWGLL4mw-194C-0974-GW, FWGLL4 mw-194C-GF, FWGLL12mw-244C-0989-GW, FWGLL12mw-244C-0989-GF, and FWGLL12mw-154C-0981-GW, twenty-one (21) samples were in AB bracket; AB CCVs ran within twelve (12) hours; therefore, the data has been reported.

For sample(s) FWGLL12mw-154C-0981-GW (MS/MSD), the closing Toxaphene CCV did not run. Per client, data has been reported.

CASE NARRATIVE (continued)

POLYCHLORINATED BIPHENYLS-8082

For sample(s) FWGLL12mw-088C-0977-GW, FWGLL12mw-184C-0982-GW, FWGLL12mw-113C-0979-GW, FWGLL12mw-128C-0980-GW, FWGLL12mw-243C-0988-GW, FWGLL12mw-185C-0983-GW, FWGLL12mw-245C-0990-GW, FWGLL12mw-DUP4-1096-GW, FWGLL12mw-187C-0984-GW, FWGLL4mw-193C-0973-GW, FWGLL12mw-188C-0985-GW, FWGLL12mw-242C-0987-GW, FWGLL12mw-246C-0991-GW, FWGLL4mw-194C-0974-GW, FWGLL12mw-244C-0989-GW, FWGLL12mw-154C-0981-GW,and the LCS associated with batch(es) 8283029, the recovery for one surrogate compound is outside acceptance criteria. Since LCG criterion is that both surrogates be above 10%, no corrective action is required.

The opening MRL for sample(s) FWGLL12mw-154C-0981-GW (MS) was reported with 1016 failing acceptance criteria high, but the CCV passed average.

METALS

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

Serial dilution of a sample in this lot indicates that physical and chemical interferences were present. Refer to the sample report pages for the affected analytes flagged with "E".

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

Matrix spike recovery and relative percent difference (RPD) data were not calculated for some analytes for FWGLL12mw-128C-0980-GF due to the sample concentration reading greater than four times the spike amount. See the Matrix Spike Report for the affected analytes which will be flagged with "NC, MSB".

The sample duplicate RPD was outside the acceptance limits for some analytes; however, the acceptable LCS analysis indicated that the analytical system was operating within control and this condition is most likely due to matrix interference. Refer to the sample duplicate report for RPDs that exceed 20%.

CASE NARRATIVE (continued)

METALS (continued)

The sample duplicate RPD was outside the acceptance limits for some analytes. The result is less than five times the reporting limit; therefore, no corrective action is required. Refer to the sample duplicate report for RPDS that exceed 20%.

GENERAL CHEMISTRY

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

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

The matrix spike/matrix spike duplicate(s) for FWGLL12mw-154C-0981-GW had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

The matrix spike/matrix spike duplicate(s) for batch(es) 8290446 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

Samples FWGLL12mw-244C-0989-GW and FWGLL12mw-154C-0981-GW associated with the Cyanide QC Batch 8294539 were distilled and analyzed multiple times. Each time the LCS failed low, but all other QC for the batch including the MS/MSD, high standard, and low standard, had acceptable recoveries. This indicated a problem with the LCS solution. A different LCS source was distilled and analyzed apart from the samples on the same day. This spiked LCS had a 93.5% recovery demonstrating that the previous LCS solution had gone bad. The client was contacted and the issue explained. Since the LCS solution was demonstrated and corrective action implemented the same day, results were reported from the initial run with the highest LCS recovery of 69%.

MANUAL INTEGRATION SUMMARY

Manual integrations were performed on samples(s) reported herein. A list of samples and analytes for which manual integration was necessary is provided following this Case Narrative.

CASE NARRATIVE

A8J090102

The following report contains the analytical results for forty-seven water samples and four quality control samples submitted to TestAmerica North Canton by Environmental Quality Mgt. Inc. from the RVAAP (OH) Site, project number 030240.0006. The samples were received October 09, 2008, according to documented sample acceptance procedures.

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

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

Any reference within this document to Severn Trent Laboratories, Inc. or STL, should be understood to refer to TestAmerica Laboratories, Inc. (formerly known as Severn Trent Laboratories, Inc.)

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

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

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

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

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The coolers were received at temperatures ranging from 0.4 to 4.4°C.

See TestAmerica's Cooler Receipt Form for additional information.

GC/MS VOLATILES

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

The matrix spike/matrix spike duplicate(s) for FWGFBQmw-170C-1043-GW had RPD's and recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

For batch 8289134, the QCMRL opener had Bromomethane at 152.24%, outside the 70-130% control limits. The QCMRL closer had Acetone at 132.95%, Bromomethane at 150.57%, and Methylene Chloride at 54.34%, all were outside the 70-130% control limits. A QCMDL check was run and passed criteria.

For batch(es) 8288323, the QCMRL opener had Methylene Chloride at 67.02%, outside the 70-130% control limits. The QCMRL closer had Bromomethane at 140.66% and Methylene Chloride at 135.26%, all were outside the 70-130% control limits. A QCMDL check was run and passed criteria.

GC/MS SEMIVOLATILES

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

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

CASE NARRATIVE (continued)

GC/MS SEMIVOLATILES (continued)

The matrix spike/matrix spike duplicate(s) for batch(es) 8285079 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

Batch(es) 8284032 had Isophorone recovery at 120%, out high in the LCS. However, there were no hits in any of the samples for Isophorone; therefore, no corrective action was necessary.

For batch(es) 8285079, Benzoic Acid recovery at 27% in the LCS. The acceptable limit is 10%. The matrix spike/matrix spike duplicate associated with this batch had recoveries for 3,3'-Dichlorobenzidine out low.

PESTICIDES-8081

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

The matrix spike/matrix spike duplicate(s) for FWGLNWmw-025C-1052-GW had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

For sample(s) FWGFBQmw-167C-1040-GW, FWGFBQmw-176C-1049-GW, FWGFBQmw-DUP7-1102-GW, FWGLNWmw-024C-1051-GW, FWGLL3mw-235C-0968-GW, FWGLL12mw-189C-0986-GW, FWGLNWmw-026C-1053-GW, FWGWBGmw-013C-1081-GW, FWGFBQmw-175C-1048-GW, FWGFBQmw-168C-1041-GW, and FWGFBQmw-177C-1050-GW, the recovery for one surrogate compound is outside acceptance criteria. Since LCG criterion is that both surrogates be above 10%, no corrective action is required.

For sample(s) FWGFBQmw-169C-1042-GW, the recovery for two (2) surrogates are outside acceptance criteria, but above 10%. Since LCG criterion is that both surrogates be above 10%, no corrective action is required.

CASE NARRATIVE (continued)

PESTICIDES-8081 (continued)

The opening and closing AB CCV and MRL for DDD failed acceptance criteria high for sample(s) FWGFBQmw-167C-1040-GW, FWGFBQmw-167C-1040-GF, FWGFBQmw-169C-1042-GW, FWGFBQmw-169C-1042-GF, FWGFBQmw-166C-1039-GW, FWGFBQmw-166C-1039-GF, FWGFBQmw-176C-1049-GW, FWGFBQmw-176C-1049-GF, FWGFBQmw-DUP7-1102-GW, FWGFBQmw-DUP7-1102-GF, FWGB12mw-011C-1003-GW, FWGB12mw-011C-1003-GF, FWGTEAM2-TRIP, FWGLNWmw-024C-1051-GW, FWGLNWmw-024C-1051-GF, FWGLNWmw-025C-1052-GW, FWGLNWmw-025C-1052-GF, FWGEQUIPRINSE3-1123-GW, FWGWBGmw-012C-1080-GW, FWGWBGmw-012C-1080-GF, FWGLL3mw-235C-0968-GW, FWGLL12mw-189C-0986-GW, FWGLL12mw-189C-0986-GF, FWGLNWmw-026C-1053-GW, FWGLNWmw-026C-1053-GF, FWGLNWmw-027C-1054-GW, FWGLNWmw-027C-1054-GF, FWGLNWmw-DUP13-1103-GW, FWGLNWmw-DUP13-1103-GF, FWGWBGmw-013C-1081-GW, FWGWBGmw-013C-1081-GF, FWGTEAM4-TRIP, FWGFBQmw-170C-1043-GW, FWGFBQmw-170C-1043-GF, FWGFBQmw-174C-1047-GW, FWGFBQmw-174C-1047-GF, FWGFBQmw-175C-1048-GW, FWGFBQmw-175C-1048-GF, FWGTEAM5-TRIP, FWGFBQmw-173C-1046-GW, FWGFBQmw-173C-1046-GF, FWGFBQmw-172C-1045-GW, FWGFBQmw-172C-1045-GF, FWGFBQmw-171C-1044-GW, FWGFBQmw-171C-1044-GF, FWGFBQmw-168C-1041-GW, FWGFBQmw-168C-1041-GF, and FWGFBQmw-177C-1050-GW.

POLYCHLORINATED BIPHENYLS-8082

For sample(s) FWGFBQmw-167C-1040-GW, FWGFBQmw-176C-1049-GW, FWGFBQmw-DUP7-1102-GW, FWGLNWmw-024C-1051-GW, FWGLNWmw-025C-1052-GW, FWGLL3mw-235C-0968-GW, FWGLL12mw-189C-0986-GW, FWGLNWmw-026C-1053-GW, FWGWBGmw-013C-1081-GW, FWGFBQmw-174C-1047-GW, FWGFBQmw-175C-1048-GW, FWGFBQmw-168C-1041-GW, and FWGFBQmw-177C-1050-GW, the recovery for one surrogate compound is outside acceptance criteria. Since LCG criterion is that both surrogates be above 10%, no corrective action is required.

For sample(s) FWGFBQmw-169C-1042-GW, the recovery for two (2) surrogates are outside acceptance criteria, but above 10%. Since LCG criterion is that both surrogates be above 10%, no corrective action is required.

CASE NARRATIVE (continued)

POLYCHLORINATED BIPHENYLS-8082 (continued)

The analytical method specifies the use of dual columns or dual detectors. Sample(s) FWGFBQmw-167C-1040-GW, FWGFBQmw-167C-1040-GF, FWGFBQmw-169C-1042-GW, FWGFBQmw-169C-1042-GF, FWGFBQmw-166C-1039-GW, FWGFBQmw-166C-1039-GF, FWGFBQmw-176C-1049-GW, FWGFBQmw-176C-1049-GF, FWGFBQmw-DUP7-1102-GW, FWGFBQmw-DUP7-1102-GF, FWGB12mw-011C-1003-GW, FWGB12mw-011C-1003-GF, FWGTEAM2-TRIP, FWGLNWmw-024C-1051-GW, FWGLNWmw-024C-1051-GF, FWGLNWmw-025C-1052-GW, FWGLNWmw-025C-1052-GF, FWGEQUIPRINSE3-1123-GW, FWGWBGmw-012C-1080-GW, FWGWBGmw-012C-1080-GF, FWGLL3mw-235C-0968-GW, FWGLL12mw-189C-0986-GW, FWGLL12mw-189C-0986-GF, FWGLNWmw-026C-1053-GW, FWGLNWmw-026C-1053-GF, FWGLNWmw-027C-1054-GW, FWGLNWmw-027C-1054-GF, FWGLNWmw-DUP13-1103-GW, FWGLNWmw-DUP13-1103-GF, FWGWBGmw-013C-1081-GW, FWGWBGmw-013C-1081-GF, FWGTEAM4-TRIP, FWGFBQmw-170C-1043-GW, FWGFBQmw-170C-1043-GF, FWGFBQmw-174C-1047-GW, FWGFBQmw-174C-1047-GF, FWGFBQmw-175C-1048-GW, FWGFBQmw-175C-1048-GF, FWGTEAM5-TRIP, FWGFBQmw-173C-1046-GW, FWGFBQmw-173C-1046-GF, FWGFBQmw-172C-1045-GW, FWGFBQmw-172C-1045-GF, FWGFBQmw-171C-1044-GW, FWGFBQmw-171C-1044-GF, FWGFBQmw-168C-1041-GW, FWGFBQmw-168C-1041-GF, and FWGFBQmw-177C-1050-GW were found to be Non-Detect (ND). Expanded deliverable data packages contain supporting data for one column or detector for the Non-Detect samples.

CASE NARRATIVE (continued)

POLYCHLORINATED BIPHENYLS-8082 (continued)

The MRLs failed acceptance criteria high for 1016, but passed average for sample(s) FWGFBQmw-167C-1040-GW, FWGFBQmw-167C-1040-GF, FWGFBQmw-169C-1042-GW, FWGFBQmw-169C-1042-GF, FWGFBQmw-166C-1039-GW, FWGFBQmw-166C-1039-GF, FWGFBQmw-176C-1049-GW, FWGFBQmw-176C-1049-GF, FWGFBQmw-DUP7-1102-GW, FWGFBQmw-DUP7-1102-GF, FWGB12mw-011C-1003-GW, FWGB12mw-011C-1003-GF, FWGTEAM2-TRIP, FWGLNWmw-024C-1051-GW, FWGLNWmw-024C-1051-GF, FWGLNWmw-025C-1052-GW, FWGLNWmw-025C-1052-GF, FWGEQUIPRINSE3-1123-GW, FWGWBGmw-012C-1080-GW, FWGWBGmw-012C-1080-GF, FWGLL3mw-235C-0968-GW, FWGLL12mw-189C-0986-GW, FWGLL12mw-189C-0986-GF, FWGLNWmw-026C-1053-GW, FWGLNWmw-026C-1053-GF, FWGLNWmw-027C-1054-GW, FWGLNWmw-027C-1054-GF, FWGLNWmw-DUP13-1103-GW, FWGLNWmw-DUP13-1103-GF, FWGWBGmw-013C-1081-GW, FWGWBGmw-013C-1081-GF, FWGTEAM4-TRIP, FWGFBQmw-170C-1043-GW, FWGFBQmw-170C-1043-GF, FWGFBQmw-174C-1047-GW, FWGFBQmw-174C-1047-GF, FWGFBQmw-175C-1048-GW, FWGFBQmw-175C-1048-GF, FWGTEAM5-TRIP, FWGFBQmw-173C-1046-GW, FWGFBQmw-173C-1046-GF, FWGFBQmw-172C-1045-GW, FWGFBQmw-172C-1045-GF, FWGFBQmw-171C-1044-GW, FWGFBQmw-171C-1044-GF, FWGFBQmw-168C-1041-GW, FWGFBQmw-168C-1041-GF, and FWGFBQmw-177C-1050-GW. Since the samples were non-detect (ND), no corrective action was required.

METALS

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

Serial dilution of a sample in this lot indicates that physical and chemical interferences were present. Refer to the sample report pages for the affected analytes flagged with "E".

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

CASE NARRATIVE (continued)

GENERAL CHEMISTRY

The matrix spike/matrix spike duplicate(s) for batch(es) 8294539 and 8295454 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

For batch(es) 8294539 and 8294540, the associated Cyanide samples were analyzed multiple times and each time the LCS failed low, but all other QC for the batch such as the MS/MSD and high and low had recoveries within control limits. This indicated a flaw in the LCS solution. A different LCS source was distilled and analyzed apart from the samples on the same day. This spiked LCS had a 93.5% recovery. The samples were reported from the run with the LCS that recovered 69%.

MANUAL INTEGRATION SUMMARY

Manual integrations were performed on samples(s) reported herein. A list of samples and analytes for which manual integration was necessary is provided following this Case Narrative.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A8J080105 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total		Work Order #: K016C1AC	LCS Lot-Sample#: A8J160000-447		
	105	(80 - 120)	SW846 9012A	10/16/08	8290447
		Dilution Factor: 1			
Cyanide, Total		Work Order #: K05XF1AC	LCS Lot-Sample#: A8J180000-068		
	106	(80 - 120)	SW846 9012A	10/18/08	8292068
		Dilution Factor: 1			
Cyanide, Total		Work Order #: K072T1AC	LCS Lot-Sample#: A8J200000-539		
	94	(80 - 120)	SW846 9012A	10/20/08	8294539
		Dilution Factor: 1			
Nitrate-Nitrite		Work Order #: K0GQT1AC	LCS Lot-Sample#: A8J090000-294		
	102	(79 - 117)	MCAWW 353.2	10/09/08	8283294
		Dilution Factor: 1			
Nitrate-Nitrite		Work Order #: K0W4C1AC	LCS Lot-Sample#: A8J150000-412		
	111	(79 - 117)	MCAWW 353.2	10/14/08	8289412
		Dilution Factor: 1			
Nitrate-Nitrite		Work Order #: K00MP1AC	LCS Lot-Sample#: A8J160000-064		
	108	(79 - 117)	MCAWW 353.2	10/15/08	8290064
		Dilution Factor: 1			

NOTE(S):

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

Environmental Quality Mgt., Inc.

Client Sample ID: FWGLL12mw-244C-0989-GW

General Chemistry

Lot-Sample #...: A8J080105-047 Work Order #...: K0DF9 Matrix.....: WG
Date Sampled...: 10/07/08 12:15 Date Received..: 10/08/08

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	ND	0.010	mg/L	SW846 9012A	10/20/08	8294539
		Dilution Factor: 1		MDL.....: 0.0050		
Nitrate-Nitrite	0.3 J	0.1	mg/L	MCAWW 353.2	10/09/08	8283294
		Dilution Factor: 1		MDL.....: 0.02		

NOTE(S):

RL Reporting Limit

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

Environmental Quality Mgt., Inc.

Client Sample ID: FWGLL12mw-243C-0988-GW

General Chemistry

Lot-Sample #...: A8J080105-019 Work Order #...: K0DEG Matrix.....: WG
Date Sampled...: 10/07/08 15:10 Date Received..: 10/08/08

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	ND	0.010	mg/L	SW846 9012A	10/18/08	8292068
		Dilution Factor: 1		MDL.....: 0.0050		
Nitrate-Nitrite	0.3	0.1	mg/L	MCAWW 353.2	10/14/08	8289412
		Dilution Factor: 1		MDL.....: 0.02		

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A8J080105 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total		Work Order #: K016C1AA		MB Lot-Sample #:	A8J160000-447	
	ND	0.010	mg/L	SW846 9012A	10/16/08	8290447
		Dilution Factor: 1				
Cyanide, Total		Work Order #: K05XF1AA		MB Lot-Sample #:	A8J180000-068	
	ND	0.010	mg/L	SW846 9012A	10/18/08	8292068
		Dilution Factor: 1				
Cyanide, Total		Work Order #: K072T1AA		MB Lot-Sample #:	A8J200000-539	
	ND	0.010	mg/L	SW846 9012A	10/20/08	8294539
		Dilution Factor: 1				
Nitrate-Nitrite		Work Order #: K0GQT1AA		MB Lot-Sample #:	A8J090000-294	
	0.05 B	0.1	mg/L	MCAWW 353.2	10/09/08	8283294
		Dilution Factor: 1				
Nitrate-Nitrite		Work Order #: K0W4C1AA		MB Lot-Sample #:	A8J150000-412	
	ND	0.1	mg/L	MCAWW 353.2	10/14/08	8289412
		Dilution Factor: 1				
Nitrate-Nitrite		Work Order #: K00MP1AA		MB Lot-Sample #:	A8J160000-064	
	ND	0.1	mg/L	MCAWW 353.2	10/15/08	8290064
		Dilution Factor: 1				

NOTE(S):

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

B Estimated result. Result is less than RL.

APPENDIX J

CORRESPONDENCE & COMMENT/RESPONSE TABLE

OhioEPA

State of Ohio Environmental Protection Agency

Northeast District Office

2110 East Aurora Rd.
Twinsburg, Ohio 44087

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

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

February 18, 2010

RE: ***RAVENNA ARMY AMMUNITION PLANT***
PORTAGE/TRUMBULL COUNTIES,
DRAFT, FWGWMP, CRT REVIEW
ANNUAL REPORT FOR 2009

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) has received and reviewed the "Facility-Wide Ground Water Monitoring Program (FWGWMP), Response to Ohio EPA Comments, Draft Annual Report for 2009, Ravenna Army Ammunition Plant, Ravenna, Ohio (RVAAP)" document. The document was received at Ohio EPA, Northeast District Office (NEDO), Division of Emergency and Remedial Response (DERR), on February 9, 2010, and is dated February 8, 2010. The document was prepared for the U.S. Army Corps of Engineers (USACE) – Louisville District, by Environmental Quality Management, Inc. (EQM), under Contract No. W912QR-04-D-0036. This document was reviewed by Ohio EPA personnel in NEDO, DERR, and NEDO's Division of Drinking and Ground Waters (DDAGW).

The RVAAP Facility now has 237 existing wells and six new deep Sharon Conglomerate Formation (SCF) wells that were installed in 2009, totaling 243 wells. The annual report summarizes the results of all ground water monitoring activities conducted in October 2008, January, April, and July 2009 under the FWGWMP. A total of 132 wells were sampled in October 2008, 131 wells were sampled in January 2009, 53 wells in April 2009, and 46 wells in July 2009. Water in LL-11, MW-009, was frozen and not sampled during the January 2009 event. The five RCRA wells (RQL: three wells and DA2: two wells) were sampled in October 2008 and April 2009 as required by the FWGWMP. Perchlorate analysis was conducted during the October 2008 sampling event, and Ohio EPA noted that most of the wells had low level detections.

The comments have been adequately addressed; however, Ohio EPA still has some concerns that relate to the LL-12 area. Historical flow maps have indicated conflicting flow directions at LL-12. Monitored Natural Attenuation (MNA) has been proposed as a remedy in a separate Feasibility Study report. Ohio EPA suggests that USACE re-evaluate, verify, and re-confirm that the proposed wells for sampling arsenic and nitrate at LL-12 are on target.

In addition, the Comment Response Table (Comment #0-2) indicated the bedrock wells (LL12mw-186 and LL12mw-189) at LL-12 are not part of the Sharon or Homewood aquifer system at RVAAP, and thus, was not included in the flow maps. Ohio EPA suggests that USACE evaluate if the vertical extent of contamination at LL-12 has been defined.

Please forward two copies of the replacement pages and titles for the final document. If you have any questions, please call me at (330) 963-1207.

Sincerely,

Vicki Deppisch
Project Coordinator
Division of Emergency and Remedial Response

VD/ds

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

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

OhioEPA

State of Ohio Environmental Protection Agency

Northeast District Office

2110 East Aurora Rd.
Twinsburg, Ohio 44087

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

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

February 2, 2010

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

Re: Previous Letter Dated January 20, 2010 and Titled "Ravenna Army Ammunition Plant, Portage/Trumbull Counties, Draft, FWGWMP, Annual Report for 2009"

Dear Mr. Patterson:

The letter referenced above was sent to you without the signature of Vicki Deppisch. The letter has been revised with her signature and is enclosed. I am sorry for any inconvenience this may cause you.

Sincerely,

Kathy S. Schillo

Kathy S. Schillo
Office Assistant 3
Division of Operations

/kss

enclosure

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

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

OhioEPA

State of Ohio Environmental Protection Agency

Northeast District Office

2110 East Aurora Rd.
Twinsburg, Ohio 44087

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

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

January 20, 2010

RE: RAVENNA ARMY AMMUNITION PLANT, PORTAGE/TRUMBULL COUNTIES, DRAFT, FWGWMP, ANNUAL REPORT FOR 2009

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

CERTIFIED MAIL
7009 1680 0000 6381 0797

CERTIFIED MAIL (second mailing)
7009 1680 0000 6381 0735
Signed Copy Resent 02/02/2010

Dear Mr. Patterson:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the "Facility-Wide Ground Water Monitoring Program (FWGWMP), Draft Annual Report for 2009, Ravenna Army Ammunition Plant, Ravenna, Ohio (RVAAP)" document. The document was received at Ohio EPA, Northeast District Office (NEDO), Division of Emergency and Remedial response (DERR), on December 10, 2009. The document was prepared for the U.S. Army Corps of Engineers (USACE) – Louisville District, by Environmental Quality Management, Inc. (EQM), under contract no. W912QR-04-D-0036. This document was reviewed by Ohio EPA personnel in NEDO, DERR, and NEDO's Division of Drinking and Ground Waters (DDAGW).

Summary:

The RVAAP Facility now has 237 existing wells and 6 new deep Sharon Conglomerate Formation (SCF) wells that were installed in 2009, totaling 243 wells. The annual report summarizes the results of all ground water monitoring activities conducted in October 2008, January, April, and July 2009 under the FWGWMP. A total of 132 wells were sampled in October 2008, 131 wells were sampled in January 2009, 53 wells in April 2009, and 46 wells in July 2009. Water in LL-11, MW-009, was frozen and not sampled during the January 2009 event. The 5 RCRA wells (RQL: 3 wells and DA2: 2 wells) were sampled in October 2008 and April 2009 as required by the FWGWMP. Perchlorate analysis was conducted during the October 2008 sampling event and Ohio EPA noted that most of the wells had low level detections.

Water levels were measured at all 237 wells prior to the January 2009 sampling event, to generate the annual potentiometric maps for the unconsolidated aquifer and deeper bedrock system including the new deep wells. The bedrock system is differentiated by geologic formation to represent the Homewood Member of the Pennsylvania-age Pottsville Formation in the western half of the facility and the Sharon Member of the Pottsville Formation in the eastern half of the facility, per methods suggested by the USACE (Hockett, 2007). The report noted that 4 wells at LL-12 were designated as being completed in the Sharon Shale; however, these 4 wells were not used to prepare the potentiometric maps. In addition, the groundwater elevations from the new Sharon Conglomerate wells were evaluated and determined not to be representative of either the Homewood or the Sharon aquifers and, therefore, were not used to

determine the potentiometric contours. The report states the elevations for these wells will be further evaluated after the next groundwater elevation monitoring event for all wells, which is scheduled for January 2010.

The report states 17 wells were redeveloped in June 2009 and 22 wells in September 2009. These activities were performed to remove fines accumulating as sediment in the well bottoms. Ohio EPA noted that the 4 wells at LL-12 did not clear during redevelopment and the purged water was described as grey-colored slurry.

Proposed Changes to the FWGWMP for 2009-10:

Several changes were presented for the 2010 FWGWMP monitoring schedule, which will include the October 2009 and January, April, and July 2010 sampling events. They include the following:

1) Approximately 48 wells will be sampled each quarter or 192 wells total during the 2010 monitoring schedule in accordance with the 20% well sampling requirement.

2) The 6 new deep SCF wells will continue to be sampled during the 2010 monitoring schedule.

3) Twelve wells will be added to the 2010 monitoring schedule, which were inexplicably excluded from the expanded monitoring program conducted in 2008 and 2009. They include 5 wells located at LL-1, 3 wells at LL-2, 2 wells at LL-3, 1 well at LL-4, and 1 well at Open Detonation # 2.

4) All 147 wells were sampled for filtered and unfiltered metals for a geochemical study during the October 2009 sampling event that will be included in the 2010 report.

5) The report also states 12 wells at LL-12 will be sampled annually for arsenic and nitrate, as per the draft Feasibility Study, dated November 6, 2009.

Report Recommendations:

1) Continue groundwater monitoring as proposed and scheduled, including the above recommendations.

2) Background Well Issue: Historically, the integrity of the background wells has not been resolved between Ohio EPA and the USACE. The report states that reinterpretation of the groundwater flow systems suggests that only wells BKGmw-005, BKGmw-006, and BKGmw-018 may be located to establish unaffected regional water-quality conditions. All other background wells may be located hydraulically down gradient from activities and practices at RVAAP that may result in measurable affects.

Ohio EPA concurs with the proposed changes and recommendations. The background well issue(s) still need(s) to be resolved between Ohio EPA and USACE.

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

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

Sincerely,

Vicki Deppisch

Vicki Deppisch
Project Coordinator
Division of Emergency and Remedial Response

VD/kss

enclosure

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

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

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

February 8, 2010

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

Re: Facility-Wide Groundwater Monitoring Program
Annual Report for 2009 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 January 20, 2010) on the *Draft Facility-Wide Groundwater Monitoring Program Annual Report for 2009* at the Ravenna Army Ammunition Plant. Enclosed please find two (2) printed copies of the responses. An electronic copy of the responses has 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

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

PRELIMINARY DRAFT FACILITY-WIDE GROUNDWATER MONITORING PROGRAM
ANNUAL REPORT FOR 2009
RAVENNA ARMY AMMUNITION PLANT, RAVENNA OHIO
COMMENT RESPONSE TABLE
January 20, 2010

Comment Number	Page or Sheet	New Page or Sheet	Comment	Recommendation	Response
			Ohio EPA (V. Deppisch/C. McCambridge)		
O-1	Pg. 20		Re: LL12-: (1) 12 wells are listed for sampling arsenic and nitrate; however each wells is specified as an arsenic source or nitrate source. Will each well be sampled for both arsenic and nitrate? (2) Did any other LL-12 wells historically have detects of nitrate or arsenic? (3) The FS included sampling MW-189 which has not been included in the list of wells.	(1) Please clarify. (2) Please discuss and provide data, if necessary. (3) Please verify.	(1) As detailed in Table 1-1 of the Annual Report for 2009 all of the 12 wells identified on page 20 will be sampled for all of the current FWGWMP analytical parameters which include both arsenic and nitrate/nitrite. (2) In addition to the wells listed on page 20 of the report the following wells at LL12 have had historical (i.e., 2007-8) detects for nitrate and arsenic: mw-154, mw-184, mw-189, mw-243. All of these wells had arsenic levels above the MCL, but the nitrate/nitrite levels were below the MCL. mw-188 had historical detects for nitrate/nitrite below the MCL. (3) Page 20 will be revised to include mw-189 in the list of wells to be sampled.
O-2	Pg. 22		Re: flow maps. (1) Why were the 4 bedrock wells at LL-12 not included in the flow maps? (2) Report states that the new Sharon Conglomerate wells were not included in the flow maps because they are not representative of the Homewood or Sharon aquifers. How and when will this be resolved?	Please discuss.	(1) The 4 bedrock wells at Load Line 12 (LL12mw-113, LL12mw-183, LL12mw-186 and LL12mw-186) were not included in construction of the Sharon Aquifer per the "Proposal to Update the Facility-Wide Groundwater Monitoring Program," (Hockett, October 2007). These Sharon Shale wells were determined to be screened in a portion of the Sharon Member of the Pottsville Formation different from all other Sharon Aquifer wells, and thus are not a part of the Sharon Aquifer. Refer to Comment O-11 for more discussion. (2) The potentiometric map (Plate 3) was prepared using data obtained in January 2009. The new Sharon Conglomerate wells were not installed until after that date. However, the

Comment Number	Page or Sheet	New Page or Sheet	Commeut	Recommendation	Response
Ohio EPA (V. Deppisch/C. McCambridge)					
					groundwater elevations in the new Sharon Conglomerate wells obtained at the time of installation are provided. Plate 3 will be revised to indicate that these data are not contemporaneous to the other elevation data. The statement in the report is supported by comparison of elevation data on Plate 3 for the Sharon and Homewood Aquifer wells and the Sharon Conglomerate wells. At the location of Sharon Conglomerate well SCFmw-001, the Homewood Aquifer elevation is about 1105 feet, whereas the reported elevation of water in the well is 1120.71. This 15-foot difference indicates that the Sharon Conglomerate and Homewood Unit are not in direct hydraulic communication, reflecting two different aquifer systems. At the locations of Sharon Conglomerate wells SCFmw-005 and SCFmw-006 the Sharon Aquifer elevation is about 955 feet and 970 feet, respectively. These elevations compare to measured levels of 960.80 feet and 965.92, respectively. Again this approximate 5-foot difference is suggestive of two separate aquifer systems. During 2010 further consideration will be given to determining if a separate Sharon Conglomerate potentiometric map is needed.
O-3	Page 28/Line 19 (Sections 3.1 and 3.3, Table 3-2)		Table 3-2 indicates that wells DET-002, DA2mw-104, DA2mw-107, DA2mw-109, DA2mw-112, DA2mw-113, and NTAmw-116 appear to have more than 1 foot of	Please provide a discussion concerning how and when this issue of excessive silting will be addressed in these wells.	Table 3-2 had a transcription error and has been corrected to indicate that none of these wells had greater than 1-foot of sediment accumulation. The page showing these well

Comment Number	Page or Sheet	New Page or Sheet	Comment	Recommendation	Response
			Ohio EPA (V. Deppisch/C. McCambridge)		
			sediment accumulations (or greater than 10% of the screen length, 10 feet) yet these wells were not included in the June or September 2009 redevelopment activities. These accumulations could be the result of excessive silting in these wells (FWGWMPP, Section 4.1, pg. 4-1).		depths and sediment accumulations is attached. Additionally, the January 2009 well depth for NTAmw-116 appears to be an error in reading the depth. Previous depth readings for this well have shown a -0.16 to -0.08 feet of sediment accumulation. Further the January 2010 measurement showed a sediment accumulation of 0.05 feet. A footnote will be added to Table 3-2 indicating the historical depths of the well.
O-4	Page 33-43/Line 27 (Section 3.2.2, Table 3-4)		Section 3.2.2 indicates that maintenance was performed on all background and monitoring wells in 2009. However several issues were noted in the review: a) Table 3-4 indicated that 2 wells (Erie Burning Grounds – EBGMW-126 and Mustard Agent Burial Site – MBSmw-001 are *"...consistently under water due to low topography and marshy conditions."* b) When are the proposed 2010 well maintenance activities scheduled?	Please provide a brief discussion concerning the following issues. a) What criteria will be used to determine the integrity of the pad and casing if well pad is under water? b) Please provide a brief discussion as to the timing of the 2010 well maintenance activities.	a) The text in the bullet beginning on line 27 Page 46 in Section 3.2.2 will be deleted and replaced with the following text: *The pads at two wells have been noted as being consistently under water. These wells (EBGmw-126 and MBSmw-001) are monitored for signs of deterioration. The pads for the wells that are underwater will be visually inspected during sampling/well inspection events to confirm that they are still intact and that the integrity of the wells is not compromised. Additionally, the water levels in the well will be closely monitored. If the water levels are found to be at ground surface it may be indicative of water entering the casing. Currently the water levels in these wells range between 2- and 7-feet below ground surface.* *It should also be noted that neither of these wells are flush-mounts, and the risers are well above the water level.* b) Well inspections for 2010 were completed in January 2010. The schedule for well maintenance activities is still being developed.

Comment Number	Page or Sheet	New Page or Sheet	Comment	Recommendation	Response
Ohio EPA (V. Deppisch/C. McCambridge)					
					The maintenance performed will be addressed under 2010 funding. The maintenance schedule for 2010 will be provided to the Ohio EPA prior to conducting any field maintenance activities.
O-5	Page 47 Line 43		Report states that LL-12 redeveloped wells did not clear; water was grey colored slurry.	Please discuss the potential impact, if any, this may have on arsenic and nitrate analysis.	Generally, for metals analysis, a total analysis (i.e., non field filtered) will result in higher concentrations of target metals than an analysis performed on a dissolved (i.e., field filtered) sample. At RVAAP, the metals samples (i.e., arsenic) are field filtered to minimize the impacts of turbidity in the wells and thus give a better indication of dissolved versus suspended metals. The October groundwater monitoring event involved sampling for both filtered and unfiltered metals which provided an indication of potential impact the turbidity might actually have on all target metal concentrations. In nearly all cases all target metals concentrations from the October event were higher in the total analysis than the soluble analysis. For a discussion of nitrate/nitrite please see the response to Comment O-7.
O-6	Page 48/Line 15 (Section 3.3.2)		Section 3.2.2 text indicates that well FBQmw-073 was redeveloped. It is unclear what well is being referred to here in the text.	Please provide a clarification of which well was redeveloped in the Fuse and Booster Quarry.	The text should read FBQmw-173. This typo graphical error will be corrected.
O-7	Table4.2 pg. 70		• Re: LL-12 (1) MCL is incorrect should be 10mg/L for nitrate/nitrite. (2) Please verify detected units for nitrate – is it µg/L or mg/L? (3) Table lists most	(1) Please correct. (2) Please verify and correct. (3) Please verify nitrate detects and discuss the B and J qualifiers. Please provide the	(1) The MCL for nitrates is 10 mg/L, however the MCL for nitrites is 1 mg/L. The MCL used in the tables has reflected the most conservative standard (i.e., 1 mg/L). No change is

Comment Number	Page or Sheet	New Page or Sheet	Comment	Recommendation	Response
			Ohio EPA (V. Deppisch/C. McCambridge)		
			nitrate detects with B and J qualifiers. Table indicates Mw-187 had 200 B µg/L detected. No lab narratives were included to discuss these issues for nitrate. (4) MNA is proposed for LL-12 for nitrate and arsenic. According to John Miller, EQM (phone 1/6/10) the nitrate samples are not field filtered, but are preserved. The lab filters the preserved sample once they receive it. The report indicates the wells at Ll12- remain turbid. Could this potentially affect the analysis since the preservative is added? Although the S&A Plan requires preserving the sample, nitrate can be collected without preserving if collected within 24 hours. Should the unfiltered preserved sample AND either a field filtered preserved sample OR an unpreserved, analyzed within 24 hours sample be collected and compared?	lab narratives. (4) Please discuss.	recommended from 1 to 10. (2) The units of measurement will be corrected to read mg/L. (3) This issue was discussed as part of the review of the October 2008 data. The attached letter was submitted and accepted by the Ohio EPA in response to the blank contamination. This letter as well as the laboratory narratives will be added as an appendix to the annual report (4) The current analytical method used in the analysis of nitrate/nitrite (EPA 353.2) for groundwater samples at RVAAP requires that samples be analyzed within 24 hours of sample collection **or** preserved to a pH < 2 with concentrated sulfuric acid, kept stored at 4° ± 2° C, and analyzed within 28 days. Due to logistical restrictions, EQM has always collected samples for nitrate/nitrite analysis at RVAAP in pre-preserved bottles in order to take advantage of the 28 day hold time. Reference documents do not address any known impact associated with field preservation. The method also recommends filtration by the laboratory, prior to analysis, to eliminate any interferences which could result from suspended matter in the reduction column which could possibly restrict sample flow. As stated, the lab is currently doing this on a preserved sample.
O-8	Section		Re: list of nitrate wells: LL-12mw-185 is	Please verify list and change if	Section 4.21.1 will be revised to indicate that

Comment Number	Page or Sheet	New Page or Sheet	Comment	Recommendation	Response
			Ohio EPA (V. Deppisch/C. McCambridge)		
	4.21.1, pg. 124, line 9-11		listed twice and it appears another has been left out.	necessary.	LL12mw-088, LL12mw-128, LL12mw-154, LL12mw-185, LL12mw-187, LL12mw-188, LL12mw-242, LL12mw- 243, and LL12mw-244 had nitrate detections above the reporting limit (RL).
O-9	Page 130/(Section 4.27.1, Tables 4-2 and 4-4)		(1) Tables 4-2 and 4-4 contain one parameter (arsenic) which exceeded its MCL in several wells. It is unclear what course of action will be implemented to address the exceedance of MCL in these wells. (2) The MCL for nitrate-nitrite in line 44 is incorrect.	(1) Please provide a discussion concerning how and when this issue of arsenic concentrations will be addressed in the impacted wells. (2) Please change.	(1) This comment pertains to potential remedial activities for groundwater at the facility. As stated in Section 4.28 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 well as iron and manganese as it relates to exceedances of the MCL. No remedial activities associated with the groundwater are planned until all groundwater wells at the facility have completed a minimum of 4 quarters of sampling. It should be further noted that additional sampling for metals was completed in October 2009. This data will be used to conduct a specialized geochemical study to better characterize the groundwater quality as it pertains to metals at the site. This study will be completed in 2010. It should also be noted that the facility is currently in the remedial investigation (RI) stage of the CERCLA process for facility-wide groundwater. Since there are no immediate threats to human health and the environment, the Army plans to address any possible remedial action activities by next conducting a

Comment Number	Page or Sheet	New Page or Sheet	Comment	Recommendation	Response
Ohio EPA (V. Deppisch/C. McCambridge)					
					feasibility study (FS). The FS will address how the Army plans to implement any remedial activities for the facility-wide groundwater. SAIC is currently contracted (under the PBA-2008 Delivery Order) to implement further RI and FS activities for groundwater at several of the AOCs. SAIC has already conducted the FS for groundwater at Load Line 12, and will continue to do so for the other AOCs. (2) This typographical error will corrected to read mg/L.
O-10	Sec 5.2 pg 132		Background wells; Ohio EPA noted that EQM suggested due to flow directions that background wells 005, 006, and 018 appear to be truly upgradient and unaffected by activities.	No response required. Ohio EPA and USACE hope to resolve this issue in the near future.	Noted.
O-11	Plate (map) 3		Ohio EPA could not locate Mw-186 or MW-189 on the map for LL-12.	Please verify.	As indicated in the response to comment O-2, wells LL12mw-186 and LL12-mw189 are Sharon Shale wells that have been determined by the USACE (Hockett, 2007) to not be a part of the Sharon Aquifer. Thus, these wells are not included when preparing the Sharon Aquifer potentiometric map. Plate 3 will be revised to include the measured elevations in these wells noting that the data were not used to prepare the potentiometric interpretation.

Environmental Quality Management, Inc.

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

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,

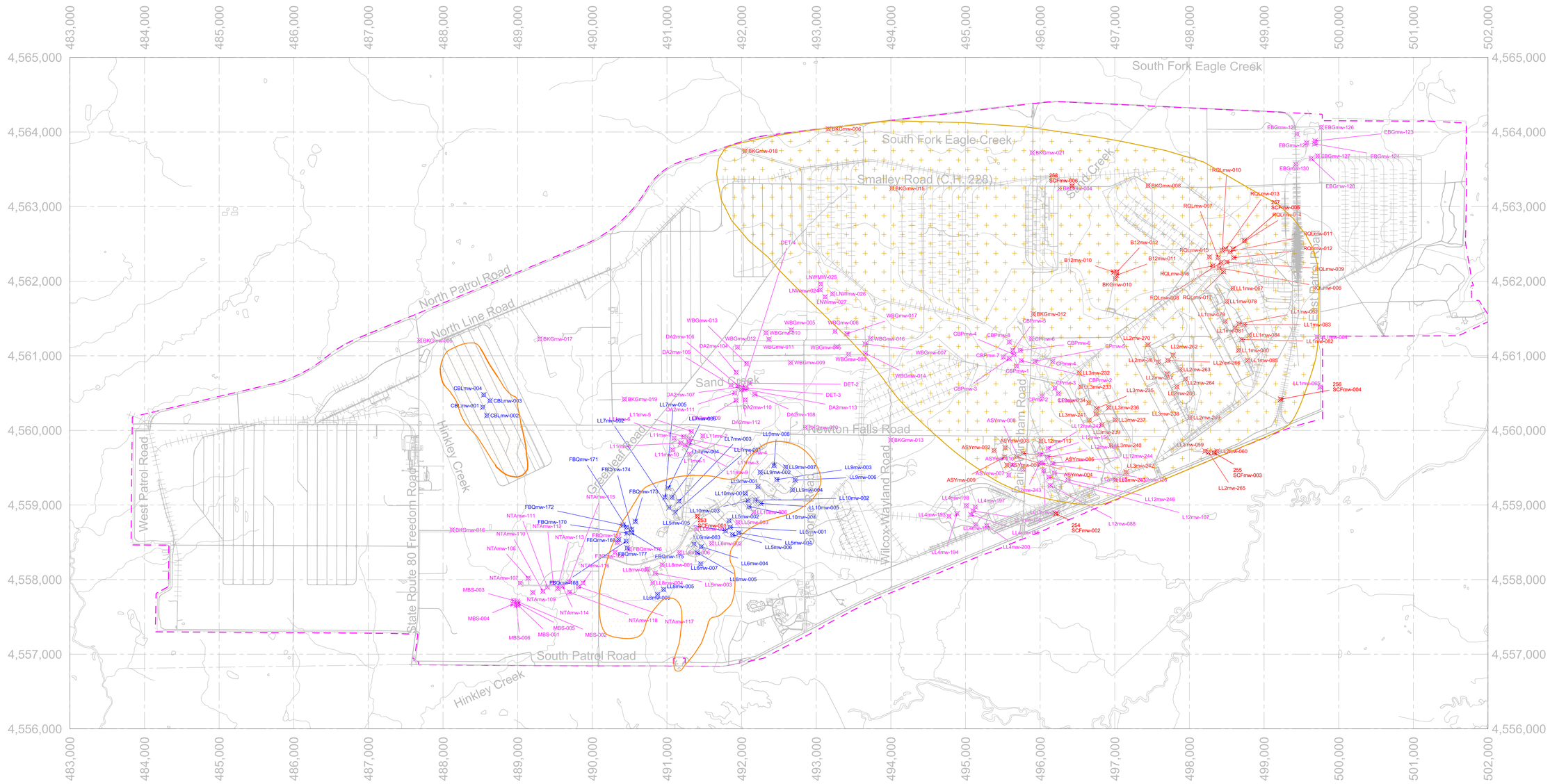
ENVIRONMENTAL QUALITY MANAGEMENT, INC.

John M. Miller, CHMM
Project Manager

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

Table 3-2. Well Construction Details, Including January 2009 Depth to Bottom Measurements

RVAAP Area	Well ID	Ohio State Plane Easting	Ohio State Plane Northing	Ground Level Elevation[a]	Total Drilled Depth[b]	TOC Elevation[a]	Well Head Type[c]	Monitored Zone	Top of Screen (ft, BGS)	Bottom of Screen (ft, BGS)	Bottom of Inner Casing Plug or End Cap (ft, BGS)	Stickup height (ft, AGS)	Reported Bottom of Inner Casing (ft, BTOC)	Jan 2009 Measured Bottom of Inner Casing (ft, BTOC)	Sediment Accumulation (ft)	Description of Bottom
Cobbs Pond	CPmw-001	2368948.81	560440.91	975.46	16.0	975.26	F	Unconsolidated	5.5	15.5	15.5	-0.20	15.3	14.74	0.56	hard
	CPmw-002	2368239.23	560311.26	972.72	16.0	972.31	F	Unconsolidated	5.5	15.5	15.5	-0.41	15.1	14.99	0.11	hard
	CPmw-003	2368796.49	560676.30	973.27	18.5	972.92	F	Unconsolidated	8.0	18.0	18.0	-0.35	17.6	17.10	0.50	hard
	CPmw-004	2368674.31	561843.46	978.51	20.0	981.20	A	Unconsolidated	9.5	19.5	19.5	2.69	22.2	22.52	-0.32	hatd
	CPmw-005	2367900.41	561846.78	970.71	40.0	973.58	A	Unconsolidated	29.5	39.5	39.5	2.87	42.4	43.16	-0.76	hard
	CPmw-006	2367727.13	562830.13	962.97	18.5	965.13	A	Unconsolidated	8.0	18.0	18.0	2.16	20.2	20.62	-0.42	hard
Demolition Area 2	DET-001B	2354959.47	560820.03	1,064.35	39.0	1,065.85	A	Unconsolidated	34.0	39.0	39.0	1.50	40.5	38.48	2.02	hard
	DET-002	2355360.33	560664.71	1,060.24	39.0	1,061.24	A	Unconsolidated	34.0	39.0	39.0	1.00	40.0	41.94	-1.94	hard
	DET-003	2355204.94	560456.10	1,035.81	15.0	1,036.81	A	Unconsolidated	7.0	12.0	12.0	1.00	13.0	15.00	-2.00	hard
	DET-004	2355072.36	560454.22	1,037.68	11.0	1,038.68	A	Unconsolidated	6.0	11.0	11.0	1.00	12.0	13.80	-1.80	hard
	DA2mw-104	2354773.79	561129.59	1,070.82	27.0	1,073.89	A	Unconsolidated	16.3	26.3	26.5	3.07	29.6	29.21	0.39	hard
	DA2mw-105	2354557.62	560572.58	1,042.66	14.0	1,045.34	A	Unconsolidated	8.3	13.3	13.5	2.68	16.2	16.20	0.00	medium
	DA2mw-106	2354848.85	560560.49	1,041.19	16.0	1,043.79	A	Unconsolidated	8.3	15.3	15.5	2.60	18.1	16.78	1.32	hard
	DA2mw-107	2354924.29	560480.05	1,039.18	15.0	1,041.63	A	Unconsolidated	8.8	13.8	14.0	2.45	16.5	16.82	-0.32	hard
	DA2mw-108	2355604.43	560181.78	1,029.92	15.0	1,032.36	A	Unconsolidated	9.3	14.3	14.5	2.44	16.9	17.16	-0.26	hard
	DA2mw-109	2354793.14	559897.89	1,068.66	24.0	1,071.29	A	Unconsolidated	11.3	21.3	21.5	2.63	24.1	24.32	-0.22	hard
	DA2mw-110	2355195.91	559927.02	1,061.39	20.0	1,063.78	A	Unconsolidated	9.3	19.3	19.5	2.39	21.9	22.34	-0.44	hard
	DA2mw-111	2354728.33	560222.94	1,039.63	12.6	1,042.12	A	Unconsolidated	7.1	12.1	12.3	2.49	14.8	14.78	0.02	medium
	DA2mw-112	2355018.98	560378.36	1,034.87	15.0	1,037.44	A	Unconsolidated	8.8	13.8	14.0	2.57	16.6	17.50	-0.90	hard
	DA2mw-113	2355153.13	560394.81	1,034.51	14.0	1,037.11	A	Unconsolidated	8.3	13.3	13.5	2.60	16.1	16.29	-0.19	hard
Erie Burning Grounds	EBGmw-123	2380049.21	571747.04	945.59	32.0	947.82	A	Unconsolidated	21.0	31.0	31.5	2.23	33.7	34.73	-1.03	medium
	EBGmw-124	2380030.24	571618.07	939.02	32.0	941.39	A	Unconsolidated	20.0	30.0	30.5	2.37	32.9	32.71	0.19	medium
	EBGmw-125	2379679.20	571655.63	947.55	25.0	949.89	A	Unconsolidated	14.0	24.0	24.5	2.34	26.8	27.43	-0.63	hard
	EBGmw-126	2380307.31	572348.81	938.20	28.0	940.61	A	Unconsolidated	15.2	25.2	25.5	2.41	27.9	27.81	0.09	medium
	EBGmw-127	2380172.16	571083.61	940.21	30.0	943.07	A	Unconsolidated	19.0	29.0	29.5	2.86	32.4	32.84	-0.44	hard
	EBGmw-128	2379892.79	570970.32	942.47	28.0	945.13	A	Unconsolidated	15.0	25.0	25.3	2.66	28.0	28.20	-0.20	hard
	EBGmw-129	2379240.52	572035.68	941.97	29.0	944.36	A	Unconsolidated	16.0	26.0	26.0	2.39	28.4	30.96	-2.56	medium
	EBGmw-130	2379220.69	570695.61	941.18	26.0	944.00	A	Unconsolidated	15.2	25.2	25.5	2.82	28.3	28.37	-0.07	hard
Fuze and Booster Quarry	FBQmw-166	2349584.33	553123.86	1,104.87	16.0	1,108.86	A	Unconsolidated	5.5	15.5	15.5	3.99	19.5	19.72	-0.22	hard
	FBQmw-167	2349675.45	553556.12	1,112.05	18.0	1,115.90	A	Unconsolidated	5.0	15.0	15.0	3.85	18.9	18.97	-0.07	hard
	FBQmw-168	2350066.87	553620.85	1,131.27	19.5	1,133.91	A	Homewood	9.0	19.0	19.0	2.64	21.6	21.21	0.39	medium
	FBQmw-169	2349730.90	553681.21	1,117.36	16.0	1,120.58	A	Homewood	5.0	15.0	15.0	3.22	18.2	18.57	-0.37	hard
	FBQmw-170	2350102.41	553975.40	1,139.67	30.5	1,142.26	A	Homewood	20.0	30.0	30.0	2.59	32.6	32.69	-0.09	hard
	FBQmw-171	2350072.44	554230.93	1,140.49	30.0	1,143.55	A	Homewood	18.0	28.0	28.0	3.06	31.1	31.39	-0.29	hard
	FBQmw-172	2349907.37	554322.17	1,145.71	33.0	1,150.09	A	Homewood	20.0	30.0	30.0	4.38	34.4	34.40	0.00	hard
	FBQmw-173	2350449.01	554491.35	1,162.43	50.0	1,165.94	A	Homewood	29.5	49.5	49.5	3.51	53.0	51.75	1.25	medium
	FBQmw-174	2350289.81	554142.44	1,135.78	22.5	1,139.97	A	Homewood	12.0	22.0	22.0	4.19	26.2	22.84	3.36	hard
	FBQmw-175	2350297.98	553989.24	1,137.16	22.5	1,140.73	A	Homewood	12.0	22.0	22.0	3.57	25.6	25.80	-0.20	hard
	FBQmw-176	2350219.45	553273.33	1,129.57	21.5	1,131.91	A	Unconsolidated	11.0	21.0	21.0	2.34	23.3	23.87	-0.57	soft
	FBQmw-177	2350112.18	553321.94	1,125.73	22.5	1,128.57	A	Homewood	12.0	22.0	22.0	2.84	24.8	24.74	0.06	medium
Landfill North of Winklepeck	LNWmw-024	2358403.21	564825.89	1,035.30	24.0	1,038.00	A	Unconsolidated	10.0	20.0	20.0	2.70	22.7	22.52	0.18	hard
	LNWmw-025	2358417.06	565071.92	1,027.20	19.0	1,029.13	A	Unconsolidated	8.0	18.0	18.0	1.93	19.9	20.30	-0.40	hard
	LNWmw-026	2358952.24	564658.16	1,025.00	24.0	1,027.80	A	Unconsolidated	13.0	23.0	23.0	2.80	25.8	25.97	-0.17	hard
	LNWmw-027	2358628.75	564517.41	1,024.40	25.0	1,027.13	A	Unconsolidated	14.0	24.0	24.0	2.73	26.7	26.86	-0.16	hard
NACA Test Area	NTAmw-107	2345433.40	551697.29	1,077.65	23.0	1,080.30	A	Unconsolidated	12.0	22.0	22.0	2.65	24.6	24.25	0.35	medium
	NTAmw-108	2345781.60	551916.22	1,083.22	23.0	1,085.62	A	Unconsolidated	12.0	22.0	22.0	2.40	24.4	24.48	-0.08	soft
	NTAmw-109	2345997.72	551293.25	1,076.89	19.0	1,079.84	A	Unconsolidated	8.0	18.0	18.0	2.95	20.9	20.89	0.01	soft
	NTAmw-110	2346438.94	551351.46	1,080.03	28.0	1,082.62	A	Unconsolidated	17.0	27.0	27.0	2.59	29.6	29.74	-0.14	medium
	NTAmw-111	2346638.01	551538.60	1,078.07	20.0	1,080.94	A	Unconsolidated	9.5	19.5	19.5	2.87	22.4	23.06	-0.66	hard
	NTAmw-112	2346889.48	551712.14	1,075.36	23.9	1,078.33	A	Unconsolidated	13.9	23.9	23.9	2.97	26.9	26.60	0.30	medium
	NTAmw-113	2347082.83	551488.52	1,072.61	27.5	1,075.68	A	Unconsolidated	17.0	27.0	27.5	3.07	30.6	29.30	1.30	soft
	NTAmw-114	2347301.57	551592.94	1,075.61	20.0	1,078.71	A	Unconsolidated	9.5	19.5	19.5	3.10	22.6	21.74	0.86	hard
	NTAmw-115	2347581.16	551791.78	1,086.91	24.0	1,089.65	A	Unconsolidated	12.5	22.5	22.5	2.74	25.2	25.27	-0.07	hard
	NTAmw-116	2348196.39	551748.00	1,091.68	22.0	1,094.33	A	Unconsolidated	10.0	20.0	20.0	2.65	22.6	21.53	1.07	hard, error?
	NTAmw-117	2347994.83	551584.57	1,091.67	25.0	1,094.54	A	Unconsolidated	14.5	24.5	24.5	2.87	27.4	27.50	-0.10	hard
	NTAmw-118	2347609.41	551335.04	1,078.86	22.5	1,081.44	A	Unconsolidated	12.0	22.0	22.0	2.58	24.6	24.09	0.51	hard



LEGEND

- UNCONSOLIDATED WELL
- HOMEWOOD MEMBER WELL
- SHARON MEMBER WELL
- PROPERTY LINE
- HOMEWOOD MEMBER
- SHARON MEMBER

NOTE: THE UNCONSOLIDATED AQUIFER OVERLAYS THE HOMEWOOD AND SHARON MEMBERS, EXCEPT AS INDICATED ON PLATE 2

0 50 1000

SCALE (METERS)

N

COORDINATE SYSTEM UTM NAD 83 ZONE 17

ENVIRONMENTAL QUALITY MANAGEMENT, INC.
1800 CARILLON BLVD.
CINCINNATI, OHIO 45240
P (513)825-7500
F (513)825-7495

REV	DESCRIPTION	DATE	APPROVED
1	ADDED NOTE	12-04-08	BT
2	ADDED SFCmw-001 THRU 006	9-10-09	JM

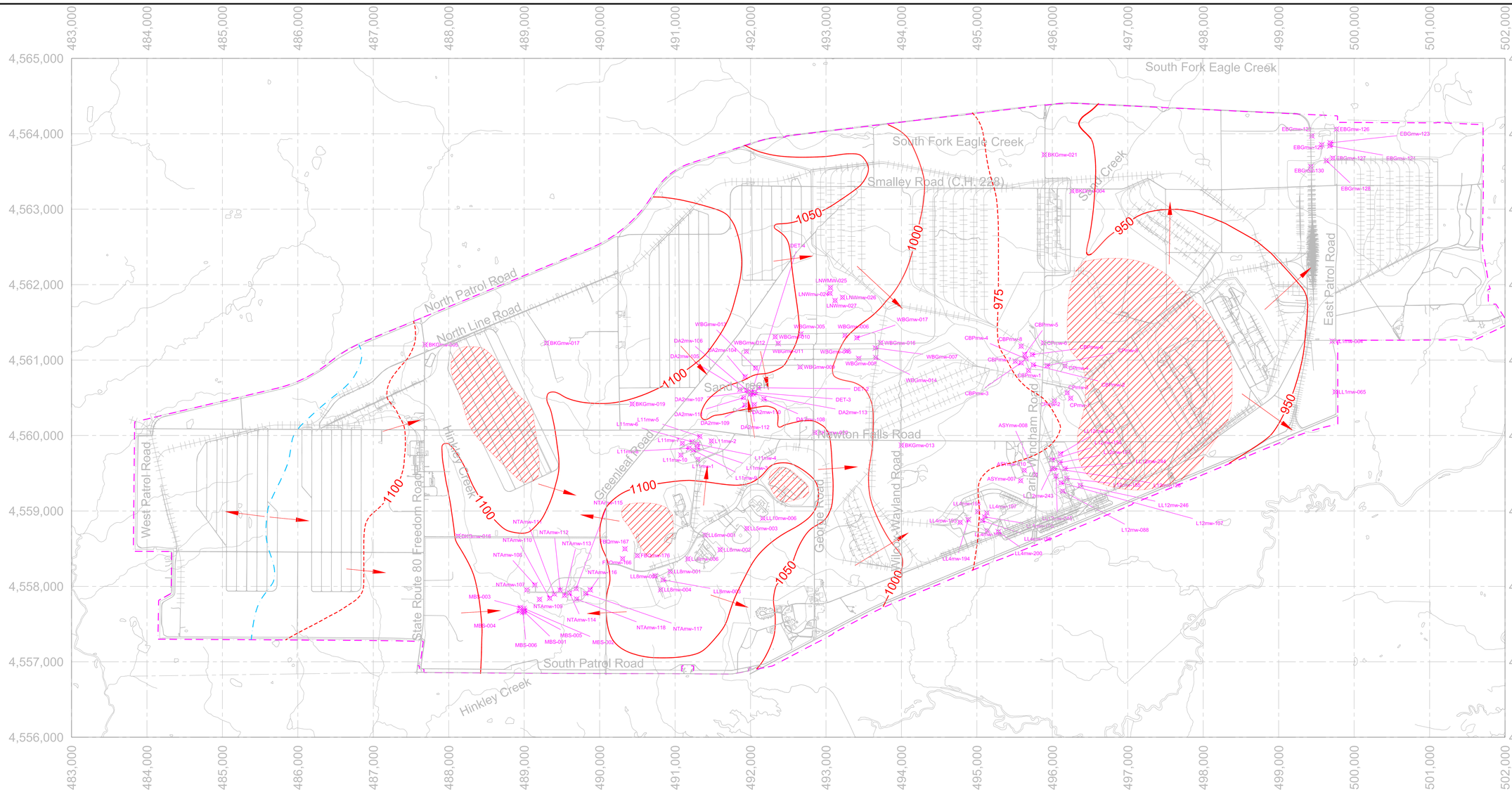
REVISIONS

DRAWN	D.TOMO	10/22/07
CHECKED		
APPROVED		

SCALE: NONE

MONITORING WELLS AT RVAAP

ORIGINAL SIZE	PROJECT NO.	DWG NO.	REV
E	030240.0006	PLATE 1	2



Well ID	Elevation (ft, amsl)
BKGmw-004	953.35
BKGmw-005	1140.72
BKGmw-013	976.63
BKGmw-016	1095.20
BKGmw-017	1117.78
BKGmw-019	1089.52
BKGmw-020	1058.90
BKGmw-021	955.46
LL1mw-064	932.95
LL1mw-065	932.47
LL4mw-193	976.20
LL4mw-194	975.67
LL4mw-195	972.23
LL4mw-196	971.83
LL4mw-197	971.30
LL4mw-198	975.17
LL4mw-199	969.79
LL4mw-200	969.83
LL5mw-003	1108.05
LL6mw-001	1110.65
LL6mw-002	1117.65

Well ID	Elevation (ft, amsl)
LL6mw-006	1109.15
LL8mw-001	1110.01
LL8mw-002	1106.24
LL8mw-003	1106.36
LL8mw-004	1104.88
LL10mw-006	1111.64
LL11mw-001	1091.45
L L11mw-002	1078.41
LL11mw-003	1087.78
LL11mw-004	1084.32
LL11mw-005	1073.00
LL11mw-006	1083.01
LL11mw-007	1068.41
LL11mw-008	1084.06
LL11mw-009	FROZEN
LL11mw-010	1078.95
LL12mw-088	973.62
LL12mw-107	970.30
LL12mw-128	968.12
LL12mw-153	971.62
LL12mw-154	970.12

Well ID	Elevation (ft, amsl)
LL12mw-182	974.18
LL12mw-184	970.45
LL12mw-185	973.07
LL12mw-187	970.42
LL12mw-188	976.45
LL12mw-242	972.68
LL12mw-243	971.16
LL12mw-244	970.54
LL12mw-245	971.11
LL12mw-246	967.87
ASYmw-007	968.29
ASYmw-008	973.74
ASYmw-010	968.08
CBPmw-001	961.99
CBPmw-002	959.63
CBPmw-003	961.98
CBPmw-004	960.15
CBPmw-005	959.38
CBPmw-006	959.54
CBPmw-007	960.08
CBPmw-008	956.91

Well ID	Elevation (ft, amsl)
CPmw-001	972.32
CPmw-002	972.21
CPmw-003	968.96
CPmw-004	970.66
CPmw-005	962.15
CPmw-006	956.99
DETmw-001B	1042.86
DETmw-002	1028.66
DETmw-003	1027.31
DETmw-004	1028.17
DA2mw-104	1052.27
DA2mw-105	1042.11
DA2mw-106	1040.14
DA2mw-107	1034.75
DA2mw-108	1026.57
DA2mw-109	1057.45
DA2mw-110	1055.63
DA2mw-111	1037.62
DA2mw-112	1030.16
DA2mw-113	1029.26
EBGmw-123	938.50
EBGmw-124	938.41

Well ID	Elevation (ft, amsl)
EBGmw-125	938.44
EBGmw-126	938.62
EBGmw-127	938.84
EBGmw-128	938.82
EBGmw-129	939.02
EBGmw-130	937.91
FBQmw-166	1104.15
FBQmw-167	1111.41
FBQmw-176	1122.38
LNWmw-024	1025.58
LNWmw-025	1024.09
LNWmw-026	1023.93
LNWmw-027	1020.43
NTAmw-107	1067.95
NTAmw-108	1068.16
NTAmw-109	1072.19
NTAmw-110	1068.64
NTAmw-111	1077.67
NTAmw-112	1069.63
NTAmw-113	1068.99
NTAmw-114	1072.79
NTAmw-115	1075.86

Well ID	Elevation (ft, amsl)
NTAmw-116	1089.54
NTAmw-117	1081.57
NTAmw-118	1072.89
WBGmw-005	1049.11
WBGmw-006	1007.79
WBGmw-007	986.14
WBGmw-008	993.72
WBGmw-009	1033.73
WBGmw-010	1061.84
WBGmw-011	1061.68
WBGmw-012	1054.20
WBGmw-013	1059.59
WBGmw-014	980.76
WBGmw-015	1000.20
WBGmw-016	979.74
WBGmw-017	998.23
MBS-001	1064.71
MBS-002	1065.21
MBS-003	1065.60
MBS-004	1064.95
MBS-005	1064.67
MBS-006	1064.63

0 50 1000

SCALE (METERS)

LEGEND

UNCONSOLIDATED WELL

PROPERTY LINE

1100 LINE OF EQUAL GROUNDWATER ELEVATION (ft,amsl)
975 (INTERMEDIATE DASHED)

GROUNDWATER DIRECTION

UNCONSOLIDATED AQUIFER MISSING

INFERRED GROUNDWATER DIVIDE

N

COORDINATE SYSTEM UTM NAD 83 ZONE 17

ENVIRONMENTAL QUALITY MANAGEMENT, INC.
1800 CARILLON BLVD.
CINCINNATI, OHIO 45240
P (513)825-7500
F (513)825-7495

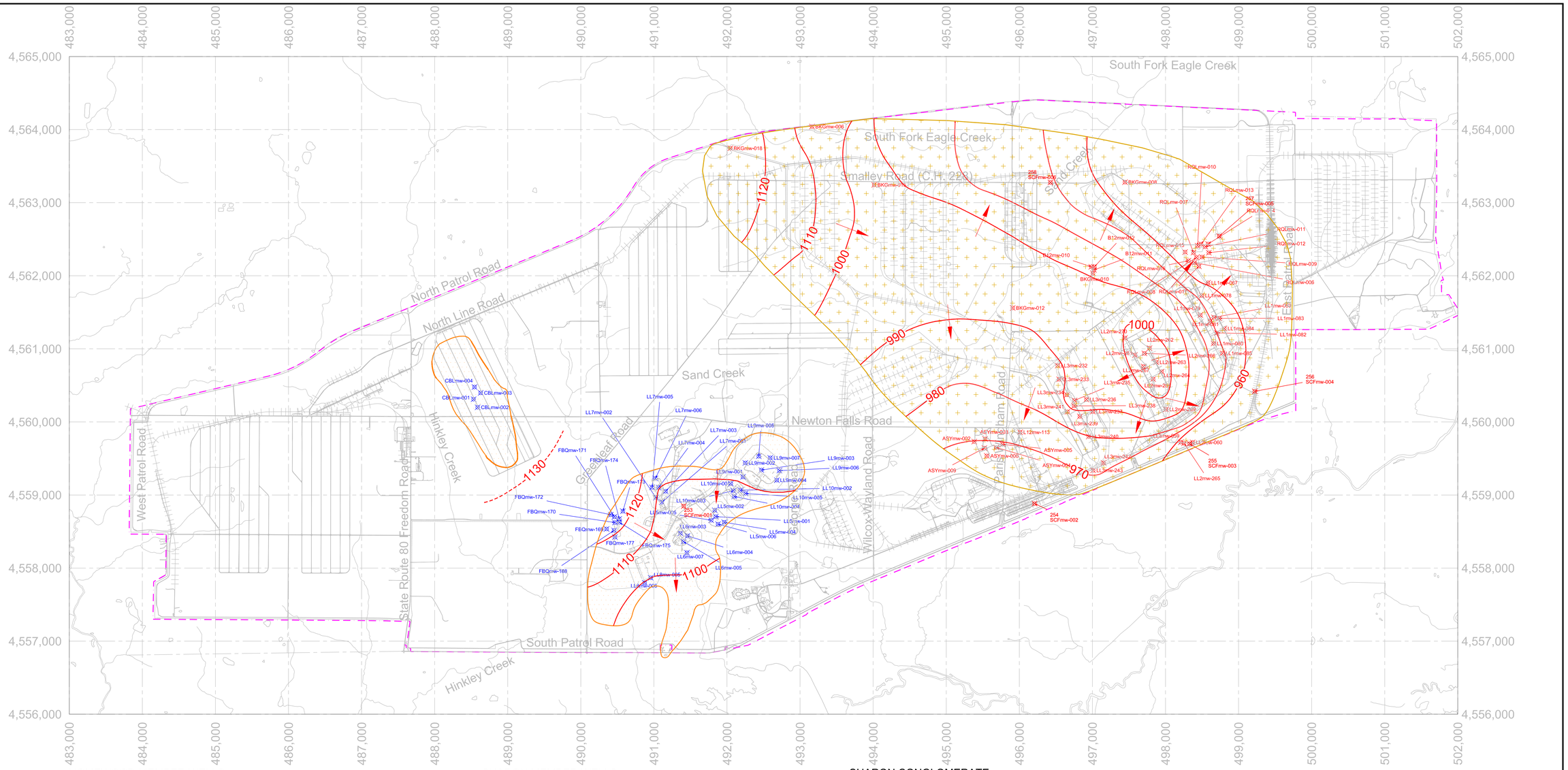
REV	DESCRIPTION	DATE	APPROVED

REVISIONS

DRAWN	D.TOMO	3-30-09
CHECKED	W.THOMPSON	3-30-09
APPROVED		
SCALE:	NONE	

POTENTIOMETRIC SURFACE OF UNCONSOLIDATED AQUIFER (JAN. 2009)

ORIGINAL SIZE	PROJECT NO.	DWG NO.	REV
E	030240.0006	PLATE 2	1



HOMEWOOD MEMBER WELLS

Well ID	Elevation (ft, amsl)
LL5mw-001	1107.89
LL5mw-002	1107.83
LL5mw-004	1107.91
LL5mw-005	1107.87
LL5mw-006	1107.58
LL6mw-003	1108.94
LL6mw-004	1108.39
LL6mw-005	1108.61
LL6mw-007	1110.12
LL7mw-001	1109.29
LL7mw-002	1113.93
LL7mw-003	1109.61
LL7mw-004	1111.57
LL7mw-005	1114.23
LL7mw-006	1113.18
LL8mw-005	1101.95
LL8mw-006	1097.47
LL9mw-001	1119.61
LL9mw-002	1116.61
LL9mw-003	1124.33
LL9mw-004	1110.62

Well ID	Elevation (ft, amsl)
LL9mw-005	1114.83
LL9mw-006	1110.96
LL9mw-007	1110.69
LL10mw-001	1107.67
LL10mw-002	1109.33
LL10mw-003	1109.33
LL10mw-004	1108.97
LL10mw-005	1109.92
CBLmw-001	1136.26
CBLmw-002	1136.09
CBLmw-003	1137.39
CBLmw-004	1137.48
FBQmw-168	1121.76
FBQmw-169	1115.10
FBQmw-170	1122.31
FBQmw-171	1124.35
FBQmw-172	1121.27
FBQmw-173	1120.59
FBQmw-174	1121.59
FBQmw-175	1121.00
FBQmw-177	1115.26

SHARON MEMBER WELLS

Well ID	Elevation (ft, amsl)
BKGmw-006	1005.87
BKGmw-008	954.09
BKGmw-010	990.76
BKGmw-012	991.57
BKGmw-015	991.50
BKGmw-018	1029.32
LL1mw-063	964.95
LL1mw-067	959.42
LL1mw-078	961.88
LL1mw-079	963.98
LL1mw-080	985.65
LL1mw-081	967.02
LL1mw-082	975.10
LL1mw-083	960.20
LL1mw-084	969.48
LL1mw-085	960.67
LL2mw-059	952.09
LL2mw-060	951.61
LL2mw-261	1004.48
LL2mw-262	1003.81
LL2mw-263	1003.32
LL2mw-264	1005.67

Well ID	Elevation (ft, amsl)
LL2mw-265	951.42
LL2mw-266	1004.38
LL2mw-267	1005.81
LL2mw-268	1003.00
LL2mw-269	994.95
LL2mw-270	1002.56
LL3mw-232	978.28
LL3mw-233	977.37
LL3mw-234	996.45
LL3mw-235	990.72
LL3mw-236	993.88
LL3mw-237	990.19
LL3mw-238	991.39
LL3mw-239	978.55
LL3mw-240	978.81
LL3mw-241	985.00
LL3mw-242	983.90
LL3mw-243	978.18
ASYmw-001	968.48
ASYmw-002	968.88
ASYmw-003	968.61
ASYmw-004	969.64

Well ID	Elevation (ft, amsl)
ASYmw-005	971.52
ASYmw-006	968.25
ASYmw-009	969.19
B12mw-010	986.77
B12mw-011	983.27
B12mw-012	981.60
RQLmw-006	958.55
RQLmw-007	957.66
RQLmw-008	958.34
RQLmw-009	958.49
RQLmw-010	954.66
RQLmw-011	952.81
RQLmw-012	953.71
RQLmw-013	953.39
RQLmw-014	951.80
RQLmw-015	957.43
RQLmw-016	959.12
RQLmw-017	959.65

SHARON CONGLOMERATE WELLS

Well ID	Elevation (ft, amsl)
SCFmw-001	1120.71
SCFmw-002	984.56
SCFmw-003	958.47
SCFmw-004	944.17
SCFmw-005	960.80
SCFmw-006	965.92

*WELLS NOT USED TO PRODUCE POTENTIOMETRIC MAP

SHARON SHALE WELLS

Well ID	Elevation (ft, amsl)
LL12mw-186	972.97
LL12mw-189	974.62

*WELLS NOT USED TO PRODUCE POTENTIOMETRIC MAP

0 50 1000

SCALE (METERS)

LEGEND

- HOMEWOOD MEMBER WELL
- SHARON MEMBER WELL
- PROPERTY LINE
- 1100 / 1030 — LINE OF EQUAL GROUNDWATER ELEVATION (ft,amsl) (INTERMEDIATE DASHED)
- GROUNDWATER DIRECTION
- HOMEWOOD MEMBER
- SHARON MEMBER

N

COORDINATE SYSTEM UTM NAD 83 ZONE 17

ENVIRONMENTAL QUALITY MANAGEMENT, INC.
1800 CARILLON BLVD.
CINCINNATI, OHIO 45240
P (513)825-7500
F (513)825-7495

REV	DESCRIPTION	DATE	APPROVED
1	ADDED SFCmw-001 THRU 006	9-10-09	JM

REVISIONS

DRAWN	D.TOMO	3-30-09
CHECKED	W.THOMPSON	3-30-09
APPROVED		
SCALE:	NONE	

POTENTIOMETRIC SURFACE OF BEDROCK -HOMEWOOD AND SHARON (JAN. 2009)

ORIGINAL SIZE	PROJECT NO.	DWG NO.	REV
E	030240.0006	PLATE 3	1